

Oracle® Banking Extensibility Workbench

Getting Started User Guide



Release 14.8.2.0.0
G55903-02
May 2026

ORACLE®

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Contents

1 Preface

1.1	Purpose	1
1.2	Introduction	1
1.3	Audience	1
1.4	Documentation Accessibility	2
1.5	Critical Patches	2
1.6	Diversity and Inclusion	2
1.7	Related Resources	2
1.8	Conventions	2
1.9	Screenshot Disclaimer	3
1.10	Acronyms and Abbreviations	3
1.11	Basic Actions	3
1.12	Symbols and Icons	4

2 Welcome to Oracle Banking Extensibility Workbench

2.1	Introduction	1
2.2	OBX and Base artifacts compatibility	2
2.3	Setting up OBX for first time use	2
2.4	OBX Maintenance	4
2.5	OBX UI	5
2.5.1	Entity Details	6
2.5.2	Field Details	6
2.5.3	Child Entity Details	8
2.5.4	Relationship Details	9

3 Service Extensions

3.1	Simple Sub Domain Service	2
3.2	Maintenance Sub Domain Service	5
3.3	Data/Resource Segment Sub Domain Service	8
3.3.1	RSOV1	8
3.3.2	RSOV2 DS	11
3.3.3	Workflow DS	13

3.4	Simple Publisher/Subscriber Event Service	15
3.5	Batch Service	18
3.6	Custom Validation Service	20
3.7	Steps to Adopt Multi in Existing Service	21
3.8	Field Config Service	23

4 UI Extensions – Web Component

4.1	Component Server	4
4.2	Simple Standalone	4
4.3	Virtual Page	7
4.4	Maintenance Detail and Summary	10
4.5	Data Segment	12
4.6	Dashboard Widget	14
4.7	Running Component after Generation	16
4.8	Creating final Extended Component war for Deployment	17
4.9	Understanding DB Scripts for Web Components	19

5 Modification of Base Web Component

5.1	Steps for Modification of Base Component	2
5.2	Process Workbench	2
5.3	OBX Update Command	8
5.3.1	Service Update	9
5.3.2	UI Update	9
5.4	In-Scope DS	10
5.5	OBX Release Command	11

6 Extending Product Data Segments with Additional Fields

6.1	Additional Fields Maintenance	1
6.2	Populating Data in Corresponding Fields From UI	6
6.3	Fetching the Saved Values	8

7 Action URL and Static Tag Maintenance

7.1	Action URL Maintenance	1
7.2	Static Tag Maintenance	1

8 Extensibility Use Cases for OBORN Servicing

8.1	New Transaction Screen – 1499 (Exact Clone of 1401)	1
8.2	Exact Clone with Additional Fields Using Common Code	2

8.3	Exact Clone with Additional Fields Using Extensible Code	6
8.4	Jar Deployment in Weblogic	6

9 Extensibility Use Cases for OBX

9.1	New Transaction screen – 1499 (Clone of 1401)	2
9.2	New Data Segment in Existing 1401 Screen	4
9.3	HTML Changes	5
9.4	JS Changes	6
9.5	JSON Changes	8
9.6	Model Changes	9
9.7	Database Changes	9
9.8	Service Component	10
9.9	New Field in Existing Base Data Segment	13
9.10	HTML Changes (Extended Components)	14
9.11	HTML Changes (Base Component)	15
9.12	JS Changes (Base Component)	16
9.13	JS Changes (Extended Component)	16
9.14	JSON Changes (Extended Component)	17
9.15	JSON Changes (Base Component)	18
9.16	DB Changes	18
9.17	Add New Columns in Base Component Table	20
9.18	Steps for adding extra column in task grid	21
9.19	Steps to use Additional Buttons provision in Task Screen	21
9.20	Steps to create common-extended folder for extending configJSON.js file	22
9.21	Customizing Existing LOV Fetch Result	23
9.22	Steps for adding Pre/post methods in extended components	24
9.23	ENDPOINT Overrides	24
9.24	Steps to create util-extended folder	26
9.25	Dynamic Data Configuration (DDC)	26
9.26	Task Screen Custom Config	29

10 Reference and Feedback

10.1	Reference	1
10.2	Documentation Accessibility	1
10.3	Feedback and Support	1

Index

1

Preface

- [Purpose](#)
- [Introduction](#)
- [Audience](#)
- [Documentation Accessibility](#)
- [Critical Patches](#)
- [Diversity and Inclusion](#)
- [Related Resources](#)
- [Conventions](#)
- [Screenshot Disclaimer](#)
- [Acronyms and Abbreviations](#)
- [Basic Actions](#)
- [Symbols and Icons](#)

1.1 Purpose

This guide is designed to help acquaint you with the Getting Started User Guide application. This guide provides answers to specific features and procedures that the user need to be aware of the module to function successfully.

This user guide would help you to understand the functioning of the Oracle Banking Extensibility Workbench – OBX and the types of extensions it provides. It provides the steps required to be followed for implementing the extensibility to the Base product. It is assumed that all the prior setup is already done related with Base product/ Kernel. In this document it is also assumed that installation will be done on Windows 10 operating system with minimum 8GB Ram and available/free space of 5GB.

1.2 Introduction

This user guide would help you to understand the functioning of the Oracle Banking Extensibility Workbench – OBX and the types of extensions it provides. It provides the steps required to be followed for implementing the extensibility to the Base product. It is assumed that all the prior setup is already done related with Base product/ Kernel. In this document it is also assumed that installation will be done on Windows 10 operating system with minimum 8GB Ram and available/free space of 5GB.

1.3 Audience

This document is intended for the teams and developers who are responsible for creating extensions like services and web components for products which are developed using Oracle Banking Microservices Architecture.

1.4 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

1.5 Critical Patches

Oracle advises customers to get all their security vulnerability information from the Oracle Critical Patch Update Advisory, which is available at [Critical Patches, Security Alerts and Bulletins](#). All critical patches should be applied in a timely manner to ensure effective security, as strongly recommended by [Oracle Software Security Assurance](#).

1.6 Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1.7 Related Resources

For more information, see these related user guides:

- Oracle Banking Extensibility Workbench Installation Guide
- Oracle Banking Extensibility Workbench Release Notes

1.8 Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1.9 Screenshot Disclaimer

Personal information used in the interface or documents is dummy and does not exist in the real world. It is only for reference purposes.

1.10 Acronyms and Abbreviations

The list of the acronyms and abbreviations that are used in this guide are as follows:

Table 1-1 Acronyms and Abbreviations

Abbreviation	Description
DDA	Demand Deposit Accounts
ECA	External Credit Approval
EOD	End of Day
IBAN	International Bank Account Number

1.11 Basic Actions

The basic actions performed in the screens are as follows:

Table 1-2 Basic Actions

Actions	Description
New	Click New to add a new record. The system displays a new record to specify the required data. The fields marked with asterisk are mandatory. <ul style="list-style-type: none">This button is displayed only for the records that are already created.
Save	Click Save to save the details entered or selected in the screen.
Unlock	Click Unlock to update the details of an existing record. The system displays an existing record in editable mode. <ul style="list-style-type: none">This button is displayed only for the records that are already created.
Authorize	Click Authorize to authorize the record created. A maker of the screen is not allowed to authorize the same. Only a checker can authorize a record. <ul style="list-style-type: none">This button is displayed only for the already created records. For more information on the process, refer Authorization Process.
Approve	Click Approve to approve the initiated record. <ul style="list-style-type: none">This button is displayed once the user click Authorize.
Audit	Click Audit to view the maker details, checker details of the particular record. <ul style="list-style-type: none">This button is displayed only for the records that are already created.
Close	Click Close to close a record. This action is available only when a record is created.
Confirm	Click Confirm to confirm the action performed.
Cancel	Click Cancel to cancel the action performed.

Table 1-2 (Cont.) Basic Actions

Actions	Description
Compare	Click Compare to view the comparison through the field values of old record and the current record. <ul style="list-style-type: none">This button is displayed in the widget once the user click Authorize.
View	Click View to view the details in a particular modification stage. <ul style="list-style-type: none">This button is displayed in the widget once the user click Authorize.
View Difference only	Click View Difference only to view a comparison through the field element values of old record and the current record, which has undergone changes. <ul style="list-style-type: none">This button is displayed once the user click Compare.
Expand All	Click Expand All to expand and view all the details in the sections. <ul style="list-style-type: none">This button is displayed once the user click Compare.
Collapse All	Click Collapse All to hide the details in the sections. <ul style="list-style-type: none">This button is displayed once the user click Compare.
OK	Click OK to confirm the details in the screen.

1.12 Symbols and Icons

This guide has the following list of symbols and icons.

Table 1-3 Symbols and Icons - Common

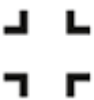






Symbol/Icon	Function
	Minimize
	Maximize
	Close
	Perform Search
	Open a list
	Add a new record
	Navigate to the first record

Table 1-3 (Cont.) Symbols and Icons - Common











Symbol/Icon	Function
	Navigate to the last record
	Navigate to the previous record
	Navigate to the next record
	Grid view
	List view
	Refresh
	Click this icon to add a new row.
	Click this icon to delete a row, which is already added.
	Calendar
	Alerts

Table 1-4 Symbols and Icons – Audit Details



Symbol/Icon	Function
	A user
	Date and time

Table 1-4 (Cont.) Symbols and Icons – Audit Details










Symbol/Icon	Function
	Unauthorized or Closed status
	Authorized or Open status
	Rejected status

Table 1-5 Symbols and Icons - Widget

Symbol/Icon	Function
	Open status
	Unauthorized status
	Closed status
	Authorized status
	Rejected status
	Modification Number

2

Welcome to Oracle Banking Extensibility Workbench

This guide provides an overview and detailed instructions for using the Oracle Banking Extensibility Workbench (OBX), enabling users to efficiently configure and customize banking workflows.

It provides the complete solution to create extensions for products based and developed on Oracle Banking Microservices Architecture (OBMA). It helps in generating the services and UI web components artifacts. This guide is designed to help user create all these types of service and UI artifacts. It also has complete life cycle management incorporated for all the extensions generated from tool.

- [Introduction](#)
Oracle Banking Extensibility Workbench (OBX) is a combination of GUI and command line tool, intended to create different type of extensions for Oracle Banking Micro services Architecture.
- [OBX and Base artifacts compatibility](#)
This topic provides the systematic instruction to perform OBX and Base artifacts compatibility.
- [Setting up OBX for first time use](#)
This topic provides the systematic instruction to perform OBX setup for first time use.
- [OBX Maintenance](#)
This topic provides the systematic instructions to execute OBX Maintenance operations.
- [OBX UI](#)
This topic provides information about OBX UI details.

2.1 Introduction

Oracle Banking Extensibility Workbench (OBX) is a combination of GUI and command line tool, intended to create different type of extensions for Oracle Banking Micro services Architecture.

OBX support generation of following types of Extensions:

1. Service Extensions
 - Simple sub domain service
 - Maintenance sub domain service
 - Data/Resource Segment sub domain service
 - Simple Publisher/Subscriber Event Service
 - Custom Validation Service
2. UI Extensions – Web Component
 - Simple Standalone
 - Virtual Page
 - Maintenance Detail and Summary

- Data Segment
 - Dashboard Widget
3. Modification of Base Web Component
- Additions of Fields on Existing component
 - Hiding fields from screen
 - Defaulting values on screen
 - Disable field
 - Making Non-mandatory field

2.2 OBX and Base artifacts compatibility

This topic provides the systematic instruction to perform OBX and Base artifacts compatibility.

OJET version compatibility:

The implementation team must ensure that the OJET version of the app shell used aligns with the OJET version present in the OBX tool.

Note

As part of OJET upgrade some older libraries may not be supported. If consulting / implementation team is using any of the unsupported libraries for their customizations, compatibility issues may arise if the app-shell version they are using doesn't include those OJET libraries.

All the UI customizations/extensions are bundled into `extended-components war` which ultimately refer to the app-shell OJET libraries only.

Please find the compatibility matrix of app-shell OJET versions and OBX OJET versions below.

Table 2-1 OBX - Compatibility

OBX version	OJET version
14.7.0.0.0	Appshell version xxxx (has 13.0.0 OJET version)
14.7.5.0.0	Appshell version 9.5.0 (has 15.1.8 OJET version)
14.8.0.0.0	Appshell version 9.6.0 (has OJET Version 17.xxx)
14.8.1.0.0	Appshell version 9.6.0 (has 17.0.0 OJET version)
14.8.2.0.0	Appshell version 9.6.0(has 17.0.0 OJET version)

2.3 Setting up OBX for first time use

This topic provides the systematic instruction to perform OBX setup for first time use.

To generate the first artifact, user must first complete the installation process, including the creation of the **extension_home** folder, and then user should be able to see the help menu as shown below.

Figure 2-1 Setting up OBX

```

C:\OBX1480\extension_home
> obx -h
obx <command>

Commands:
obx batch                Creates new OBMA based batch service
obx build-cca            Generates extended-components war
obx create-jar            Creates the jar from the given war
obx event [options]       Creates publisher and/or subscriber event service
obx release              Displays release note
obx service-update        Update existing service to latest
obx service <command> [options] Creates new domain service
obx startup [options]     Executes UI component
obx start-cs             Starts the component server from extension home
obx task [options]        Creates a reference task service
obx ui-update            Update existing UI to latest
obx ui [options]          Creates UI component
obx validation [options] Creates a validation service
obx xdl-gen [options]     Opens OBX UI for generating XDL file

Options:
-h, --help              Show help
-v, --version            Show version information

Examples:
obx service new -c

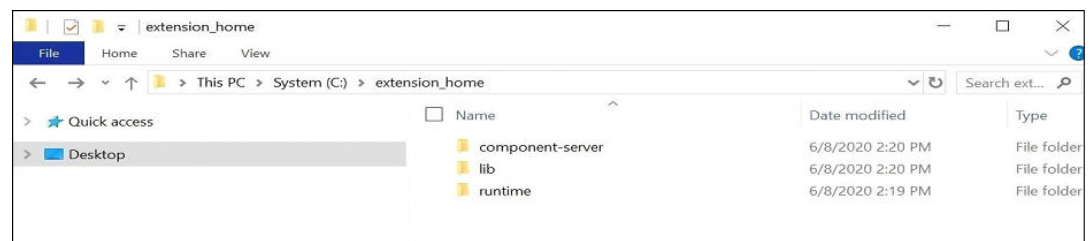
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.
C:\OBX1480\extension_home
>

```

Once that is done, we will proceed to next step which is setting up libraries and components from base product. Follow the below process to setup libraries and components:

1. Create a folder **component-server** inside **extension_home** directory.
2. Use 7zip or other similar tool to extract **app-shell-9.5.0.war** from base product to copy the **common & js** folders and put it inside the **component-server** folder.
3. Navigate inside the **js** folder and copy the **components** folders and place it in the **component- server** folder.
4. Create a folder **lib** inside **extension_home** directory.
5. To use a service war file like **cmc-datasegment-services-9.5.0.war**, open it using a tool like 7zip. Navigate to the **WEB-INF\lib** folder within the war file and copy all the jars inside. Then, paste them into the **lib** folder of user extension's home directory.
6. Create a folder runtime inside **extension_home** directory.
7. Navigate to the **gradle** folder within the **obx.zip**, then copy the **extra_jars** from the **lib** folder to the runtime folder within the **extension_home** directory.
8. After all the above process **extension_home** folder looks like below.

Figure 2-2 Extension Home Folder



9. Once all of the above process is done, we cannot now generate the artifact.

2.4 OBX Maintenance

This topic provides the systematic instructions to execute OBX Maintenance operations.

Before generating the artifact, verify the below items from the base installation.

Items for the base installation verification.

- Verify if the **PRODUCT_EXTENDED_LEDGER** table exists in the **plato-ui-config** schema. If it's not present, execute the script below:

```
-----
-- DDL for Table PRODUCT_EXTENDED_LEDGER
-----
CREATE TABLE "PRODUCT_EXTENDED_LEDGER" ("ID" VARCHAR2(20),
"CCA_NAME" VARCHAR2(100), "CCA_TYPE" VARCHAR2(20), "PARENT_CCA_NAME"
VARCHAR2(100), "PRODUCT_NAME" VARCHAR2(100))
-----
-- Constraints for Table PRODUCT_EXTENDED_LEDGER
-----
ALTER TABLE "PRODUCT_EXTENDED_LEDGER" ADD CONSTRAINT
"PRODUCT_EXTENDED_LEDGER_PK" PRIMARY KEY ("ID")
ALTER TABLE "PRODUCT_EXTENDED_LEDGER" MODIFY ("CCA_NAME" NOT NULL
ENABLE)
ALTER TABLE "PRODUCT_EXTENDED_LEDGER" MODIFY ("ID" NOT NULL ENABLE)
ALTER TABLE "PRODUCT_EXTENDED_LEDGER" ADD CONSTRAINT
"UNIQES_CCA_NAME" UNIQUE ("CCA_NAME")
```

- Maintain the product name **OBX** in the table **SMS_TM_APPLICATION** inside SMS schema.
- Grant user **OBX** application access through **SMS_TM_USER_APPLICATION** or preferred use the UI.

Figure 2-3 Create User

The screenshot shows the 'Create User' interface. It features two data tables. The first table, 'User Role Branches', has columns for a checkbox, 'Branch Code', 'Role Code', and 'Role Description'. The second table, 'Customer Access Groups', has columns for a checkbox, 'Customer Access Group', and 'Customer Access Description'. Both tables are empty, with a message 'No data to display.' and pagination controls showing 'Page 1 (0 of 0 items)'. The interface includes a title bar, window controls, and 'Cancel' and 'Save' buttons at the bottom right.

2.5 OBX UI

This topic provides information about OBX UI details.

After setting up the OBX, we can now generate the XDL (OBX Domain Language) file, which will be used by the OBX engine to further generate the service and UI artifacts.

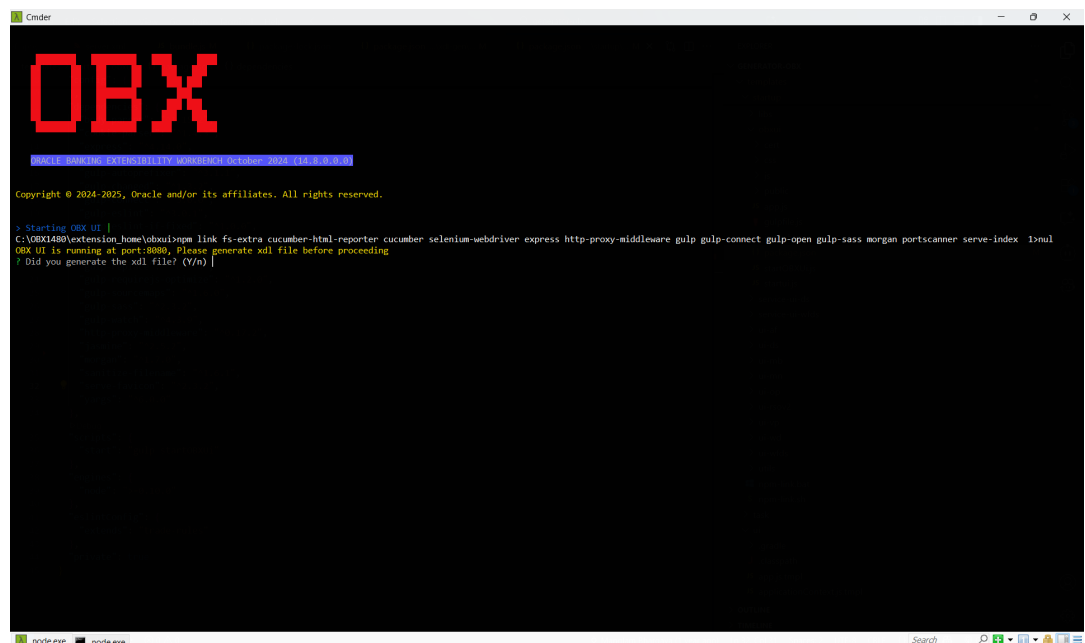
To start OBX UI:

1. Navigate to **extension_home** folder from console emulator (cmdr).
2. Use the command **obx xdl-gen**.
3. This command will automatically open a new tab in cmdr with OBX UI running at local port 8080 (<https://localhost:8080>).

Note

If you have running applications on port number 8080, you may need to stop them to start the obx UI.

Figure 2-4 OBX UI



4. Open the browser and navigate to <http://localhost:8080>. after the obx UI is running.

Figure 2-5 Banking Extensibility Workbench

The screenshot shows the Banking Extensibility Workbench interface. It has a title bar with navigation icons and a URL bar showing 'https://localhost:8080'. The main content area is divided into four sections:

- Entity Details:** Contains an 'Entity Name' input field with a placeholder 'only Alphanumeric characters' and a 'Required' label. To the right is a button that says 'Please drop XDL file or Click here to upload'.
- Field Details:** Contains a table with columns 'Field Name', 'Field Type', 'Default Value', and 'Field Size'. The table is currently empty with the text 'No data to display.' Below the table are 'Add', 'Modify', and 'Delete' buttons.
- Child Entity Details:** Contains an 'Add Child Entity' button and the text 'No items to display.'
- Relationship Details:** Contains a 'Has Relationship' section with radio buttons for 'True' and 'False', where 'False' is selected.

Following are sections present on the OBX UI:

- **Entity Details**
- **Field Details**
- **Child Entity Details**
- **Relationship Details**
- [Entity Details](#)
This topic helps user to capture the entity name.
- [Field Details](#)
This topic helps user to define the fields for the main entity.
- [Child Entity Details](#)
This topic helps user to define the fields for the Child Entity.
- [Relationship Details](#)
This topic helps user to define the fields for the Relationship Details.

2.5.1 Entity Details

This topic helps user to capture the entity name.

As the Domain Entity pattern an object is primarily defined by its identity is called an Entity.

Figure 2-6 Entity Details

This is a close-up of the 'Entity Details' section. It shows the 'Entity Name' input field with the placeholder 'only Alphanumeric characters' and a 'Required' label. To the right is a button that says 'Please drop XDL file or Click here to upload'.

2.5.2 Field Details

This topic helps user to define the fields for the main entity.

Click the Add button and provide the field details.

Figure 2-7 Field Details

Field Details

Field Name	Field Type	Default Value	Field Size
No data to display.			

Add

Modify

Delete

OBX supports the following field types:

Table 2-2 Field types - Field Description

Field	Description
String	The OBX field type is built-in. It's translated to a varchar in SQL scripts, a string type in Java files, and a normal text field in UI components.
Integer	The OBX field type is built-in. It's translated to a number in SQL scripts, a integer type in Java files, and a normal text field in UI components.
Float	The OBX field type is built-in. It's translated to a number in SQL scripts, a float type in Java files, and a normal text field in UI components.
LOV	The OBX field type is inherited from the base product and has its own configuration as below.

Figure 2-8 LOV Configuration

Field Details

Field Name

Field Datatype

Default Value

Size

only letters

LOV

default value for field

1

Mandatory

True

False

LOV Configuration

Id

Title

End Point

lov id

lov title

end point

Add

This ID is the specific ID given to this LOV component. The title is displayed on the LOV dialog box, and the endpoint is the service endpoint this field connects to for fetching values.

Table 2-3 LOV component - Field Description

Field Name	Description
Date	This field is also inherited from the base product and add date component on the screen.
Amount	This field is also inherited from the base product and add the amount field on the screen. This field also captures currency along with the amount.
Combobox	This field is taken from Ojet Cookbook and OBX UI provides configurations to needed for this component like value and label.

Figure 2-9 Combobox Configuration

Field Details

Field Name

only letters

Required

Field Datatype

Combobox

Default Value

default value for field

Size

1

Mandatory

☒ True

☐ False

Combobox Configuration

Value

No data to display.

Label

Value

Label

Add

Table 2-4 Combobox Configuration - Field Description

Field	Description
Checkbox	This field type is also taken from Ojet Cookbook and OBX UI provides configurations to needed for this component like value and label.
Toggle Button	This field type is taken from Ojet Cookbook.
Text Area	This field type is taken from Ojet Cookbook.

2.5.3 Child Entity Details

This topic helps user to define the fields for the Child Entity.

Use this block for adding the child entities. Once clicked the Add Child Entity Button, it will open a dialog box where we can enter the child entity name. Once clicked ok it will add a child block below with its details.

Add the child entity field details in a similar way like we added for main entity.

Figure 2-10 Child Entity Details

2.5.4 Relationship Details

This topic helps user to define the fields for the Relationship Details.

Once all the entity details are added we can define relationship among them. Use this block to define the relationship.

Currently OBX supports two types of relationships:

- **One to Many**
- **One to Many to Many**

Figure 2-11 Relationship Details

Once all of the above Entity, Field Details & Relationship is created click on the Save XDL button and it will save the xdl file on machine.

Note

Its recommended to put the xdl file under the same **extension_home** folder and give it proper name (generally main entity name).

The final XDL file looks like below:

Figure 2-12 XDL File Folder

```
C:\OBX1480\extension_home\obxui>npm link ts-extra cucumber-html-reporter cucumber selenium webdriver
OBX UI is running at port:8080, Please generate xdl file before proceeding
? Did you generate the xdl file? Yes
? Do you want to create: (Use arrow keys)
> UI component
  Domain service with optional UI component
  Data-segment service with optional UI component
  Maintenance domain service with optional detail & summary UI components
  Obscf service with optional UI component    force ../../..\Users\Kartik\yo-rc-global.json
```

Once XDL file is generated user may come back to cmdr main tab where it is waiting for the input. User may proceed creating next set of artifacts which are described in next sections.

Figure 2-13 OBX UI



3

Service Extensions

This topic provides the systematic instructions to perform the basic operations on the selected records.

Using OBX we can create multiple types of service extensions. This services extension has complete infrastructure needed to build to service. Also, the source folder generated out the box from OBX follows the package structure which is adopted and used by base/kernel teams to keep it in sync.

There are two ways to generate the service artifact:

1. Select the category immediately after generating the XDL file and proceed.

Figure 3-1 XDL File

```
OBX UI is running at port:8080, Please generate xdl file before proceeding
? Did you generate the xdl file? Yes
? Do you want to create: (Use arrow keys)
? Do you want to create:
> UI component
  Domain service with optional UI component
  Data-segment service with optional UI component
  Maintenance domain service with optional detail & summary UI components
  Obscf service with optional UI component
```

2. Use the service specific command to generate different types.

Figure 3-2 Command

```
C:\Users\Kartik\Documents\OBX\OBX Final\OBX-14.7.0.0\extension_home
λ obx service -h
obx service <command> [options]

Creates new domain service

Commands:
  obx service ds [options]      Creates a new OBMA based data-segment service
  obx service mn [options]      Creates new OBMA based maintenance service
  obx service new [options]     Creates new OBMA based simple service
  obx service obscf [options]   Creates new OBMA based obscf service
  obx service rsov2 [options]   Creates a new RSOv2 based data-segment service
  obx service wfds [options]    Creates a new OBMA based Workflow data-segment service

Options:
  -h, --help      Show help
  -v, --version   Show version information
```

Note

Both above ways will generate the same artifacts.

- [Simple Sub Domain Service](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Maintenance Sub Domain Service](#)
This topic describes the process to generate the Maintenance Sub Domain Service.
- [Data/Resource Segment Sub Domain Service](#)
This topic provides the systematic instructions to perform the basic operations on the Data/Resource Segment sub domain service.
- [Simple Publisher/Subscriber Event Service](#)
This topic the systematic instructions to perform the basic process to generate simple publisher/subscriber event service.
- [Batch Service](#)
This topic describes the process to generate Oracle Banking Microservices Architecture (OBMA) based Batch service.
- [Custom Validation Service](#)
This topic provides the systematic instructions to generate custom validation service.
- [Steps to Adopt Multi in Existing Service](#)
This topic provides the systematic instruction to adop multi in existing service.
- [Field Config Service](#)
This topic provides the systematic instructions to Field Config Service.

3.1 Simple Sub Domain Service

This topic provides the systematic instructions to perform the basic operations on the selected records.

This is one of the primary use cases in OBX. To generate the simple sub-domain service, follow the below steps:

1. Navigate to same **extension_home** folder using cmdr.
2. Use the command **obx service new -c**.

Figure 3-3 OBX Service new -c

```

Cmder

OBX

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? Select the product family: (Use arrow keys)
> Oracle Banking Virtual Account Management
  Oracle Banking Trade Finance Process Management
  Oracle Banking Credit Facility Process Management
  Oracle Banking Corporate Lending Process Management
  Oracle Banking Intrest & Charges
  Oracle Banking Supply Chain Finance
  Oracle Banking Cash Management
(Move up and down to reveal more choices)

```

3. Once this command is fired, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.

Figure 3-4 OBX UI

```

OBX

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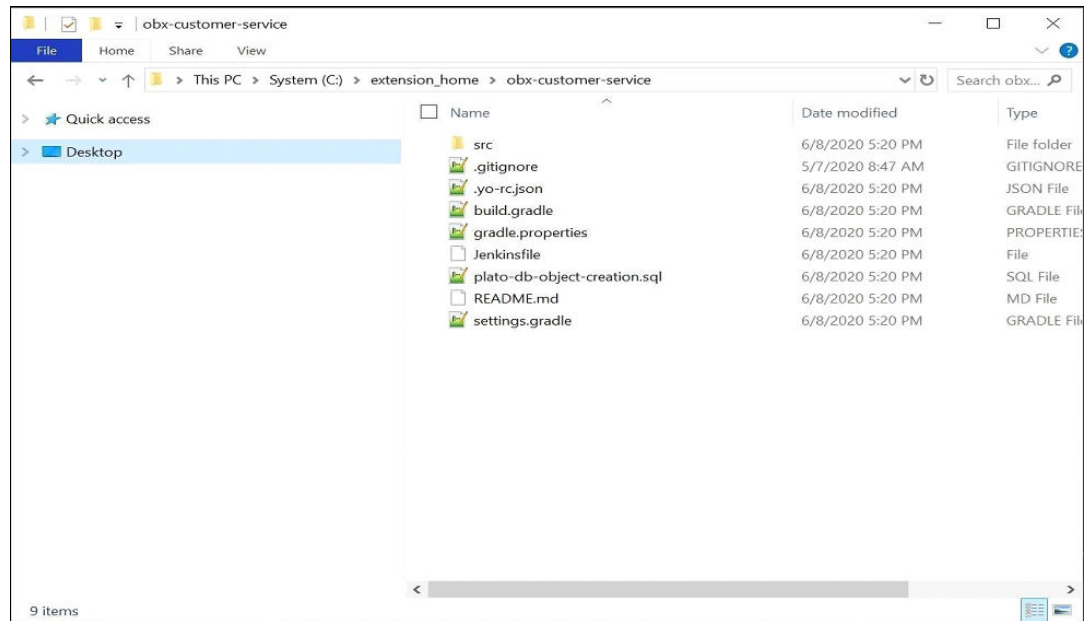
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? Select the product family: Oracle Banking Extensibility Workbench
? Enter name of service (I'll add -service to it): customer
? Select service tenant type: Single Tenant
? Enter name of Infra (OBMA) data source (I'll add prefix jdbc/ to it): PLATO
? Enter name of Security data source (I'll add prefix jdbc/ to it): PLATO_SECURITY
? Enter name of this service data source (I'll add prefix jdbc/ to it): ENTITY
? Enter product release version: 14.7.5.0.0
? Enter the absolute path of xdl file: C:/Users/Kartik/Downloads/newvessel.xdl

```

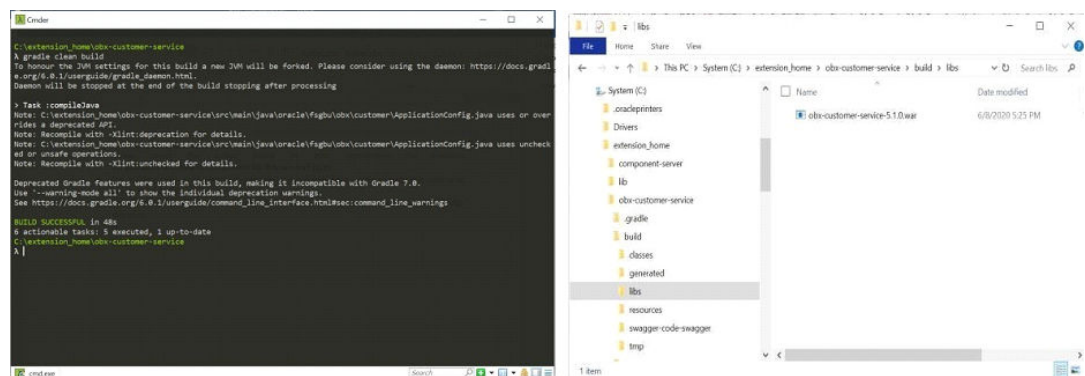
4. Once all the questions are answered and path of XDL is given, it will generate a folder inside the **extension_home** folder.

Figure 3-5 OBX Customer Service



5. Select the option based on user requirement for question **Do user want to create UI component for this service? (Y/n)**.
6. For building the service go into the service folder from cmdr and run the command **gradle clean build**.
7. This will build the service and we can find the war of the service getting created inside the build/libs directory.

Figure 3-6 Lib's Directory



8. Use this service and deploy it in user environment.

Note

- DB scripts for the service will be generated inside the folder:
\extension_home\obx\customerservice\src\main\resources\db
- Compile the Entity script in the entity schema created for extensions only.
- Service created as part of extension should be deployed in separate domain and should not be mixed or co-deployed with any other product specific services.
- Before compiling **CONFIG_SCRIPT.sql** in verify the entries manually and change it according to user setup.
- Also, verify **PLATO_TABLE_SCRIPT.sql** before executing it in the schema it may contain some dummy values.
- As part of sqlcl make sure to check the placeholders keys in sqlclconfig.properties file in db->properties folder.

