Development of Maintenance Form Oracle Banking Corporate Lending Release 14.7.2.0.0 Part No. F92377-01 [November] [2023]

FINANCIAL SERVICES

Contents

1. Pref	ace	3
1.1	Audience	3
1.2	Related Documents	3
2. Intro	oduction	4
2.1	How to use this Guide	4
3. Ove	rview of Maintenance Screen	4
4. Scre	en Development	4
4.1	Header Information	4
4.2	Preferences	6
4.3	Data Sources	7
4.4	Data Blocks	12
4.5	Screens	14
4.6	Field Sets	16
4.7	LOV	20
4.8	Attaching Call forms	23
4.9	Adding Summary	27
4.10	Amendable fields Maintenance	29
5. Gen	eration and Deployment of files	
6. Gen	erated Units	
6.1	Front End Units	33
6.1.	1 Language xml	33
6.1.	2 SYS JavaScript File	33
6.1.	3 Release Type Specific JavaScript File	33
6.2	Data Base Units	
6.2.	1 Static Scripts	
6.2.	2 System Packages	
6.2.	3 Hook Packages	
63	Other Units	34
63	1 Yed	
7 Evt	nsible Development	
7. DAU 7.1	Extensibility in JavaScrint Coding	
7.1	Extensionity in Savasenpt Coding	
7.2	Excensionity in Dacken County	
1.2.	1 PUTCHOUS IN THOSE I ACKAGES	
7.2.	2 Flow of control through Hook packages	35
7.2.	3 By passing Base Release Functionality	36

1. Preface

This document describes Maintenance Screens in FLEXCUBE and the process of designing a simple Maintenance form using Oracle FLEXCUBE Development Workbench for Universal Banking

1.1 Audience

This document is intended for FLEXCUBE Application developers/users that use development Workbench to develop various FLEXCUBE components.

To Use this manual, you need conceptual and working knowledge of the	below:

Proficiency	Resources
FLEXCUBE Functional Architecture	Training programs from Oracle
	Financial Software Services.
FLEXCUBE Technical Architecture	Training programs from Oracle
	Financial Software Services.
FLEXCUBE Screen Development	<u> Development Workbench - Screen</u>
	<u>Development I</u>
Working knowledge of Web based applications	Self Acquired
Working knowledge of Oracle Database	Oracle Documentations
Working knowledge of PLSQL & SQL Language	Self Acquired
Working knowledge of XML files	Self Acquired

1.2 Related Documents

 Oracle FLEXCUBE Enterprise Limits and Collateral Management ODT Screen

 Development

 Development Workbench - Screen Development II

2. Introduction

2.1 How to use this Guide

The information in this document includes:

- Chapter 2, "Introduction"
- Chapter 3, "Overview of Call Form"
- Chapter 4 , "Screen Development"
- Chapter 5, "Generated Units"
- <u>Chapter 5 , "Extensible Development"</u>

3. Overview of Maintenance Screen

Maintenance Function Id's are used for storing maintenance data which are required for processing of any contracts, batches or for any other maintenance which are dependent on this

Example: Customer maintenance screen

If any customer wants to use the service of a bank, details about the customer will have to be maintained in the system .This will be maintenance data which will be required for other maintenances (creating account for the customer) as well as for transaction processing (debiting of customer account)

Business logic for a maintenance function id would be provided by the Development Workbench generated files .Most of the cases, system provided logic would be sufficient .Extra validations can be coded in the hook packages by the developer.

4. Screen Development

Design and development of a Maintenance function id is similar to any other function Ids. This section briefs the steps in designing a Maintenance screen. STDCINF is sample function id used for demonstration in this document

For detailed explanation, refer the document: <u>Oracle FLEXCUBE Enterprise Limits and</u> <u>Collateral Management ODT Screen Development</u>

4.1 Header Information

Provide the header information as shown in the figure.

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Function Id	Parent Function	Header Template None
Save XML Path	Parent Xml	Footer Template Norie -
ListOfValues DataBlocks Screens FieldSets Actions CallForms LaunchForms Summary		

- For new screen select action As New.
- Enter Function ID \rightarrow STDCIFD
- Function Type \rightarrow Parent
- Function Category \rightarrow Maintenance
- Parent Function Id \rightarrow None
- Parent Xml \rightarrow None
- Header Template \rightarrow None (Only for Process flow screens)
- Footer Template → Maint Audit

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User can save work at any point in time. Click the save icon on top right for the same .In order to work again with it select action as Load and load radxml from the hard disk path

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		Amm your computer. If you do not t save this life. <u>What is the mix</u> ?	ruit the source, do not open or			

Fig 12.3: Saved File Information page

Note the following while providing header information for Maintenance screen

i) Naming Convention:

The third letter of the function id has to be D. Ideally the function id name should have 8 characters.

ii) Footer Template

Make sure that the master data source has the audit columns if footer template is provided as Maint log.

Refer <u>Oracle FLEXCUBE Enterprise Limits and Collateral Management ODT Screen</u> <u>Development</u> for detailed explanation

4.2 Preferences

- Details entered in Preferences are used in generating INCS for SMTB_MENU, SMTB_FUNCTION_DESCRIPTION and SMTB_ROLE_DETAILS.
- **Control String** → Developer needs to select the actions which should be available for this screen in FLEXCUBE.

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Note the following points while providing details in Preferences screen

i) Control String

REVERSE, ROLLOVER, CONFIRM, LIQUIDATE, HOLD operations are not applicable for maintenance screens.

ii) Defining Browser Menu Tree

Browser menu tree will be defined in the script generated for *smtb_function_description*.