3.2 Maintenance Sub Domain Service

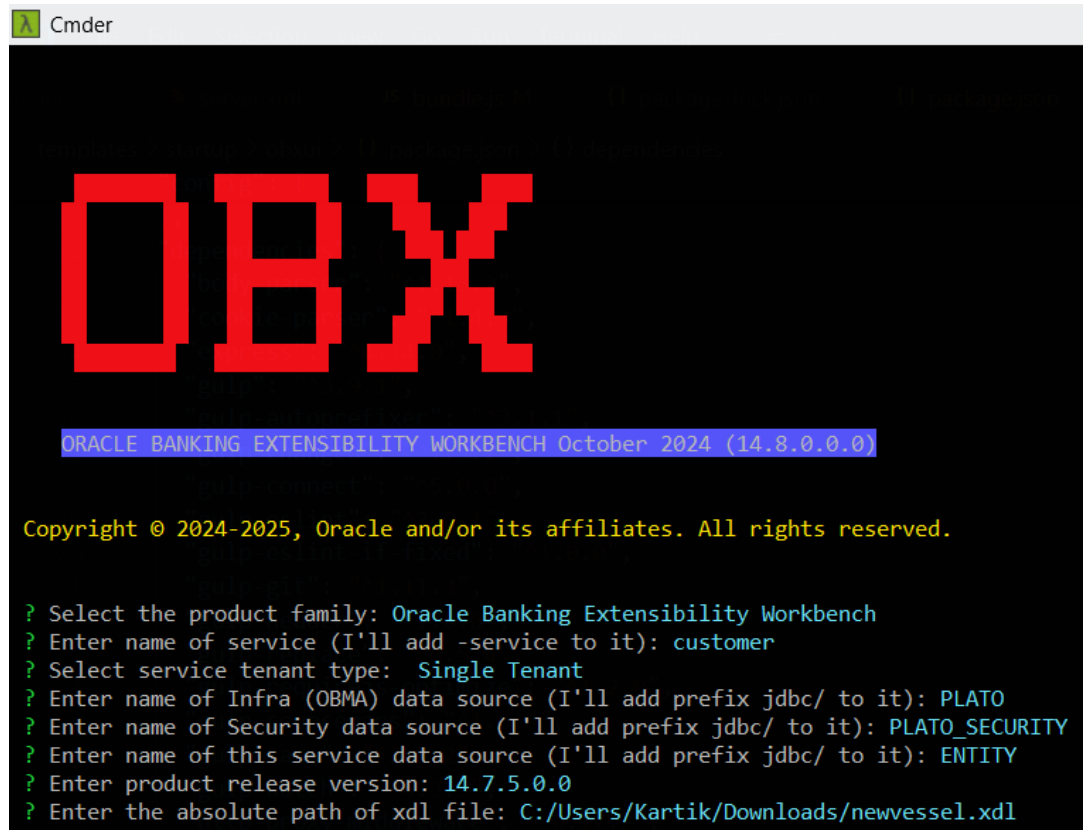
This topic describes the process to generate the Maintenance Sub Domain Service.

Maintenance service generally has concept of main and worktable. This allows enables functionality where all the Authorized records goes to main table and all the unauthorized records goes to worktable. Also, with this type of service we attach audit details to payload.

To generate the maintenance type of service, follow the below steps:

1. Navigate to same **extension_home** folder using cmd.
2. Use the command **obx service mn -c**.

Figure 3-7 OBX Command



```
Cmder

OBX

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Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? Select the product family: Oracle Banking Extensibility Workbench
? Enter name of service (I'll add -service to it): customer
? Select service tenant type: Single Tenant
? Enter name of Infra (OBMA) data source (I'll add prefix jdbc/ to it): PLATO
? Enter name of Security data source (I'll add prefix jdbc/ to it): PLATO_SECURITY
? Enter name of this service data source (I'll add prefix jdbc/ to it): ENTITY
? Enter product release version: 14.7.5.0.0
? Enter the absolute path of xdl file: C:/Users/Kartik/Downloads/newvessel.xdl
```

3. Once this command is fired, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.

Figure 3-8 OBX Setup



```
OBX

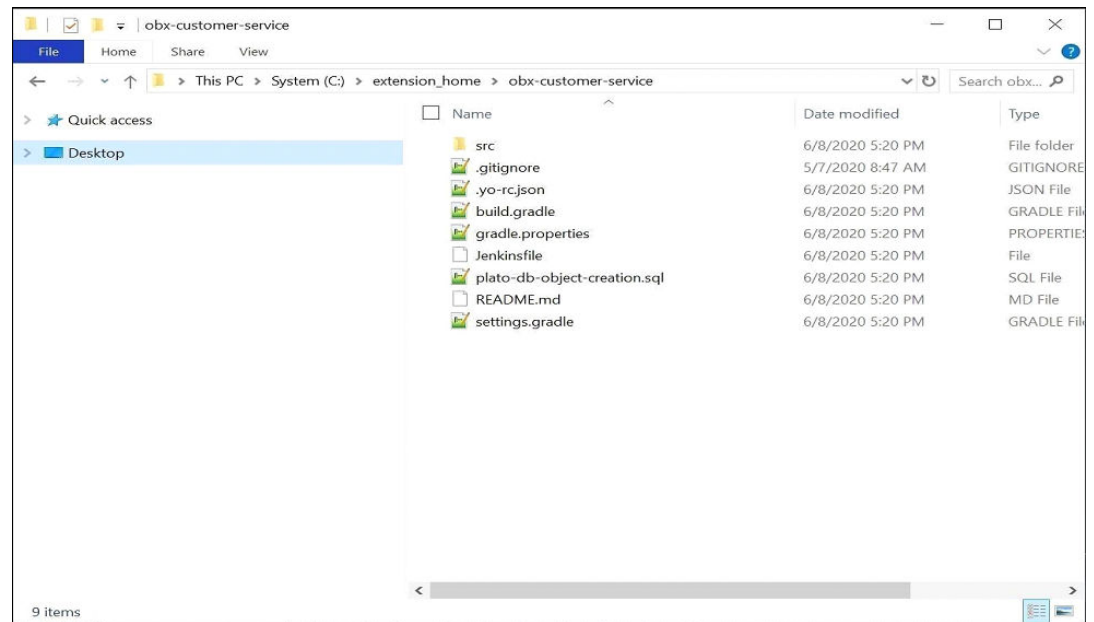
ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)

Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? Select the product family: Oracle Banking Extensibility Workbench
? Enter name of service (I'll add -service to it): customer
? Select service tenant type: Single Tenant
? Enter name of Infra (OBMA) data source (I'll add prefix jdbc/ to it): PLATO
? Enter name of Security data source (I'll add prefix jdbc/ to it): PLATO_SECURITY
? Enter name of this service data source (I'll add prefix jdbc/ to it): ENTITY
? Enter product release version: 14.7.5.0.0
? Enter the absolute path of xdl file: C:/Users/Kartik/Downloads/newvessel.xdl
```

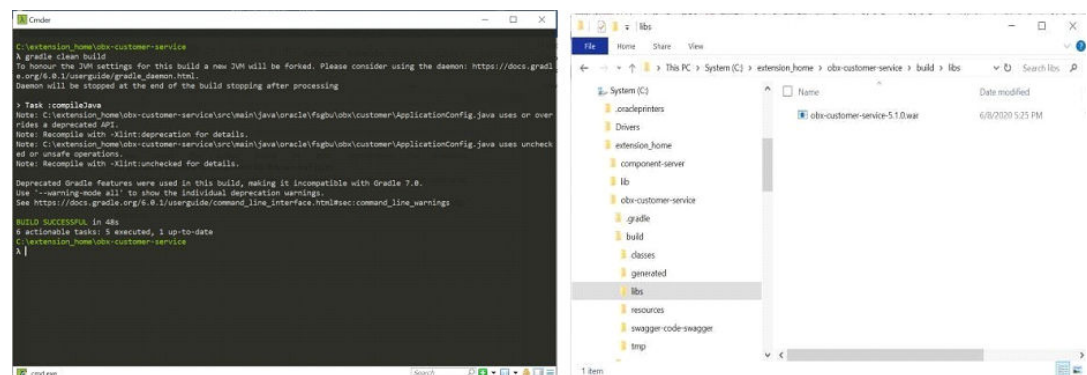
- Once all the questions are answered and path of XDL is given, it will generate a folder inside the **extension_home** folder.

Figure 3-9 Extension Home Folder



- Select the option based on user requirement for question: **Do user want to create a Maintenance and Summary Components for this service? (Y/n).**
- For building the service go into the service folder from cmdr and run the command **gradle clean build**.
- This will build the service and we can find the war of the service getting created inside the build/libs directory.

Figure 3-10 Lib's Directory



- Use this service and deploy it in user environment.

Note

- DB scripts for the service will be generated inside the folder:
\extension_home\obxcustomer-service\src\main\resources\db
- Compile the Entity script in the entity schema created for extensions only.
- Service created as part of extension should be deployed in separate domain and should not be mixed or co-deployed with any other product specific services.
- Here Security Management System (SMS) scripts are also generated.
\extension_home\obxcustomer-service\src\main\resources\db\sms
- As part of sqlcl make sure to check the placeholders keys in sqlclconfig.properties file in db->properties folder.
- Execute the SMS script in sms schema, here we only generate the functional activity of service. Assigning to proper role should be done according to the steps mentioned in base application.

3.3 Data/Resource Segment Sub Domain Service

This topic provides the systematic instructions to perform the basic operations on the Data/Resource Segment sub domain service.

This topic consists of the following sub-topics:

- [RSOV1](#)
This topic describes the process to generate the data/resource segment type of maintenance service.
- [RSOV2 DS](#)
This topic provides information on RSOV2 DS operations data segment.
- [Workflow DS](#)
This topic provides information on workflow details data segment.

3.3.1 RSOV1

This topic describes the process to generate the data/resource segment type of maintenance service.

Here we can generate Master Type of data segment or child type of data segment.

- **Master Type:** This case is used when user wants to generate the complete flow from scratch. It will generate the new screen class code for the data segments.
- **Child Type:** This is primarily used when user wants to attach a single data-segment in the existing flow/process. Generally, this existing flow/process is available in the base product. We use the same screen class code from base and attach our data segment to it. To generate it please follow the below steps:
 1. Navigate to same **extension_home** folder using cmd
 2. Use the command **obx service ds -c**.

Figure 3-11 OBX service ds - c

```
C:\OBX1480\extension_home
λ obx service ds -c

OBX

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? Select the product family: (Use arrow keys)
> Oracle Banking Virtual Account Management
  Oracle Banking Trade Finance Process Management
  Oracle Banking Credit Facility Process Management
  Oracle Banking Corporate Lending Process Management
  Oracle Banking Interest & Charges
  Oracle Banking Supply Chain Finance
  Oracle Banking Cash Management
(Move up and down to reveal more choices)
```

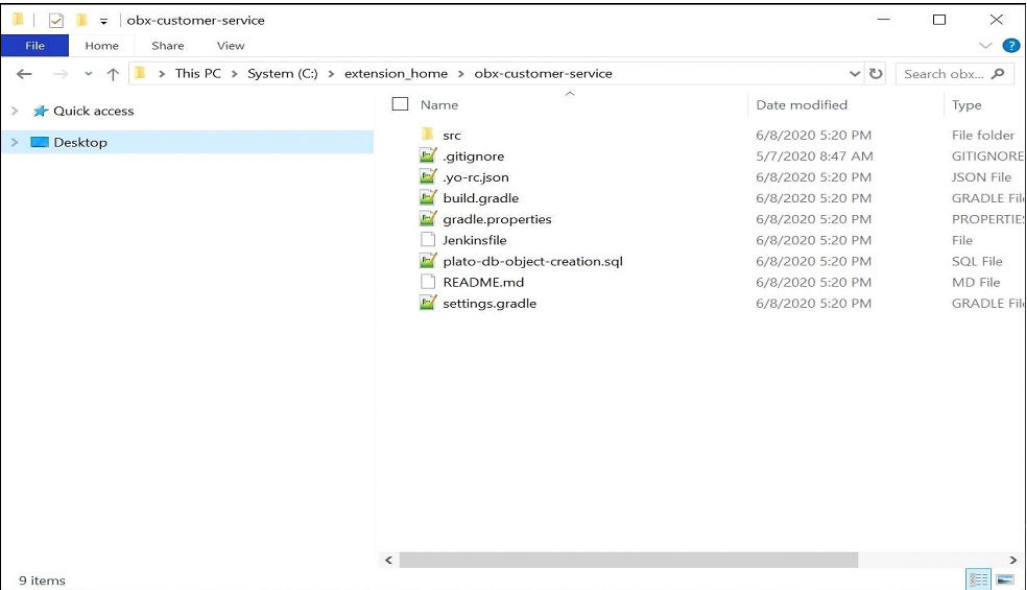
3. Once this command is fired, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.
4. Select the type of component according to user requirement.

Figure 3-12 Master Type Component



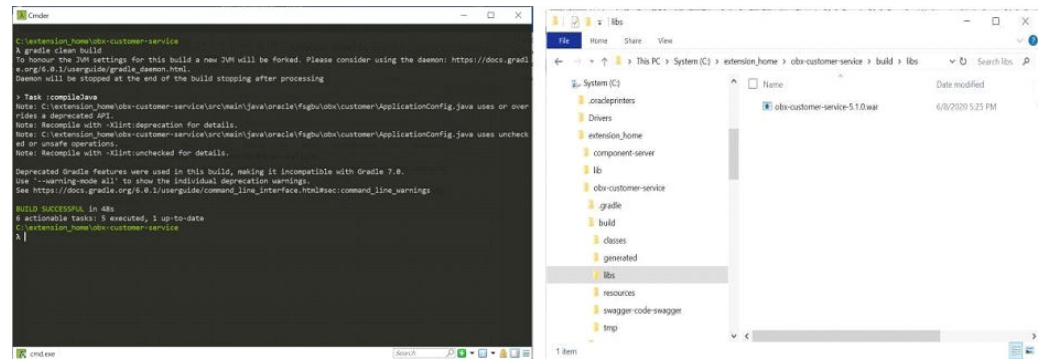
5. Once all the questions are answered and path of XDL is given, it will generate a folder inside the **extension_home** folder.

Figure 3-13 Extension Home Folder



6. Select the option based on user requirement for question: **Do user want to create a Data Segment for this service? (Y/n).**
7. For building the service, go into the service folder from cmd and run the command: **gradle clean build.**
8. This will build the service and we can find the war of the service getting created inside the build/libs directory.
9. As part of sqlcl make sure to check the placeholders keys in sqlclconfig.properties file in db->properties folder.

Figure 3-14 Lib's Directory



10. Use this service and deploy it in user environment.

Note

- DB scripts for the service will be generated inside the folder:
\extension_home\obxcustomer-service\src\main\resources\ldb
- Compile the Entity script in the entity schema created for extensions only.
- Service created as part of extension should be deployed in separate domain and should not be mixed or co-deployed with any other product specific services.
- Here Security Management System (SMS) scripts are also generated:
\extension_home\obx-customer-service\src\main\resources\db\sms.
- Execute the SMS script in sms schema, here we only generate the functional activity of service. Assigning to proper role should be done according to the steps mentioned in base application.
- Here along with SMS and Entity, CMC scripts are also generated under folder:
\extension_home\obx-customer-service\src\main\resources\db\cmc.
- Execute them in the CMC schema.
- **Screen Class and Data Segment** has to be maintained from the UI which is present under common core.

3.3.2 RSOV2 DS

This topic provides information on RSOV2 DS operations data segment.

For Nov patchset innovation - RSOv1 is discontinued and RSOv2 should be adopted for all customizations for maintenance services.

Here we can generate Master Type of data segment or child type of data segment.

Figure 3-15 OBX Service RSOV2-C

```
C:\OBX1480\extension_home
λ obx service rsov2 -c

OBX

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Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? Select the product family: Oracle Banking Virtual Account Management
? Enter name of service (I'll add -service to it): customer
? Is it a Master type component? Yes
? Select service tenant type: Single Tenant
? Enter name of Infra (OBMA) data source (I'll add prefix jdbc/ to it): PLATO
? Enter name of Security data source (I'll add prefix jdbc/ to it): PLATO_SECURITY
? Enter name of this service data source (I'll add prefix jdbc/ to it): ENTITY
? Enter product release version: 14.7.5.0.0
? Enter the absolute path of xdl file: C:/Users/PC/Downloads/newvessel.xdl
```

- **Master Type:** This will create two components one would be core component of product services which will contain utility service, the other one would be the master type of component that needs to be included in the core services folder.
- **Child Type:** This will create only one component that needs to be included in the core services (containing utility).

Follow the steps to deploy it in your environment:

1. Navigate to same **extension_home** folder using cmd.
2. Use the command **obx service rsov2 -c**.
3. Once this command is fired, this will take you to next section where it will prompt other set of questions. Answer them accordingly to your setup and requirement.
4. Select the type of component according to your requirement.
5. Once all the questions are answered and path of XDL is given, it will generate the folders accordingly inside the **extension_home**.
6. Select the option based on your requirement for question: **Do you want to create a Data Segment for this service?(Y/N)**.

7. Include the folders created either master or child inside the (core-services), folder and make the modifications accordingly.
8. Use this service and deploy it in your environment.

3.3.3 Workflow DS

This topic provides information on workflow details data segment.

Here, the user can generate master or child type if data segment.

- **Master Type:** This case is used when user wants to generate the complete flow from scratch. It will generate the new screen class code for the data segments.
- **Child Type:** This is primarily used when user wants to attach a single data-segment in the existing flow/process. Generally, this existing flow/process is available in the base product. We use the same screen class code from base and attach our data segment to child type. To generate master or child type if data segment, follow the below steps:
 1. Navigate to same **extension_home** folder using cmdr.
 2. Use the command **obx service wfds -c**.

Figure 3-16 OBX service wfds -c

```

C:\OBX1480\extension_home
λ obx service wfds -c

OBX

ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)

Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? Select the product family: Oracle Banking Virtual Account Management
? Enter name of service (I'll add -service to it): customer
? Is it a Master type component? Yes
? Select service tenant type: Single Tenant
? Enter name of Infra (OBMA) data source (I'll add prefix jdbc/ to it): PLATO
? Enter name of Security data source (I'll add prefix jdbc/ to it): PLATO_SECURITY
? Enter name of this service data source (I'll add prefix jdbc/ to it): ENTITY
? Enter product release version: 14.7.5.0.0
? Enter the absolute path of xdl file: C:/Users/PC/Downloads/newvessel.xdl
  
```

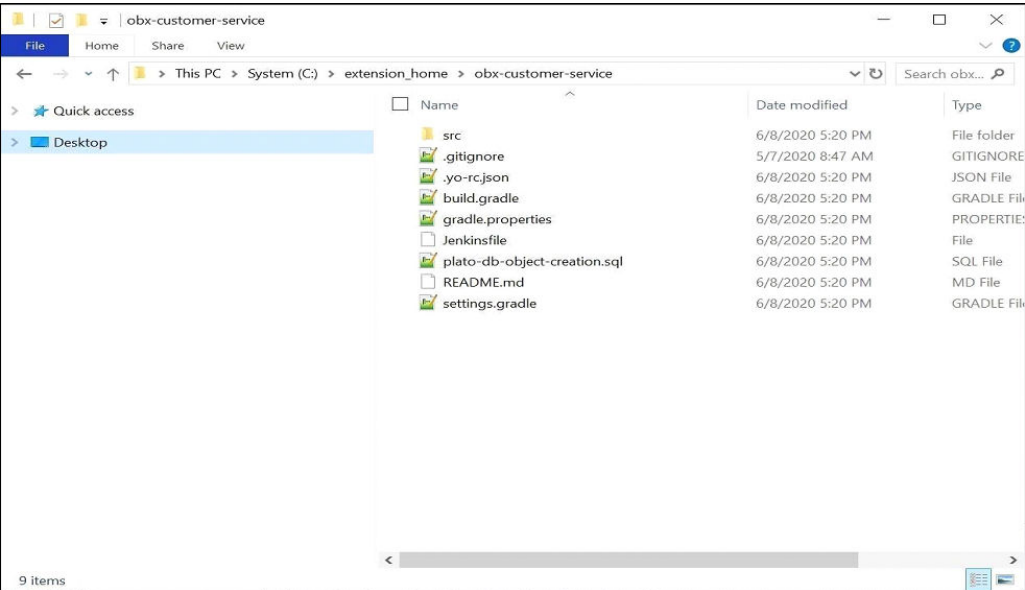
3. Once this command is fired, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.
4. Select the type of component according to user requirement.

Figure 3-17 Component Type



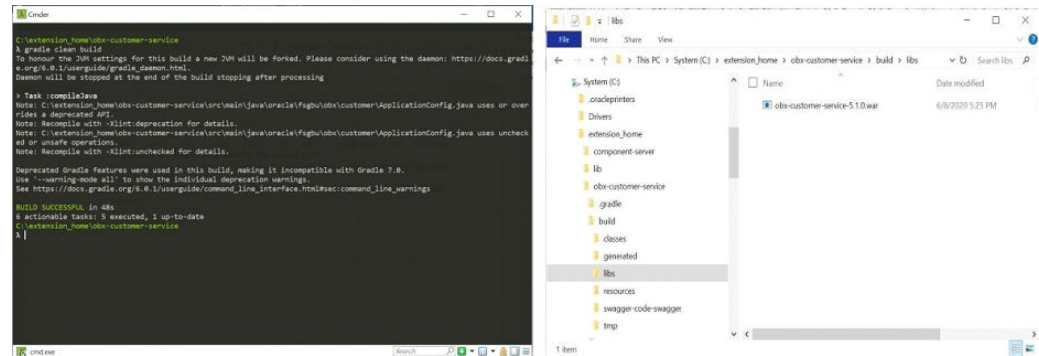
5. Once all the questions are answered and path of XDL is given, it will generate a folder inside the **extension_home** folder.

Figure 3-18 Extension Home Folder



6. Select the option based on user requirement for question: **Do user want to create a Data Segment for this service? (Y/n).**
7. For building the service go into the service folder from cmdr and run the command **gradle clean build**.
8. This will build the service and we can find the war of the service getting created inside the build/libs directory.
9. As part of sqlcl make sure to check the placeholders keys in sqlclconfig.properties file in db->properties folder.

Figure 3-19 Lib's Directory



10. Use this service and deploy it in user environment.

① Note

- DB scripts for the service will be generated inside the folder.
textension_homelobxcustomer-service\src\main\resources\ldb
- Compile the Entity script in the entity schema created for extensions only.
- Service created as part of extension should be deployed in separate domain and should not be mixed or co-deployed with any other product specific services.
- Here Security Management System (SMS) scripts are also generated.
textension_homelobxcustomer-service\src\main\resources\db\sms
- Execute the SMS script in sms schema, here we only generate the functional activity of service. Assigning to proper role should be done according to the steps mentioned in base application.
- Here along with SMS and Entity, CMC scripts are also generated under folder.
textension_homelobx-customer-service\src\main\resources\db\cmc
- Execute them in the CMC schema.
- Screen Class and Data Segment has to be maintained from the UI which is present under common core.

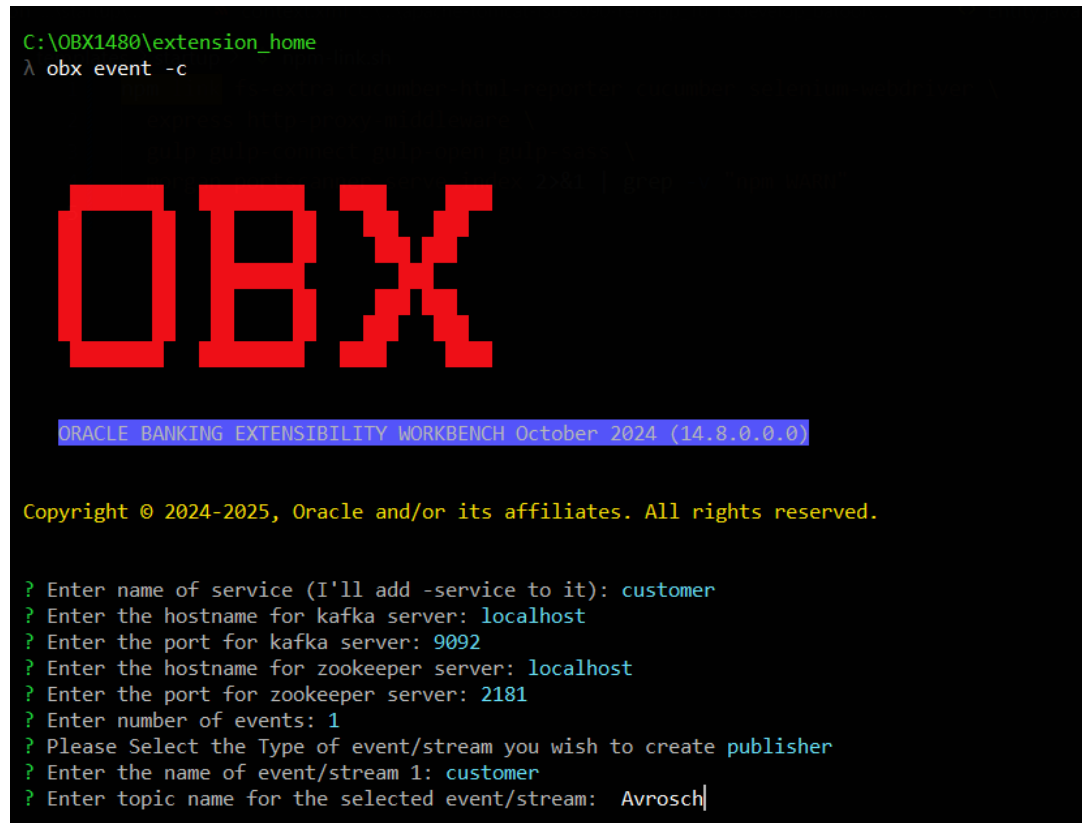
3.4 Simple Publisher/Subscriber Event Service

This topic the systematic instructions to perform the basic process to generate simple publisher/subscriber event service.

To generate simple publisher/subscriber event service, follow the below steps:

1. Navigate to same **extension_home** folder using `cmd`.
2. Use the command **obx event -c**.
3. Once this command is fired, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.

Figure 3-20 OBX event - c



```
C:\OBX1480\extension_home
λ obx event -c

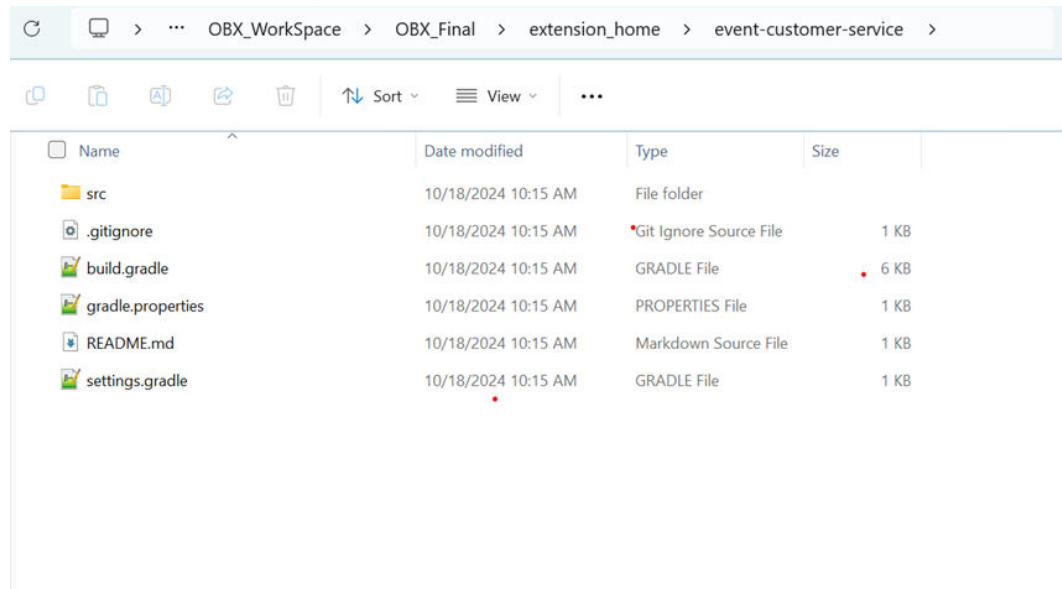
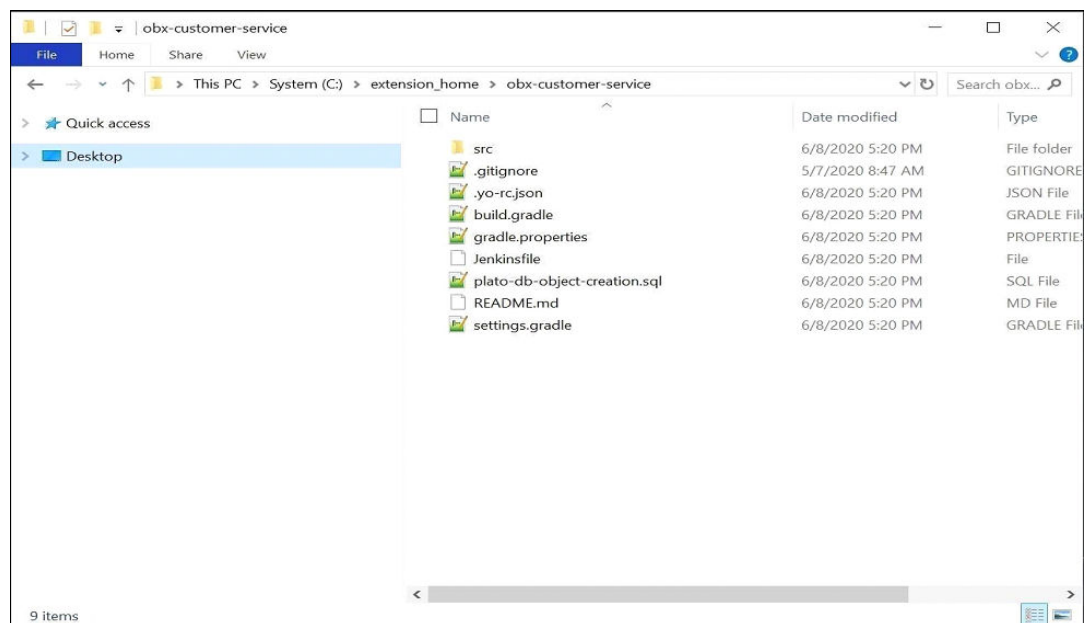
OBX

ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)

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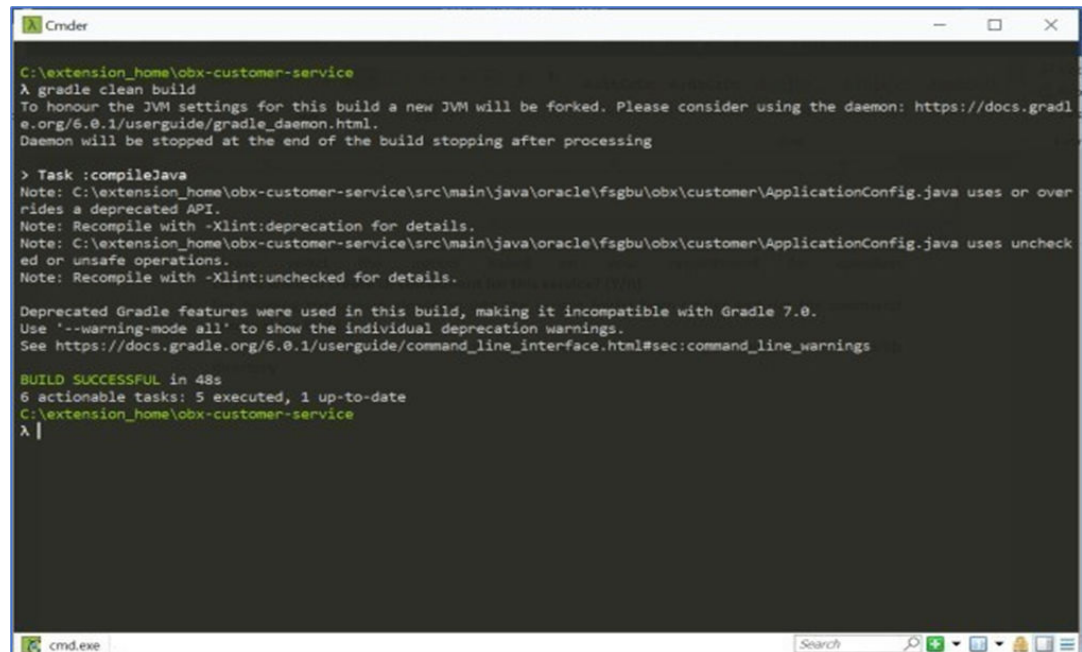
? Enter name of service (I'll add -service to it): customer
? Enter the hostname for kafka server: localhost
? Enter the port for kafka server: 9092
? Enter the hostname for zookeeper server: localhost
? Enter the port for zookeeper server: 2181
? Enter number of events: 1
? Please Select the Type of event/stream you wish to create publisher
? Enter the name of event/stream 1: customer
? Enter topic name for the selected event/stream: Avrosch|
```

4. Once all the questions are answered and path of XDL is given, it will generate a folder inside the **extension_home** folder.

Figure 3-21 Extension Home Folder**Figure 3-22 Extension Home Folder**

5. For building the service, go into the service folder from cmd and run the command **gradle clean build**.
6. This will build the service and we can find the war of the service getting created inside the build/libs directory.

Figure 3-23 Libs Directory



```
C:\extension_home\obx-customer-service
λ gradle clean build
To honour the JVM settings for this build a new JVM will be forked. Please consider using the daemon: https://docs.gradle.org/6.0.1/userguide/gradle_daemon.html.
Daemon will be stopped at the end of the build stopping after processing

> Task :compileJava
Note: C:\extension_home\obx-customer-service\src\main\java\oracle\fsghu\obx\customer\ApplicationConfig.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
Note: C:\extension_home\obx-customer-service\src\main\java\oracle\fsghu\obx\customer\ApplicationConfig.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.

Deprecated Gradle features were used in this build, making it incompatible with Gradle 7.0.
Use '--warning-mode all' to show the individual deprecation warnings.
See https://docs.gradle.org/6.0.1/userguide/command_line_interface.html#sec:command_line_warnings

BUILD SUCCESSFUL in 48s
6 actionable tasks: 5 executed, 1 up-to-date
C:\extension_home\obx-customer-service
λ |
```

7. Use this service and deploy it in user environment.

3.5 Batch Service

This topic describes the process to generate Oracle Banking Microservices Architecture (OBMA) based Batch service.

The purpose of this service is to create reader, writer and processor in which methods will be written according to business use case.

To generate Oracle Banking Microservices Architecture (OBMA) based Batch service, follow the below steps:

1. Navigate to same **extension_home** folder using cmd.
2. Use the command **obx batch -c**.
3. Inputs to be given after the command:
 - Select the product family.
 - Enter name of the service (I'll construct it as <productFamilyName>-batch<serviceName>-extended-services).
 - Enter product release version.
4. Upon successful creation of batch service, user will find a folder generated with <productFamilyName>-batch-<serviceName>-extended-services having the sample service code generated.
5. The generated code has two types of batch job template inside.
 - o Simple job creation using spring batch features. The method name for this type of job creation is jobName(). The reader, writer, processor etc are taken from spring's itemReader, itemWriter, itemProcessor.
6. Plato batch type job creation by keeping plato batch into consideration.

Figure 3-24 Job Name

```

141
142     @Bean(name = "jobName")
143     public Job jobName(JobBuilderFactory jobBuilderFactory, StepBuilderFactory stepBuilderFactory,
144                       Reader itemReader, Processor itemProcessor, Writer itemWriter) {
145
146         Step step = stepBuilderFactory.get("step1").chunk(10).reader(itemReader).processor(itemProcessor)
147             .writer(itemWriter).build();
148
149         return jobBuilderFactory.get("jobName").start(step).build();
150     }
151
152

```

7. The method name for this type of job creation is batchProcessJob(). In this case reader is specified as EReader, writer as TWriter and processor as ETProcessor. E means the entity to be read for this job; T means the transformed object to be persisted in the database. Hence the names are given in that manner.

Figure 3-25 Batch Process Job

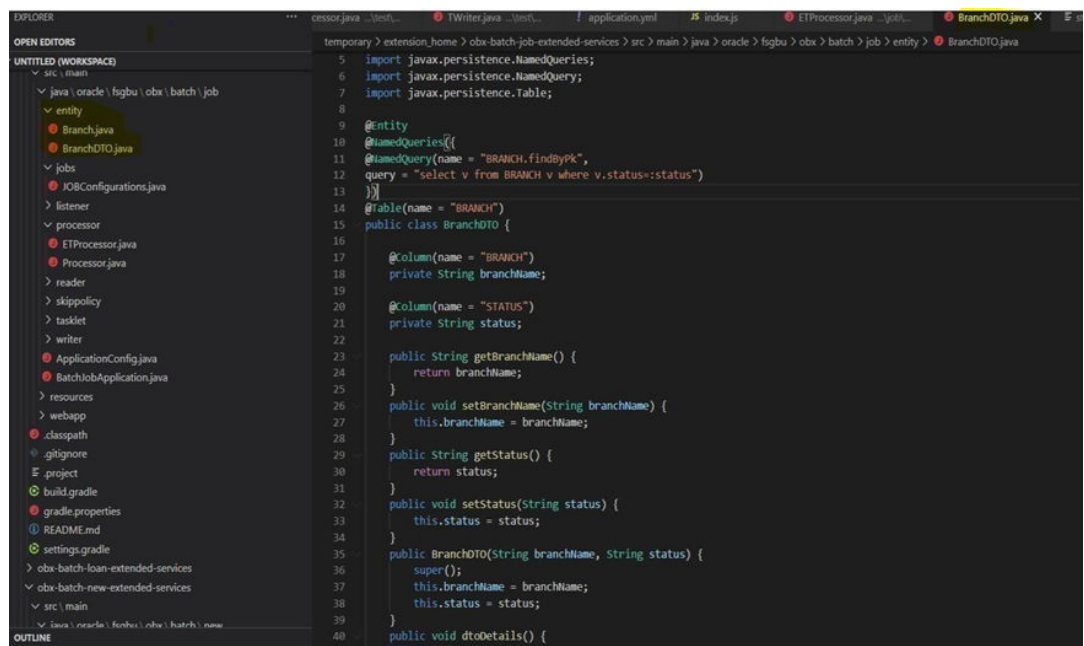
```

@Bean
public Job batchProcessJob() throws Exception {
    return jobBuilderFactory.get("batchProcessJob").start(taskletStep()).next(chunkStep()).build();
}

```

8. For plato batch type job, user needs to write his/her entity classes in which the business logic will be kept. For example, this is the structure of the entity class highlighted in the left.

Figure 3-26 Plato Batch Type



9. One needs to write methods for reader, writer and processor accordingly.
10. To build the service:
 - a. Navigate to the service.
 - b. Fire the command gradle clean build.
 - c. This will create the war file of the service in the folder structure build/libs/productFamilyName>-batch-<serviceName>-extended-services.war.
 - d. As part of sqlcl make sure to check the placeholders keys in sqlclconfig.properties file in db->properties folder.

3.6 Custom Validation Service

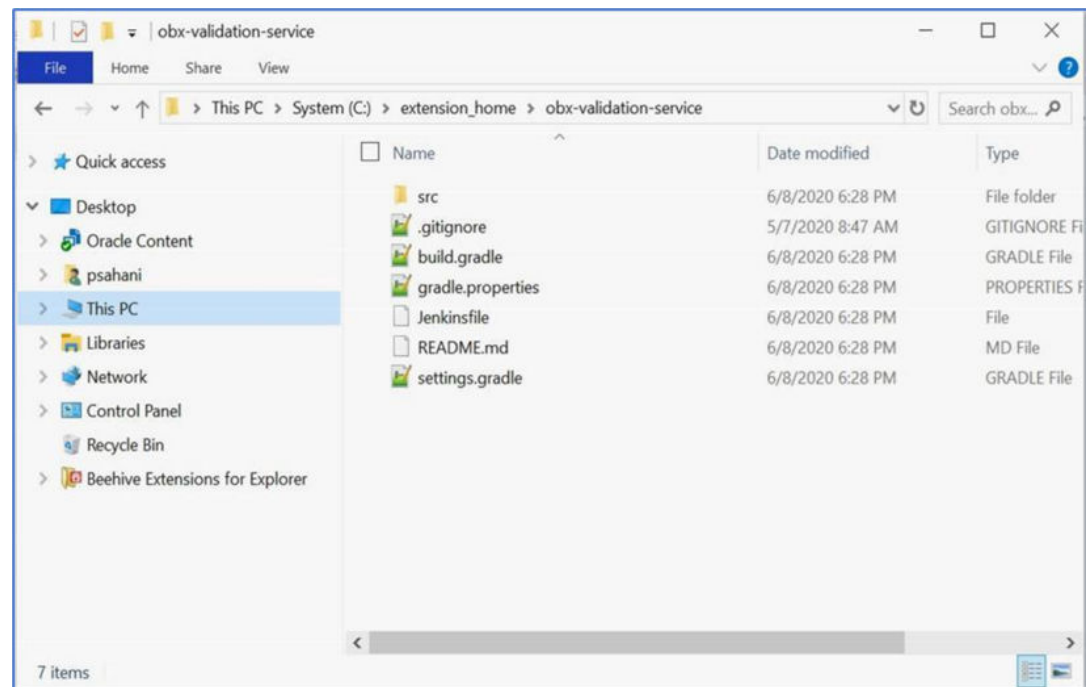
This topic provides the systematic instructions to generate custom validation service.

The purpose of this service is to perform custom validations on the base service. It is important to remember that we will be only able to perform the validation and never modify the payload to change the value.

To generate validation service, follow the below steps:

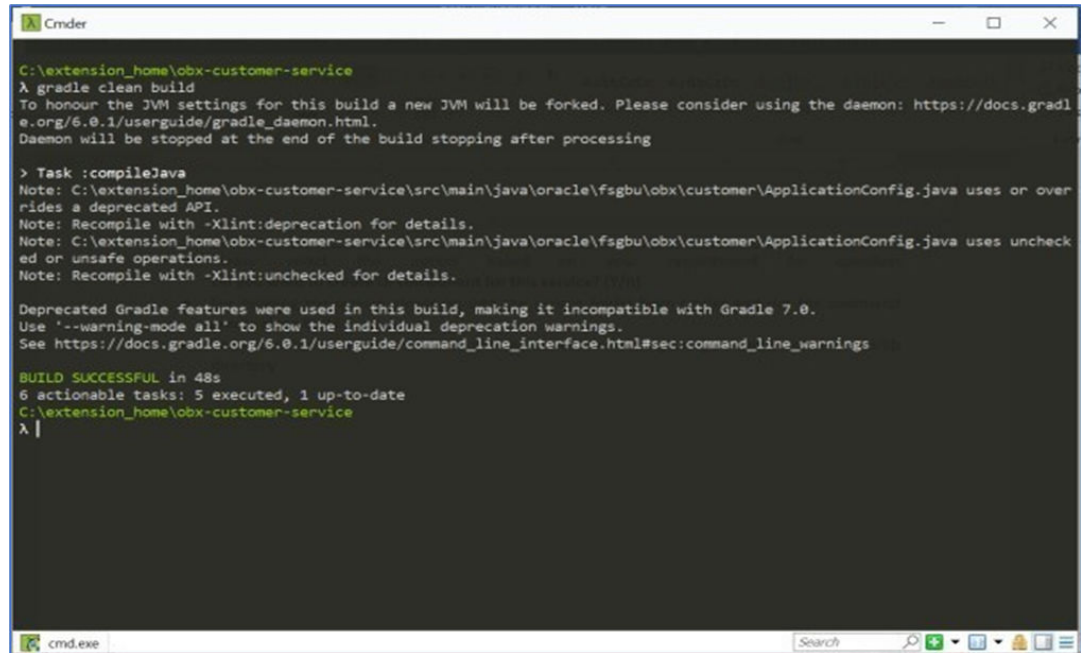
1. Navigate to same **extension_home** folder using cmd.
2. Use the command **obx validation -c**.
3. It will generate a folder inside the **extension_home** folder with obx-validation-service.

Figure 3-27 OBX validation service



4. For building the service, go into the service folder from cmd and run the command **gradle clean build**.
5. This will build the service and we can find the war of the service getting created inside the build/libs directory.

Figure 3-28 Libs Directory



```

C:\extension_home\obx-customer-service
λ gradle clean build
To honour the JVM settings for this build a new JVM will be forked. Please consider using the daemon: https://docs.gradle.org/6.0.1/userguide/gradle_daemon.html.
Daemon will be stopped at the end of the build stopping after processing

> Task :compileJava
Note: C:\extension_home\obx-customer-service\src\main\java\oracle\fsghu\obx\customer\ApplicationConfig.java uses or overrides a deprecated API.
Note: Recompile with -Xlint:deprecation for details.
Note: C:\extension_home\obx-customer-service\src\main\java\oracle\fsghu\obx\customer\ApplicationConfig.java uses unchecked or unsafe operations.
Note: Recompile with -Xlint:unchecked for details.

Deprecated Gradle features were used in this build, making it incompatible with Gradle 7.0.
Use '--warning-mode all' to show the individual deprecation warnings.
See https://docs.gradle.org/6.0.1/userguide/command_line_interface.html#sec:command_line_warnings

BUILD SUCCESSFUL in 48s
6 actionable tasks: 5 executed, 1 up-to-date
C:\extension_home\obx-customer-service
λ

```

6. Use this service and deploy it in user environment.

3.7 Steps to Adopt Multi in Existing Service

This topic provides the systematic instruction to adopt multi in existing service.

Plato Micro Service Dependencies Changes

```
compile("release.obma.plato.21_0_0.services:plato-microservice-dependencies:6.0.0")
```

Eventhub dependency changes

```
compile("release.obma.plato.21_0_0.services:plato-eventhub-dependencies:6.0.0")
```

PlatoInterceptor Changes

```

@Bean public MappedInterceptor gemInterceptor(PlatoInterceptor
platoInterceptor) {
LOG.info("Added interceptor for fetching the application headers"); return new
MappedInterceptor(new String[] { "/"**" }, platoInterceptor);
}

```

Logging (Please include only ,%X{entityId}, change. Rest of them remain as per the old logback.xml)

Please include only %X{entityId} in the existing value of the LOG_PATTERN of

```
your logba
c k.xml
```

One sample format is below,

```
<property name="LOG_PATTERN"          value="%clr(%d{yyyy-MM- dd
HH:mm:ss.SSS}){faint} %clr(%5p [%${applicationName},%X{entityId},%X{X-B3-
TraceId:},%X{X-B3-SpanId:-},%X{X-Span-Export:-}]) %clr([%mdc{env:-null}]
[%mdc{tenant:- null}])
[%mdc{user:-null}] [%mdc{branch:-null}])}{faint} %clr(${PID:- }){magenta}
%clr(--
-){faint} %clr([%15.15t])}{faint} %clr(%-
40.40logger{39}){cyan} %clr(:){faint} %m%n${LOG_EXCEPTION_CONVERSION_WORD:-
%wEx}" />
```

Feed Services

Folder structure should be */parentFolder/<<entityId>>/{fileName}

```
compile("release.obma.plato.21_0_0.services:plato-feed-core:6.0.0")
```

Caching Strategy

```
@Cacheable(value = "customers", key = "{ <<functionalKeys>>
T(oracle.fsgbu.plato.core.per
sistence.provider.PlatoHolder).getCurrentEntityId() }")
```

Introduce appld in application.yml of individual micro services

If the service is a eventhub based service they should use

```
spring:
  application:
    appID:
```

If the service is a non-eventhub based service they can use either

```
spring:
  application:
    appID:
```

or

```
appId: <<appId>>
```

3.8 Field Config Service

This topic provides the systematic instructions to Field Config Service.

This service will be used to:

- Hiding fields from screen .
- Defaulting values on screen .
- Disable field.
- Making Non-mandatory field Mandatory

This section describes the process to generate Field config service. The purpose of this service is to hide/show, disable/enable fields, defaulting values for fields and making non mandatory fields mandatory according to configurations provided in OBX_TM_FIELD_CONFIG_MASTER table. To generate it please follow the below steps:

1. Navigate to same extension_home folder using cmdr.
2. Use the command `obx service fc -c`.
3. Inputs to be given after the command.
4. Select the product family.
5. Enter name of the service-> fieldconfig (I'll construct it as <productFamilyName>-batch<serviceName>extended-services):
6. Enter product release version.
7. Upon successful creation of service, user will find a folder generated with service code generated.
8. Locate the CONFIG folder in db folder replace the values of `eureka.client.serviceUrl.defaultZone` and `server.port` insert configuration for properties table in `CONFIG_SCRIPT.sql` and `SMS_TM_ROLE_ACTIVITY` entry in `ROLE_ACTIVITY.sql` file appropriately.
9. In `\resources\db\properties` folder please find the `sqlclconfig.properties` file and check if placeholders exist in your `setUserOverride.sh` file
10. Build the file using command:

```
gradle clean build -Dartifact_version=10.1.0 -Drelease_version=25_1_0 -Dstage=release
```

Note

Please do not change the name of the war file generated.

11. Run the db zip folder generated using sqlcl deployer.
12. Deploy the service. Maintain the configuration in the ****OBX_TM_FIELD_CONFIG_MASTER**** table for any fields whose behavior you wish to change.

Example:

ID	APP_ID	CCA_NAME	FIELD_ID	VISIBLE	ENABLE	MANDATORY	DEFAULT_VALUE
1 2	PLATO	fsgbu-ob-plato-rules-mn-facts	text-input	N	(null)	(null)	(null)

13. Maintain Y/N value for VISIBLE, ENABLE, MANDATORY field and put string input for DEFAULT_VALUE
14. In use case where user want to hide the fields from existing screen, always check whether the field is mandatory or not. If it is mandatory, then it should set before making it hidden on the screen. If not done so service calls make break.
15. Make sure for the cca for which user trying to change field behaviour has the `commonUtil.applyFieldConfig(context)`; call in `self.bindingsApplied` method.

4

UI Extensions – Web Component

This topic describes the OBX capability to generate to different types of web components. Each Web component is capable of running itself locally.

There are various types of these web components each serving different functionality.

Standalone Component: A standalone component can be thought of as a smallest reusable UI component. They are generally the building blocks of main screens. Components like amount, text fields, lov etc. are part of standalone components.

Virtual Page: A virtual page can be thought of as a screen or a web page in single page applications. They are loaded inside the content area next to the left navigation menu. Important point to remember when designing virtual page is, it appends and changes the router (app URL) when navigation is done.

Figure 4-1 Virtual Page

The screenshot displays the Oracle Bank Virtual Page. On the left is a dark navigation menu with the Oracle logo and a search bar. The menu items include: Additional Fields, Core Maintenance, Customer DS, Dashboard, Feed Management, OAUTH Users Management, OBX Screens, Security Management, and Task Management. The main content area is titled 'Bank Virtual Page' and includes a header with 'Plato (000)' and 'Apr 13, 2018'. Below the header are three buttons: 'Reset', 'Save', and 'Get All'. The form contains several fields: 'Bank Code *', 'Bank Name *', 'Number Of Branches', 'Default Currency' (with a search icon), and 'Holiday *' (with a dropdown arrow). At the bottom, there is a table with columns: 'Bank Code', 'Bank Name', 'Number Of Branches', 'Default Currency', and 'Holiday'. The table currently shows 'No data to display.'

Container Component: These Components are a special type of components which are loaded inside a container called as Wizard. It gives functionality like minimizing the component and open multiple screens simultaneously on the screen. Important point to remove here is that these components never change to router state, so bookmarking is not possible for these screens.

Figure 4-2 Bank Details

The screenshot displays the 'Bank Virtual Page' in the Oracle application. The page title is 'Bank Details'. It features a 'New' button at the top left. The form contains several input fields: 'Bank Code', 'Bank Name', 'Number Of Branches', 'Default Currency' (with a search icon), and 'Holiday' (with a dropdown arrow). Below these fields is a table with columns: Address, City, State, Country, and Pincode. The table is currently empty, showing 'No data to display.' at the bottom. The top navigation bar includes the Oracle logo, the page title 'Bank Virtual Page', a user profile 'Plato (000)' with the date 'Apr 13, 2018', and a user name 'PAWAN' with the email 'pawan@oracle.com'.

Data/Resource Segment: A component designed using data segment approach are similar to that of virtual page but are always part of flow or process and loaded like container components. It is helpful in use cases where data to be captured is huge or is captured in various stages of applications.

Figure 4-3 Customer Dashboard

The screenshot displays the 'Customer Dashboard' in the Oracle application. The page title is 'Customer DS Details'. It features a sidebar with two segments: 'Customer' (selected) and 'Income Details'. The main form contains several input fields: 'Customer Id' (with a dropdown arrow), 'First Name', 'Last Name', 'Dob' (with a calendar icon), 'Address', and 'Mobile Number'. The 'Mobile Number' field contains the value '987654321'. The top navigation bar includes the Oracle logo, the page title 'Dashboard', a user profile 'Plato (000)' with the date 'Apr 13, 2018', and a user name 'PAWAN' with the email 'pawan@oracle.com'. At the bottom right, there are four buttons: 'Back', 'Next', 'Save & Close', and 'Cancel'.

In above screenshot Customer and Income Details on left are two data segments which is part of Customer DS Details Application.

Widgets: Widgets are special components meant for dashboard. These are generally created in the form of tiles and are attached to the dashboard.

Figure 4-4 Dashboard



Note

- All the above components except standalone components have SMS applied on it.
- We have to assign functional activity of web components to the role and then only they are integrated with the main application shell.
- Also, it always recommended to try and run the component locally before merging them into main application.
- All web components come bundled with testing framework including unit test cases and functional test. Therefore, it's a good practice to write them along with the development.

- [Component Server](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Simple Standalone](#)
This topic describes the process of creating the simple standalone component using OBX.
- [Virtual Page](#)
This topic describes the process of creating the virtual page component using OBX.
- [Maintenance Detail and Summary](#)
This topic describes the process of creating the Maintenance Detail and Summary component using OBX.
- [Data Segment](#)
This topic describes the process of creating the virtual page component using OBX.
- [Dashboard Widget](#)
This topic describes the process of creating the simple standalone component using OBX.
- [Running Component after Generation](#)
This topic describes the steps user need to follow to re-run the component created or generated earlier.
- [Creating final Extended Component war for Deployment](#)
This topic describes the steps to generate Extended Component war for Deployment.

- [Understanding DB Scripts for Web Components](#)
This topic describes the significance of DB folder generate inside the web component folder.

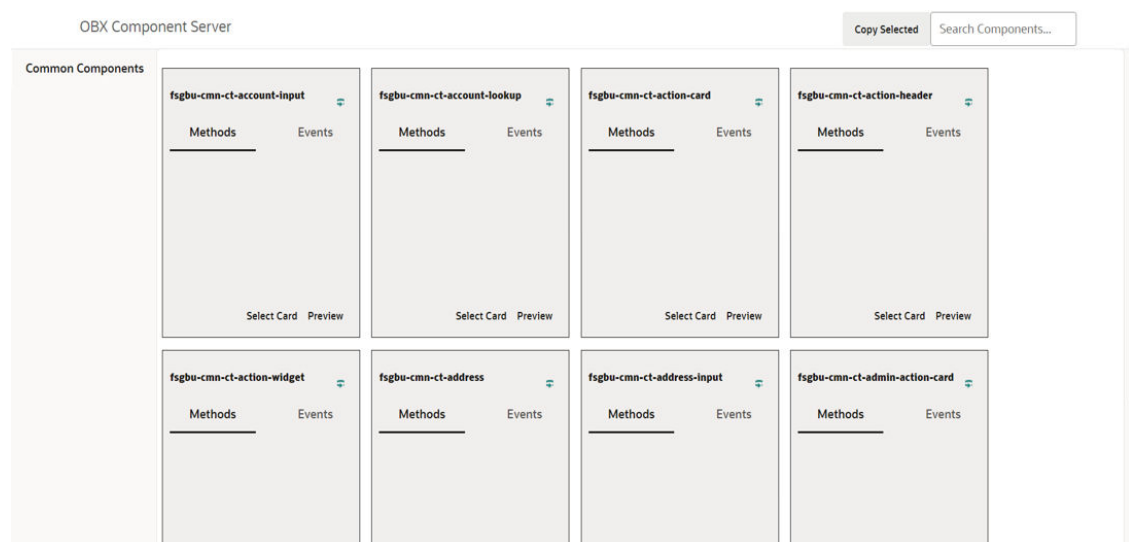
4.1 Component Server

This topic provides the systematic instructions to perform the basic operations on the selected records.

It is one of highlight feature from OBX. A component server is hub of components which are available from the base/kernel application. As each component is developed individually and reusable, we can use this functionality to reuse even the components from base application. It saves time as we don't have to code same thing again and again. We can reuse as many components as possible from base application into extensions.

Component server is started automatically when you generate the web component. It runs on `http://localhost:8002`. One can simply go to browser and copy components and put them in a **metadata.js** file which is created inside the component and by doing so it indicated OBX that we have to reuse the component and it generates the code automatically.

Figure 4-5 Component Server



4.2 Simple Standalone

This topic describes the process of creating the simple standalone component using OBX.

Following are the steps needed to be followed:

1. Navigate to **extension_home** folder from cmdr.
2. Use the command: **obx ui -sd**.
3. Once this command is executed, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.

Figure 4-6 OBX UI-sd

```

C:\OBX1480\extension_home
λ obx ui --sd

OBX

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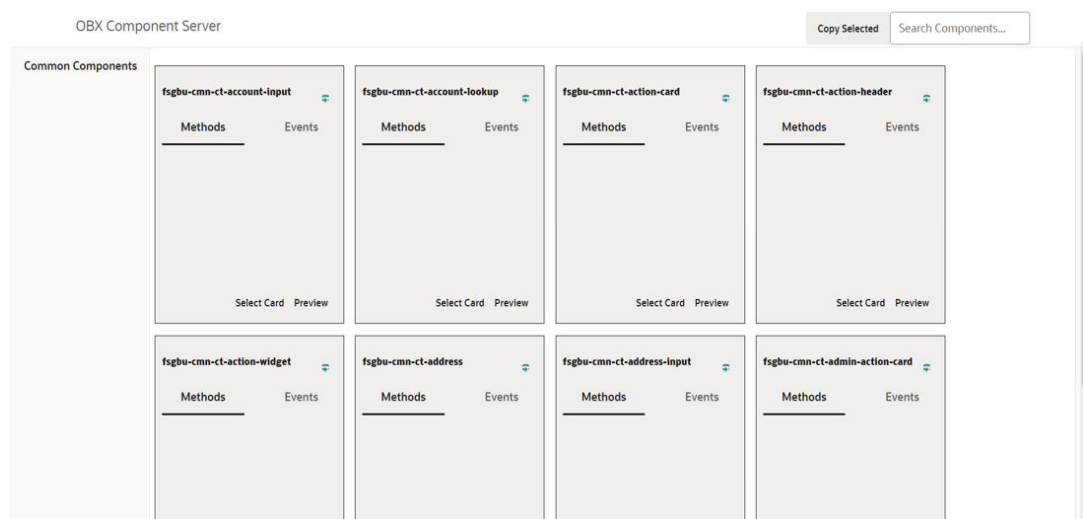
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? select the product family: Oracle Banking Extensibility Workbench
? Select the name of the standalone component (I'll prepend obx-sd- to it): customer
  force ..\yo-rc.json
  force ..\..\Users\Kartik\yo-rc-global.json
  create buildExtendedComponent.sh
  create buildExtendedComponent.bat
  create build.gradle
  create gradle.properties
  create package.json
  create Jenkinsfile
  create app.js
  create gulpfile.js
  create startCS.js
  create metadata.js
  create middleware.js
> Generating Libraries||

```

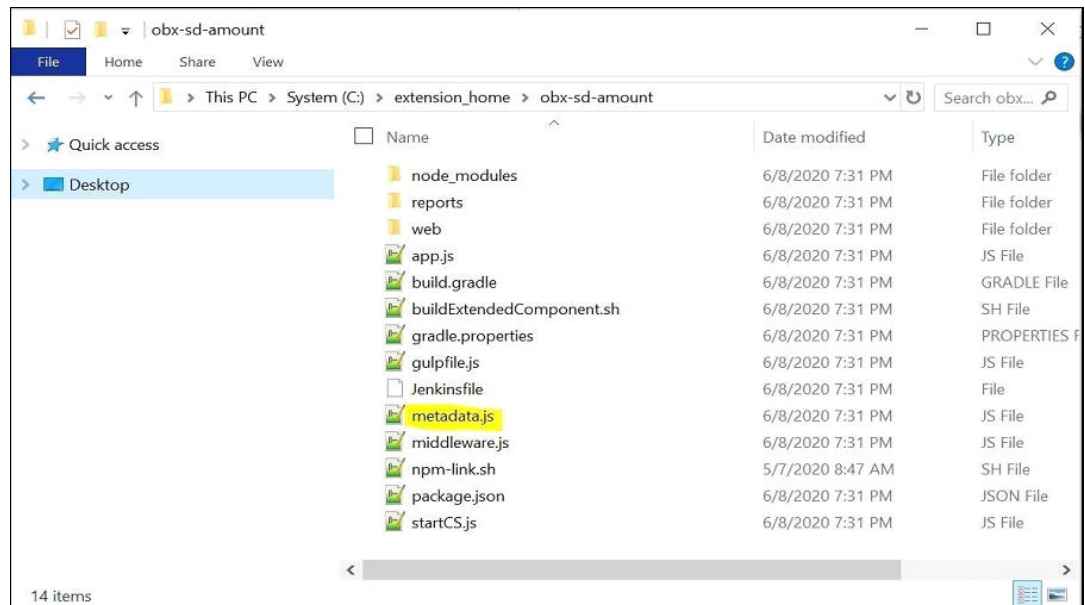
4. It will automatically generate the libraries for the component to run locally and user will be also able to see new cmdr tab opened where component server is running.
5. At this point of time go to browser and navigate to <http://localhost:8002>. User will be able to see component server home page like:

Figure 4-7 OBX Component Server



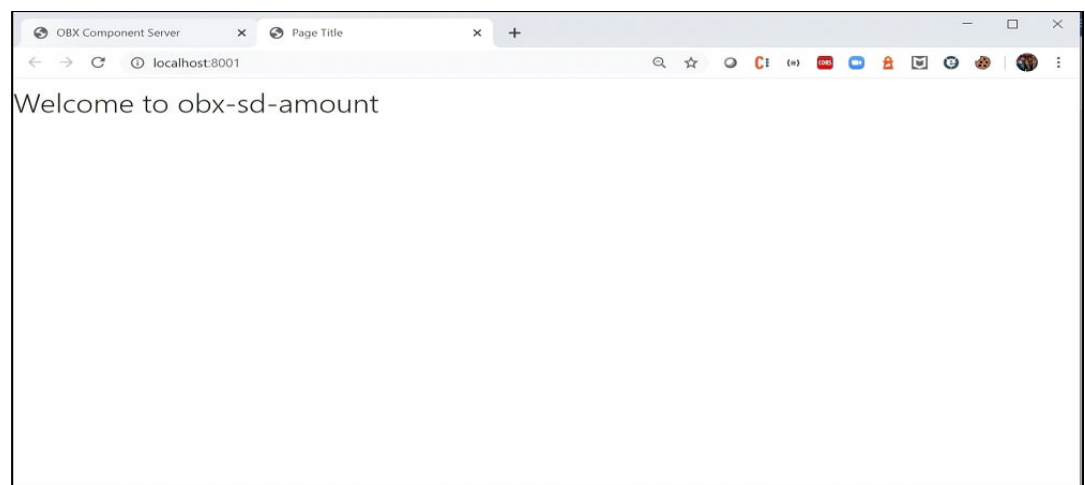
6. Select the component which user want to reuse in user extension and paste it in `module.exports = []` inside the `metadata.js` file.

Figure 4-8 obx-sd-amount



7. Once done come back to main tab in cmdr where is waiting with question, **Please modify the Metadata.js file before proceeding. Once done press y to proceed?**
8. On completing the above process, it will automatically generate the source folder now and open a new tab on cmdr where component will be running. Along with cmdr tab it will automatically open a tab on default browser as well with component rendered on the screen.

Figure 4-9 Source folder



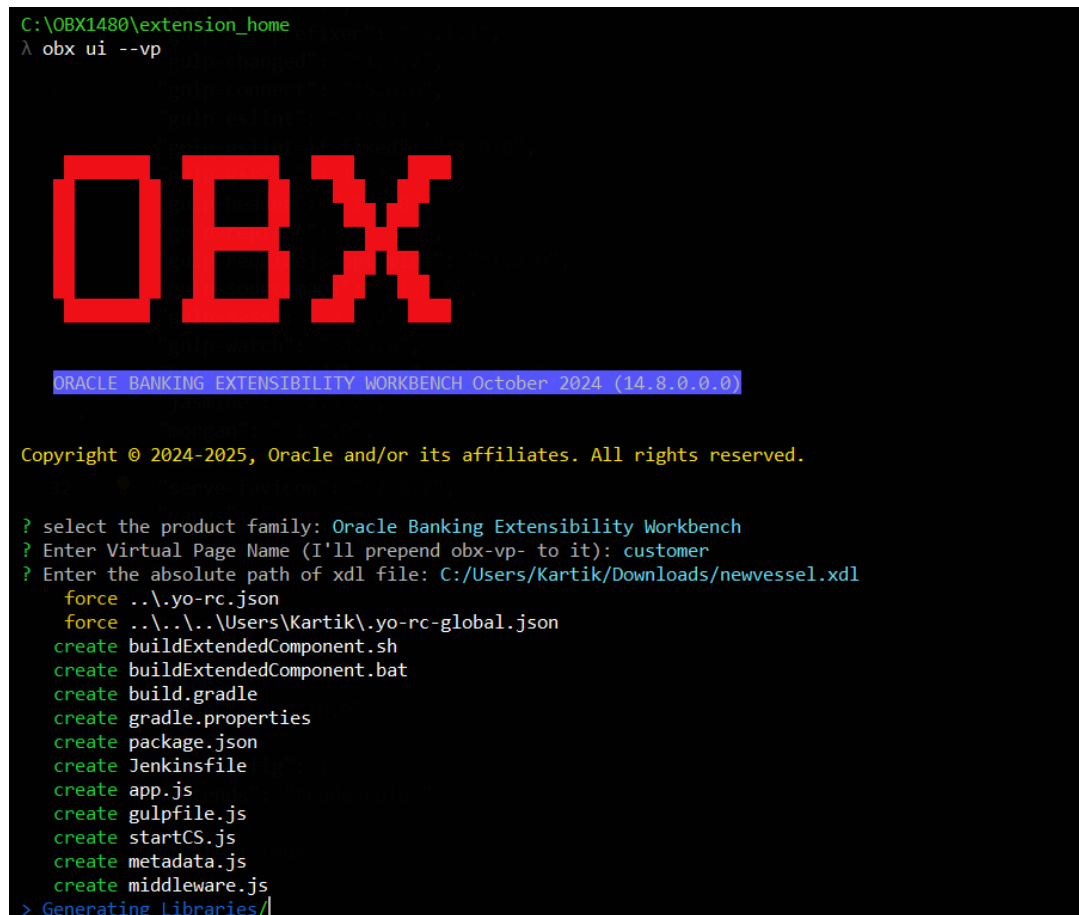
4.3 Virtual Page

This topic describes the process of creating the virtual page component using OBX.

Following are the steps needed to be followed:

1. Navigate to **extension_home** folder from cmdr.
2. Use the command **obx ui --vp**.

Figure 4-10 obx ui-vp



```
C:\OBX1480\extension_home
λ obx ui --vp

OBX

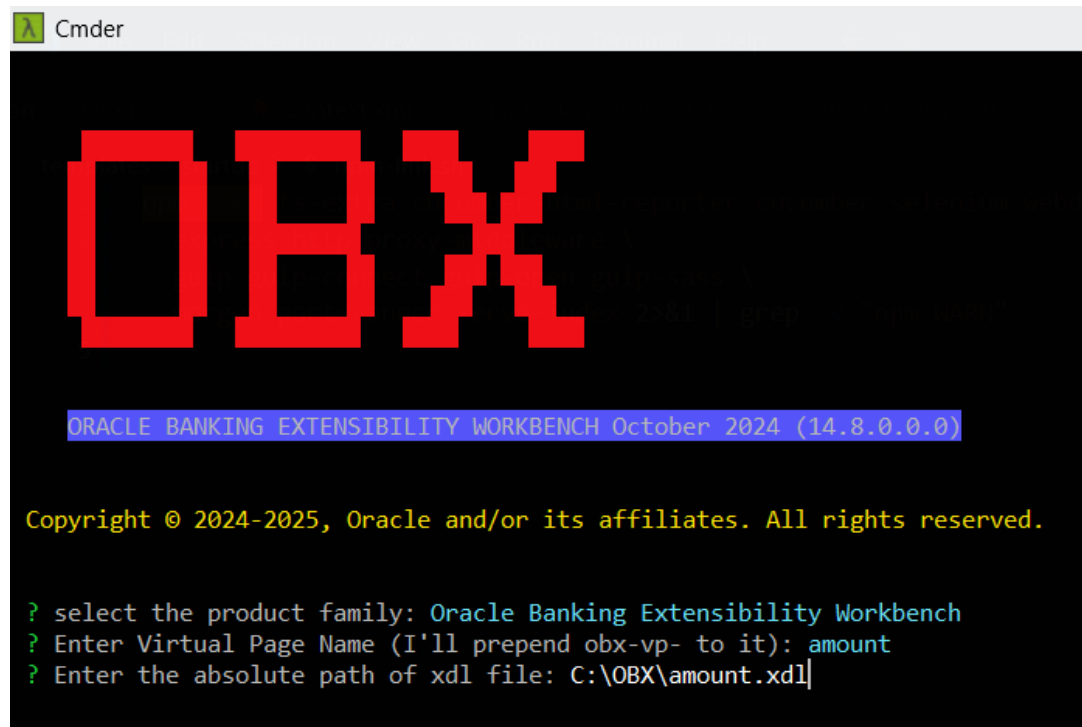
ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)

Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? select the product family: Oracle Banking Extensibility Workbench
? Enter Virtual Page Name (I'll prepend obx-vp- to it): customer
? Enter the absolute path of xdl file: C:/Users/Kartik/Downloads/newvessel.xdl
  force ..\yo-rc.json
  force ..\..\..\Users\Kartik\yo-rc-global.json
  create buildExtendedComponent.sh
  create buildExtendedComponent.bat
  create build.gradle
  create gradle.properties
  create package.json
  create Jenkinsfile
  create app.js
  create gulpfile.js
  create startCS.js
  create metadata.js
  create middleware.js
> Generating Libraries/
```

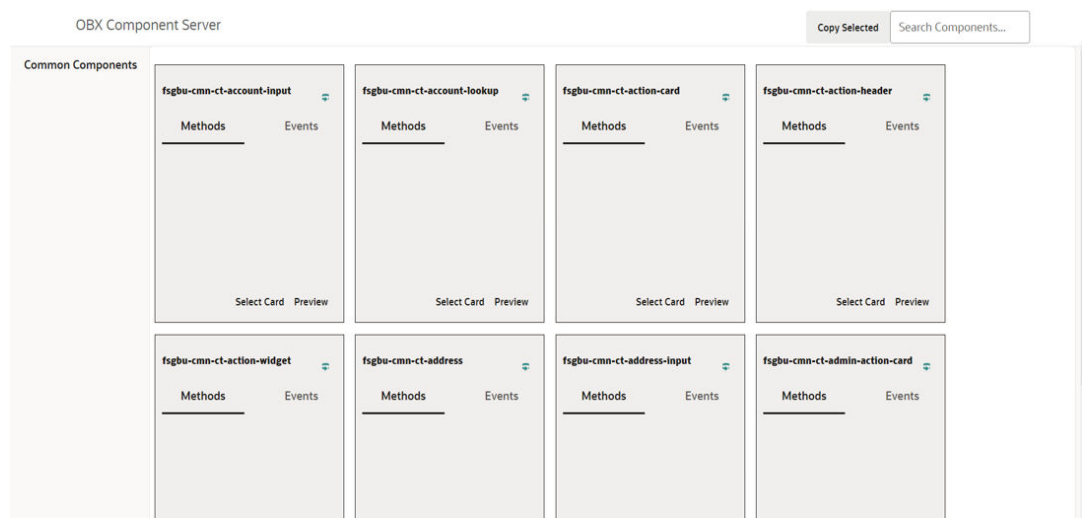
3. Once this command is executed, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.