The following labels has to be maintained for generation of proper script Main Menu: LBL_{function id}_MAIN_MENU Sub Menu 1: LBL_{function id}_SUB_MENU_1 Sub Menu 2: LBL_{function id}_SUB_MENU_2 Description: LBL_{function id}_DESC *Example: For STDCIFD, following labels has to be maintained* LBL_STDCIFD_MAIN_MENU, LBL_STDCIFD_SUB_MENU_1, LBL_STDCIFD_SUB_MENU_2, LBL_STDCIFD_DESC

Refer <u>Oracle FLEXCUBE Enterprise Limits and Collateral Management ODT Screen Development</u> for detailed explanation on preferences

4.3 Data Sources

- Right Click on Data Sources; click on Add. Add table window gets opened.
- If user knows the exact table name, he can enter name directly; else go to List Of values to get the list of tables available. Select the required table from the list.

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Fig 12.5: Adding Data Sources for the Function id

- Select Master as Yes if added data source is Master Data Source for the screen. Every function id should have one master data source..
- **Primary Key columns** (i.e. Pk Cols) and **Primary Types** (i.e. Pk Types) are mandatory. If it is already maintained in user schema in STTB_PK_COLS it will populated automatically otherwise user needs to enter values without fail. If user misses Pk cols and Pk Types package generation will fail. *Note: Master Data Source cannot have any parent.*

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Fig 12.6: Providing master Data Source Properties

• Right Click on Added Table (STTM_CUSTOMER) to add fields to the table. Popup window gets opened with available columns in data source. Select the required fields and click ok. Selected will get added to the Data Source Tree.

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Fig 12.7: Including Data Source Fields for the Data Source

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Fig 12.7: Selecting Data Source Fields for the Data Source

Data Source Field Properties:

Only max length can be modified by the developer in data source field properties. Rest will be defaulted from table definition

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Data model of a single function id would include multiple tables .All the tables needs to added in the function id. Note the following while adding child data sources

Adding Child Data Source:

- Select Multi Record value as Yes if child data source is Multi record table.
- Child Data Source should always be associated with a parent.
- Relation is mandatory between parent and child. While giving relation, parent data source should come in left side of the relation.

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Fig 12.7: Providing properties for Child Data Source

Note: A data source cannot be parent to itself.

Note the following while adding data sources:

- i) If the data source is designed with relation type as 1: N with its parent, then it should have at least one more Pk col than its parent (assuming relationship is based on Pk cols).
- ii) Master data source needs to have the audit columns if footer template is Maint audit; but those should not be added to data source fields as system will handle it

Refer <u>Oracle FLEXCUBE Enterprise Limits and Collateral Management ODT Screen Development</u> for detailed explanation on data sources.

4.4 Data Blocks

• Block Name should start with BLK_<short Name equivalent to data source but not exactly same as Data Source name>.

Add Block		×
Block Name	BLK_CUSTOMER	
	Ok Cancel	
Fig 12.8	: Creating a new Data Block	

- Select Parent block if added block is not Master Block.
- Select Multi Record (Yes/No) based on this value, available data sources will displayed in data source available text area.

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	Fig 12.9: P	roviding prope	rties for l	Data Block						

• Select the required data source and click move button to attach Data Source to the block

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Fig 12.10: Attaching Data Sources to Data Block

Adding multi record data source to data block:

User on selecting Multi record Yes in data block properties all the data sources with multi record Yes will be populated. *Multi Data Source once used to one block won't available for reuse where as single record data source can be used in multiple blocks*

Select Block Fields:

- Right click on added block. Select Fields window will get opened. Developer needs to check the right side check box to add the required fields.
- **Field Name**: It should not be the same as column name .Special characters are also not allowed in the field name (including underscore and space)
- Label Code: It will be automatically populated based on field name.

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Fig 12.11: Adding Block Fields to Data Block

Refer <u>Oracle FLEXCUBE Enterprise Limits and Collateral Management ODT Screen Development</u> for detailed explanation on data blocks and block field properties

4.5 Screens

- Right click on Screens node to add a new screen
- Screen Name should start with CVS_<Name>...
- By default screen are divided into 3 parts.
- One Main Screen is Mandatory.
- Tabs can be defined on any of the screen portions as required
- User can add sections to tabs.
- Each section can be divided into partitions.

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Fig 12.12: Providing properties to new Screen

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TAB_MAIN FOIOTER FoidSels Actions Califorms LaunchForms Summary	Ok Cancel				

Fig 12.13: Creating new section in TAB_MAIN in the body of screen CVS_MAIN

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TAB_MAIN	PART2	50 -
SEC_CUST		
TAB_FOOTER FieldSets Californs LaunchForms Summary		

4.6 Field Sets

A group of fields can be grouped together in a Field set which can be placed together in the screen

- Field Set Name should start with FST_<>.
- Select the Block adding to field set.
- All fields available to the block will be displayed in to the data block fields text area. Move fields from data block fields to Field set fields.
- The order of fields in *field set fields* will reflect in the screen as well

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Fig 12.14: Attaching Fields to a Field set

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• Select the screen portion (Header/Body/Footer) where this field set has to be placed. Select remaining details like tab, section and partition.

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 Preferences DataSource ListONalues DataBlocks FieldSets FST_CUST1 FST_CUST2 Actions CallForms LaunchForms Summary 	Fieldset Name FST_CUST1 Fieldset Label PE Data Block BLK_CUSTOMER V Multi Record No View Type Single V Fieldset Height Data Block Fields CNTY NLTY LANG	Screen Name Screen Portion Tab Name Section Name Partition Name PART1 Number Of Rows FieldSet Fields CUSTNO CUSTNO CUSTNO CUSTYPE ADDR1	Subpartition Name	☐ Horizontal Fieldset ☐ ReadOnly ☐ Navigation Button ☑ Visible

Fig 12.15: Providing details where Field Set has to be placed

Once fields are added to field set, developer can check the preview of the designed screen. Right click on Screen Name and click on Preview.