Figure 4-11 obx ui-vp

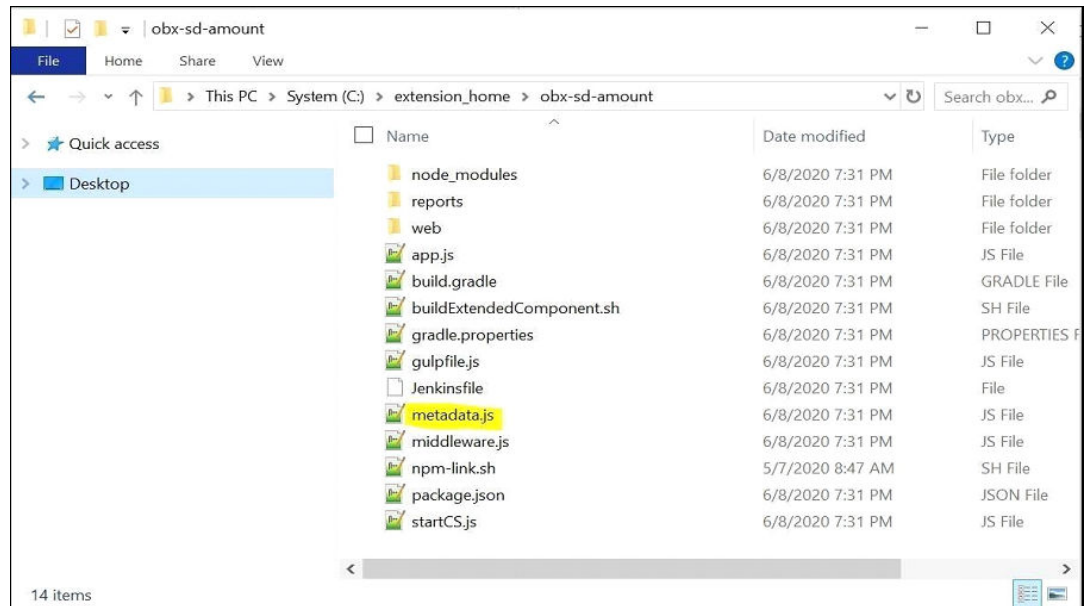


4. It will automatically generate the libraries for the component to run locally and user will be also able to see new cmdr tab opened where component server is running.
5. At this point of time go to browser and navigate to <http://localhost:8002>. User will be able to component server home page like:

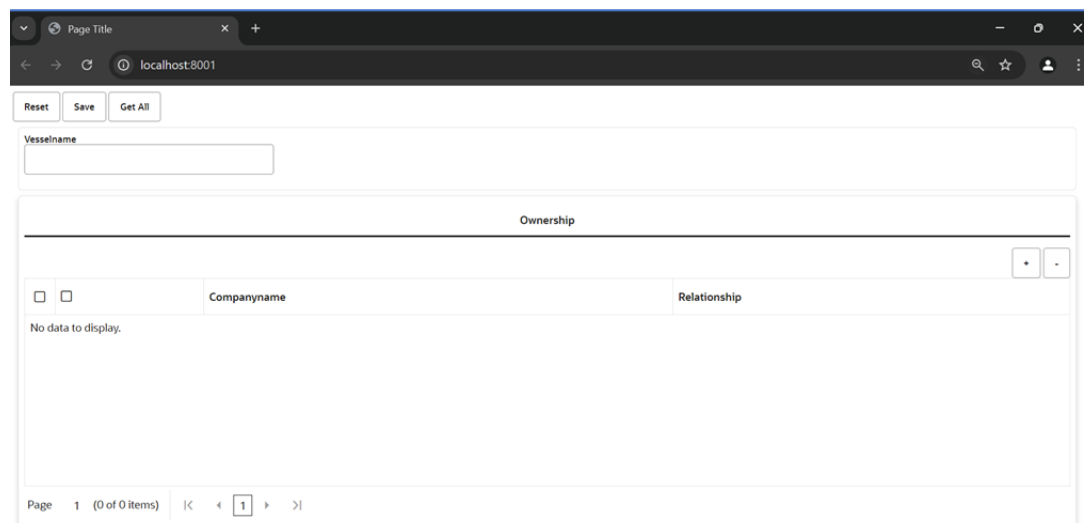
Figure 4-12 OBX Component Server



6. Select the component which user want to reuse in user extension and paste it in **module.exports = []**; inside the **metadata.js** file.

Figure 4-13 obx-sd-amount

7. Once done come back to main tab in cmdr where is waiting with question: **Please modify the Metadata.js file before proceeding. Once done press y to proceed?**
8. On completing the above process, it will automatically generate the source folder now and open a new tab on cmdr where component will be running.
9. Along with cmdr tab it will automatically open a tab on default browser as well with component rendered on the screen.

Figure 4-14 Component

4.4 Maintenance Detail and Summary

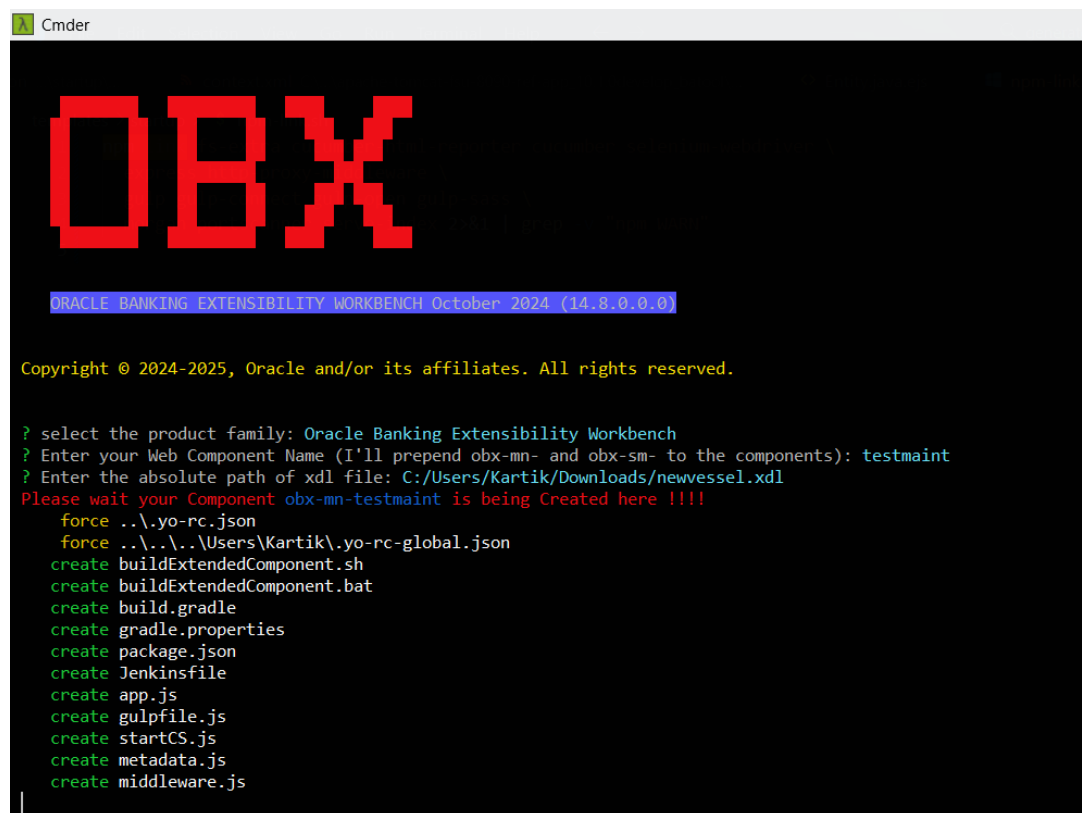
This topic describes the process of creating the Maintenance Detail and Summary component using OBX.

Here we must remember that we will be generating two web components one will be detail component and another one for summary component.

Following are the steps needed to be followed:

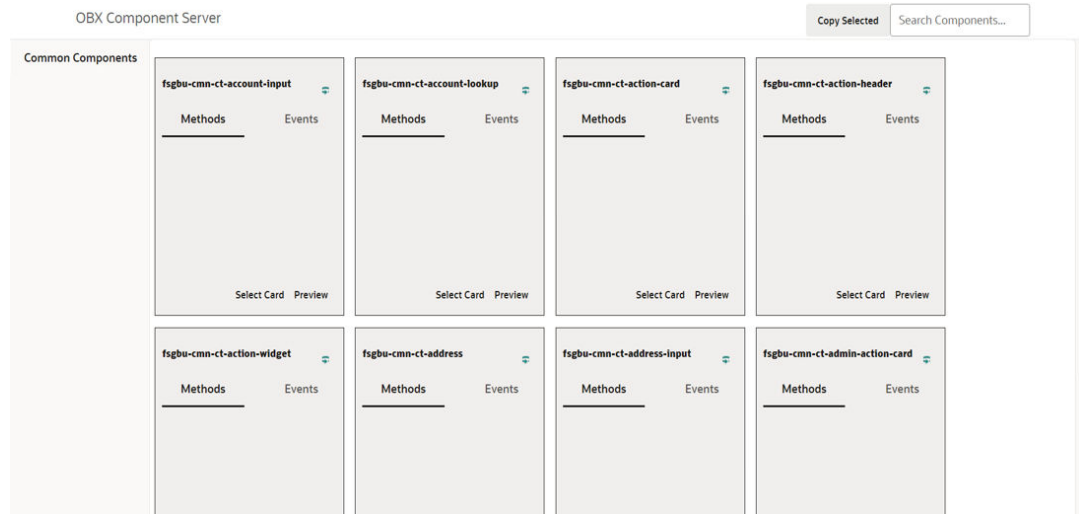
1. Navigate to **extension_home** folder from cmdr.
2. Use the command **obx ui -mnsn**.
3. Once this command is executed, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.

Figure 4-15 OBX UI

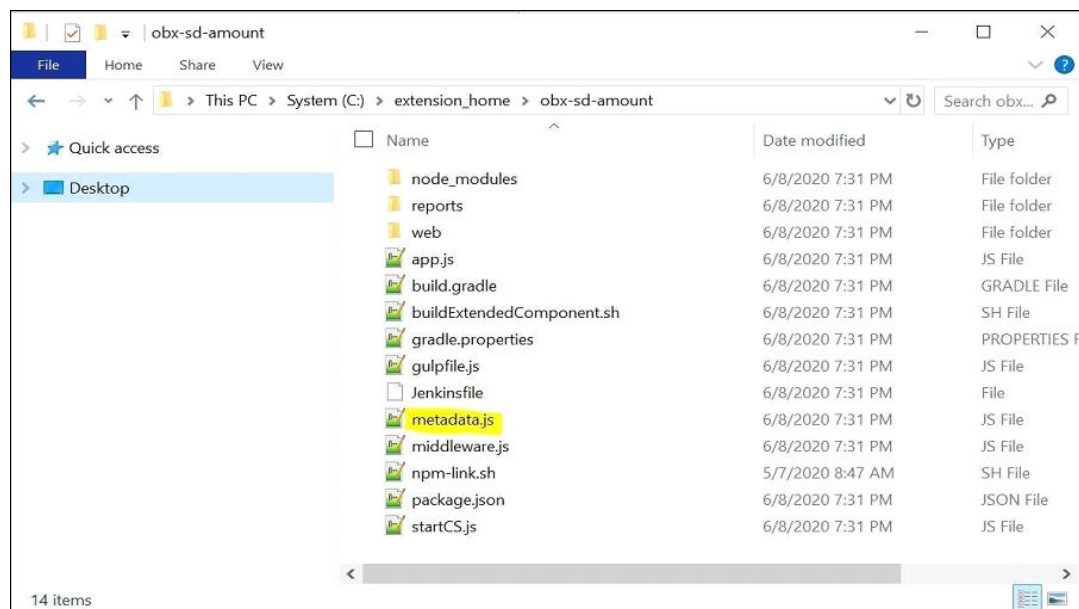


```
Cmder
OBX
ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.
? select the product family: Oracle Banking Extensibility Workbench
? Enter your Web Component Name (I'll prepend obx-mn- and obx-sm- to the components): testmaint
? Enter the absolute path of xdl file: C:/Users/Kartik/Downloads/newvessel.xdl
Please wait your Component obx-mn-testmaint is being Created here !!!!
force ..\yo-rc.json
force ..\..\Users\Kartik\yo-rc-global.json
create buildExtendedComponent.sh
create buildExtendedComponent.bat
create build.gradle
create gradle.properties
create package.json
create Jenkinsfile
create app.js
create gulpfile.js
create startCS.js
create metadata.js
create middleware.js
```

4. It will automatically generate the libraries for the components.
5. At this point of time go to browser and navigate to <http://localhost:8002>. User will be able to component server home page like:

Figure 4-16 OBX Component Server

6. Select the component which user want to reuse in user extension and paste it in `module.exports = []`; inside the `metadata.js` file.

Figure 4-17 OBX sd amount

7. Once done come back to main tab in cmdr where is waiting with question **Please modify the Metadata.js file before proceeding. Once done press y to proceed?**
8. On completing the above process, it will automatically generate the source folder for maintenance details screen and same process will followed for summary screen as well.
9. For this case we will be not able to see the component running locally as we have to 2 components generated.
10. To start the component, one needs to go inside the component are run it manually.


4.5 Data Segment

This topic describes the process of creating the virtual page component using OBX.

Following are the steps needed to be followed:

1. Navigate to **extension_home** folder from cmdr.
2. Use the command **obx ui -ds**.
3. Once this command is executed, this will take user to next section where it will prompt other set of questions. Answer them accordingly to user setup and requirement.

Figure 4-18 obx ui-ds



```
C:\OBX1480\extension_home
λ obx ui --ds

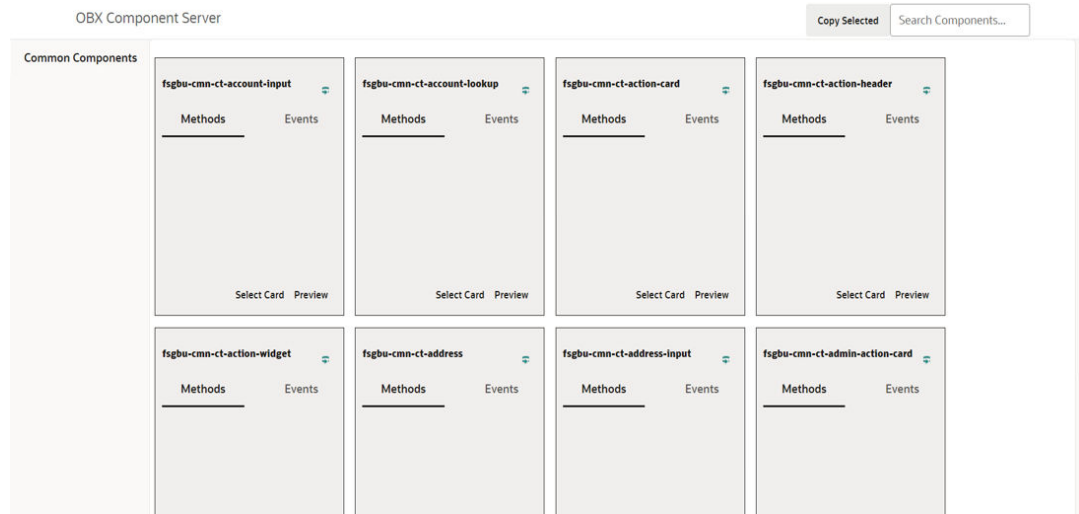
OBX

ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)

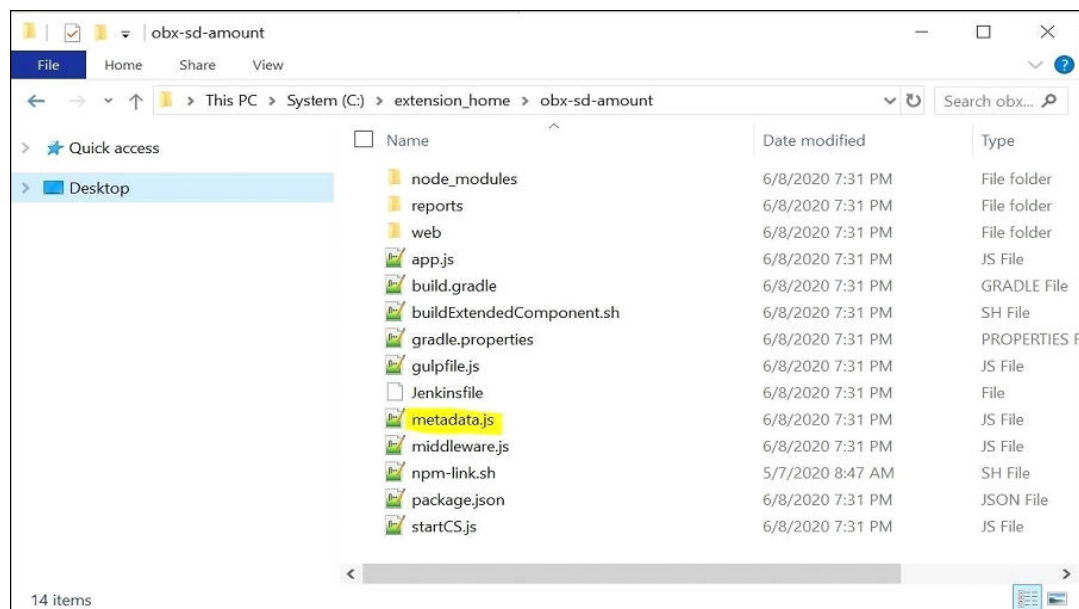
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? select the product family: (Use arrow keys)
> Oracle Banking Virtual Account Management
  Oracle Banking Trade Finance Process Management
  Oracle Banking Credit Facility Process Management
  Oracle Banking Corporate Lending Process Management
  Oracle Banking Intrest & Charges
  Oracle Banking Supply Chain Finance
  Oracle Banking Cash Management
(Move up and down to reveal more choices)
```

4. It will automatically generate the libraries for the component to run locally and user will be also able to see new cmdr tab opened where component server is running.
5. At this point of time go to browser and navigate to <http://localhost:8002>. User will be able to component server home page like:

Figure 4-19 OBX Component Server

6. Select the component which user want to reuse in user extension and paste it in `module.exports = []`; inside the `metadata.js` file.

Figure 4-20 OBX sd amount extension home folder

7. Once done come back to main tab in cmdr where is waiting with question **Please modify the Metadata.js file before proceeding. Once done press 'y' to proceed?**
8. On completing the above process, it will automatically generate the source folder now and open a new tab on cmdr where component will be running.
9. Along with cmdr tab it will automatically open a tab on default browser as well with component rendered on the screen.

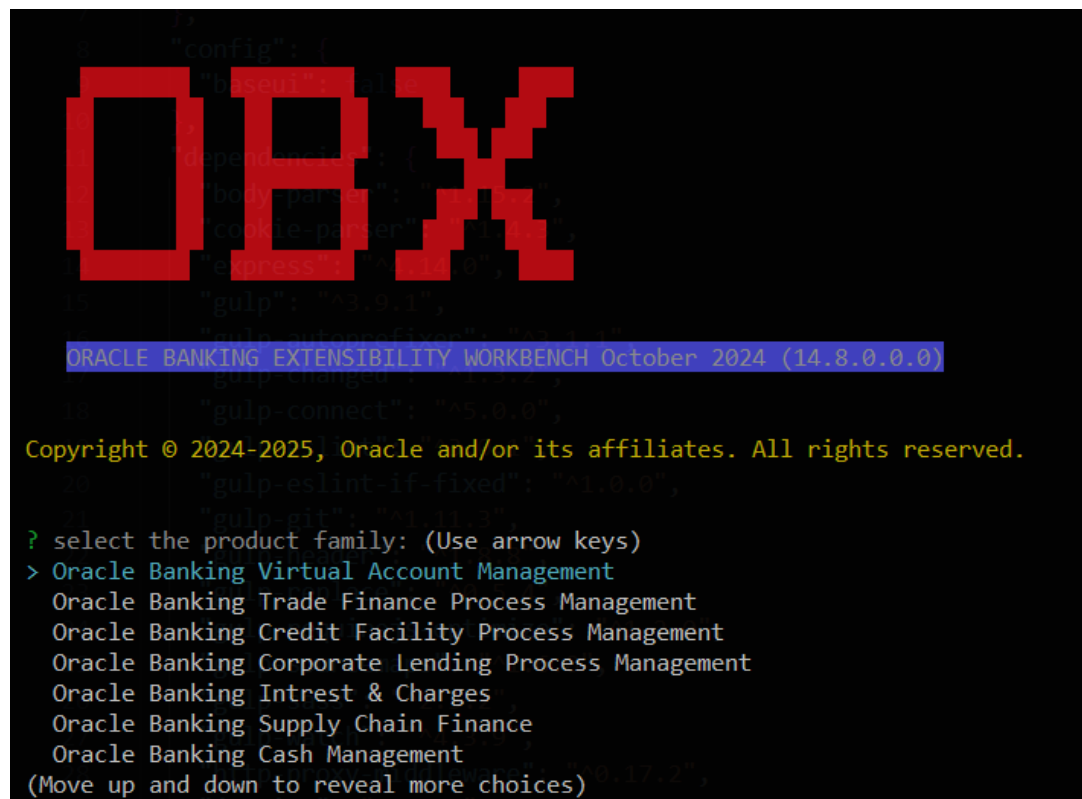
4.6 Dashboard Widget

This topic describes the process of creating the simple standalone component using OBX.

Following are the steps needed to be followed:

1. Navigate to **extension_home** folder from cmdr.
2. Use the command **obx ui --wd**.

Figure 4-21 OBX UI



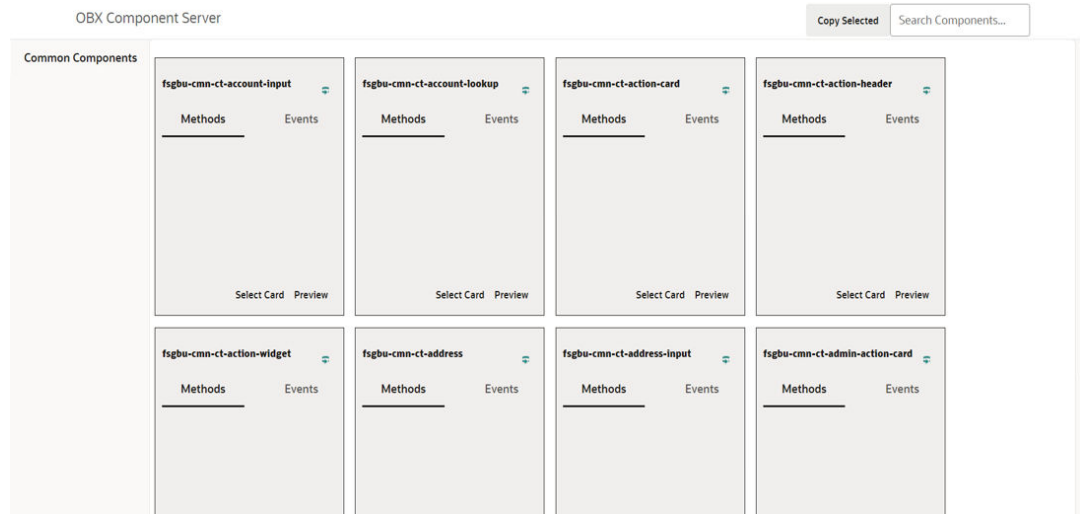
```

  "config": {
    "baseurl": "http://localhost:8002",
    "dependencies": {
      "body-parser": "1.19.0",
      "cookie-parser": "1.4.4",
      "express": "4.18.2",
      "gulp": "3.9.1",
      "gulp-autoprefixer": "6.0.0",
      "gulp-changed": "3.2.0",
      "gulp-connect": "5.0.0",
      "gulp-eslint-if-fixed": "1.0.0",
      "gulp-git": "2.10.3",
      "gulp-uglify": "3.0.1"
    }
  },
  "gulp-changed": "3.2.0",
  "gulp-connect": "5.0.0",
  "gulp-eslint-if-fixed": "1.0.0",
  "gulp-git": "2.10.3",
  "gulp-uglify": "3.0.1"
}

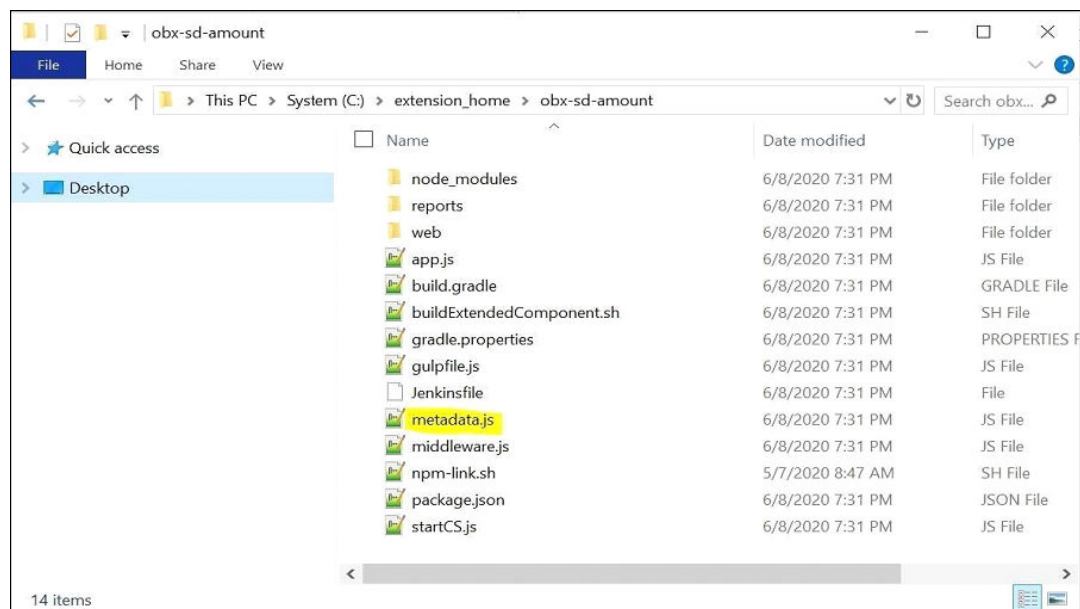
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.

? select the product family: (Use arrow keys)
> Oracle Banking Virtual Account Management
  Oracle Banking Trade Finance Process Management
  Oracle Banking Credit Facility Process Management
  Oracle Banking Corporate Lending Process Management
  Oracle Banking Intrest & Charges
  Oracle Banking Supply Chain Finance
  Oracle Banking Cash Management
(Move up and down to reveal more choices)
```

3. Once this command is executed, this will take you to next section where it will prompt other set of questions. Answer them accordingly to your setup and requirement.
4. It will automatically generate the libraries for the component to run locally and user will be also able to see new cmdr tab opened where component server is running.
5. At this point of time go to browser and navigate to <http://localhost:8002>. User will be able to see component server home page like:

Figure 4-22 OBX Component Server

6. Select the component which user want to reuse in user extension and paste it in `module.exports = []`; inside the `metadata.js` file.

Figure 4-23 OBX sd amount extension folder

7. Once done come back to main tab in cmdr where is waiting with question **Please modify the Metadata.js file before proceeding. Once done press 'y' to proceed?**
8. On completing the above process, it will automatically generate the source folder now and open a new tab on cmdr where component will be running.
9. Along with cmdr tab it will automatically open a tab on default browser as well with component rendered on the screen.

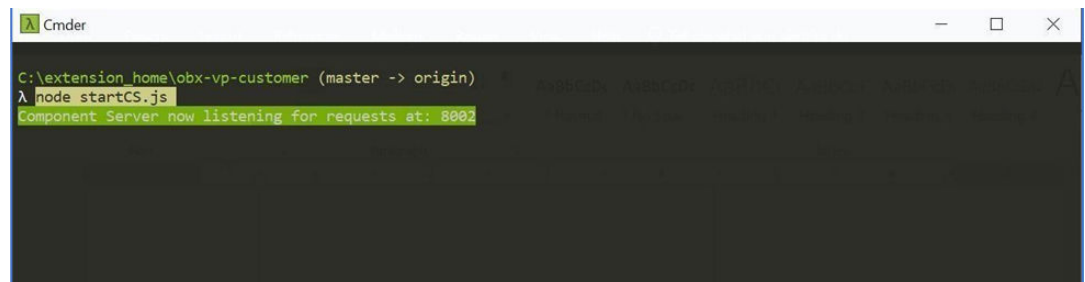
Figure 4-24 Cmder Component

4.7 Running Component after Generation

This topic describes the steps user need to follow to re-run the component created or generated earlier.

Follow the below steps to do the same:

1. Make sure user always have the component server rightly created.
2. Open two tabs in the cmdr tool.
3. Navigate to component folder in both the tabs for example **extension_home\obx-vp-customer**.
4. From the first tab run the command **node startCS.js**.

Figure 4-25 Node startCS.js

5. This will make the component server up and running again. This is important as component server not only serves base component but also some other important files which is needed for the component to run locally.
6. After this from another cmdr tab run the command **npm start**.

Figure 4-26 npm start

```

C:\extension_home\obx-vp-customer (master -> origin)
λ npm start

> obx-vp-customer@1.0.1 start C:\extension_home\obx-vp-customer
> gulp start

[21:47:20] Using gulpfile C:\extension_home\obx-vp-customer\gulpfile.js
[21:47:21] Starting 'start'...
[21:47:21] Starting 'srcJS'...
[21:47:21] Finished 'srcJS' after 33 ms
[21:47:21] Starting 'srcHTML'...
[21:47:21] Finished 'srcHTML' after 16 ms
[21:47:21] Starting 'srcJSON'...
[21:47:21] Finished 'srcJSON' after 17 ms
[21:47:21] Starting 'srcSCSS'...
[21:47:21] Finished 'srcSCSS' after 27 ms
[21:47:21] Starting 'templatesJS'...
[21:47:21] Finished 'templatesJS' after 20 ms
[21:47:21] Starting 'templatesHTML'...
[21:47:21] Finished 'templatesHTML' after 13 ms
[21:47:21] Starting 'launch'...
[21:47:21] Finished 'launch' after 6.27 ms
[21:47:21] Starting 'connect_1'...
[HPM] Proxy created: /ui -> http://localhost:8002/component-server
[HPM] Proxy rewrite rule created: "/ui" ~> "/"
[21:47:21] Starting server...
[21:47:21] Finished 'connect_1' after 534 ms
[21:47:21] Finished 'start' after 686 ms
[21:47:21] Dist App started http://localhost:8001
[21:47:21] LiveReload started on port 35729
[21:47:21] Running server
[21:47:21] Opening http://localhost:8001 using the app chrome
  
```

7. This will make the component running again on <http://localhost:8001/> and also open the default browser.

4.8 Creating final Extended Component war for Deployment

This topic describes the steps to generate Extended Component war for Deployment.

This is the final stage for generating extended-component war for all the Web components inside the **extension_home** folder. Important point to note here that before any component gets bundled to **extended-component.war**, it needs to pass all the test cases.

Perform the following steps to generate the war:

1. Go inside the individual component and run the command **sh buildExtendedComponent.sh**. This command will start performing and running unit test cases on the component.

Figure 4-27 Command - sh buildExtendedComponent.sh

```

C:\extension_home\obx-vp-customer (master -> origin)
λ sh buildExtendedComponent.sh
[21:56:19] Using gulpfile C:\extension_home\obx-vp-customer\gulpfile.js
[21:56:19] Starting 'runUnitTests'...
[21:56:19] Starting 'srcJS'...
[21:56:19] Finished 'srcJS' after 40 ms
[21:56:19] Starting 'srcHTML'...
[21:56:19] Finished 'srcHTML' after 13 ms
[21:56:19] Starting 'srcJSON'...
[21:56:19] Finished 'srcJSON' after 14 ms
[21:56:19] Starting 'srcSCSS'...
[21:56:19] Finished 'srcSCSS' after 17 ms
[21:56:19] Starting 'templatesJS'...
[21:56:19] Finished 'templatesJS' after 16 ms
[21:56:19] Starting 'templatesHTML'...
[21:56:19] Finished 'templatesHTML' after 14 ms
[21:56:19] Starting 'unitTests'...
08 06 2020 21:56:27.952:INFO [karma-server]: Karma v4.3.0 server started at http://0.0.0.0:9876/
08 06 2020 21:56:27.955:INFO [launcher]: Launching browsers ChromeHeadless with concurrency unlimited
08 06 2020 21:56:31.141:INFO [HeadlessChrome 83.0.4103 (Windows 10.0.0)]: Connected on socket 2wf6Zi3Jy-YVG48IAAAA with
id 15485939
HeadlessChrome 83.0.4103 (Windows 10.0.0): Executed 1 of 1 SUCCESS (0.036 secs / 0.002 secs)
TOTAL: 1 SUCCESS
[21:56:31] Finished 'unitTests' after 12 s
[21:56:31] Finished 'runUnitTests' after 13 s

```

2. Once the test cases are executed successfully it will create a folder inside the **extension_home** folder named extended-components.
3. Now we have to navigate back to **extension_home** folder and run the command **obx build-cca**.

Figure 4-28 OBX UI

```

Cmder

OBX

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? Enter product release version: 10.1.0
extended-components\. : no such file or directory

War file generated successfully
force .yo-rc.json
force ..\..\..\Users\Kartik\..yo-rc-global.json

```

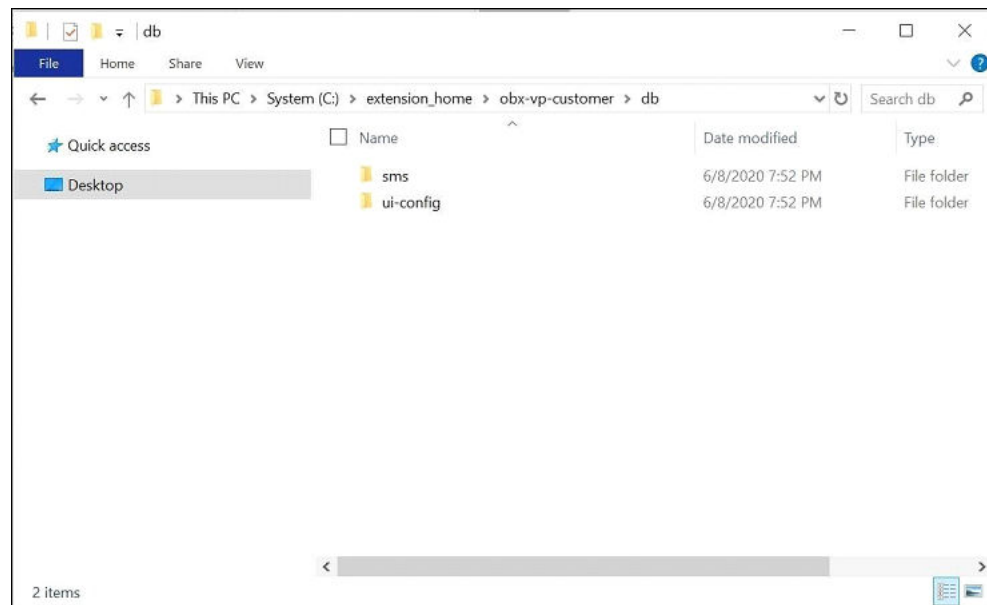
4. This **extended-component.war** should be deployed in the same domain where application shell is deployed.

4.9 Understanding DB Scripts for Web Components

This topic describes the significance of DB folder generate inside the web component folder.

This is important as without executing these scripts extension web components will not be loaded inside application shell and even these components menu will be not listed in left navigation menu.

Figure 4-29 DB Folder



DB folder inside the web component consists of two folders **sms** and **ui-config**:

- **SMS:** The sms scripts consists of all the service activity, functional activity generated all out of the box from OBX.

Figure 4-30 SMS

```
INSERT INTO SMS_TM_UI_ACTIVITY (UI_ACTIVITY_CODE,DESCRIPTION,ICON,CCA_NAME,APPLICATION_ID,UI_ACTIVITY_TYPE)
VALUES ('OBX_UA_CUSTOMER','OBX Customer',null,'obx-vp-customer','OBX','Virtual Page');

INSERT INTO SMS_TM_SERVICE_ACTIVITY (SERVICE_ACTIVITY_CODE,DESCRIPTION,CLASS_NAME,METHOD_NAME,APPLICATION_ID,SERVICE_TYPE,UI_ACTIVITY_CODE)
VALUES ('OBX_SA_CUSTOMER','OBX Customer','oracle.fsgbu.obx.customer.web.CustomerWebController','getCustomerById','OBX','Web API','OBX_UA_CUSTOMER');

INSERT INTO SMS_TM_UI_ACTIVITY_ACTIONS (ID,UI_ACTIVITY_CODE,SERVICE_ACTIVITY_CODE,LABEL)
VALUES ('OBX_AA_CUSTOMER','OBX_UA_CUSTOMER','OBX_SA_CUSTOMER','view');

INSERT INTO SMS_TM_MENU (ID,DESCRIPTION,SERVICE_ACTIVITY_CODE,APPLICATION_ID,PARENT_ID,SEQUENCE)
VALUES ('OBX_CUSTOMER','Customer',null,'OBX',null,1);
INSERT INTO SMS_TM_MENU (ID,DESCRIPTION,SERVICE_ACTIVITY_CODE,APPLICATION_ID,PARENT_ID,SEQUENCE)
VALUES ('OBX_CUSTOMER_DETAIL','Customer Detail','OBX_SA_CUSTOMER','OBX','OBX_CUSTOMER',null);
)
INSERT INTO SMS_TM_MENU_DESCRIPTION (ID,MENU_ID,LANGUAGE,DESCRIPTION)
VALUES ('OBX_CUSTOMER_ENG','OBX_CUSTOMER','ENG','Customer');
INSERT INTO SMS_TM_MENU_DESCRIPTION (ID,MENU_ID,LANGUAGE,DESCRIPTION)
VALUES ('OBX_CUSTOMER_DETAIL_ENG','OBX_CUSTOMER_DETAIL','ENG','Customer Details');

INSERT INTO SMS_TM_FUNCTIONAL_ACTIVITY (FUNCTIONAL_ACTIVITY_CODE,APPLICATION_ID,TYPE)
VALUES ('OBX_FA_CUSTOMER','OBX','O');

INSERT INTO SMS_TM_FUNC_ACTIVITY_DETAIL (ID,FUNCTIONAL_ACTIVITY_CODE,SERVICE_ACTIVITY_CODE)
VALUES ('OBX_FD_CUSTOMER','OBX_FA_CUSTOMER','OBX_SA_CUSTOMER');

COMMIT
```

- **UI Config:** This script should be compiled in ui-config schema. It maintains the ledger of all the extended components. App-shell uses this configuration to identify which components should be referred from extended-component war.

Figure 4-31 UI Config

```
Insert into PRODUCT_EXTENDED_LEDGER (ID,CCA_NAME,CCA_TYPE,PARENT_CCA_NAME,PRODUCT_NAME)
select max(ID+0)+1,'obx-vp-customer','vp',null,'EXTENDED_COMPONENTS' from PRODUCT_EXTENDED_LEDGER;

Insert into PRODUCT_SERVICES_LEDGER (ID,PRODUCT_NAME,ENDPOINT_KEY,ENDPOINT_VALUE,REQUEST_TYPE,SERVICE_NAME)
select max(ID+0)+1,'OBX','CUSTOMER','/api/v1/customers','GET','obx-customer-service' from PRODUCT_SERVICES_LEDGER;

Insert into PRODUCT_SERVICES_CTX_LEDGER (ID,PRODUCT_NAME,SERVICE_NAME,SERVICE_CONTEXT_PATH,HEADER_APPID,CONTENT_TYPE,ACCEPT,USERID,BRANCH,SOURCE)
select max(ID+0)+1,'OBX','obx-customer-service','/','FXDSSRV001','application/json','application/json',null,null,null from PRODUCT_SERVICES_CTX_LEDGER;

COMMIT
```

Modification of Base Web Component

This topic provides the systematic instructions to perform the basic operations on the selected records.

This feature of OBX enables users to create extensions which helps to modify the behavior of existing component. Modification of Base Web Component serves the one of the most common use cases from extensibility perspective. There are few important points which should be remembered before modifying the behavior of existing components.

Important Points:

- Addition of fields can be done on various locations of base screen, but this may break the CSS if not handled properly (Responsive Behavior). In such cases it is always recommended to put additional fields at the bottom of other fields.
- Wherever possible, use Data-segments to add additional field.
- In use case where user wants to hide the fields from existing screen, always check whether the field is mandatory or not. If it is mandatory then it should be set before making it hidden on the screen. If not done so, service calls may break.
- Above point is also valid in case where user wants to disable a field on the screen.

Following are the use cases which can be achieved using modification of existing component:

- Addition of Fields
- Hiding fields from screen
- Defaulting values on screen
- Disable field
- Making Non-mandatory field Mandatory
- [Steps for Modification of Base Component](#)
This topic provides the systematic instructions to the steps to follow in case of adding fields on the existing screen.
- [Process Workbench](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [OBX Update Command](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [In-Scope DS](#)
This topic provides the systematic instructions to the overview of IN-Scope DS fields.
- [OBX Release Command](#)
This topic provides information on OBX Release Command details.

5.1 Steps for Modification of Base Component

This topic provides the systematic instructions to the steps to follow in case of adding fields on the existing screen.

It is assumed that before using this command a developer knows the name of the base component in which he will be adding the additional fields.

Following are the steps needed to be followed:

1. Navigate to the **extension_home** folder from the cmdr.
2. Execute the command **obx ui --mb**.

Figure 5-1 OBX UI



```
C:\OBX1480\extension_home
λ obx ui --mb

OBX

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? Enter Base Web component name which you want to modify (I'll append -extended to it): (customer)
```

3. After above command is executed it will prompt for the name of base component. Once given it will create a folder with base component name appending - extended at the end of it.
4. Here also like above all the libraries are generated at runtime.
5. Component generated contains the boiler plate or reference code, which helps to achieve the use case.

Again, db folder contains all the relevant scripts which is needed to be executed prior to see the component live and running in main application shell.

5.2 Process Workbench

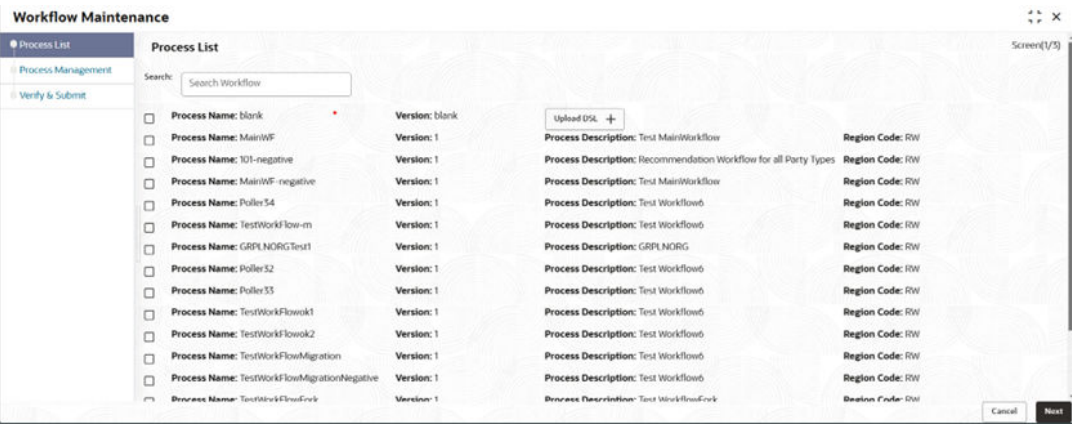
This topic provides the systematic instructions to perform the basic operations on the selected records.

The Process Workbench screen is used to create or modify processes. Users can add new stages, edit existing ones, or upload JSON-based DSLs into the system. This screen also facilitates workflow customization and allows users to download a JSON-based DSL reflecting the modifications made in the UI. Additionally, users can preview the flow diagram of a newly added or modified process. Any process changes will automatically increment the version number by 1 from the latest version.

Process Creation and Modification Screen:

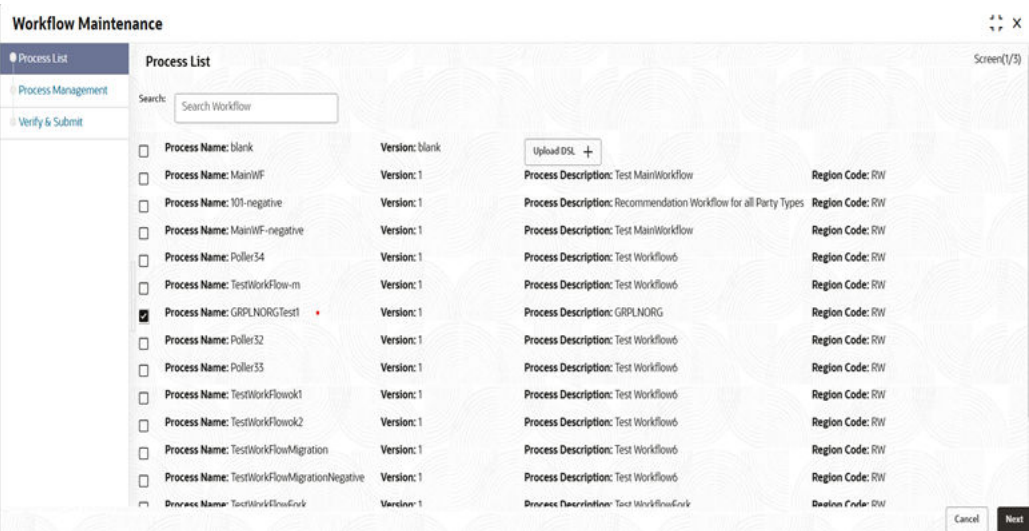
- 1. Screen 1 - Shows list of the processes:
 - **Displays the List of Processes:** A comprehensive list of existing processes is shown.
 - **Upload DSL Button:** Enables the upload of workflows in JSON format
 - **Blank Option (First Row):** Used to create a new process.

Figure 5-2 Workflow maintenance Process list



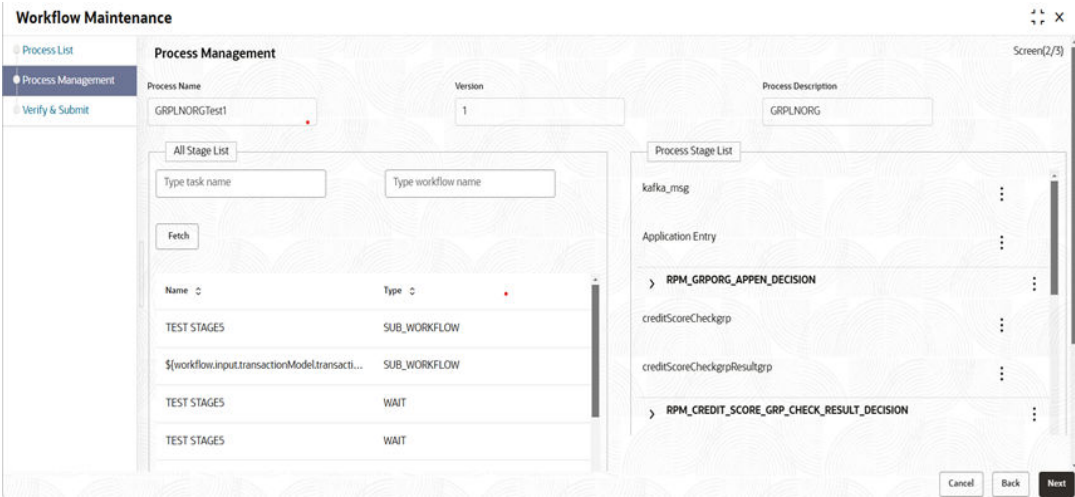
- 2. Select a Process.

Figure 5-3 Select a process list



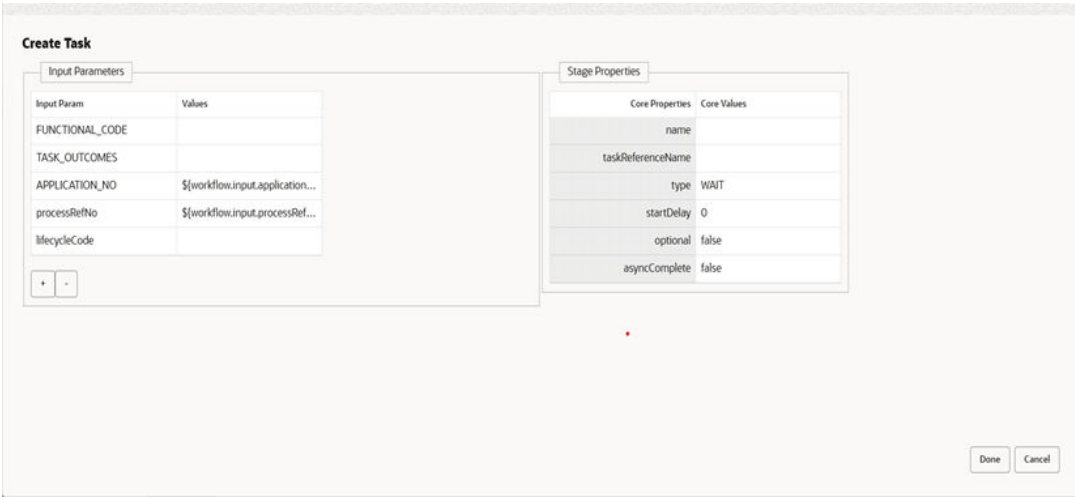
- 3. Shows stages : Under the process which was selected on screen 1.

Figure 5-4 Workflow maintenance process management



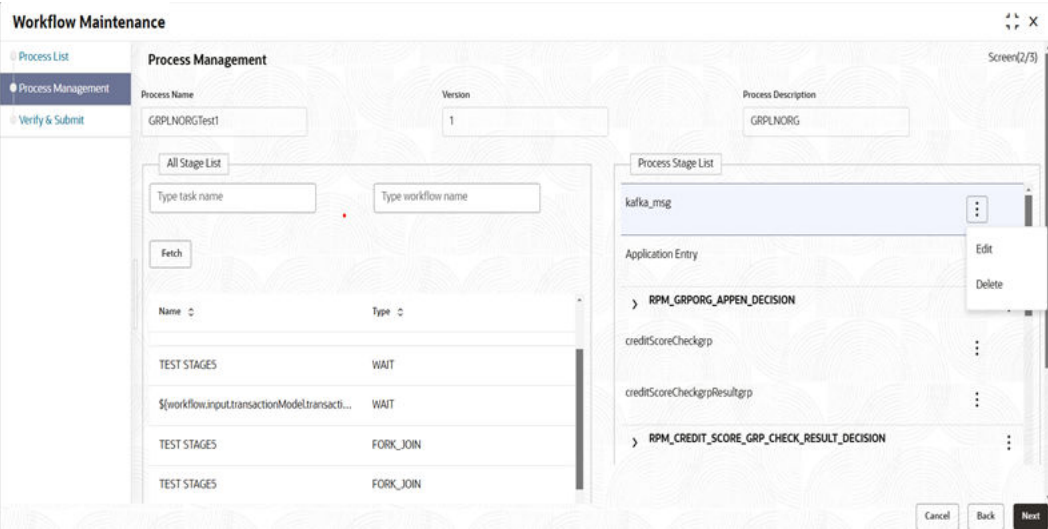
4. Create Stage button:
 - Used to create a new stage.
 - Dialog box for creating a new stage.

Figure 5-5 Create Task



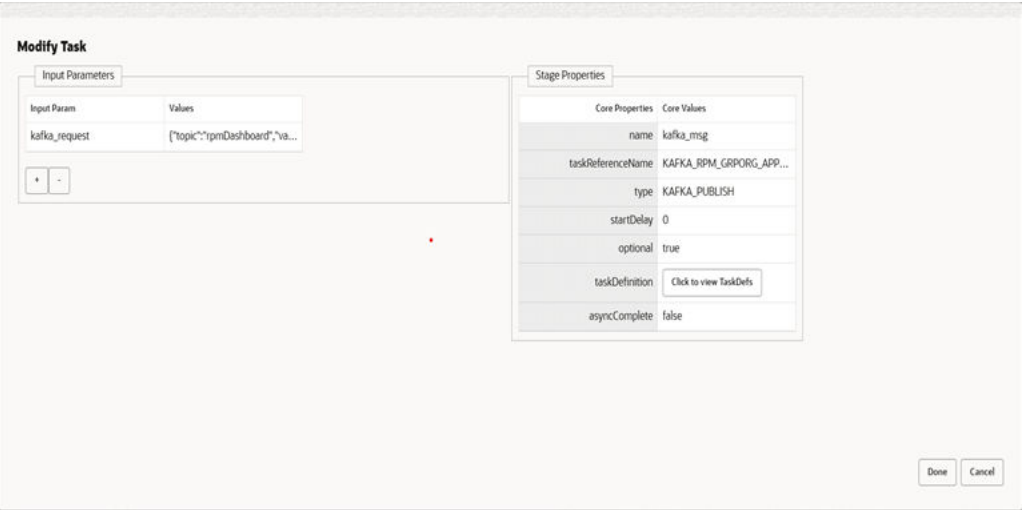
5. We can edit/delete a particular stage in Process Stage list.

Figure 5-6 Process management



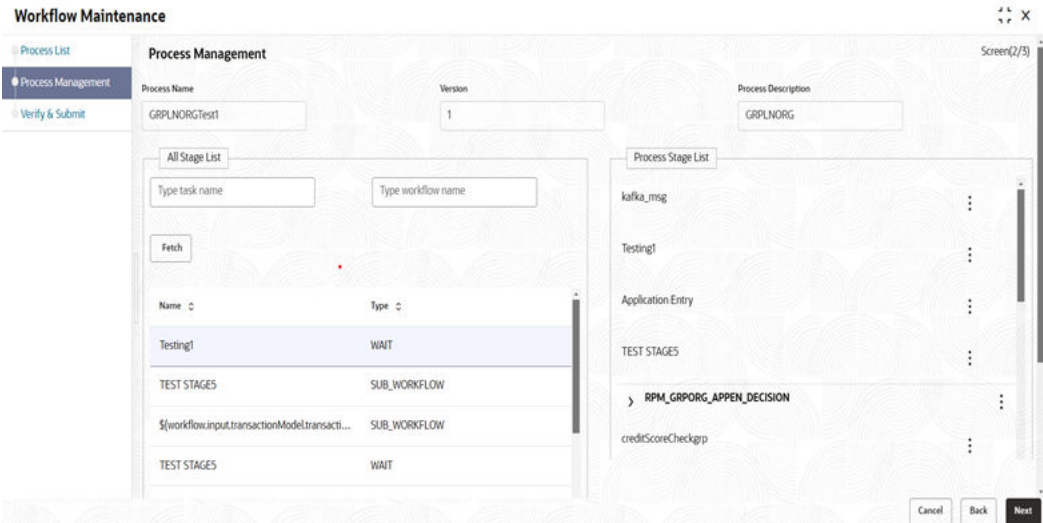
- 6. Dialogue box which opens when we edit a particular stage.

Figure 5-7 Modify Task



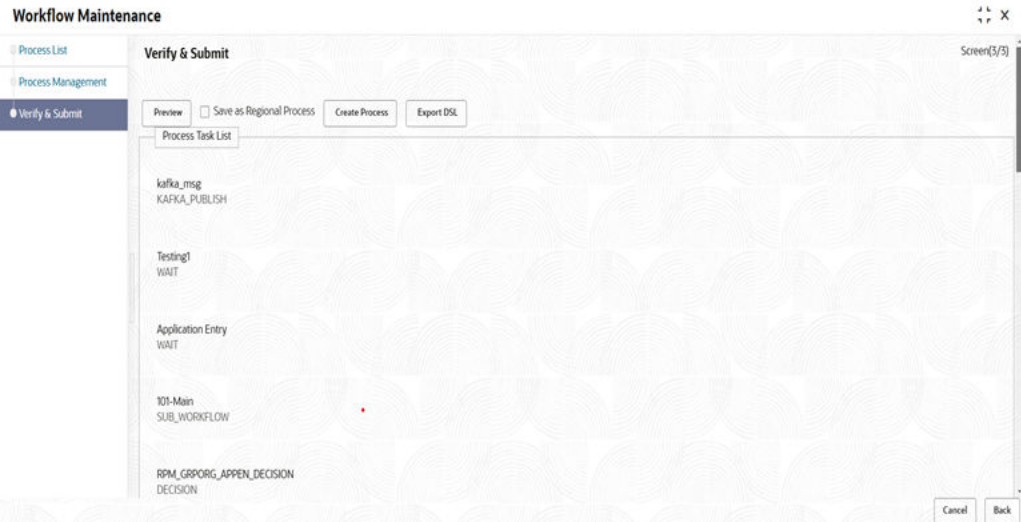
- 7. Drag and Drop Functionality Stage named **Testing1** from all stage list was dragged and dropped on the process stage list as shown here:

Figure 5-8 Process management Testing 1



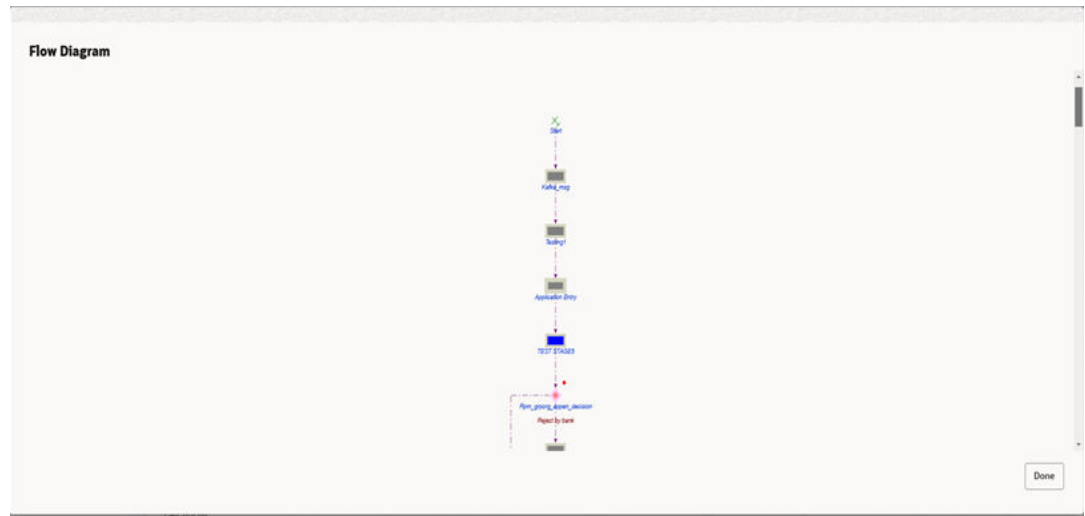
8. In this process includes:
- **Preview:** To preview flow diagram of the process selected.
 - **Create Process:** For creating a new process.
 - **Export DSL:** To Export DSL into a file in JSON format.

Figure 5-9 Workflow maintenance verify and submit



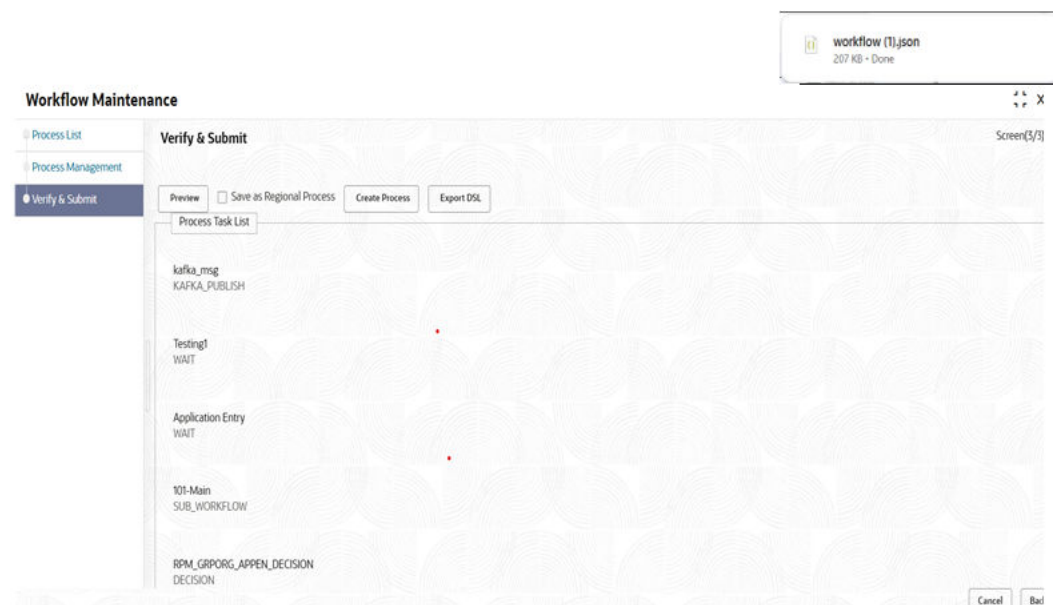
9. Flow Diagram of the modified or new added workbench process.

Figure 5-10 Flow Diagram



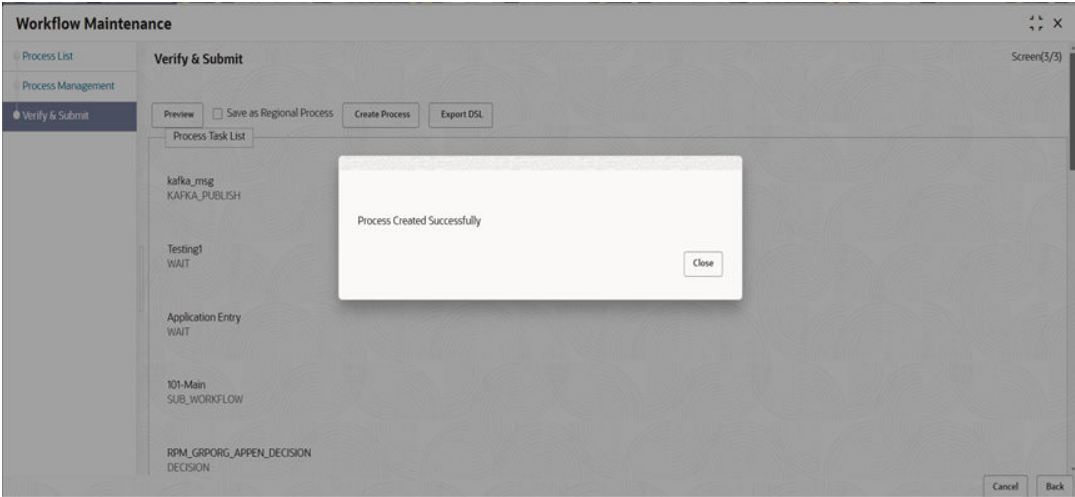
10. When **Export DSL** button is clicked. The DSL gets downloaded in workflow(1).json file as shown.

Figure 5-11 Export DSL



11. When **Create Process** button is clicked. Process is Created.

Figure 5-12 Create Process



12. Version is updated when the process is created successfully.

Figure 5-13 Workflow maintenance updated version



5.3 OBX Update Command

This topic provides the systematic instructions to perform the basic operations on the selected records.

This topic helps in migrating the artifacts from previous version of OBX to latest. This is applied to both services and web components.

This topic consists of the following sub-topics:

- [Service Update](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [UI Update](#)
This topic provides the systematic instructions to UI Update developed in OBX.

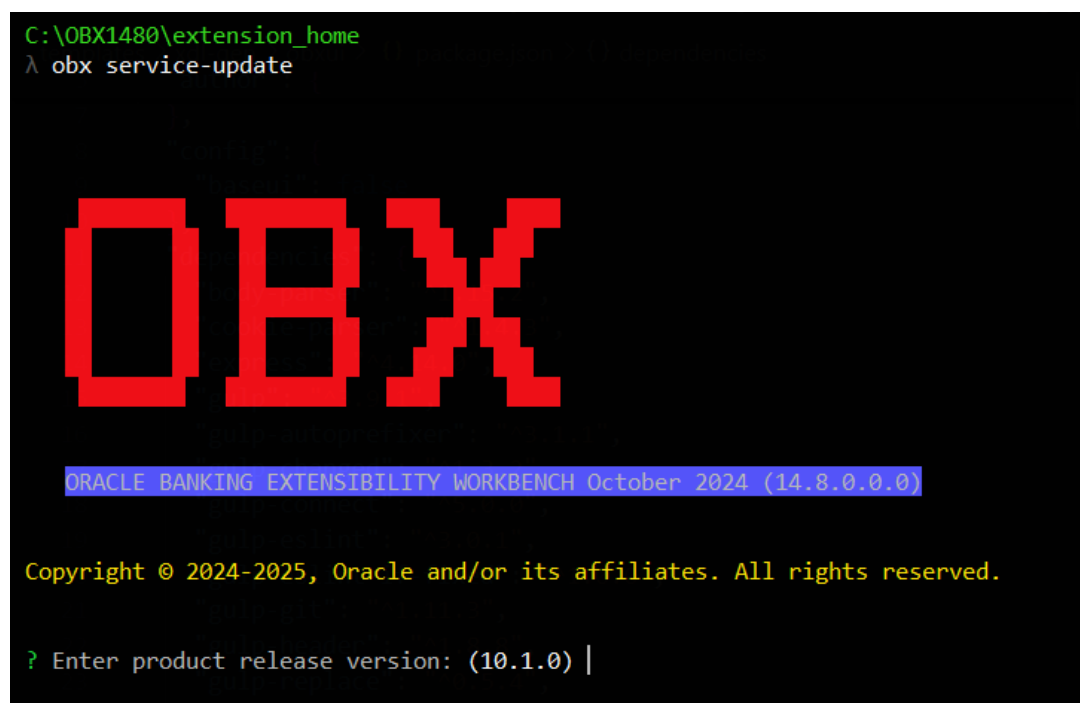
5.3.1 Service Update

This topic provides the systematic instructions to perform the basic operations on the selected records.

To migrate services developed in previous versions of OBX to latest please follow the below steps:

1. Navigate to service specific folder inside the **extension_home** directory.
2. Execute the command **obx service-update**.
3. Provide the relevant product release version number.
4. Once provided it will automatically change the build.gradle file and service is ready to be built with latest dependencies.

Figure 5-14 OBX UI-Service Update



```
C:\OBX1480\extension_home
λ obx service-update

OBX

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Enter product release version: (10.1.0) |
```

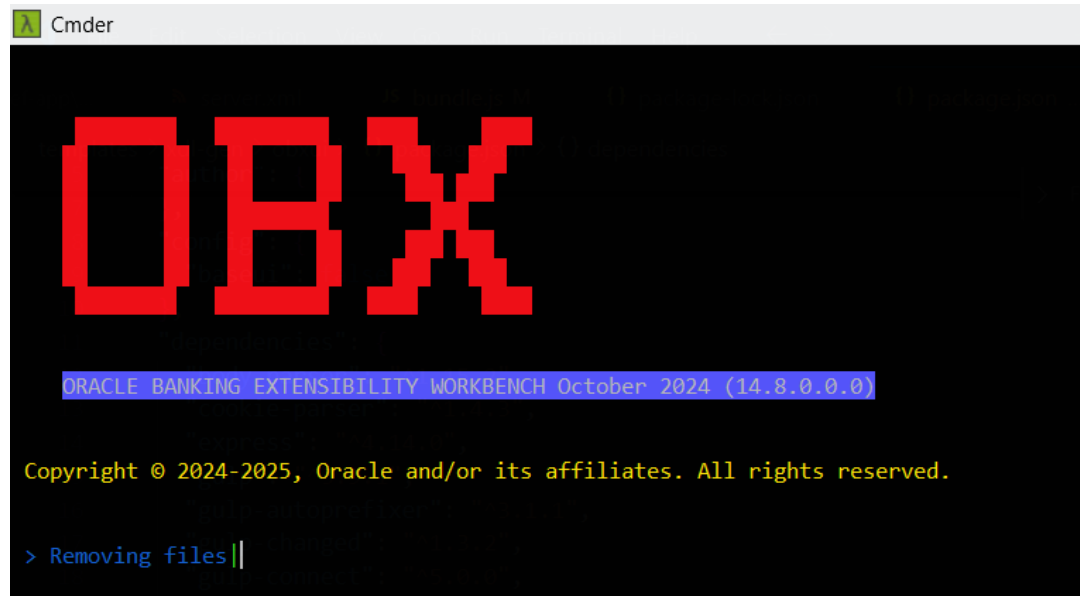
5.3.2 UI Update

This topic provides the systematic instructions to UI Update developed in OBX.