🔶 Main		
🗗 New 🖾 Enter Query		
Customer No		
Name		
Туре		
Address		
Maker	Date Time:	
Checker		
	Date Time:	Exit
Mod No	Record Status	
mourto	Authorization Status	
l		

Fig 12.16: Preview of the designed Screen

Adding Multi entry block to field set.

- On selecting a multiple block, Multi Record Property will be defaulted to Yes..
- In case of Multi record, View type can be either Single or Multiple (By Default).

🔶 Main		×
🖹 New 🦻 Enter Query		
Customer No Name Type Address		
I	Go to Page	+ - =
Group Id	Customer No Relation	
•	III	•
Maker Checker	Date Time: Date Time:	Exit
Mod No	Record Status	
	Autonzation Status	

Below image shows a multiple view multi record field set



• For multi record single view navigation button should be checked.

NACE TEXCODE DEVElopment Work	Senen for oniversal balls	mg mindows internet Explorer	a the second second second second		
RACLE FLEXCUBE Devel	opment Workbench for	Universal Banking			DEMOUS
owser 🗸				Windo	ows Options Sign C
nction Generation					
					🔚 🗶 🗏 🖗 🍕
Action Load -		Function Type Parent		Function Category Maintenance	-
Function Id STDCIFD		Parent Function		Header Template None 👻	
Save XML Path STDCIFD_R	BROWSE	Parent Xml		Footer Template Maint Audit	•
arch	Fieldset Prop	erties			- 🥂
Preferences	Fieldset N	ame FST_CUST2	Screen Name CVS	_MAIN	🔲 Horizontal Fieldse
DataSource	Fieldset L	abel	Screen Portion Body	· · ·	ReadOnly
STIM_CUSTOMER	Data B	Block BLK_GROUP -	Tab Name TAB	MAIN	Navigation Button
CUSTOMER TYPE	Multi Re	cord Yes -	Section Name SEC	_GROUP -	Visible
CUSTOMER_NAME1	View	Type Single -	Partition Name PAR	T1 👻	1
address_line1	Fieldset H	eight	Number Of Bows		
COUNTRY					
STTM CUST GROUP		Data Block Fields	Field S	et Fields Subpartition Name	
GROUP_ID					
CUSTOMER_NO				•	
Carl RELATIONSHIP			CUST_NO	_	
ListOfValues			RELATION	•	
			44		
Screens					
🖃 🚞 CVS_MAIN					
SEC_GROUP					
🗉 🚞 FOOTER					
iii FieldSets					
FST_CUST1					
FSI_CUS12					

~

Fig 12.18: Properties for Single View Multi Record Field set

🔶 Main		
🗗 New 🔄 Enter Query		
Customer No Name Type Address		
Group Id Customer No Relation		
Maker Checker	Date Time: Date Time:	
Mod No	Record Status Authorization Status	Exit

Below figure shows the preview of a single view multi record field set

Fig 12.18: Preview for Single View Multi Record Field set

4.7 LOV

List Of values can be defined for the function id using LOV node

- To add LOV right click on List of Values Node. LOV Name should start with LOV_<name>. *Example: LOV_COUNTRY.*
- Enter valid query and click on populate button

Function Generation								
						I 7	· 🧐	¢
Action Load 🔻	Function Ty	pe Parent 👻		Function Cate	gory Maintenance 👻			
Function Id STDCIFD	Parent Functi	on		Header Temp	late None 🔻			
Save XML Path STDCIFD_RAI	BROWSE Parent X	ml		Footer Temp	late Maint Audit 👻			
Search	List Of Values Details					-	x 🧐	
I Teterences Therefores Therefores	LOV Name * LOV_OCONTRY LOV Query select country_cod	e,description from sttm_	_country where auth_stat = '	'A' and record_stat = 'O'		Popul	late	
DataBlocks	Query Columns Data	Type Visible	Reduction Field	Reduction Field Type	Reduction/Column Label	<u> </u>	*	
Creens Contract Contr							-	
Actions CallForms LaunchForms Summary								

Fig 12.19: Defining new LOV

LOV	Query	×
	select country_code,description from sttm_country where auth_stat = 'A' and record_stat = 'O'	
	Ok Cancel	

Fig 12.20: Providing LOV query

Function Generation												_ ×
									×	= 1⁄2	۶ 🤘	4
Action Load 👻	F	Function Type Parent	-			Fund	tion Category Maintenance	-				
Function Id STDCIFD	Pa	rent Function				Hea	der Template None 🔻					
Save XML Path STDCIFD_RAI	BROWSE	Parent Xml				Foo	ter Template Maint Audit	•				
Search	List Of Values Details									-	A 9	^
Preferences DataSources STTM_CUSTOMER DISTTM_CUST_GROUP LIStONalues LIStONalues LISTONalues	LOV Name * LOV_OC LOV Query select of	CUNTRY ountry_code,description	from sttm_co	untry where auth_stat :	= 'A' and record	l_stat = 'O'				Рори	late	
DataBlocks	Query Columns	Data Type	Visible	Reduction Field	Reductio	n Field Type	Reduction/Colu	ımn La	bel	-	^	
Screens FieldSets	COUNTRY_CODE	VARCHAR2 -	Yes 👻	Yes 👻	TEXT	•	LBL_CNTRY		×E		-	
Actions CallForms LaunchForms	DESCRIPTION	VARCHAR2 V	Yes 🔻	Yes 🔻	TEXT	•	LBL_COUNTRYCD		1		~	

Fig 12.21: Providing LOV details

- Redn/Col Labels are mandatory. If user won't provide will get error on click of LOV button after deployment in FLEXCUBE
- After defining LOV go to block and corresponding field where the LOV has to be attached.