To migrate services developed in previous versions of OBX to latest please follow the below steps:

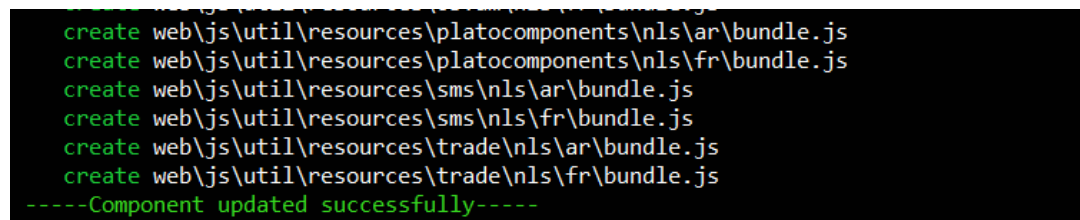
1. Navigate to UI (Web Component) specific folder inside the **extension_home** directory.
2. Execute the command **obx ui-update**.

Figure 5-15 OBX UI-Update



3. This command will automatically start removing old libraries without changing the source folder. This help will help you retaining the business logic already written in web component.
4. One done and executed successfully you will the below message.

Figure 5-16 Message



5. Now to run the command with new libraries run below command sequentially:
 - **sh npm-link.sh** – It will create new node module folder inside the component with latest modules and dependencies.
 - **node startCS.js** - Open a new tab in cmder and navigate to same web component directory and run command node startCS.js.
 - **npm start** – From the main tab, where we executed npm-link command run the command npm start, it will automatically run the web component with latest libraries and launch it on the browser as well.

5.4 In-Scope DS

This topic provides the systematic instructions to the overview of IN-Scope DS fields.

Following is the sequence to be followed:

- Additional of fields at any desired location in an existing data-segment is supported now.

- Data will be stored in separate custom schema.
- In-scope Data segment can be used for addition of new fields. (using jquery, at any position, we can add the field).

Example of In-Scope DS (Additional fields):

- Include the hooks required in js and html of base components accordingly.
- Run the command “obx ui --af” for adding fields in extended components.
- Include the additional field in “self.data”.

```
self.data = {  
    "newField": ko.observable("")  
};
```

- Subscribe it to change handler.

```
self.data.newField.subscribe(self.changeHandler);
```

- Use jquery to insert it in the location you want to add the fields.

```
var element = context.properties.data.payload.homeBranch; $  
( '#homeBranch' ).parent().parent().parent().append( $( '#ui-ex-div-  
newField' ).parent() );
```

.

5.5 OBX Release Command

This topic provides information on OBX Release Command details.

This command is used to check all the available features bundled with OBX version installed on the machine.

To run this command,

1. Navigate to **extension_home** folder.
2. Run the command: **obx release**

Figure 5-17 OBX release

```

Cmder
OBX
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Release Notes
This release introduces key platform upgrades and enhancements improving performance, security, and feature capabilities across OBX.
-> Java upgraded to version 17
-> Gradle upgraded to version 8.10.2
-> One-to-Many Relationship Support for Workflow Data Segment
-> Zuul routes changed from api-gateway to api-gateway-router
-> API endpoint updated from @RequestMapping to @GetMapping
-> Enhancement to makerDateStamp and checkerDateStamp field handling
[1] Java 17 Upgrade
-> OBX has been successfully upgraded to Java 17, ensuring compatibility with the latest language features, improved performance, and enhanced security support.
[2] Gradle 8.10.2 Upgrade
-> The build system has been upgraded to Gradle 8.10.2, providing better build performance, improved dependency management, and support for modern Java versions.
[3] Enhancement: One-to-Many Relationship Support for Workflow Data Segment
-> Introduced support for one-to-many relationships within workflow data segments, allowing greater flexibility and data modeling capabilities for complex workflows.
[4] Zuul Routes Changed from api-gateway to api-gateway-router
-> Updated Zuul routing from 'api-gateway' to 'api-gateway-router' to ensure consistency with revised service naming standards for the Plato API Gateway Router module.
[5] Enhancement: API Endpoint Updated from @RequestMapping to @GetMapping
-> The HTTP mapping annotation for the lovValidation API endpoint was updated from @RequestMapping to @GetMapping for improved clarity and adherence to REST standards.
[6] Enhancement: Update to makerDateStamp and checkerDateStamp Field Handling
-> Ensures date values are consistently formatted before being assigned to DTOs, improving data integrity and standardization across components.

```

6

Extending Product Data Segments with Additional Fields

This topic provides the systematic instructions to perform the basic operations on the selected records.

This topic describes the following sub-topics:

- [Additional Fields Maintenance](#)
This topic provides the systematic instructions on Additional Fields Maintenance.
- [Populating Data in Corresponding Fields From UI](#)
This topic provides information on Populating Data in Corresponding Fields From UI.
- [Fetching the Saved Values](#)
This topic provides information on fetching the saved values for each field during the transaction.

6.1 Additional Fields Maintenance

This topic provides the systematic instructions on Additional Fields Maintenance.

This screen is used to maintain the additional fields for a transaction screen.

To process this screen, type Additional Fields Maintenance in the Menu Item Search located at the left corner of the application toolbar and select the appropriate screen.

Follow the below steps:

1. From **Home** screen, click Core Maintenance. Under Core Maintenance, click Additional Fields Maintenance.
2. The **Additional Fields Maintenance** screen is displayed.

Figure 6-1 Additional Fields Maintenance

3. Specify the details in the Additional Fields Maintenance screen.
For more information on fields, refer table Field Description – Additional Field Maintenance.

Table 6-1 Additional Field Maintenance - Field Description

Field	Description
Component Name	Specify the data segment name as component name. Note: By default, the value fsgbu-ob-cmndsadditional-fields is displayed, which is the Common Core Data Segment that displays the maintained additional fields. It will fetch the corresponding maintained record for Additional Fields by querying with uiKey = DataSegmentName @ ProductCode.
Product Code	Specify the function code as product code.
Product Name	Displays the product name of the specified product code.
Description	Displays the description as Additional Fields .
Application ID	Displays the Application ID.
+ icon	Click this icon to add a new row.
– icon	Click this icon to delete a row, which is already added.
Construct Additional Fields MetaData	Specify the fields.
Select	Check this box to select a row.
Field ID	Specify the Field ID.
Field Label	Specify the field label.
Category	Specify the category.
Field Type	Specify the field type.
Edit	Select if a value needs to be inputted in the additional field.
Mandatory	Select if the input value is mandatory in the additional field.
Construct Validation MetaData	Specify the fields.
Select	Check this box to select a row.
Validation Name	Specify the validation name.

Table 6-1 (Cont.) Additional Field Maintenance - Field Description

Field	Description
Validation Template to Use	Specify the template to be used for validation.
Custom Error Message	Specify the custom error message to be displayed.
Edit Arguments	Select if arguments needs to be edited in the additional field.

- Click Save to add the additional field in the maintenance work table (CMC_TW_ADDT_ATTR_MASTER).

Note

Once it is approved, the data will persist in the master table. Currently, Mobile Number and Date are added as additional fields. In addition, the validation is added for Date.

- Sign in with different user ID since maker will not be able to approve the records with the same user ID.

Figure 6-2 Additional Fields Maintenance Records

- Map the new data segment for the function code. Make sure that the data is present in CMC_TM_SCREEN_DS_MAPPING.

Note

Once the additional fields are added for a particular function code, a separate data segment will be enabled in the transaction screen for Additional Fields.

- Click Submit, to save the transaction data of additional fields to the CMC_TB_ADDT_ATTR_DATA.
In addition, the following actions have been performed from service side:
 - Fetch record through inter-service call to additional attributes service in common transaction with record ID.

- Append the field data to the main payload for the ejlogging.

```
{
  "data": {
    "addDtls": {
      "signatureVerifyIndicator": "Y",
      "hostStatus": null,
      "hostMultiTripId": null,
      "txnBranchCcy": "GBP",
      "txnBranchDate": "2020-03-25T18:30:00.000+0000",
      "txnType": "C",
      "cashInOutIndicator": "I",
      "ejLoggingRequired": null,
      "ejTxnAmtMapping": "TO",
      "ejTxnCcyMapping": "TO",
      "adviceName": null,
      "orchestratorId": null,
      "rsp": null,
      "isReversal": "N",
      "isAdvice": "N",
      "reversalButton": "N",
      "ignoreApproval": false,
      "ignoreWarning": false,
      "isExternal": false
    },
    "txnDtls": {
      "functionCode": "1401",
      "txnBranchCode": null,
      "txnBranchCcy": null,
      "txnBranchDate": null,
      "requestStatus": "COMPLETED",
      "assignmentMode": null,
      "txnId": "f6b36a91-889d-4505-aac0-d7b98484d098",
      "txnRefNumber": "989124345493245",
      "tellerSeqNumber": null,
      "overrideConfirmFlag": null,
      "supervisorId": null,
      "onlineOfflineTxn": null,
      "userComments": null,
      "authoriserComments": null,
      "eventCode": null,
      "accountType": "UBS"
    },
    "dataPayload": {
      "datasegment": null,
      "fromAccountAmt": 100,
      "fromAccountCcy": "GBP",
      "toAccountCcy": "GBP",
      "beneficiaryName": null,
      "beneficiaryAddress1": null,
      "beneficiaryAddress2": null,
      "beneficiaryAddress3": null,
      "beneficiaryAddress4": null,
      "identificationType": null,
      "identificationNumber": null,
      "exchangeRate": 1,

```

```
"recievedAccount
  Ccy": null,
"recievedAccount
  Amt": null,
"totalCharges":
  null,
"cashAmount":
  100,
"netAccountCcy": null,
"netAccountAmt": null,
"narrative": "Cash Deposit",
"txnControllerRefNo": null,
"recordId": "f6b36a91-889d-4505-aac0-
d7b98484d098", "cashAmtCcy": null,
"cashAmt":
  null,
"chequeDate": null,
"chequeNumber": null,
"eventCode": null,
"ejId": null,
"emailId": null,
"fromAccountBranch": "000",
"fromAccountNumber": null,
"mobileNumber": null,
"originalExchangeRate": null,
"payee": null,
"productCode": null,
"reversalDate": null,
"stationId": null,
"toAccountBranch": "000",
"toAccountNumber": "00000008010010",
"toAccountAmt": 100,
"txnBranchCode": "000",
"functionCode": null,
"txnCustomer": null,
"tellerId": null,
"txnDate": 1585161000000,
"txnRefNumber": "9892566557744",
"txnSeqNumber": null,
"uniqueIdentifierNumber": null,
"uniqueIdentifierType": null,
"userRefNumber": null,
"valueDate": null,
"versionNumber": null,
"referenceNumber": null,
"createdBy": null,
"createdTs": null,
"updatedBy": null,
"updatedTs": null,
"demDtls": [],
"fxInDemDtls": null,
"fxOutDemDtls": null,
"prcDtls": [],
"addDtls": null,
"txnDtls": null,
"overrideDtls": null,
```

```

        "batchTableDetails": null,
        "cmcAddlFields": [
            {
                "id": "OTH_passprt",
                "label": "Passport No",
                "type": "TEXT",
                "value": "43243"
            },
            {
                "id": "UDF_aadhar",
                "label": "Aadhar",
                "type": "TEXT",
                "value": "1243"
            },
            {
                "id": "TMIS_toDate",
                "label": "To Date",
                "type": "DATE",
                "value": ""
            },
            {
                "id": "TMIS_fromDate",
                "label": "From Date",
                "type": "DATE",
                "value": ""
            }
        ],
        "extDetails": null,
        "warDtls": [],
        "authoriserDtls": []
    },
    "errors": null,
    "warnings": null,
    "informations": null,
    "authorizations": null,
    "paging": ""
}

```

6.2 Populating Data in Corresponding Fields From UI

This topic provides information on Populating Data in Corresponding Fields From UI.

Unlike the other transaction screen data-segments, the ejlogged data is not required. Instead, two GET calls that happen during screen launch fetches all the details.

To fetch the corresponding **Additional-Fields-Maintenance** screen record based on which it will display the maintained fields for this function code.

Endpoint : CORE.GET_CMC_ADDITIONAL_ATTRIBUTES

Request URL : <http://whf00peb.in.oracle.com:8003/api-gateway/cmc-additional-attributeservices/cmcadditional-attributes-services/?uiKey=fsgbu-ob-cmn-ds-additional-fields@1006>

Sample Response :

```

{
  "data": [
    {
      "keyId": "33347926-842b-4232-af31-8c1b59612244",
      "makerId": "ABHINAV",
      "makerDateStamp": null,
      "checkerId": null,
      "checkerDateStamp": null,
      "modNo": 1,
      "recordStatus": "O",
      "authStatus": "A",
      "onceAuth": null,
      "doerRemarks": null,
      "approverRemarks": null,
      "links": [
        {
          "rel": "self",
          "href": "http://10.40.158.157:8005/cmc-
            additional-attributeservices/cmcadditional-
            attributes-services/33347926-842b-4232-
            af318c1b59612244"
        }
      ],
      "description": "Additional Fields",
      "fieldMetaData":
        "[{\\"id\\":\\"OTH_Mobile\\",\\"label\\":\\"Mobile
        Number\\",\\"type\\":\\"NUMBER\\",\\"required\\":true},{\\"id\\":\\"OTH
        _From\\",\\"label\\":\\"Fr om
        Date\\",\\"type\\":\\"DATE\\",\\"required\\":true},{\\"id\\":\\"OTH_To_D
        ate\\",\\"label\\":\\"To
        Date\\",\\"type\\":\\"DATE\\",\\"required\\":true}]", "uiKey": "fsgbu-
        ob-cmn-ds-additional-fields@1006", "validationMetaData":
        "[{\\"id\\":\\"\\",\\"validateMethod\\":\\"compareFromToDates\\",\\"type\\":\\"
        \\",\\"args\\":[{\\"ty
        pe\\":\\"FIELD\\",\\"value\\":\\"OTH_From\\",
        {\\"type\\":\\"FIELD\\",\\"value\\
        ":\\"OTH_To_Date\\
        }],\\"errorMsg\\":\\"Error Date 1 must be &gt; Date
        2\\",\\"validationName\\":\\"Date
        Validation\\"}]",
      "applicationId": "OBTFFPM"
    }
  ],
  "paging": {
    "totalResults": 1,
    "links": {
      "next": null,
      "prev": null
    }
  }
}

```

6.3 Fetching the Saved Values

This topic provides information on fetching the saved values for each field during the transaction.

You can fetch the values saved for each field during the transaction.

Endpoint : `CORE.GET_ADDITIONAL_ATTRIBUTES`.

Request URL : `http://whf00peb.in.oracle.com:8003/api-gateway/cmc-additionalattributesservices/additionalattributes/?uiKey=fsgbu-ob-cmn-ds-additionalfields@1006&dataReferenceKey=00a01dfd-0d6f-4400-a9c5-0f56551165e4`

Samples Response :

```
{
  "ExtensibleDTO": [
    {
      "id": "1644022a-179e-429b-82c8-873761c3ac74",
      "uiKey": "fsgbu-ob-cmn-ds-additional-fields@1006",
      "dataReferenceKey": "00a01dfd-0d6f-4400-a9c5-0f56551165e4",
      "fieldMetaDataVersion": "1",
      "fieldData": [
        {
          "id": "OTH_Mobile",
          "label": "Mobile Number",
          "type": "NUMBER",
          "value": "678688789"
        },
        {
          "id": "OTH_From",
          "label": "From Date",
          "type": "DATE",
          "value": "678688789"
        },
        {
          "id": "OTH_To_Date",
          "label": "To Date",
          "type": "DATE",
          "value": null
        }
      ],
      "applicationId": "OBREMO"
    }
  ]
}
```

7

Action URL and Static Tag Maintenance

This topic provides the systematic instructions to perform the basic operations on Action URL and Static Tag Maintenance.

This topic consists of the following sub-topics:

- [Action URL Maintenance](#)
This topic provides the systematic instructions of action URL maintenance.
- [Static Tag Maintenance](#)
This topic provides the systematic instructions to static tag maintenance.

7.1 Action URL Maintenance

This topic provides the systematic instructions of action URL maintenance.

Endpoints are maintained in cmn-transaction-services for the specific transaction based on function code. The operation has to be maintained as action URL in table SRV_TB_BC_ACTIONS_URL. Action URL will be called from all the domain services based on function code and action (like OPENCHECK, CREATE, OVERRIDE, REVERSAL, PENDING_APPROVAL, or AUTHORIZE).

The database details are as follows:

Schema: BRANCHCOMMON

Table: SRV_TB_BC_ACTIONS_URL

If the action URL is not maintained for the specific operation of the particular transaction, the error message will be displayed as Action URL not maintained. Error code is maintained in ERTB_MSGS as RM-BC-UR-01.

7.2 Static Tag Maintenance

This topic provides the systematic instructions to static tag maintenance.

Static tag is maintained for accounting, till update, and debit-credit for each transaction based on the function code in table SRV_TB_TX_STATIC_TAGS.

The database details are as follows:

Schema : TRANSACTION

Table : SRV_TB_TX_STATIC_TAGS

TILL_TAGS, DRCR_TAGS and ACCOUNTING_TAGS are maintained as JSON structure. Static tags will be fetched from cmn-transaction-services based on function code. If it is not maintained for the particular function code, the transaction will be failed

8

Extensibility Use Cases for OBBRN Servicing

This topic provides the systematic instructions to perform the basic operations on Extensibility Use Cases for OBBRN Servicing.

This topic describes the following sub-topics:

- [New Transaction Screen – 1499 \(Exact Clone of 1401\)](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Exact Clone with Additional Fields Using Common Code](#)
This topic provides the systematic instructions to exact clone with additional fields using common code.
- [Exact Clone with Additional Fields Using Extensible Code](#)
This topic provides the systematic instructions to the exact clone with additional fields using extensible code.
- [Jar Deployment in Weblogic](#)
This topic provides the systematic instructions to the Jar Deployment in Weblogic.

8.1 New Transaction Screen – 1499 (Exact Clone of 1401)

This topic provides the systematic instructions to perform the basic operations on the selected records.

For this use case, user need to ensure data is present in the tables similar to 1401.

The below mentioned tables need to be checked in SMS schema:

- SMS_TM_MENU
- SMS_TM_MENU_Description
- SMS_TM_SERVICE_ACTIVITY
- SMS_TM_FUNCTIONAL_ACTIVITY
- SMS_TM_FUNC_ACTIVITY_DETAIL
- SMS_TM_ROLE_ACTIVITY
- SMS_TM_UI_ACTIVITY

The below mentioned tables need to be checked in common core schema:

- CMC_TM_SCREEN_CLASS
- CMC_TM_SCREEN_DS_MAPPING

The below mentioned tables need to be checked in branch common schema:

- SRV_TM_BC_FUNCTION_INDICATOR
- SRV_TM_BC_FUNCTION_CODE
- SRV_TM_BC_FUNCTION_PREF
- SRV_TM_BC_FUNCTION_PREF_DTLS

- SRV_TM_BC_BRANCH_ACCOUNTING
- SRV_TM_MENU_CONFIG
- SRV_TB_BC_ACTIONS_URL

The below mentioned tables need to be checked in transaction schema:

- SRV_TB_TX_STATIC_TAGS

Figure 8-1 Cash Deposit Clone

The screenshot shows the 'Cash Deposit Clone' form. It includes fields for Account Number, Exchange Rate, Total Charge Amount, Narrative, Transaction Amount, and Account Amount. Below these is a 'Denomination' section with two tables: 'Bills' and 'Coins'. The 'Bills' table has columns for Denom Code, Units, and Value. The 'Coins' table has columns for Denom Code, Units, and Value. The form also has a 'Submit' button and a 'Cancel' button.

Denom Code	Units	Value
100	0	0
50	0	0
20	0	0
10	10	100
5	0	0
200	0	0

Denom Code	Units	Value
2	0	0
1	0	0
0.5	0	0
0.2	0	0
0.1	0	0
1000	0	0

Figure 8-2 Information Message

The screenshot shows the 'Cash Deposit Clone' form with an 'Information' message overlay. The message states 'Transaction completed successfully' and has an 'OK' button. The form fields and denomination tables are visible in the background.

8.2 Exact Clone with Additional Fields Using Common Code

This topic provides the systematic instructions to exact clone with additional fields using common code.

A new screen is available with function code 9999. The Additional Fields is shown as 4th data segment as below:

Figure 8-3 Additional Fields Segment

- The library reference in weblogic.xml is available for extensibility, for example, obremo-srv-ext-common-txn. A new jar obremo-srv-cmn-common-txn, which holds the most of the code of transaction service and can be a dependency in the external jar.

```
<wls:library-ref>
  <wls:library-name>obremo-srv-cmn-common-
  txn</wls:library-name> </wls:library-ref>
```

Response :

```
{
  "data": {
    "addDtls": {
      "signatureVerifyIndicator": "Y",
      "hostStatus": null,
      "hostMultiTripId": null,
      "txnBranchCcy": "GBP",
      "txnBranchDate": "2020-03-25T18:30:00.000+0000",
      "txnType": "C",
      "cashInOutIndicator": "I",
      "ejLoggingRequired": null,
      "ejTxnAmtMapping": "TO",
      "ejTxnCcyMapping": "TO",
      "adviceName": null,
      "orchestratorId": null,
      "rsp": null,
      "isReversal": "N",
      "crossCcyEnabled": null,
      "isTotChargesReq": null
    },
    "txnDtls": {
      "functionCode": "9999",
      "txnBranchCode": null,
      "txnBranchCcy": null,
      "txnBranchDate": null,
      "requestStatus": "COMPLETED",
      "assignmentMode": null,
      "txnId": "71a08a0f-ee2a-405b-a1e3-b77ca9e59b6e",

```

```
"txnRefNumber": "0002008600007160",
"tellerSeqNumber": null,
"overrideConfirmFlag": "N",
"supervisorId": null,
"onlineOfflineTxn": null,
"userComments": null,
"authoriserComments": null,
"eventCode": null,
"accountType": "UBS"
},
"dataPayload": {
  "datasegment": null,
  "fromAccountAmt": 100,
  "fromAccountCcy": "GBP",
  "toAccountCcy": "GBP",
  "beneficiaryName": null,
  "beneficiaryAddress1": null,
  "beneficiaryAddress2": null,
  "beneficiaryAddress3": null,
  "beneficiaryAddress4": null,
  "identificationType": null,
  "identificationNumber": null,
  "exchangeRate": 1,
  "recievedAccount
Ccy": null,
  "recievedAccount
Amt": null,
  "totalCharges":
null,
  "cashAmount":
null,
  "netAccountCcy": null,
  "netAccountAmt": null,
  "narrative": "Cash Deposit",
  "txnControllerRefNo": null,
  "recordId": "bd40562d-06b4-4f95-95fe-
e66fa6eb7f13", "cashAmtCcy": null,
  "cashAmt":
null,
  "chequeDate": null,
  "chequeNumber": null,
  "eventCode": null,
  "ejId": null,
  "emailId": null,
  "fromAccountBranch": "000",
  "fromAccountNumber": null,
  "mobileNumber": null,
  "originalExchangeRate": null,
  "payee": null,
  "productCode": null,
  "reversalDate": null,
  "stationId": null,
  "toAccountBranch": "000",
  "toAccountNumber": "00000008010010",
  "toAccountAmt": 100,
  "txnBranchCode": "000",
```

```

        "functionCode": null,
        "txnCustomer": null,
        "tellerId": null,
        "txnDate": 1585161000000,
        "txnRefNumber": "0002008600007160",
        "txnSeqNumber": null,
        "uniqueIdentifierNumber": null,
        "uniqueIdentifierType": null,
        "userRefNumber": null,
        "valueDate": null,
        "versionNumber": null,
        "referenceNumber": null,
        "createdBy": null,
        "createdTs": null,
        "updatedBy": null,
        "updatedTs": null,
        "demDtls": null,
        "fxInDemDtls": null,
        "fxOutDemDtls": null,
        "prcDtls": null,
        "addDtls": null,
        "txnDtls": null,
        "overrideDtls": null,
        "batchTableDetails": null
    },
    "extDetails": null,
    "warDtls": [],
    "authoriserDtls": []
  },
  "errors": null,
  "warnings": null,
  "informations": null,
  "authorizations": null,
  "paging": " "
}

```

Figure 8-4 Common Core Additional Attributes

Columns	Data	Model	Constraints	Grants	Statistics	Triggers	Flashback	Dependencies	Details	Partitions	Indexes	SQL	Actions...
UI_KEY	DATA_REF_KEY	FIELD_META_DATA_VER	FIELD_DATA										
1 9811 fagbu-ob-cmn-ds-additional-fields@9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13 1		{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}										
2 5ed3 fagbu-ob-cmn-ds-additional-fields@9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13 1		{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}										
3 7c96 fagbu-ob-cmn-ds-additional-fields@9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13 1		{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}										
4 2826 fagbu-ob-cmn-ds-additional-fields@9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13 1		{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}										
5 832c fagbu-ob-cmn-ds-additional-fields@9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13 1		{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}										

- In the debug, user can find that the common code is used, stemplmpl onCashSubmitTillAcc will be called.

Figure 8-5 Common Code

```

lf-tuning)' o.f.p.c.p.p.PlatoProxyEntityManager : PlatoProxyEntityManager :: Application :: Current A
lf-tuning)' o.f.p.c.p.p.PlatoProxyEntityManager : PlatoProxyEntityManager :: Application :: Current T
lf-tuning)' o.f.p.c.p.p.PlatoProxyEntityManager : The application [ App id = SRVCMNTXN / Tenant Id =
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : appId [ SRVCMNTXN ]
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : tenantId [ SRVCMNTXN ]
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : emType [ APPLICATION ]
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : Entity Manager Factory is available in Cache for th
lf-tuning)' StepImpl : Here for function code 9999 and beanname is FC9999
lf-tuning)' StepImpl : onCashSubmitTillAcc operation
lf-tuning)' o.f.o.s.s.t.domain.CashService : inside onCashSubmitTillAcc
lf-tuning)' o.f.o.s.s.t.s.TransactionServiceImpl : START fetching the data
lf-tuning)' o.f.o.s.s.t.s.TransactionServiceImpl : START fetching the data
lf-tuning)' o.f.o.s.s.t.domain.CashService : after calll to move data from work to main charges
lf-tuning)' o.f.o.s.s.t.domain.CashService : Going to call EJ Creation
lf-tuning)' o.f.o.s.s.srv.transaction.util.Common : GenerateEJIdStep ends
lf-tuning)' o.f.o.s.s.t.domain.CashService : Going for enrichment
lf-tuning)' o.f.o.s.s.t.domain.CashService : Going for validate Roles check
lf-tuning)' o.f.o.s.s.srv.transaction.util.Common : inside validateRole
lf-tuning)' o.f.o.s.s.srv.transaction.client.SMSImpl : Going to call userLoginId
lf-tuning)' o.f.o.s.s.t.domain.CashService : Goinf for balance check

```

8.3 Exact Clone with Additional Fields Using Extensible Code

This topic provides the systematic instructions to the exact clone with additional fields using extensible code.

A screen is created with function code 9999 and Additional Fields as 4th data segment.

Figure 8-6 Additional Fields Segment

- A library reference is added weblogic.xml (obremo-srv-ext-common-txn) for extensibility. A new jar obremosrvcmn-common-txn, which holds the most of the code of transaction service and can be a dependency in the external jar

```

<wls:library-ref>
  <wls:library-name>obremo-srv-cmn-common-txn</wls:library-name>
</wls:library-ref>

```

8.4 Jar Deployment in Weblogic

This topic provides the systematic instructions to the Jar Deployment in Weblogic.

Below screen shows the Jar Deployment in weblogic.

Figure 8-7 Jar Deployment

<input type="checkbox"/>	 obremo-srv-cmn-transaction-services-5.2.0_snapshot	Active	✓ OK	Web Application	SERVICING	Global		1
<input type="checkbox"/>	 obremo-srv-cus-customer-services-5.2.0_snapshot	Active	✓ OK	Web Application	SERVICING	Global		1
<input type="checkbox"/>	 obremo-srv-ext-common-bn	Active		Library	SERVICING	Global		1

Response:

```
{
  "data": {
    "addDtls": {
      "signatureVerifyIndicator": "Y",
      "hostStatus": null,
      "hostMultiTripId": null,
      "txnBranchCcy": "GBP",
      "txnBranchDate": "2020-03-25T18:30:00.000+0000",
      "txnType": "C",
      "cashInOutIndicator": "I",
      "ejLoggingRequired": null,
      "ejTxnAmtMapping": "TO",
      "ejTxnCcyMapping": "TO",
      "adviceName": null,
      "orchestratorId": null,
      "rsp": null,
      "isReversal": "N",
      "crossCcyEnabled": null,
      "isTotChargesReq": null
    },
    "txnDtls": {
      "functionCode": "9999",
      "txnBranchCode": null,
      "txnBranchCcy": null,
      "txnBranchDate": null,
      "requestStatus": "COMPLETED",
      "assignmentMode": null,
      "txnId": "71a08a0f-ee2a-405b-a1e3-b77ca9e59b6e",
      "txnRefNumber": "0002008600007160",
      "tellerSeqNumber": null,
      "overrideConfirmFlag": "N",
      "supervisorId": null,
      "onlineOfflineTxn": null,
      "userComments": null,
      "authoriserComments": null,
      "eventCode": null,
      "accountType": "UBS"
    },
    "dataPayload": {
      "datasegment": null,
      "fromAccountAmt": 100,
      "fromAccountCcy": "GBP",
      "toAccountCcy": "GBP",
      "beneficiaryName": null,
      "beneficiaryAddress1": null,

```

```
"beneficiaryAddress2": null,
"beneficiaryAddress3": null,
"beneficiaryAddress4": null,
"identificationType": null,
"identificationNumber": null,
"exchangeRate": 1,
"recievedAccountCcy": null,
"recievedAccountAmt": null,
"totalCharges":
null,
"cashAmount":
null,
"netAccountCcy": null,
"netAccountAmt": null,
"narrative": "Cash Deposit",
"txnControllerRefNo": null,
"recordId": "bd40562d-06b4-4f95-95fe-
e66fa6eb7f13", "cashAmtCcy": null,
"cashAmt":
null,
"chequeDate": null,
"chequeNumber": null,
"eventCode": null,
"ejId": null,
"emailId": null,
"fromAccountBranch": "000",
"fromAccountNumber": null,
"mobileNumber": null,
"orginalExchangeRate": null,
"payee": null,
"productCode": null,
"reversalDate": null,
"stationId": null,
"toAccountBranch": "000",
"toAccountNumber": "00000008010010",
"toAccountAmt": 100,
"txnBranchCode": "000",
"functionCode": null,
"txnCustomer": null,
"tellerId": null,
"txnDate": 1585161000000,
"txnRefNumber": "0002008600007160",
"txnSeqNumber": null,
"uniqueIdentifierNumber": null,
"uniqueIdentifierType": null,
"userRefNumber": null,
"valueDate": null,
"versionNumber": null,
"referenceNumber": null,
"createdBy": null,
"createdTs": null,
"updatedBy": null,
"updatedTs": null,
"demDtls": null,
```

```

"fxInDemDtls": null,
"fxOutDemDtls": null,
"prcDtls": null,
"addDtls": null,
"txnDtls": null,
"overrideDtls": null,
"batchTableDetails": null
},

"extDetails": null,
"warDtls": [],
"authoriserDtls": []
},

"errors": null,
"warnings": null,
"informations": null,
"authorizations": null,
"paging": ""
}

```

Figure 8-8 Common Core Additional Attributes

UI_KEY	DATA_REF_KEY	FIELD_META_DATA_VER	FIELD_DATA
1 9811 fagbu-ob-cmn-ds-additional-fields#9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13	1	{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}
2 5ed3 fagbu-ob-cmn-ds-additional-fields#9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13	1	{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}
3 7c96 fagbu-ob-cmn-ds-additional-fields#9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13	1	{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}
4 2826 fagbu-ob-cmn-ds-additional-fields#9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13	1	{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}
5 632c fagbu-ob-cmn-ds-additional-fields#9999	bd40562d-06b4-4f95-95fe-e66fa6eb7f13	1	{"OTH_Year": "2020", "OTH_Amount": 100, "OTH_Number": "DAHFM214AH"}

- In the debug, the extensible code is used, which is present in the extension jar (obremo-srv-ext-commontxn.jar). Instead stemplImpl onCashSubmitTillAcc, FC9999 onCashSubmitTillAcc will be called, where user can add code that is required for the new dataSegment added or to achieve different functionality of charging, accounting, till updates, etc

Figure 8-9 Debug Codes

```

lf-tuning)' o.f.p.c.p.p.PlatoProxyEntityManager : PlatoProxyEntityManager :: Application :: Current Ap
lf-tuning)' o.f.p.c.p.p.PlatoProxyEntityManager : PlatoProxyEntityManager :: Application :: Current Te
lf-tuning)' o.f.p.c.p.p.PlatoProxyEntityManager : The application [ App id = SRVCMNTXN / Tenant Id = r
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : appId [ SRVCMNTXN ]
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : tenantId [ SRVCMNTXN ]
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : emType [ APPLICATION ]
lf-tuning)' o.f.p.c.p.provider.PlatoRegistry : Entity Manager Factory is available in Cache for the
lf-tuning)' FC9999 : Here for function code 9999 and beanname is FC9999
lf-tuning)' FC9999 : onCashSubmitTillAcc operation
lf-tuning)' o.f.o.s.s.t.domain.CashService : inside onCashSubmitTillAcc
lf-tuning)' o.f.o.s.s.t.s.TransactionServiceImpl : START fetching the data
lf-tuning)' o.f.o.s.s.t.s.TransactionServiceImpl : START fetching the data
lf-tuning)' o.f.o.s.s.t.domain.CashService : after call to move data from work to main charges a
lf-tuning)' o.f.o.s.s.t.domain.CashService : Going to call EJ Creation
lf-tuning)' o.f.o.s.srv.transaction.util.Common : GenerateEJIdStep ends
lf-tuning)' o.f.o.s.s.t.domain.CashService : Going for enrichment
lf-tuning)' o.f.o.s.s.t.domain.CashService : Going for validate Roles check
lf-tuning)' o.f.o.s.srv.transaction.util.Common : inside validateRole
lf-tuning)' o.f.o.s.srv.transaction.client.SMSImpl : Going to call userLoginId
lf-tuning)' o.f.o.s.s.t.domain.CashService : Goinf for balance check

```

Extensibility Use Cases for OBX

This topic provides the systematic instructions to perform the basic operations on the Extensibility Use Cases for OBX.