Block Field Properties to attach LOV to the field

- **Display Type:** Select display type as Lov.
- Lov Name: Select the required Lov name from the list of all defined LOV's.
- Click on return fields tab. The result fields maintained in the LOV query will be populated on click of *Default from Lov Definition* button

- Select the desired field (and its block)to which the result of the LOV query should be defaulted
- If return field is not required to be defaulted to any field in the screen, return field value can be left blank

Function Generation		
		📰 🗵 🗐 🔗 🤤
Action Load -	Function Type Parent	Function Category Maintenance 💌
Function Id STDCIFD	Parent Function	Header Template None -
Save XML Path STDCIFD_RAL	BROWSE Parent Xml	Footer Template Maint Audit 🛛 👻
Search	Block Field Properties	
Preferences DataSource DataSource LSTM_CUSTOMER LSTM_CUST_GROUP LISTONAIUes LISTONAIUes LISTONAIUES LISTONAICUSTINO CUSTINO CUSTINO CUSTINPE CNAME ADDR1 CNTY NLTY LANG DALK_GROUP	Field Name * CNTY Field Label DataSource Column Name * COUNTRY Data Type * Varchar2 ~ Display Type Lov ~ Item Type Database Item ~ Parent Field Related Block Related Block Related Field LOV Name COUNTY ~	XSD Tag CNTY Required XSD Annotation Visible Field Size * Read Only Maximum Length Calender Text Mainmum Value Popup Edit Require Maximum Value Uppercase Only Maximum Value Uppercase Only TextArea Rows Required in Xs TextArea Columns Input by LOV Only Default Value Report Parameter Mask Id PE
Creens FieldSets Actions CallForms	Custom Attributes Events Bind Variables Return Fields Return Fields Mapping Ouery Column	telated Field Default From Lov Definition Block Name Return Field Name
LaunchForms	COUNTRY_CODE BLK_CUSTOM	ER 🔻 CNTY 👻
Cumury	DESCRIPTION BLK_CUSTOM	ER 👻

Use of Bind Variable

If the list of values should be based on any other field value from the screen, bind variables can be used.

Example:

Define lov as shown in below query; where clause should contain condition with '?'.

SELECT cust_ac_no, branch_code, ccy from sttms_cust_account where cust_no = ? and record_stat = 'O' and once_auth = 'Y' and ac_stat_de_post = 'Y'

In the block field, after selecting return fields, click on bind variables tab. Click on **Default from Lov Definition** button. New rows will be created depending on the number of bind variable provided in the LOV query. Select the bind filed in the screen (and its block) for the LOV. Data type of the field has also to be selected.

Action Last	Function Type Parent	14	Function Category III	antenance (m)			
Function Id STDCH/F	Parent Function	-	Header Template 14	one 💌			
Save XML Path DIRADTOOLY	Parent Xml		Footer Template	aint Audit 👒			
Search	Block Field Properties					- A) 9	0
Search	Field Name CUSTNO Field Label LBL_CUSTNO XSD Tag CUSTNO Display Type Text Mem Type Database filem Parent Field Related Field Related Field Text-rea Rows Max Decimals LOV Name LOV_ACCOUNT Fieldset Name FST_GROUP		Data Type Varchar2 M DataSource STTMS_CUST Max Length B Fred Std Column Name CUSTOMER_I Defaut Value Prevsen Value Accessive/ Code TertArea Cols Max Val Mask Id Off Line LOV Name Image Source	ND	Popup Edit Reg3 Regured Visible Input by LOV Only Catender Text Select Multiple Uppercase Only LOV Validation Reg3 Not Reg in Xad Report Parameter Read Only		
Californs LaundhForns Summary	Bind Variables Mapping Biock Name Biock Name Bit, CUSTOMER	×	Bind Variable CUSTNO	Gefacit Boon LoV definitio Detatype STRING			_

Fig 12.23: Defining bind variable for the LOV

4.8 Attaching Call forms

Maintenance Call forms can be attached to a maintenance screen. Refer the document <u>Development of Online Forms</u> for developing call forms

Attaching Call forms

- Add button to block to launch call form on button click.
 - Right click on Block
 - Select Add fields. Select fields and Add UI field's window will be launched
 - Select UI Fields tab. Click add row button. Enter button name and click ok.
 - Select display type as button and enter field label.

S	elect F	ields & Add	UI Fields						×
Γ	DataS	ource fields	Ul Fields						
							 	+	<u>.</u>
				Field Na	me	_	 Data Type		^
	1	BTM_MIS					•		
									*
								Ok	Cancel

Fig 12.24: Defining Button field

• Add Call form details to Call form node

Function Generation					_ ×
				F 🔀	🗏 7 🧐 🔿
Action Load 👻		Function Type Parent	Function Category	Maintenance 👻	
Function Id STDCIFD		Parent Function	Header Template	None 👻	
Save XML Path STDCIFD_RAI	ROWSE	Parent Xml	Footer Template	Maint Audit 🔻	
Search	Call Form Details				ن م م
Dreferences					
DataSource STTM_CUSTOMER			Screen Argun	nents Dependent I	Fields + -
B STTM_CUST_GROUP	Function ID	Parent Data Block Parent Data Source	Relation Relation T	pe Callform Screen	Display 1 ^
ListOfValues	MICCUSTM	BLK_CUSTOMER - STTM_CUSTOMER -	TTM_CUSTOMER.COSTOMER_NO = 💭 One To On	e 🕶 💌	Button
🖃 🚞 DataBlocks					
BLK_CUSTOMER CUSTNO					
CUSTTYPE					
CNTY					
BTM_MIS					
Screens FieldSets					
Actions					
CallForms					
Summary					
	4				-