This topic describes the following sub-topics:

- [New Transaction screen – 1499 \(Clone of 1401\)](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [New Data Segment in Existing 1401 Screen](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [HTML Changes](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [JS Changes](#)
This topic provides the systematic instructions to JS fields.
- [JSON Changes](#)
This topic describes the changes JSON fields across all the screens.
- [Model Changes](#)
This topic provides the systematic instructions to Model Changes.
- [Database Changes](#)
This topic provides the systematic instructions to Database Changes.
- [Service Component](#)
This topic provides the systematic instructions to the Service Component.
- [New Field in Existing Base Data Segment](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [HTML Changes \(Extended Components\)](#)
This topic describes the changes Extended Component HTML fields across all the screens.
- [HTML Changes \(Base Component\)](#)
This topic describes the base components HTML fields changes for all the screens.
- [JS Changes \(Base Component\)](#)
This topic describes the base components JS fields changes for all the screens.
- [JS Changes \(Extended Component\)](#)
This topic describes the extended components JS fields changes for all the screens.
- [JSON Changes \(Extended Component\)](#)
This topic describes the extended components JSON fields changes for all the screens.
- [JSON Changes \(Base Component\)](#)
This topic describes the base components JSON fields changes for all the screens.

- [DB Changes](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Add New Columns in Base Component Table](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Steps for adding extra column in task grid](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Steps to use Additional Buttons provision in Task Screen](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Steps to create common-extended folder for extending configJSON.js file](#)
This topic provides the systematic instructions to perform the basic operations on common-extended folder for extending configJSON.js file.
- [Customizing Existing LOV Fetch Result](#)
This topic provides the systematic instructions to perform the basic operations on the Customizing Existing LOV Fetch Result.
- [Steps for adding Pre/post methods in extended components](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [ENDPOINT Overrides](#)
This topic describes the endpoint overrides.
- [Steps to create util-extended folder](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Dynamic Data Configuration \(DDC\)](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.
- [Task Screen Custom Config](#)
This topic provides the systematic instructions to perform the basic operations on the selected records.

9.1 New Transaction screen – 1499 (Clone of 1401)

This topic provides the systematic instructions to perform the basic operations on the selected records.

For this use case, make sure that the data is present in the below tables similar to 1401. The below mentioned tables need to be checked in SMS schema:

- SMS_TM_MENU
- SMS_TM_MENU_Description
- SMS_TM_SERVICE_ACTIVITY
- SMS_TM_FUNCTIONAL_ACTIVITY
- SMS_TM_FUNC_ACTIVITY_DETAIL
- SMS_TM_ROLE_ACTIVITY
- SMS_TM_UI_ACTIVITY

The below mentioned tables need to be checked in Common Core schema:

- CMC_TM_SCREEN_CLASS
- CMC_TM_SCREEN_DS_MAPPING

The below mentioned tables need to be checked in branch Common schema:

- SRV_TM_BC_FUNCTION_INDICATOR
- SRV_TM_BC_FUNCTION_CODE
- SRV_TM_BC_FUNCTION_PREF
- SRV_TM_BC_FUNCTION_PREF_DTLS
- SRV_TM_BC_BRANCH_ACCOUNTING
- SRV_TM_MENU_CONFIG

Figure 9-1 Cash Deposit Clone

The screenshot displays the 'Cash Deposit Clone' interface. At the top, there are input fields for 'Account Number', 'Exchange Rate' (set to 1.00), 'Total Charge Amount' (GBP0.00), and 'Narrative' (Cash Deposit). To the right, 'Transaction Amount' and 'Account Amount' are both set to GBP100.00. Below these fields is a 'Charge Details' section with a 'Denomination' tab. This tab contains two tables: 'Bills' and 'Coins'. The 'Bills' table has columns for Denom Code, Units, and Value, with rows for 100, 50, 20, 10, 5, and 100. The 'Coins' table has columns for Denom Code, Units, and Value, with rows for 2, 1, 0.5, 0.2, 0.1, and 0.05. On the right side of the screen, there are three panels: 'Current Till Position' (GBP0,016,553.33), 'Alerts' (No record to display), and 'Frequent Customer Operations'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

Figure 9-2 Information Message

This screenshot shows the same 'Cash Deposit Clone' interface as Figure 9-1, but with an 'Information' message box overlaid in the center. The message box has a green header with a checkmark icon and the text 'Information'. The main text of the message is 'Transaction completed successfully'. There is an 'OK' button at the bottom right of the message box. The background interface elements, including the account details, denomination tables, and right-side panels, are visible but slightly dimmed behind the message box.

9.2 New Data Segment in Existing 1401 Screen

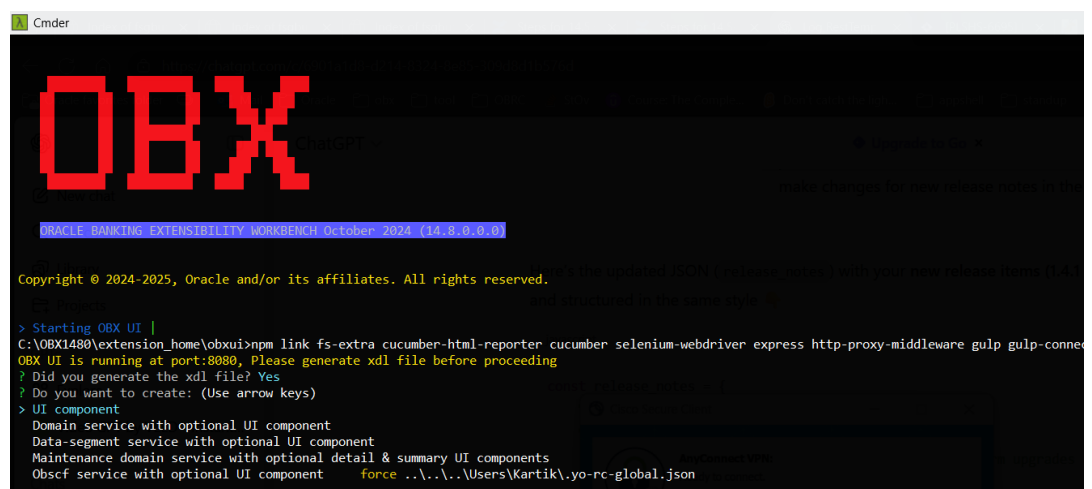
This topic provides the systematic instructions to perform the basic operations on the selected records.

For this use case, it is needed to implement UI Component and Service side to persist data.

The steps to create UI Component are as follows:

1. Start OBX and create XDL by running command **obx xdl-gen**.
2. Once XDL is created, go to Cmdr tab, and press Y for XDL generation.

Figure 9-3 OBX XDL generation



```
Cmdr

OBX

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> Starting OBX UI |
C:\OBX1480\extension_home\obxui>npm link fs-extra cucumber-html-reporter cucumber selenium-webdriver express http-proxy-middleware gulp gulp-concat
OBX UI is running at port:8080, Please generate xdl file before proceeding
? Did you generate the xdl file? Yes
? Do you want to create: (Use arrow keys)
> UI component
  Domain service with optional UI component
  Data-segment service with optional UI component
  Maintenance domain service with optional detail & summary UI components
  Obscf service with optional UI component  force ..\..\..\Users\Kartik\..rc-global.json
```

3. Select the option UI Component.
4. Select product family as Oracle Banking Retail Mid Office.
5. Specify the name of virtual page/data-segment/stand-alone component to be created.
6. Specify absolute path of the XDL generated. (XDL is generated inside extension_home folder).

Note

A new UI Component will be created in extension_home folder with prefix obx- vp/ obx-ds. In the Cmdr tab, OBX will prompt to modify Metadata.js file of the newly created component. In addition, the component-server will start running at port 8002.

Figure 9-4 XDL Path

```

C:\OBX1480\extension_home
λ obx ui --vp

OBX

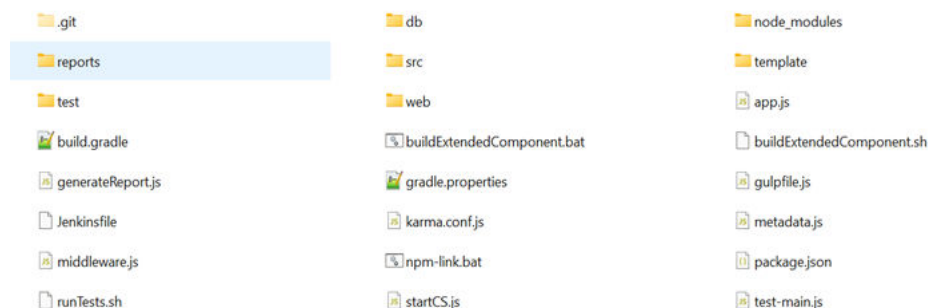
ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)

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? select the product family: Oracle Banking Extensibility Workbench
? Enter Virtual Page Name (I'll prepend obx-vp- to it): customer
? Enter the absolute path of xdl file: C:/Users/Kartik/Downloads/newvessel.xdl
  force ..\yo-rc.json
  force ..\..\..\Users\Kartik\yo-rc-global.json
  create buildExtendedComponent.sh
  create buildExtendedComponent.bat
  create build.gradle
  create gradle.properties
  create package.json
  create Jenkinsfile
  create app.js
  create gulpfile.js
  create startCS.js
  create metadata.js
  create middleware.js
> Generating Libraries/

```

Figure 9-5 Extension Home Folder



- The generated UI component contains boiler plate code to do the common operations of Save, Get, Get All etc. Changes needed in the newly created component from OBX tool from UI side.

9.3 HTML Changes

This topic provides the systematic instructions to perform the basic operations on the selected records.

- According to the screen design, one can change the HTML values like payload() and mobileNumber. If mobileNumber field is entered by the user, value of mobileNumber will directly update the JS payload that will be going as a part of save call.

Figure 9-6 HTML Changes

```

<div id="dialog-content" role="main" class="oj-sm-padding-2x-top">
</div>
</oj-dialog>
<div class="oj-panel oj-sm-margin-2x demo-panel-customizations">
  <div class="oj-flex oj-form-layout oj-sm-only-flex-direction-column oj-lg-flex-items-1">
    <div class="oj-flex-item">
      <div class="oj-form oj-sm-odd-cols-12 oj-md-labels oj-form-cols-labels-inline oj-form-cols-max">
        <div class="oj-flex">
          <div class="oj-flex-item">
            <oj-label for="depositorname" show-required="true">
              <span data-bind="text : labels.obxvpadditionaldetails.depositorName"></span>
            </oj-label>
            <oj-input-text id="depositorname" required="true"
              value="{{payload().depositorName}}"></oj-input-text>
          </div>
          <div class="oj-flex">
            <div class="oj-flex-item">
              <oj-label for="mobilenumber" show-required="true">
                <span data-bind="text : labels.obxvpadditionaldetails.mobileNumber"></span>
              </oj-label>
              <oj-input-text id="mobilenumber" required="true"
                value="{{payload().mobileNumber}}"></oj-input-text>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
</div>

```

- The oj-validation-group is required for configuring the HTML as part of validation.

Figure 9-7 Validation

```

<div class="oj-form oj-form-no-dividers oj-lg-form-across">
  <oj-validation-group data-bind="attr : { 'id' : 'tracker' + unique()}" valid="{{groupValid}}">
    <div id="fsgbu-ob-remo-srv-ds-cash-deposit-input-panel" class="oj-flex wizard-input-panel ">

```

9.4 JS Changes

This topic provides the systematic instructions to JS fields.

Perform the following steps to implement JS changes:

1. Add all the dependencies in define block.
2. The JS **self.payload** is an observable, which will hold all the info inputted from the HTML. All keys in **self.payload** is directly linked with HTML.

Figure 9-8 JS Changes

```
define(['ojs/ojcore',
    'jquery',
    'knockout',
    'ojsL10n!./resources/nls/bundle',
    './model/additionaldetails-model',
    'ojs/ojarraydataprovider',
    'ojs/ojbutton',
    'ojs/ojknockout',
    'ojs/ojinputtext',
    'ojs/ojcheckboxset',
    'ojs/ojtable',
    'cmn-cca/fsgbu-ob-cmn-fd-lov/loader',
    'cmn-cca/fsgbu-ob-cmn-fd-date/loader',
    'cmn-cca/fsgbu-ob-cmn-fd-amount/loader',
    'ojs/ojswitch',
    'ojs/ojpagingcontrol',
    'ojs/ojdialog', 'components/fsgbu-ob-remo-srv-cmn-ct-datasegment/loader'],
function (oj, $, ko, labels, model, ArrayDataProvider) {
    /**
```

Figure 9-9 JS Self Payload

```
self.payload=ko.observable({
    "datasegment": ko.observable(self.datasegment()),
    "depositorName": ko.observable(),
    "mobileNumber": ko.observable(),
})
```

3. Save method implementation will look like in below figure. In the next line, it is making a promise and calling the save function of cmn-ct-datasegment providing the payload and endpoint as parameters. If save is success, it will resolve and for failures it will come to reject.

Figure 9-10 Save Method

```

self.save = function (wiz, data) {
  if (self.validate()) {
    self.payload().isMainDs = false;
    return new Promise(function (resolve, reject) {
      self.cmnCtDatasegment().save(self.payload(), "OBREMO.SAVE_ADDITIONAL_DETAILS").then(function (response) {
        if (!self.isEmptyNullOrUndefined(response.errors)) {
          reject(response);
        }
        else {
          resolve(response)
        }
      });
    });
  }
  else {
    // show messages on all the components
    // that have messages hidden.
    tracker.showMessages();
    tracker.focusOn("@firstInvalidShown");
  }
};

```

4. The function null check is as shown below:

Figure 9-11 Function Null Check

```

self.isEmptyNullOrUndefined = function (value) {
  if (value === "" || value === undefined || value === null) {
    return true;
  } else {
    return false;
  }
};

```

5. The validate function is shown in the below mentioned validate function screen, which will check all mandatory fields during save.

Figure 9-12 Validate Function

```

self.validate = function () {
  tracker = document.getElementById("tracker"+self.unique());
  if (tracker.valid === "valid") {
    return true;
  }
  else {
    return false;
  }
};

```

9.5 JSON Changes

This topic describes the changes JSON fields across all the screens.

The data and datatransferPayload properties need to be exposed from JSON. The data property is used to take the information of transaction specific and the datatransferPayload property is used to share data between data segments.

Figure 9-13 JSON Changes

```

{
  "name": "obx-vp-additionaldetails",
  "version": "1.0.0",
  "jetVersion": ">=5.2.0",
  "properties": {
    "name": {
      "description": "The name to display",
      "type": "string"
    },
    "data": {
      "description": "The name to display",
      "type": "object",
      "writeback": true
    },
    "dataTransferPayload": {
      "description": "The name to display",
      "type": "object",
      "writeback": true
    }
  },
  "methods": {
    "save": {
      "description": "Save and Close"
    }
  },
  "events": {}
}

```

9.6 Model Changes

This topic provides the systematic instructions to Model Changes.

There will be no methods in the model. All the REST calls needs to go through cmn-ct-datasegment similar to Save.

Perform the following steps to make model changes:

1. Run the DB Scripts present in this component.

Note

he OBX generates SQL script with default HEADER_APPID as PXDSSRV001 for all components. This script can be changed and used

2. Create extended war for the component and deploy.

9.7 Database Changes

This topic provides the systematic instructions to Database Changes.

To add database changes to do the following:

1. Add the newly created data segment name in the **PRODUCT_EXTENDED_LEDGER** table (this will be done when DB script from UI component is run).
2. Make a fourth Data Segment entry for function code 1401 in **CMC_TM_SCREEN_DS_MAPPING** table of **CMNCORE**. The **DS_CODE** should be the name of the UI Component created. The entry is as shown in the Data Segment Entry.

Figure 9-14 Data Segment Entry

ID	SCREEN_CLASS_ID	DS_CODE	SEQUENCE	EDIT_FLAG	MANDATORY	DS_DESCRIPTION
1 269a1677-ff70-52fd-904a-b5d0bc93d1pk 1401		fsqbu-ob-remo-srv-ds-charge-details	2N	N		Charge Details
2 269b0677-ff70-48fd-904a-b5d0bc93d1pk 1401		fsqbu-ob-remo-srv-ds-denomination	3N	N		Denomination
3 269a1677-ff70-48fd-904a-b5d0bc93d1pk 1401		fsqbu-ob-remo-srv-ds-cash-deposit	1N	Y		Cash Deposit
4 269a1677-ff70-48fd-904a-b5d0bc93d1pk 1401		obx-vn-additionaldetails	4N	N		Additional Details

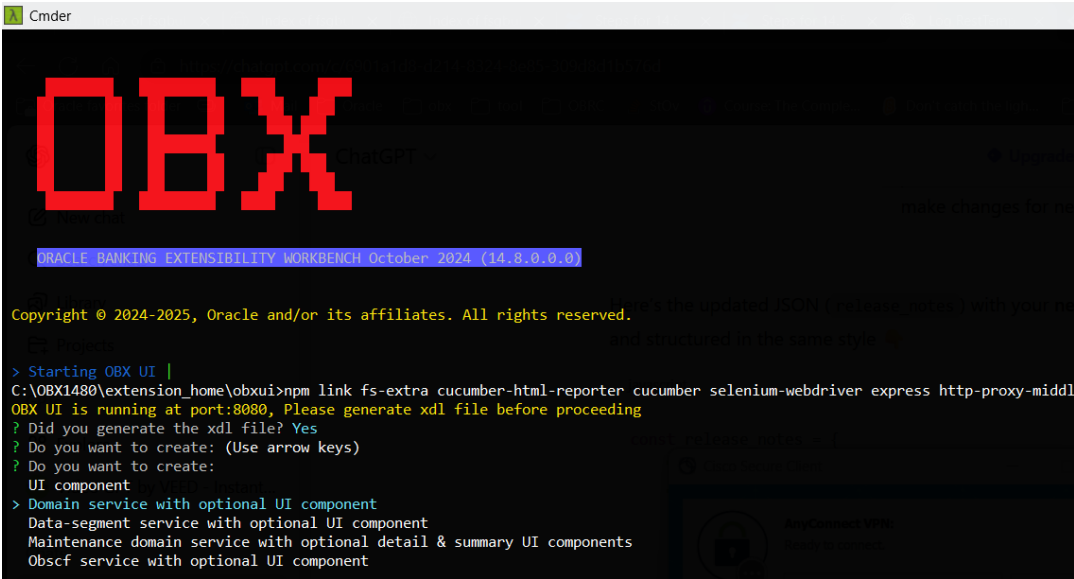
- 3. If the service is created separately than UI Component, change the endpoint URL in SQL script for table PRODUCT_SERVICES_LEDGER accordingly.

9.8 Service Component

This topic provides the systematic instructions to the Service Component.
To create a service component do the following:

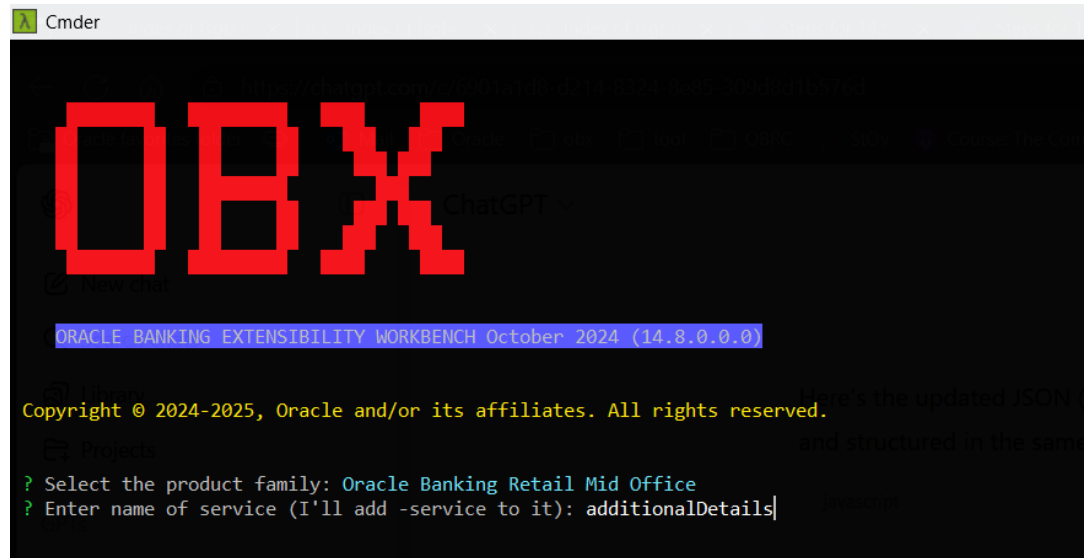
- 1. Start OBX and use the **XDL file** that is already generated.
- 2. Select the domain service with optional UI component.

Figure 9-15 Domain Service



- 3. Select product family as **Oracle Banking Retail Mid Office**.

Figure 9-16 Product Family



```
Cmdr
OBX
ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.
? Select the product family: Oracle Banking Retail Mid Office
? Enter name of service (I'll add -service to it): additionalDetails
```

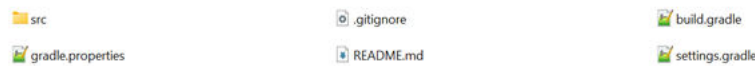
4. Specify the service name as additional Details and all the remaining details as mentioned in the service name screen.

Figure 9-17 Service Name



```
Cmdr
OBX
ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.
? Select the product family: Oracle Banking Retail Mid Office
? Enter name of service (I'll add -service to it): additionalDetails
? Select service tenant type: Single Tenant
? Enter name of Infra (OBMA) data source (I'll add prefix jdbc/ to it): PLATO
? Enter name of Security data source (I'll add prefix jdbc/ to it): PLATO_SECURITY
? Enter name of this service data source (I'll add prefix jdbc/ to it): ENTITY
? Enter product release version: 10.1.0
? Enter the absolute path of xdl file: C:/Users/Kartik/Downloads/newvessel.xdl
```

5. A new service is generated in `extension_home` folder with prefix `obremo-additionadetails-service`.

Figure 9-18 Extension Home Folder

6. Run the DB scripts present in this service.

Note

It will create a new table to persist data of new data segment. For example, a table is created as ADDITIONALDETAILS. This table can be created in existing schema or in a new schema.

7. If user need to create a new schema, mention that in table. PRODUCT_SERVICES_CTX_LEDGER while running UI Component Script.
8. Restart plato servers once this change is completed.
9. If required, make appropriate changes in the service, build it, and deploy.

Note

After deploying extended war and additional details service along with proper DB entry, you can see a new data segment in the appshell screen.

10. Fill the necessary details and click Submit, the data for new DS will be saved in new table.

Figure 9-19 Additional Details Segment
Figure 9-20 Updated Data in New Table

ID	MOBILE_NUMBER	DEPOSITOR_NAME
1	b2ebe8bc-cb89-43d6-b369-447d7477a9ac	8960436521 Alok

9.9 New Field in Existing Base Data Segment

This topic provides the systematic instructions to perform the basic operations on the selected records.

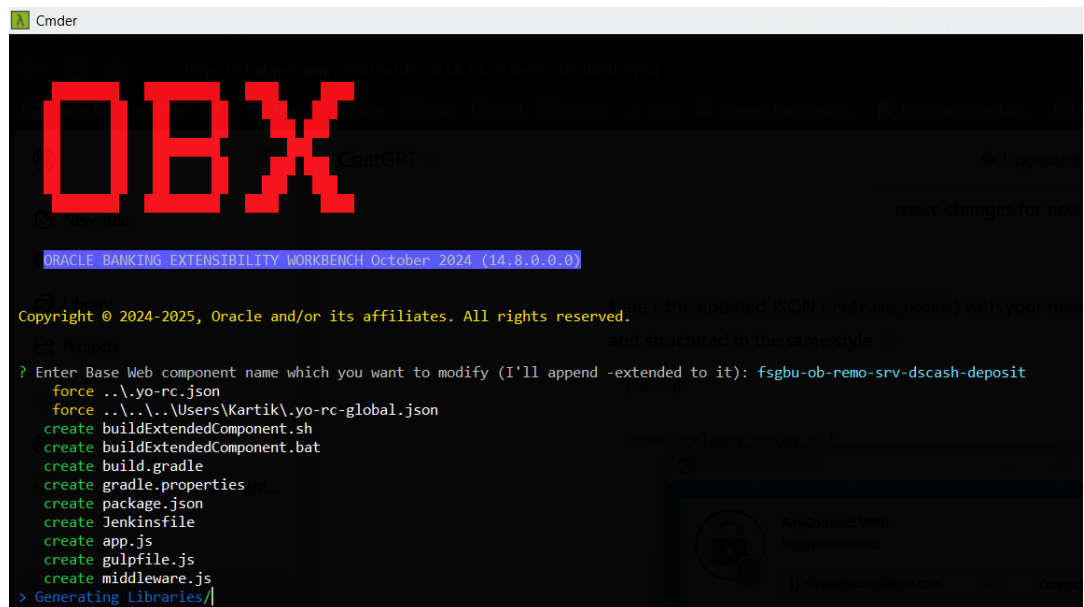
This use case defines a new field in the existing base data segment (fsgbu-ob-remo-srv-ds-cash-deposit) in 1401 screen class.

For this use case, user need to create an extended UI Component, make changes in the existing UI appshell, and make changes in the service.

Perform the following steps:

1. Modify the base component cca and create an extended component. To do this, start OBX and run the command `obx ui --mb`. It will prompt for name of base web component.
2. Specify the name of base web component. A folder will be created with base component name appending -extended at the end of it.

Figure 9-21 Base Web Component



```
Cmder
OBX
ORACLE BANKING EXTENSIBILITY WORKBENCH October 2024 (14.8.0.0.0)
Copyright © 2024-2025, Oracle and/or its affiliates. All rights reserved.
? Enter Base Web component name which you want to modify (I'll append -extended to it): fsgbu-ob-remo-srv-dscash-deposit
force ..\..\.yo-rc.json
force ..\..\Users\Kartik\.yo-rc-global.json
create buildExtendedComponent.sh
create buildExtendedComponent.bat
create build.gradle
create gradle.properties
create package.json
create Jenkinsfile
create app.js
create gulpfile.js
create middleware.js
> Generating Libraries/
```

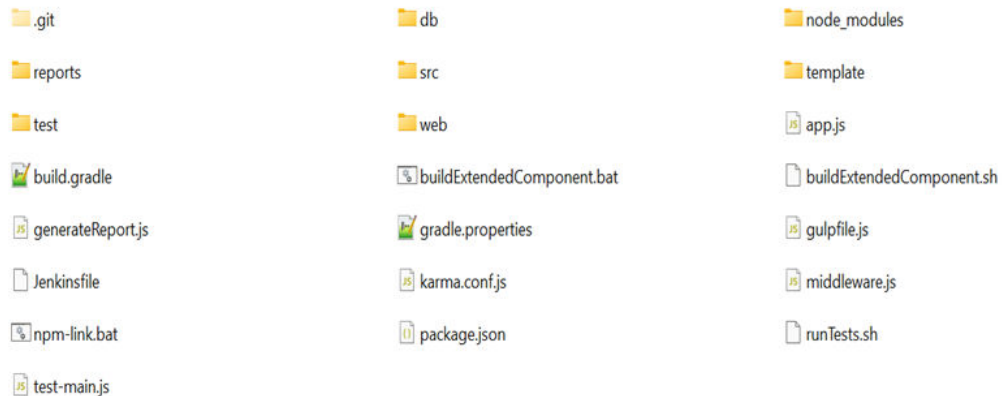
Figure 9-22 Base Web Component

```

Initializing empty Git repository.....
Initialized empty Git repository in C:/OBX1480/extension_home/fsgbu-ob-remo-srv-dscash-deposit-extended/.git/
create template\js\appController.js
create src\components\fsgbu-ob-remo-srv-dscash-deposit-extended\fsgbu-ob-remo-srv-dscash-deposit-extended.json
create src\components\fsgbu-ob-remo-srv-dscash-deposit-extended\fsgbu-ob-remo-srv-dscash-deposit-extended.scss
create src\components\fsgbu-ob-remo-srv-dscash-deposit-extended\fsgbu-ob-remo-srv-dscash-deposit-extended.html
create src\components\fsgbu-ob-remo-srv-dscash-deposit-extended\resources\nls\bundle.js
create src\components\fsgbu-ob-remo-srv-dscash-deposit-extended\fsgbu-ob-remo-srv-dscash-deposit-extended.js
create db\ui-config\config_extended.sql
create generateReport.js
create karma.conf.js
create runTests.sh
create test-main.js
create template\index.html
create template\js\knockout-mapping.js
create template\js\main.js
create test\mocks\common.js
create test\mocks\commonFunction.js
create test\cucumber\features\support\hooks.js
create test\cucumber\features\support\timeouts.js
create test\cucumber\features\support\world.js
create src\components\fsgbu-ob-remo-srv-dscash-deposit-extended\loader.js
create test\components\fsgbu-ob-remo-srv-dscash-deposit-extended\fsgbu-ob-remo-srv-dscash-deposit-extendedSpec.js
create test\cucumber\features\fsgbu-ob-remo-srv-dscash-deposit-extended.feature
create test\cucumber\features\steps\fsgbu-ob-remo-srv-dscash-deposit-extended.js
extended-component created

```

Figure 9-23 Extended Folder

**Note**

The changes are required in the extended component from the UI side.

9.10 HTML Changes (Extended Components)

This topic describes the changes Extended Component HTML fields across all the screens.

The extended component contains the boiler plate codes, in which user need to make the changes as shown in the below HTML Changes (Extended Component) screen. After user make the necessary changes, the additional fields will be added after the existing fields in the base component.

Figure 9-24 HTML Changes (Extended Component)

```

<oj-dialog id='extensiondialog'>
  <!-- <div id='aadharfield' class="oj-flex-item">
    <div class="oj-xl-6 oj-lg-6 oj-md-12 oj-sm-12 oj-flex-item oj-flex wizard-input-field"> -->
    <div id='aadharfield' class="oj-flex-item">
      <oj-label id="ui-id-12-labelled-by">
        <span>
          <!--ko text: labels.aadharNoLbl-->
          <!-- /ko -->
        </span>
      </oj-label>
      <oj-input-text id='aadharNo' value="{{data.aadharNo}}" label-hint="Aadhar Number">
        <input data-oj-internal="" type="text" placeholder="">
      </oj-input-text>
    </div> -->
  </div>
  <div id='panfield' class="oj-flex-item">
    <!-- <div class="oj-xl-6 oj-lg-6 oj-md-12 oj-sm-12 oj-flex-item oj-flex wizard-input-field">
    <div class="oj-flex-item"> -->
    <oj-label id="address3">
      <span>
        <!--ko text: labels.panNoLbl-->
        <!-- /ko -->
      </span>
    </oj-label>
    <oj-input-text id='panNo' value="{{data.panNo}}" label-hint="Pan Number">
      <input data-oj-internal="" type="text" placeholder="">
    </oj-input-text>
  </div> -->
</div> -->
</div>
</oj-dialog>

```

The following changes are required only if user need to add the additional field at the end of the base component and in a separate extension panel. User can choose to add the additional fields in the existing base component or in the extension panel as per the requirement.

Figure 9-25 Extension Panel

```

<!-- <div id="extensionpanel" class="oj-panel oj-panel-shadow-sm oj-sm-margin-2x demo-mypanel">
  <h3 class="oj-header-border">Extension</h3>
  <oj-form-layout id="extension" max-columns="{{columns}}" direction="row">
    <oj-input-text value="{{data.mobile}}" label-hint="Mobile Number"></oj-input-text>
    <oj-input-text value="{{data.address3}}" label-hint="Address3"></oj-input-text>
  </oj-form-layout>
</div> -->

```

9.11 HTML Changes (Base Component)

This topic describes the base components HTML fields changes for all the screens.

Perform the HTML changes in the base component.

Figure 9-26 HTML Changes (Base Component)

```

<!-- ko if: ifExtension -->
<fsgbu-ob-remo-srv-ds-cash-deposit-extended data="{{payload}}" base="{{base}}">
</fsgbu-ob-remo-srv-ds-cash-deposit-extended>
<!-- /ko -->

```

9.12 JS Changes (Base Component)

This topic describes the base components JS fields changes for all the screens.

Perform the JS changes in the base component as shown in the JS Changes (Base Component) screen.

Figure 9-27 JS Changes (Base Component)

```
self.loadExtendedCCA = ko.observable('fsgbu-ob-base-component-extended');
self.ifExtension = ko.observable(false);

self.loadExtendedComponent = function () {
  // eslint-disable-next-line no-undef
  if (requirejs.s.contexts._.config.paths['components/' + self.loadExtendedCCA()]) {
    var componentName = ['components/' + self.loadExtendedCCA() + '/loader'];
    require(componentName, function () {
      self.ifExtension(true);
    });
  }
};
```

The part of code shown below is present in JS or view model file. From the self.connected method, user need to call self.loadExtendedComponent method.

Figure 9-28 Self Connected Method

```
self.connected = function (context) {
  self.loadExtendedComponent();
};
```

9.13 JS Changes (Extended Component)

This topic describes the extended components JS fields changes for all the screens.

In the bindings applied, it will take the ID of the fields and add the additional fields after the field base component. Both additional fields will be added after the field of base component for which the ID is **lastTab**.

Figure 9-29 JS Changes (Extended Component)

```

self.bindingsApplied = function (context) {

    self.entityNameTemplate = document.getElementById('aadharfield');
    self.newentityNameTemplate = self.entityNameTemplate.cloneNode(true);
    document.querySelector("#lastTab").insertAdjacentHTML('afterEnd', self.newentityNameTemplate.outerHTML);

    self.entityNameTemplate1 = document.getElementById('panfield');
    self.newentityNameTemplate1 = self.entityNameTemplate1.cloneNode(true);
    document.querySelector("#lastTab").insertAdjacentHTML('afterEnd', self.newentityNameTemplate1.outerHTML);

    applyBindings(context);
};

function applyBindings(context) {
    ko.applyBindings(mainContentViewModel(context), $("#aadharfield")[0]);
    ko.applyBindings(mainContentViewModel(context), $("#panfield")[0]);
}

```

9.14 JSON Changes (Extended Component)

This topic describes the extended components JSON fields changes for all the screens.

Perform the HTML changes to add data and base property for extended component.