Fig 12.25: Defining details of the Call form to be attached in call form node

- Add event to button.
 - On selecting event type as call form or launch form or sub screen button will be displayed on bottom of the screen.
 - If user needs to place button position in desired place on the screen, event type should be Normal .User has to write code in release specific JavaScript file to launch the screen

Function Generation				-
				🖫 🗶 🗏 🖗 🤤 🖙
Action Load -	Function Type	Parent 👻	Function Category Mainte	enance 🔻
Function Id STDCIFD	Parent Function		Header Template None	•
Save XML Path STDCIFD_RAL	BROWSE Parent Xml		Footer Template Maint	Audit 👻
Search	Block Field Properties			- 🛚 🔾 🌍
Preferences CataSource Cata	Field Name Field Label DataSource Column Name Data Type Text Parent Field Related Field LOV Name Field Vame F	X XSD Ani Fi Maximum Maximum Maximum Maximum D TextAre TextArea C Defata Previe	ISD Tag MIS motation MIS I Length m Value ecimals olumns olumns w Value I Value Val	Required Visible Read Only Calender Text Popup Edit Required Uppercase Only LOV Validation Required Input by LOV Only Not Required In Xsd Report Parameter
	Off Line LOV Name Fieldset Name Custom Attributes Events Related Field Event Name Funct	ction Name Event Type	Button Screen CallForm Name	Screen Name
 BODY TAB_MNN SEC_CUST SEC_GROUP FieldSets Actions CallForms LaunchForms Summary 	V onunioad V	Caliform •	CVS_MAIP • MICCUSTM •	CVS_CUSTO

• Check the preview.

🔶 Main				X
🖹 New 🦻 <u>Enter Query</u>				
Customer No Name Type Address				
I≪ 1 of 1 ▶ ▶	Go to Page		+ - ==	
Group Id	Customer No	Relation	·	
		III	*	
MIS Change Log				
Maker	I	Date Time:		
Checker		Date Time:	Exi	t
Mod No	Rec Authoriza	tion Status		

Fig 12.27: Preview of the screen with the Call Form button

4.9 Adding Summary

1) Add entry in Preferences node for Summary screen

Action Load Function Id STDCIFD RAI Function Id Raintenance Function Id Ra	Action Function Type Functin Type Function Type	
Action Load Function Type Parent Function Type Parent Function Category Maintenance Base XML Path STDC/FD_RAI BROWSE Parent Yunction Header Template None Base XML Path STDC/FD_RAI BROWSE Parent Xml Footer Template None earch Preferences Head Office Function Logging Required Module Description STIM_CUST GROUP STIM_CUST GROUP STIM_CUST GROUP STIM_CUSTORER Field Log Required STMLCUST MER Field Log Required SVN Repository NL Choose Block Field Log Required SVN Repository NL Choose Field Choose Field STDC/FD_ST Static Maintenance STOC/FD_ST Static Maintenance STSC/FD_ST Static Maintenance Static Maintenance	Action Load Function Type Parent Function Type Parent Function Type Parent Function Id STDCIFD Parent Function Header Template None Save XML Path STDCIFD_RAL BROWSE Parent Xml earch Preferences Footer Template Maint Audit © DataSource Flead Office Function Module © STIM_CUSTOMER Clogging Required Module Description © STIM_CUSTOMER Auto Authorization Branch Program Id © StaticMaintenance Field Log Required SVN Repository URL © BLK_CUSTOMER Multi Branch Access Transaction Block	
Function Id STDCIFD Parent Function Header Template None Save XML Path STDCIFD_RAI BROWSE Parent Xml Footer Template Maint Audit sarch Preferences Image: Complant Static Maintenance Module ST DataSource Image: Complant Static Maintenance Static Maintenance Static Maintenance Image: STM_CUST ONLER Image: Complant Static Maintenance Static Maintenance Static Maintenance Image: Static Maintenance Image: Static Maintenance Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance Image: Static Maintenance	Function Id STDC/FD Parent Function Header Template None Save XIML Path STDC/FD_RAL BROWSE Parent Xml Footer Template Maint Audit arch Preferences Image: Preferences Image: Preferences ST #E DataSource Image: DataSource Image: DataSource Static Maintenance Static Maintenance Image: Image	
Save XML Path STDCIFD_RAI PROWSE Parent Xml Footer Template Maint Audit Parent Xml Preferences Image: Constraint of the state	Save XML Path STDCIFD_RAL BROWSE Parent Xml Footer Template Maint Audit Parent Preferences Image: Control of the state of the sta	
Preferences V Head Office Function Module ST Image: State Maintenance Image: DataSource Image: STM_CUSTOMER Image: STM_CUSTOMER Image: State Maintenance Image: Statem	earch Preferences Preferences DataSource STTM_CUSTOMER STTM_CUSTOMER DataBlocks BLK_CUSTOMER Multi Branch Access Process Code Choose Block Choose Block Multi Branch Access State Choose Block Choose B	
Preferences	Preferences F Head Office Function Module ST DataSource Logging Required Module Description Static Maintenance STTM_CUSTOMER Auto Authorization Branch Program Id Image: Constraint of the static Maintenance DataBlocks Field Log Required SVN Repository URL Image: Constraint of the static Maintenance DataBlocks Field Log Required SVN Repository URL Image: Constraint of the static Maintenance DataBlocks Field Log Required SVN Repository URL Image: Constraint of the static Maintenance	
DataSource Logging Required Module Description Static Maintenance	DataSource In Logging Required Module Description Static Maintenance B \nimediation Static Maintenance Static Maintenance B \nimediation Frank Modifications Branch Program Id B \nimediation Frank Modifications Process Code DataBlocks Frield Log Required SVN Repository URL B LLK_CUSTOMER Multi Branch Access Transaction Block	
Auto Authorization Auto Authorization Auto Authorization Auto Authorization Auto Authorization Branch Program Id Field Log Required Tank Modifications Process Code Custrio Tank Modifications Process Code Custrio C	Image: State Cost of the	
ListOfValues Tank Modifications Process Code DataBlocks Field Log Required SVN Repository URL CustNo CUSTNO CUSTNYPE CUSTNYPE CUSTNYPE CAME ADDR1 CNTY LANG BTM_MIS Function Id Module * Module * Module bescription ST CUSTOR ST Static Maintenance Static Maintenance Static Maintenance Static Maintenance Static Maintenance Custors Static Maintenance Static Maintenance Custors Custors Static Maintenance	□ ListOfValues □ Tank Modifications Process Code □ DataBlocks □ Field Log Required SVN Repository URL □ BLK_CUSTOMER □ Multi Branch Access Transaction Block	
Field Log Required SVN Repository URL Gustablocks Gustablocks Gustablocks Gustablocks Gustablocks Gustablock	□ DataBlocks ▼ Field Log Required SVN Repository URL □ DataBlocks □ Multi Branch Access Transaction Block □ CTANO □ Multi Branch Access None	
BLC_COSTONER Multi Branch Access Multi Branch Access Mame COSTNO CUSTTYPE CUSTTYPE COSTONER COSTON	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	
CUSITYPE Excel Export Required Transaction Field Choose F		
CNAME ADDR1 ADDR1 CNTY NLTY LANG BULK_GROUP STCIFD ST Sterens Control String Streens Control String Streens Stree	CUSTTYPE Excel Export Required Transaction Field	
ADDR1 ADDR1 NLTY LANG BTM_MIS BLK_GROUP STCIFD ST FieldSets Adoins CallForms	CNAME Name	
NLTY Control String • BTM_MIS Function Id Module * Module Description BLK_GROUP Streens Static Maintenance CSY_MAIN STSCIFD ST E Static Maintenance FieldSets Actions Static Maintenance Static Maintenance		
LANG BTM_MIS BTM_MIS BTM_MIS BTM_MIS BTM_MIS BTM_MIS BTM_MIS BTM_MIS BTM_MIS STOCIFD ST ST ST ST ST ST ST ST ST ST		trol String 📕
B M Mils Function to Module * Module bescription B M Mils Streens Streens Streens Streens StrSCIFD Str Static Maintenance Streens StrSCIFD Str Static Maintenance Streens StrSCIFD Str Static Maintenance Streens StrSCIFD Streens Streens Streens Streens	LANG Constitution of Constitut	
Streens Stoch D St Period attribution and ce B CVS_MAIN Stock Maintenance Califorms Califorms	DIM MOUNT TOULOU NU	
CVS_MAIN STSCIFD ST Static Maintenance Galferms	Stockens Sto	_
	CVS_MAIN V SISCIPD SI VISCIPA	
Califorms	di ⊒ rieuseis ⊡ Adions	
	CallForms	
LaunchForms	LaunchForms	
Summary	Summary	

- 2) Click on Summary Node.
 - Enter Summary title .Select label code from lov.
 - Select Data Block master block and summary blocks will be displayed. Select required block from drop down list.
 - Select Data Source for summary.
 - Select Summary Type.
 - Select Summary Screen size.
 - Enter if any where clause is required.
 - Enter Default order by if required.
 - Enter Multi Branch where clause if required.
 - Attach the fields required in the summary result grid
 - If the field is required as part of filtering, query has to be checked for the particular field
 - Provide the position of fields in Result grid and Summary Query set .

Action Load - Function Id STDCIFD		Function Type Parent Parent Function	•		Function Header	Category Maintenance	•			
Save XML Path STDCIFD_RAI BROWSE		Parent Xml			Footer	Template Maint Audit	•			
arch Summar	y Details								ß	a 9
Preferences DataSource DataSource DataSource DataSource DataSource DataSource DataSource DataSource DataBlocks Summary DataBlocks Summary DUSTNO	Title Data Blocks Data Source Inmary Type Screen Size	BLK_CUSTOMER STTM_CUSTOMER Summary Medium	► ▼ ▼ ▼	Default Where Clause Default Order By Multi Branch Where Clause Main Summary Screen	WebSen Required	rices d	000]]		
CUSTTYPE Data Bloc CNAME ADDR1 CNTY NLTY	k Fields Cu	Istom Buttons Fields Ordering		Fields Selected	Querr	LOV Name				
🗀 LANG		Duta Diock Ficial			Query	LOV Name				
				CUSINO			-			
Creens Screens			NN	COSTITE						
Creens CVS_MAIN			VV	40004			_			
I ☐ Screens II ☐ CVS_MAIN I ☐ FieldSets Actions				ADDR1			*			
2 - Screens 2 - CVS_MAIN 2 - FieldSets - Actions - CallForms			44	ADDR1 CNTY	Function Header Footer		*			
Greens CVS_MAIN GVS_MAIN FieldSets CallForms CallForms Summary			44	ADDR1 CNTY NLTY			•			

Summary Preview

Right click on summary node and click on preview.

	euto Query C t Advance	d Saarch O Bas	at D Clear All							×
E EXE	Authorization Status Customer No	v Search +5 Kes			Reco	ord Status	•			
Reco	rds per page 15 👻 📊	🛯 1 of 1 🕨 🔰		3						*
	Authorization Status	Record Status	Customer No	Name	Туре	Address	Country	Nationality	Language	
										E
										-
									Þ	
									Exit	

Fig 12.29: Summary Screen Preview

4.10 Amendable fields Maintenance

Amendable Fields

If user needs to modify data of a particular field on unlock, in Workbench developer has to maintain fields as amendable.