Figure 9-30 Jjson Changes (Extended Component)

```

{
  "name": "fsgbu-ob-remo-srv-ds-cheque-withdrawal-extended",
  "version": "1.0.0",
  "jetVersion": ">=5.2.0",
  "properties": {
    "name": {
      "description": "The name to display",
      "type": "string"
    },
    "data": {
      "description": "The name to display",
      "type": "object",
      "writeback": true
    },
    "base": {
      "description": "The name to display",
      "type": "object",
      "writeback": true
    }
  },
  "methods": {},
  "events": {}
}

```


Figure 9-31 Json Changes (Extended Component)

```

{
  "name": "fsgbu-ob-remo-srv-ds-cheque-withdrawal-extended",
  "version": "1.0.0",
  "jetVersion": ">=5.2.0",
  "properties": {
    "name": {
      "description": "The name to display",
      "type": "string"
    },
    "data": {
      "description": "The name to display",
      "type": "object",
      "writeback": true
    },
    "base": {
      "description": "The name to display",
      "type": "object",
      "writeback": true
    }
  },
  "methods": {},
  "events": {}
}

```

9.15 JSON Changes (Base Component)

This topic describes the base components JSON fields changes for all the screens.

In base component JSON file, the properties is Extensible and authMode are present. User need to make changes in the existing appshell UI component so that it reads the extended component. In addition, it will contain DB scripts which need to be run.

Figure 9-32 JSON Changes (Base Component)

```

" name": "fsgbu-ob-remo-srv-ds-cash-deposit",
"version": "1.0.0",
"isVirtualPage": "true",
"isExtensible": true,
"properties": {
  "name": {
    "description": "The name to display",
    "type": "object"
  },
  "totalDS": {
    "description": "The totalDS to display"
  },
  "data": {
    "description": "The name to display",
    "type": "object",
    "writeback": true
  },
  "authMode": {
    "description": "Authorization mode",
    "type": "boolean"
  }
},

```

9.16 DB Changes

This topic provides the systematic instructions to perform the basic operations on the selected records.

Add the newly created data segment name in the `PRODUCT_EXTENDED_LEDGER` table.

Perform the following steps to make the service level change:

1. Add a new field named `additionalFields` with data type `String` in work and main table entity classes of the respective service. The corresponding setters and getters should also be added in these classes.
`@Column(name = "ADDITIONAL_FIELDS") private String additionalFields.`
2. Add a column with the name **ADDITIONAL_FIELDS** in the main and work tables of the DB with CLOB data type.
3. For persistence of data in main table, add **additionalFields** with data type `String` in model class.
4. Deploy the changed service, extended war component, and changed appshell.

Note

After deployment, the two additional fields named **Pan Number** and **Aadhaar Number** will be added in existing data segment.

5. Specify the necessary details and click **Submit**. The additional fields will be saved in respective work and main table in an additional column **ADDITIONAL_FIELDS**.

Figure 9-33 Data Segment with Additional Fields

The screenshot shows a 'Teller Transaction' form. On the left, there's a 'Customer Search' section with a search icon and a date selector set to 'Mar 26, 2020'. Below this are input fields for 'Cheque Number', 'Cheque Date' (set to 'Mar 26, 2020'), 'Exchange Rate' (set to '1.00'), 'Account Amount' (set to 'GBP10.00'), 'Narrative' (set to 'Cheque Withdrawal'), 'Pan No', and 'Aadhar No'. On the right, there's a section for 'No Customer Image to display' with a 'New' button and a 'Frequent Customer Operations' button. Below this is a table showing account details: 'Account Number', 'Account Branch', 'Account Status', 'Actual Balance', 'Overdraft Limit', and 'Account Balance'. At the bottom right, there are 'Submit' and 'Cancel' buttons.

6. In the request payload from UI to backend, the values appear as follows:

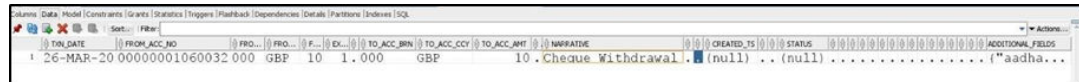
Figure 9-34 Request Payload

```

▼ Request Payload view source
  {
    "datasegment": "fsgbu-ob-remo-srv-ds-cheque-withdrawal",
    "chequeDate": "2020-03-26",
    "addDtls": {
      "txnType": "C",
      "cashInOutIndicator": "0",
      "ejTxnAmtMapping": "FROM",
      "ejTxnCcyMapping": "FROM",
      "additionalFields": "{\"aadharNo\":\"1234567890\",\"panNo\":\"123456abc\"}"
    },
    "chequeDate": "2020-03-26",
    "chequeNumber": "123456"
  }

```

7. The data will get saved in newly added column `Additional Fields` in the respective table.

Figure 9-35 SRV_TB_CH_CASH_TXN Table


TXN DATE	FROM ACC NO	PRD	EX	TO ACC BIN	TO ACC COY	TO ACC AMT	NARRATIVE	CREATED TO	STATUS	ADDITIONAL FIELDS
26-MAR-20	00000001060032 000	GBP	10	1.000	GBP	10	Cheque Withdrawal	(null)	(null)	('aadha...

9.17 Add New Columns in Base Component Table

This topic provides the systematic instructions to perform the basic operations on the selected records.

For adding new columns in base component table to do the following.

1. Create an extended component for the base cca by making these changes in the base accordingly.
2. Changes in base
In HTML

```
<!-- ko if: ifExtension -->
<componentName-extended data="{{base}}">
</componentName-extended>
<!-- /ko -->
```

In JS

```
self.base
= this;
self.ifExtension = ko.observable(false);
self.connected = function () {
    if
    (requirejs.s.contexts._.config.paths['components/componentName-
extended']) {
        require(['components/componentName-extended/loader'], function
        () {
            self.ifExtension(true);
        });
    }
}
```

3. Changes in extended

```
self.bindingsApplied = function (context) {
    context.props.then(function (properties) {
        console.log(properties.data.columnArray);
        properties.data.columnArray.splice(columnIndex, 0,
        {
            headerText: "Manager Id",
            field: "ManagerId"
        });
        tableId.refresh(properties.data.columnArray);
    });
}
```

4. Changes needed at service level.
For data inside table, custom projection service had to be written, custom events needs to be raised while custom fields persistence. For base fields, a call can be made from projection service to base service to fetch data and persisting the same over projection schema.

9.18 Steps for adding extra column in task grid

This topic provides the systematic instructions to perform the basic operations on the selected records.

For adding extra column in task grid to do the following:

1. Clone the respective Free/My/Hold Task components.
2. Then the additional column can be added using the following example code snippet.

```
self.additionalColumns = [{
    dataIndex: 'customerName',
    dataType: 'string',
    displayType: 'text',
    width: '60px',
    sortable: true,
    resizable: true,
    accessTo: ['AVAILABLE', 'HOLD', 'ACQUIRED']
}];
```

The above code needs to be added in js file of the cloned components.

While calling **fsgbu-ob-cmn-fd-work-list** from the html of the cloned components please make a call like this (which also sends additional columns as a property).

Example:

```
<fsgbu-ob-cmn-fd-work-list id='completedTaskGridCCA' dashboard-
id='STANDARD' dashboard-
queue-name='ACQUIRED'
  process-code={{processCode}} dashboard-queue-type='L' worklist-
columns='{{columnArray}}'
  additional-columns='{{additionalColumns}}' page-size=20 dependent-
vm="{{dialogParameters}}"></fsgbu-ob-cmn-fd-work-list>
```

3. Making these changes would display the extra column in the task screens.

9.19 Steps to use Additional Buttons provision in Task Screen

This topic provides the systematic instructions to perform the basic operations on the selected records.

In the custom component (example - fsgbu-ob-slp0-vp-wl-locked-task-extended) from where user will be calling **fsgbu-ob-cmn-fd-work-list**, make the following changes:

1. In the js file user can declare an array of the buttons user want to include like this-

```
self.extraButtons = [{      label: 'Extraa',      icons: {
start: 'oj-ux-ico-refresh' },      display: 'all',
accessTo: ['L', 'F', 'H', 'C', 'S', 'A', 'O', 'T', 'WFCC']
}, {      label: 'Extrab',
icons: { start: 'oj-ux-ico-refresh' },
display: 'all',      accessTo: ['L', 'F']
}
]
```

2. And also the method which needs to be executed on the button click.

```
self.extraa = function(data){
console.log("it got called");
}
```

Note

The function name should be same as label of the button (in lower case).

3. In the HTML file, additional buttons attribute needs to be included like this:

```
<fsgbu-ob-cmn-fd-work-list id='completedTaskGridCCA' dashboard-
id='STANDARD'
dashboard-queue-name='ACQUIRED' dashboard-queue-type='L' worklist-
columns='{{columnArray}}' additional-columns='{{additionalColumns}}'
additional-buttons='{{extraButtons}}' page-size=20>
</fsgbu-ob-cmn-fd-work-list>
```

4. In the json file, the methods which would be implemented on the custom button click needs to be exposed.

```
"methods": {
  "extraa": {
    "description": "Would be implemented on Extraa button click"
  },
  "extrab": {
    "description": "Would be implemented on Extrab button click"
  }
}
```

9.20 Steps to create common-extended folder for extending configJSON.js file

This topic provides the systematic instructions to perform the basic operations on common-extended folder for extending configJSON.js file.

For creating common-extended folder for extending configJSON.js file to do the following:

1. Create a folder inside **extended-components\js\components**.
2. Folder structure **\common-extended\js\util**.
3. Next we will add a file configJSON.js in the created folder.
4. The code inside this configJSON.js would be like-

```
define(['cmn-util/configJSON'], function (baseobj) {
  baseobj.applicationObject.entityIdByProcessCode['CUSTOM'] = { 'ccName':
    'fsgbu-
    ob-remo-deposit-ct-process-flow', 'Name': 'RD Amount Block', 'shortName':
    'RD
    Amount Block' };
});
```

5. Some understanding of the code: -
 - Including the base object by giving the path of configJSON.js base file.
 - Then for example adding the entry for custom process as shown above.
 - The extended configJSON file would be loaded from base commonFunction.js
6. Insertion of the below script into PRODUCT_EXTENDED_LEDGER table

```
Insert into PRODUCT_EXTENDED_LEDGER
(ID,CCA_NAME,CCA_TYPE,PARENT_CCA_NAME,PRODUCT_NAME) select nvl(new_uuid
,'common-extended','config',null,'EXTENDED_COMPONENTS' from
PRODUCT_EXTENDED_LEDGER;
```

9.21 Customizing Existing LOV Fetch Result

This topic provides the systematic instructions to perform the basic operations on the Customizing Existing LOV Fetch Result.

Modifying the retrieval output of an existing LOV to meet specific requirements.

- Ins cope Data segment can be used for addition of new fields. (using jquery, at any position, we can add the field).
- Service Extensibility to be used for overriding the base method, OBX tool will generate the base service jar from base service war and this jar should be used to override the base service method and implement the custom changes.
- From UI, call will go to custom service, from custom service, call will go to base service for base field persistence as Java to Java call, then custom functionality to be implemented for persistence of custom fields as part of REST call to another custom service.
- For LOV data, custom projection service to be written. Custom Event needs to be raised while custom fields persistence. For base fields, a call can be made from projection service to base service to fetch data and persisting over the projection schema.

9.22 Steps for adding Pre/post methods in extended components

This topic provides the systematic instructions to perform the basic operations on the selected records.

Suppose here we consider that we want to persist custom fields on postnext call (which means first 'self.next' method of base would get called and then the control will come in postnext method written in extended component).

1. Write postnext method in .js file of the extended component – where in user can call the custom Api for persisting the custom fields.
2. Expose this method in the .json file of the extended component.
3. Similarly we can add prenext method as well.(it would get executed before 'self.next' method of base executes).

Note

The hooks for these methods to work should be a part of common infrastructure components in appshell.

4. Below is the list of CCAs and the common methods which has pre and post hooks:

Table 9-1 List of CCAs - Field Description

CCA Name	Common method name	Pre hook present	Post hook present
fsgbu-ob-cmn-ct-authorization	compare	No	Yes
	approve	No	Yes
fsgbu-ob-cmn-ct-act-summary- template	delete	No	Yes
	reopen	No	Yes
	close	No	Yes
fsgbu-ob-cmn-ct-maintenance	save	Yes	Yes
fsgbu-ob-cmn-ct-wizard	next	Yes	Yes
	previous	Yes	Yes
	saveClose	Yes	Yes
	cancel	Yes	Yes
	hold	Yes	Yes
	Applicable for custom footer buttons as well	Yes	Yes
fsgbu-ob-cmn-ct-rs-authorization	approve	No	Yes
fsgbu-ob-cmn-ct-summary-template	delete	No	Yes
	open	No	Yes
	close	No	Yes

9.23 ENDPOINT Overrides

This topic describes the endpoint overrides.

To enhance the endpoint override extensibility, we've added a new column, **CCA_NAME**, to the **PRODUCT_SERVICE_EXT_LEDGER** table.

This column provides an extensibility for overriding the existing endpoint behaviour for specific UI components.

How to configure:

1. Determine the component for which user want to override the endpoint.
2. Enter the component's name in the **CCA_NAME** column of the **PRODUCT_SERVICE_EXT_LEDGER** table.
3. **PRODUCT_NAME** & **ENDPOINT_KEY** must be same as endpoint we are extending.
4. The **ENDPOINT_VALUE** field should be populated with the new endpoint URI, while the **SERVICE_NAME** field should specify the corresponding service to which this endpoint belongs.
5. An entry of extension service should also be present in **PRODUCT_SERVICE_CTX_LEDGER** to pick up the new APPID or other properties.
6. If **CCA_NAME** column contains **NULL** value, then endpoint override will be applicable across all components subscribed to respective **ENDPOINT_KEY**.

Figure 9-36 Endpoint 1

ID	PRODUCT_NAME	ENDPOINT_KEY	ENDPOINT_VALUE	SERVICE_NAME	CCA_NAME
1	1 OBEDX	CORPORATE_PREFERENCES	/web/v1/corporatemaintenance/corporatenames	obedx-core-service	fsgbu-ob-edx-wd-todays-snapshot

Figure 9-37 Endpoint 2

ID	PROD...	ENDPOINT_KEY	ENDPOINT_VALUE	REQUEST...	SERVICE_NAME
1	388 OBEDX	CORPORATE_PREFERENCES	/web/v1/corporatemaintenance	GET	obedx-core-service

How it works:

When a request is made for the component, the ext orchestrator service will now consult the **CCA_NAME** column. If a matching entry exists, the endpoint specified in the ext orchestrator service (**PRODUCT_SERVICE_EXT_LEDGER**) will take precedence over the existing endpoint of base product.

This new approach offers several advantages:

- Any endpoint can be extended using this approach.
- The **PRODUCT_SERVICE_EXT_LEDGER** table is independent of product-related flyway updates, ensuring that future changes won't impact existing overrides.
- This extensibility allows for specific endpoint overrides, other components are unaffected with their original endpoints.

9.24 Steps to create util-extended folder

This topic provides the systematic instructions to perform the basic operations on the selected records.

1. Create a folder inside extended-components\js\components in app-shell for component user want to make label-changes.
2. Folder structure: <%componentName%>-util-extended\resources\<component-name>\nls.
Example : for sms it would look like: sms-util-extended\resources\sms\nls.
3. Add the file bundle.js in the created folder.
4. The code inside bundle.js would be like-

```
define(['ojL10n!' + window.location.origin + '/<%componentName%>-component-  
server/js/components/resources/<%componentName%>/nls/bundle.js'],  
function (baseLabels) {  
    baseLabels.fsgbuobsmsmnusers.lblhomeBranch = "Foreign111n Branch"  
    baseLabels.fsgbuobsmsmnusers.lblstatusChangedOn = "Yogesh"    return  
    {  
        'root': baseLabels  
    };  
});
```

5. Some understanding for the code: -
 - Including the base labels by giving the path of bundle.js of main component.
 - Then changing the labels accordingly like in the example above -> Home Branch is replaced with "Foreign111n Branch".
 - Returning the labels (including the changes).
6. Insertion of the below script into **PRODUCT_EXTENDED_LEDGER** table.

```
Insert into PRODUCT_EXTENDED_LEDGER  
ID,CCA_NAME,CCA_TYPE,PARENT_CCA_NAME,PRODUCT_NAME)  
select nvl(new_uuid , '<%=componentName%>-util-  
extended','util',null,'EXTENDED_COMPONENTS' from PRODUCT_EXTENDED_LEDGER;
```

9.25 Dynamic Data Configuration (DDC)

This topic provides the systematic instructions to perform the basic operations on the selected records.

DDC is an infrastructure component comprising a user interface and a service.

It empowers developers to define prepared statements for dynamic data retrieval. The Dynamic Data Configuration (DDC) service's response is utilized by UI components or invoking services to render List of Values (LOV) results.

Dynamic Data Configuration infra can be utilized with OBX code to call endpoint and bind the response.

Prerequisites:

- For domain services to perform dynamic data queries on the domain schema, the `@ComponentScan` annotation must include the "oracle.fsgbu.plato.validation" where domain services reside.

Figure 9-38 Plato Validation

```
@SpringBootApplication
@ComponentScan({ "oracle.fsgbu.obedx", "oracle.fsgbu.gcs", "oracle.fsgbu.gus", "oracle.fsgbu.plato.flyway", "oracle.fsgbu.
sms", "oracle.fsgbu.plato.common", "oracle.fsgbu.plato.core", "oracle.fsgbu.plato.logger", "oracle.fsgbu.plato.eventhub",
"oracle.fsgbu.plato.batch", "oracle.fsgbu.plato.coherence", "oracle.fsgbu.plato.validation" })
@EnableEurekaClient
@EnableScheduling
@EnableAsync
public class WorkflowApplication extends SpringBootServletInitializer implements WebApplicationInitializer {
```

- A database schema created for the Dynamic Data Configuration service.
- A configured JDBC data source named **jdbc/PLATODYNADATA** on the server.
- Configure newly created schema name in **PROPERTIES** table of **PLATO** schema.

Figure 9-39 PLATO schema

APPLICATION	PROFILE	LABEL	KEY	VALUE
plato-dynamic-data-services	jdbc	jdbc	flyway.domain.schemas	OBEDX_PLATODYNADATA_DEV1
plato-dynamic-data-services	jdbc	jdbc	flyway.domain.placeholderReplacement	false
plato-dynamic-data-services	jdbc	jdbc	flyway.domain.outOfOrder	true
plato-dynamic-data-services	jdbc	jdbc	flyway.domain.locations	db/migration/domain
plato-dynamic-data-services	jdbc	jdbc	flyway.domain.ignoreMissingMigrations	true
plato-dynamic-data-services	jdbc	jdbc	flyway.domain.db.jndi	jdbc/PLATODYNADATA

Deployment Steps:

1. Deploy the Dynamic Data Configuration service to the server.
2. Once deployed, the Dynamic Data Configuration user interface should be accessible.

Configuration steps:

1. Select the desired **product processor**.
2. Specify the **service name**.
3. Define the **unique key** for the data.
4. List the required **columns**.
5. Provide the **from query** to retrieve data.
6. Set the **paging parameters** (if applicable).
7. Determine the desired **response format**.

Figure 9-40 Dynamic Data Configure

Dynamic Data Configure

ResetSaveUpdateDeleteGet All

Exit

Product Processor

PLATO_PASSWORD

Service Name

plato-password-policy-service

Key

test1

Column List

DEFAULT_VALUE

From Query

PLATO_TM_PASSWORD_POLICY_D
ETAIL where FIELD_NAME=?
FIELD_NAME

Paging Param

OFFSET ?offset ROWS FETCH NEXT
?limit ROWS ONLY

Format Response

{ "data": "%response%", "paging":
{ "totalResults":
"%totalResultCount%", "error":
"%error%" } }

Query to be executed

SELECT DEFAULT_VALUE FROM
PLATO_TM_PASSWORD_POLICY
_DETAIL where FIELD_NAME=?
FIELD_NAME OFFSET ?offset
ROWS FETCH NEXT ?limit ROWS

Test API

Test LOV

Product Processor

Key

Service Name

Column List

From Query

Paging Param

PLATO_PASSWORD

test1

plato-password-policy-services

DEFAULT_VALUE

PLATO_TM_PASSWORD_POLICY_DETAIL where FIELD_NAME=?FIELD_NAME

OFFSET ?offset ROWS FETCH NEXT ?

Test Query:

- **Test API:** Use the test API to execute the query. Provide any necessary query parameters and click "OK." The results will be displayed based on the query.

Figure 9-41 Modal Dialog

Dynamic Data Configure

ResetSaveUpdateDeleteGet All

Exit

Product Processor

PLATO_PASSWORD

Service Name

plato

Key

Column List

DEFAULT_VALUE

From Query

PLATO_TM_PASSWORD_POLICY_D
ETAIL where FIELD_NAME=?
FIELD_NAME

Paging Param

OFF
?lim

Query to be executed

SELECT DEFAULT_VALUE FROM
PLATO_TM_PASSWORD_POLICY
_DETAIL where FIELD_NAME=?
FIELD_NAME OFFSET ?offset
ROWS FETCH NEXT ?limit ROWS

Test API

Test LOV

Product Processor

Key

Service Name

Column List

From Query

Paging Param

PLATO_PASSWORD

test1

plato-password-policy-services

DEFAULT_VALUE

PLATO_TM_PASSWORD_POLICY_DETAIL where FIELD_NAME=?FIELD_NAME

OFFSET ?offset ROWS FETCH NEXT ?

Modal Dialog

"Enter the query params "

0&offset=0&FIELD_NAME="account"

Required

OK

Figure 9-42 Success

ORACLE

Dynamic Data Conf

ResetSaveUpdate

Exit

Product Processor

PLATO_PASSWORD

From Query

PLATO_TM_PASSWORD_P
ETAIL where FIELD_NAME
FIELD_NAME

Test API

Test LOV

Product Processor

Key

Service Name

Column List

From Query

Paging Param

PLATO_PASSWORD

test1

plato-password-policy-services

DEFAULT_VALUE

PLATO_TM_PASSWORD_POLICY_DETAIL where FIELD_NAME=?FIELD_NAME

OFFSET ?offset ROWS FETCH NEXT ?

Success

```
{  
  "data": [  
    {  
      "DEFAULT_VALUE": "1234"  
    }  
  ],  
  "paging": {  
    "totalResults": 1  
  },  
  "error": "null"  
}
```

OK

- **Test LOV:** If applicable, use the test List of Values (LOV) to test the query.

Figure 9-43 Modal Dialog

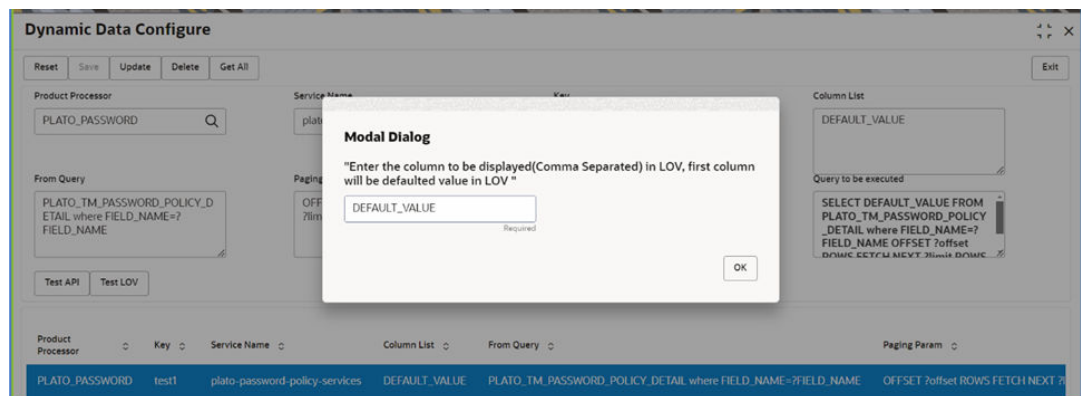
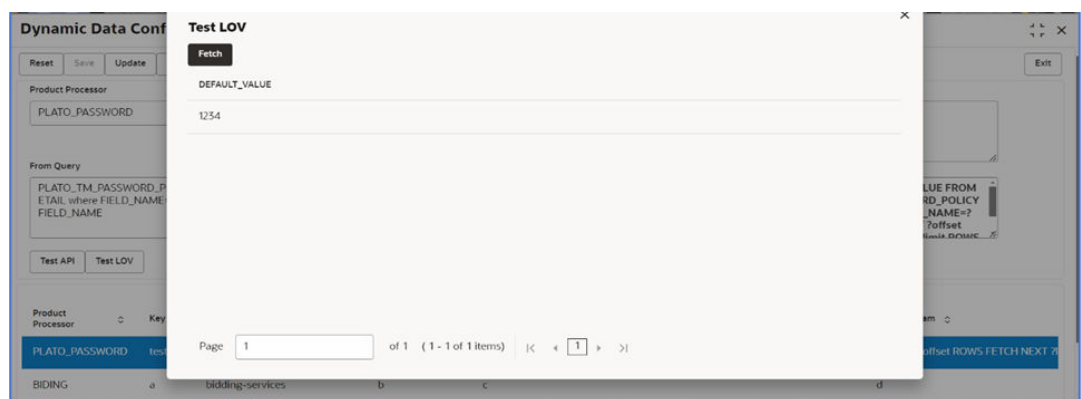


Figure 9-44 Test LOV



Once satisfied with the results, save the dynamic data query.

9.26 Task Screen Custom Config

This topic provides the systematic instructions to perform the basic operations on the selected records.

This document outlines how to customize the task screen using a **CUSTOM_CONFIG** table, user can show or hide existing columns, and even add additional filters to the task search screen for specific fields.

Prerequisites:

Ensure that all columns on the task screen are listed in the **CUSTOM_CONFIG** table present in **PLATO_ORCH** schema. All the default columns would already be present in this table.

- For all the default columns in Task screen, **TASK_SCREEN_VIEW** column value will be set to **YES** by default. If consulting wishes to hide any default column, they can set it to **NO**.
- Also, if they wish to add new custom column, they need to add the key (key in which we will get the value of custom field in response of task screen **plato-orch-service/api/v1/**

`extn/tasks api`) of that column in **CUSTOM_FIELD_NAME** column in **CUSTOM_CONFIG** table.

Adding Custom Filters

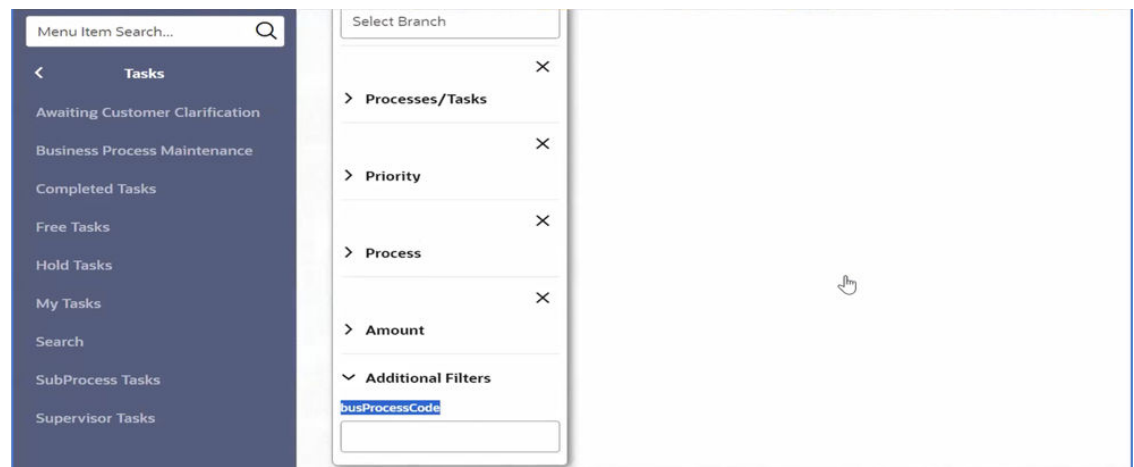
1. Determine the custom field for which user want to add a filter.
2. Update **CUSTOM_CONFIG** table:
 - Add the field name (custom field key) to the **CUSTOM_FIELD_NAME** column.
 - Set the **SEARCH_SCREEN_VIEW** column to **YES** for this field.

Once these changes are made, the additional filter will be displayed on the search screen's UI.

Figure 9-45 Custom Fields 1

	CUSTOM_FIELD_NAME	MAPPED_COLUMN	TASK_SCREEN_VIEW	SEARCH_SCREEN_VIEW	WIDTH	ORDER_NUMBER
1	busProcessCode	COLUMN4	NO	YES	200	11
2	priority	(null)	YES	NO	75px	1
3	processName	(null)	YES	NO	170px	2
4	processRefNo	(null)	YES	NO	200px	3
5	applicationNumber	(null)	YES	NO	165px	4
6	stage	(null)	YES	NO	200px	5
7	startTime	(null)	YES	NO	200px	6
8	branchCode	(null)	YES	NO	120px	7
9	referenceNumber	(null)	YES	NO	200px	8
10	customerNumber	(null)	YES	NO	200px	9
11	amountWithCurrency	(null)	YES	NO	200px	10

Figure 9-46 Screen UI



Hiding/Adding Columns on the Task Screen:

1. Identify the column user want to hide.
2. Update **CUSTOM_CONFIG** table:
Set the **TASK_SCREEN_VIEW** column to **NO** for that column.

After updating the configuration, the column will no longer be visible on the task screen.

Figure 9-47 Custom Fields 2

	CUSTOM_FIELD_NAME	MAPPED_COLUMN_NAME	TASK_SCREEN_VIEW	SEARCH_SCREEN_VIEW	WIDTH	ORDER_NUMBER
1	busProcessCode	COLUMN4	NO	YES	200	11
2	priority	(null)	YES	NO	75px	1
3	processName	(null)	NO	NO	170px	2
4	processRefNo	(null)	YES	NO	200px	3
5	applicationNumber	(null)	YES	NO	165px	4
6	stage	(null)	YES	NO	200px	5
7	startTime	(null)	YES	NO	200px	6
8	branchCode	(null)	YES	NO	120px	7
9	referenceNumber	(null)	YES	NO	200px	8
10	customerNumber	(null)	YES	NO	200px	9
11	amountWithCurrency	(null)	YES	NO	200px	10

Figure 9-48 Task List

	Edit	Priority	Process Reference Number	Application Number	Stage	Application Date
<input type="checkbox"/>	Edit	1	300ILC1012269	300ILC1012269	TEST STAGES5	18-05-05

Similarly, we can even add new custom column in Task screens. For this they need to add the custom field name (key in which we will get the value of custom field in response of task screen `plato-orch-service/api/v1/extn/tasks` api) of that column in **CUSTOM_FIELD_NAME** column in **CUSTOM_CONFIG** table.

Configurations needed from backend:

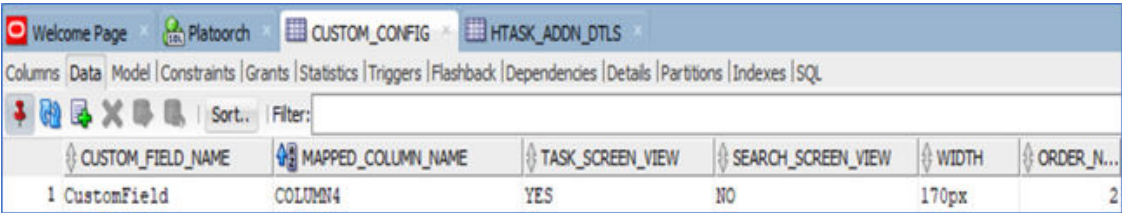
Configurations needed from backend side to get the custom field in `plato-orch-service/api/v1/extn/tasks` response –

During workflow initiation, the customer provides key-value pairs for specific columns. In the **CUSTOM_CONFIG** table, columns are mapped under the **MAPPED_COLUMN_NAME** field. For instance, COLUMN4 is mapped to a custom_field_name, such as CustomField.

Here's how it works: In the **CUSTOM_CONFIG** table, COLUMN4 is mapped to the field CustomField. During workflow initiation, the customer provides the value for COLUMN4, such as COLUMN4 = CF_1. The system uses this mapping to interpret the value as follows: CustomField (from the CUSTOM_CONFIG mapping) will get the value CF_1 for that task, provided by the customer during initiation. This allows the customer to input COLUMN4 = CF_1 during workflow initiation, and it will be mapped with **CUSTOM_FIELD_NAME** based on the mapping defined in the **CUSTOM_CONFIG** table. This way, user can map any internal column to a custom field name that suits user specific use case.

Additionally, the columns that can be used for such mappings currently range from COLUMN1 to COLUMN20, providing flexibility to define up to 20 custom fields.

Figure 9-49 Custom Fields 3



CUSTOM_FIELD_NAME	MAPPED_COLUMN_NAME	TASK_SCREEN_VIEW	SEARCH_SCREEN_VIEW	WIDTH	ORDER_N...
1 CustomField	COLUMN4	YES	NO	170px	2

Figure 9-50 Test Workflow

```
{
  "createTime": 1585655473582,
  "updateTime": 1588595146622,
  "name": "MK-SQL",
  "description": "Test Workflow6",
  "version": 2,
  "tasks": [
    {
      "name": "TestTask",
      "taskReferenceName": "test",
      "description": "first test task",
      "inputParameters": {
        "COLUMN4": "CF_1",
        "FUNCTIONAL_CODE": "PLATORULE_FA_FACT_NEW",
      }
    }
  ]
}
```

10

Reference and Feedback

This section describes following topics:

- [Reference](#)
- [Documentation Accessibility](#)
- [Feedback and Support](#)

10.1 Reference

For more information on any related features, user can refer to the following documents:

- **Oracle Banking Extensibility Workbench Installation Guide**

10.2 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/us/corporate/accessibility/index.html>.

10.3 Feedback and Support

Oracle welcomes customers' comments and suggestions on the quality and usefulness of the document. User feedback is important to us. If user have a query that is not covered in this user guide.

Index

A

Action URL and Static Tag Maintenance, [1](#)
Additional Fields Maintenance, [1](#)

C

Creating final Extended Component war for
Deployment, [17](#)

D

Dashboard Widget, [14](#)

E

Entity Details, [6](#)
Extending Product Data Segments with Additional
Fields, [1](#)
Extensibility Use Cases for OBORN Servicing, [1](#)
Extensibility Use Cases for OBX, [1](#)

H

HTML Changes, [5](#)

I

In-Scope DS, [10](#)

J

JS Changes, [6](#)

M

Maintenance Detail and Summary, [10](#)
Model Changes, [9](#)
Modification of Base Web Component, [1](#)

N

New Field in Existing Base Data Segment, [13](#)
New Transaction screen – 1499 (Clone of 1401),
[2](#)

O

OBX Release Command, [11](#)
OBX UI, [5](#)
OBX Update Command, [8](#)

R

Reference and Feedback, [1](#)
Running Component after Generation, [16](#)

S

Service Component, [10](#)
Service Extensions, [1](#)
Service Update, [9](#)
Sign In, [4](#), [12](#)
Steps for Modification of Base Component, [2](#)

U

UI Extensions – Web Component, [1](#)
UI Update, [9](#)
Understanding DB Scripts for Web Component,
[19](#)

V

Virtual Page, [7](#)

W

Welcome to Oracle Banking Extensibility
Workbench, [1](#)