- Click ACTIONS node.
- Click on Amendables button next to the action for which the field has to be made amendable
- Select the fields in each block which user can modify for the selected action.

Amendable DetailsQUERY		×
Data Blocks	DataBlock Fields	
BLK_CUSTOMER BLK_GROUP	New Allowed Delete Allowed All Records	Mandatory
	Field Name	Amendable
	CUSTNO	
	CUSTTYPE	
	CNAME	
	ADDR1	V
	CNTY	V
	NLTY	•
	LANG	•
	BTM_MIS	
1		
		Ok Cancel
	L	

Fig 12.30: Maintaining amendable fields

5. Generation and Deployment of files

Generate Files

• Click on generate button select the required files to generate and click on Generate button.

nation		×	4	Aeta Data	Others	
! Re	Error Description quest successfully Processed	Error Code RD-SAVE-007	Menu Details Datasource Details LOV Details Block Details Screen Details	Label Details Elock PK Columns Function Call Forms Gateway Details Notification Details Configurations Configurations	Xsds Xsds Xsd Wih Annotations Screen Html Upload Table Trigger Upload Tables Definition Archive Table Definition	
STDCIFDCVS_MAINTAB_FOOTER html		File Download Do you want to open or sa Name: RAD.ZIP	ve this file?	rge Details	Status	
		Type: WinRAR From: 10.184.1	ZIP archive 32.100 Den Save Cancel		Cenerated Generated Generated Generated Generated	
	STDOIFDCVS_MAINTAB_FOOTER html slpks_stdoifd_main spc stpks_sldcifd_kernel.spc	While files from the Inte harm your computer. If save this file. What's th	emet can be useful, some files can potenti you do not trust the source, do not open o <u>ne risk?</u>	ally or	Generated * Generated * Generated *	
	sipks_stdoild_main sql		SQL	-	Generaled +	
	stpks_sldcifd_kernel.sql		SOL	-	Generated *	
	CST8_FIELD_LABELSSTDCIFD.INC		INC		Generaled +	
	CSTB_OTHER_LABELSSTDCIFD INC		INC		Generated 👻	
	OCTO FID AND FODBO OTGATO NO		INC		(Cenerglad +	

Fig 12.30: Generation of Files

Deploy files

• Click on deploy button select the required files to deployed to server and click on deploy. On successful deployment status will be displayed as Deployed.

У						
Front-End Files	System Packages	Hook Packages		Meta Data	Others	
RadXML ℤ Screen Xml ℤ System JS	 Main Package Spec Main Package Body Notification Triggers Upload Package Spec Upload Package Body 	Kernel Package Spec Kernel Package Body Cluster Package Body Cluster Package Body Custom Package Spec Custom Package Body	Menu Details Datasource Details D Datasource Details D Details D Details Suck Details Screen Details Amendable Details C all form Details Summary Details	Label Details Elock PK Column Function Call For Gateway Details Notification Detail Function Parame Purge Details	Xsd Sth Annotations S Xsd Vith Annotations Screen Html Upload Table Trigger S Upload Tables Definition ters Archive Table Definition	
CS	TB_FIELD_LABELSSTDCIFD.INC		IN	с	Deployed 👻	
CS	TB_OTHER_LABELSSTDCIFD.INC		IN	С	Deployed -	
CS	TB_SUMMARY_INFOSTDCIFD.INC		IN	С	Deployed -	
5 ST	TB_AUDIT_PK_COLSSTDCIFD.INC		IN	С	Deployed -	
CS	TB_FID_DATA_BLOCKSSTDCIFD.INC		IN	С	Deployed -	
CS	TB_FID_DATA_SOURCESSTDCIFD.INC		IN	С	Deployed 👻	
CS	TB_FID_SCR_TABSSTDCIFD.INC		IN	С	Deployed -	
0 CS	TB_FID_SCREENSSTDCIFD.INC		IN	С	Deployed 👻	
I1 SM	ITB_MENUSTDCIFD.INC		IN	С	Deployed -	
12 SM	ITB_ROLE_DETAILSTDCIFD.INC		IN	С	Deployed -	
3 SM	ITB_FUNCTION_DESCRIPTIONSTDCIFD.IN	IC	IN	с	Deployed -	
4 SM	ITB_FCC_FCJ_MAPPING_STDCIFD.INC		IN	С	Deployed -	
5 91	DCIFD RAD.xml		R	ADXML	Generated 👻	

Fig 12.30: Deployment of Files

Testing

•

- Launch the screen from FLEXCUBE
- Try sample operations on the screen (NEW, MODIFY, QUERY etc)



6. Generated Units

The following units will be generated for a Maintenance screen.

Refer document <u>Development Workbench - Screen Development II</u> for detailed explanation on the same

6.1 Front End Units

6.1.1 Language xml

This file is an XML markup of presentation details, for the designed Call Form specific to a language.

6.1.2 SYS JavaScript File

This JavaScript file mainly contains a list of declared variables required for the functioning of the screen

6.1.3 Release Type Specific JavaScript File

This file won't be generated by the Tool. It has to be manually written by the developer if he has to write any code specific in that release

6.2 Data Base Units

6.2.1 Static Scripts

The following static scripts generated are required for the proper functioning of a Call Form screen. Refer document on generated units for detailed explanation

i) Menu Details

Scripts for SMTB_MENU and SMTB_FCC_FCJ_MAPPING, SMTB_ROLE_DETAIL, SMTB_FCC_GCJ_MAPPING are required for the functioning of Maintenance screen

- ii) Lov Details
- iii) Amendable Details
- iv) Label details
- v) Screen Details
- vi) Block details
- vii) Data Source Details
- viii) Call form details
- ix) Summary Details

6.2.2 System Packages

The Main Package contains the basic validations and backend logic for the Maintenance function id. The Main package contains the mandatory checks required. It will also contain function calls to the other packages generated by Workbench.

The main package has the below stages for a maintenance form:

- Converting Ts to PL/SQL Composite Type
- Checking for mandatory fields
- Defaulting and validating the data
- Writing into Database
- Querying the Data from database

• Converting the Modified Composite Type again to TS

Each of these stages has a 'Pre' and 'Post' hooks in the Kernel, Cluster and Custom Packages. And these Hooks are called from the Main Package itself

Main Package has the system-generated code and should not be modified by the developer Kernel, Cluster and Custom Packages are the packages where the respective team can add business logic in appropriate functions using the Pre and Post hooks available

6.2.3 Hook Packages

Release specific packages will be generated based on the release type (KERNEL.CLUSTER or CUSTOM). Developer can add his code in the release specific hook package.

The Main Package has designated calls to these Hook Packages for executing any functional checks and Business validations added by the user. The structure for all the Hook Packages are the same, like:

Fn_Post_Build_Type_Structure Fn_Pre_Check_Mandatory Fn_Post_Check_Mandatory Fn_Pre_Default_and_Validate Fn_Post_Default_and_Validate Fn_Pre_Upload_Db Fn_Post_Upload_Db Fn_Pre_Query Fn_Post_Query

These Functions are called from the Main package using the Pre and Post Hooks available in the Main Package. The 3 Hook Packages namely Kernel, Cluster and Custom Packages have similar structure and are for the respective teams to work on.

6.3 Other Units

6.3.1 Xsd

Xsd 's will be generated if gateway operations are required for the particular function id. Maintenance for the same has to be done in *Actions* node

7. Extensible Development

Developer can add his code in hook packages and release specific JavaScript file.

7.1 Extensibility in JavaScript Coding

For release specific JavaScript coding, code has to be written in release specific JavaScript

file.

It follows the naming convention as : (Function Id)_(Release Type).js *Example: Code in STDCIFD_CLUSTER.js is exclusive to cluster release*

This JavaScript file allows developer to add functional code and is specific to release.

The functions in this file are generally triggered by screen events. A developer working in cluster release would add functions based on two categories:

- Functions triggered by screen loading events *Example: fnPreLoad_CLUSTER(), fnPostLoad_CLUSTER()*
- Functions triggered by screen action events *Example: fnPreNew_ CLUSTER (), fnPostNew_ CLUSTER ()*

7.2 Extensibility in Backend Coding

Release specific code has to be written in the Hook Packages generated.

7.2.1 Functions in Hook Packages

Different functions available in the Hook Package of a Maintenance Form are:

- 1) Skip Handler : Pr_Skip_Handler This can be used to skip the logic written in another release. *Example: logic written in KERNEL release can be skipped in CLUSTER release*
- 2) Fn_post_bulid_type_structure If any change has to be made in the field values obtained from the form befor start of processing, code can be written here
- 3) Fn_pre_check_mandatory
- 4) Fn_post_check_mandatory

Any extra mandatory checks on the field values from the screen can be written here.

- 5) Fn_pre_query
- 6) Fn_post_query

Any specific logic while querying can be written in these functions. It is called from fn_query of the main package

- 7) Fn_pre_upload_db
- 8) **Fn_post_upload_db** Any logic while uploading data to tables can be written here .
- 9) Fn_pre_default_and_validate

10) Fn_post_default_and_validate

Any release specific logic for defaulting and validation can be written here . It is called from the fn_default_and_validate in the main package

7.2.2 Flow of control through Hook packages

The flow of control through the Hook Packages for a particular stage is as explained in the figure below



Fig 12.31: Flow of control through Hook Packages



7.2.3 By passing Base Release Functionality

There are auto generated functions like FN_SKIP_<RELEAE_TYPE> which would determine whether or not a particular hooks needs to be called.

Developer also has an option to bypass the base release hook if need be. For example if the validations written in *STPKS_STDCINF_KERNEL.FN_PRE_CHECK_MANDATORY* are not required or not suitable for the Cluster release, system provides an option to bypass the code written by Kernel team. Similarly a Custom release can also bypass the code written by Kernel and Custom Releases. This can be achieved by calling procedures

PR_SET_SKIP_<RELEASE_TYPE> and *PR_SET_ACTIVATE_<RELEASETYPE>*. These procedures will be made available in the main package and the development teams of Customization teams can use these procedures to skip and re-activate the hooks of parent release.

The Developer should avoid adding validations or Checks in the Pre Stage of any function, like Fn_Pre_Check_Mandatory, etc and should aim to add all the validations in the Fn_Post_Default_and_Validate.

For Example let us see the flow for the Mandatory Stage for STDCIFD:



Fig 12.31: Flow of control explaining skip logic in pacakges



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