Development of Maintenance Form Oracle Banking Corporate Lending Release 14.8.0.0.0 Part No. G30443-01 April 2025

FINANCIAL SERVICES

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# **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	Self Acquired
Language	
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 None -
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 → 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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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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						508	introl String	+-	
	Function Id     STDCIFD	ßī	Module *	[81]	Module Static Maintenance	Description			

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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	STTM_CUSTOMER_PRE_IMAGE STTM_CUSTOMER_SOURCE_DETAILS		
	STTM_CUSTOMER_SRC_DETAILS STTM_CUSTOMER_SRNO STTM_CUSTOMER_UNUSED		
	STTM_CUSTOMER_VW		

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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		Ok Cancel					

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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	Eig 12 7. I		s for Data Source Field	1-		

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 FOOTER FieldSels Califorms LaunchForms Summary	Ok Cancel				
	Fig 12.12: Creating now continuin the MAIN in t				

Fig 12.13: Creating new section in TAB\_MAIN in the body of screen CVS\_MAIN

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TAB_FOOTER  FieldSets  Actions  CaliForms LaunchForms		
Fig 12.14: Defining partitions for the Section		

# 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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Action New 💌	Function Type Parent		Function Category Maintenance	•
Function Id STDCIFD	Parent Function		Header Template None 🔻	
Save XML Path D:\RADTOOL	Parent Xml		Footer Template None	•
arch	Fieldset Properties			- 🔊
<ul> <li>Preferences</li> <li>DataSource</li> <li>ListOVAlues</li> <li>DataBlocks</li> <li>FieldSets</li> <li>FST_CUST1</li> <li>FST_CUST2</li> <li>Actions</li> <li>CallForms</li> <li>Summary</li> </ul>	Fieldset Name Fieldset Label Data Block Multi Record View Type Fieldset Height CUSTNO CUSTTYPE CHAME CHAME CHAME CUSTYPE CHAME CH	Screen Name Screen Portion Tab Name Section Name Partition Name Number Of Rows	MAIN	<ul> <li>☐ Horizontal Fieldset</li> <li>☐ ReadOnly</li> <li>☐ Navigation Button</li> <li>☑ Visible</li> </ul>

#### Fig 12.14: Attaching Fields to a Field set

DRACLE' FLEXCUBE Developm	nent Workbench for Universal Banking	DEMOUSE
Browser 🗸		Windows Options Sign Ou
unction Generation		
		🖫 🗷 🗏 🖗
Action New -	Function Type Parent -	Function Category Maintenance 💌
Function Id STDCIFD	Parent Function	Header Template None 💌
Save XML Path D:\RADTOOL	Parent Xml	Footer Template None
earch	Fieldset Properties	4
<ul> <li>Preferences</li> <li>(a) DataSource</li> <li>(a) ListOfValues</li> <li>(a) CataSource</li> <li>(a) Screens</li> <li>(a) FreidSets</li> <li>(a) FST_CUST1</li> <li>(a) FST_CUST2</li> <li>(a) Actions</li> <li>(a) CaliForms</li> <li>(a) CaliForms</li> <li>(b) Summary</li> </ul>	Fieldset Name FST_CUST1 Fieldset Label RELK_CUSTOMER  Multi Record No  View Type Single  Fieldset Height Data Block Fields CNTY NLTY LANG	Screen Name CVS_MAIN

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

ORACLE FLEXCUBE Development Workbenc	h for Universal Banking - Windows Internet Explorer	- Are Manual Real		
ORACLE FLEXCUBE Developm	ent Workbench for Universal Banking			DEMOUSER
Browser -			Window	s Options Sign Out
Function Generation				_ ×
				🔚 🗶 🗏 🎸 🧃 🔿
Action New -	Function Type Parent	Fur	ction Category Maintenance	•
Function Id STDCIFD	Parent Function		ader Template None 🔻	
Save XML Path D:\RADTOOL	Parent Xml		ooter Template None	•
Search	Fieldset Properties	~		- 🛯 🌍 🤺
<ul> <li>Preferences</li> <li>DataSource</li> <li>ListONalues</li> <li>DataBlocks</li> <li>FieldSets</li> <li>FST_CUST1</li> <li>FST_CUST2</li> <li>Actions</li> <li>CallForms</li> <li>LaunchForms</li> <li>Summary</li> </ul>	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 Authorization Status	
	Autonzation Status	

### Below image shows a multiple view multi record field set



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

UNACLE PLEXCOBE Development workben	ien for oniversal banking - v	indows internet explorer			- mark			
RACLE FLEXCUBE Develop	ment Workbench for Unive	rsal Banking						DEMOUS
rowser 🗸							Window	ws Options Sign C
nction Generation								
								🗄 🗶 🗏 7 🍕
Action Load		Function Type Parent				Function	n Category Maintenance	*
Function Id STDCIFD		Parent Function					Template None 👻	
Save XML Path STDCIFD_RAI	BROWSE	Parent Xml				Footer	Template Maint Audit	<b>-</b>
earch	Fieldset Properties	;						- 🥂
🗀 Preferences	FieldsetName	FST_CUST2		Scree	n Name	CVS_MAIN	•	🔲 Horizontal Fieldse
DataSource	Fieldset Label	×=			Portion	Body	-	ReadOnly
STTM_CUSTOMER CUSTOMER NO	Data Block	BLK_GROUP -				TAB_MAIN	•	Navigation Button
CUSTOMER_NO	Multi Record	Yes 👻	ç			SEC GROUP	•	Visible
CUSTOMER_NAME1	View Type	Single -			Name	PART1	•	
address_line1	Fieldset Height				fRows			
COUNTRY	rieldserrielgitt		Nul	ilber (	Rows			
LANGUAGE		Data Block Fields			г:	eldSet Fields	Subpartition Name	
GROUP_ID		Data Diock Fields					Supparution Name	
CUSTOMER_NO					GROUP_	ID	•	
RELATIONSHIP					CUST_N	C	-	
istOfValues					RELATIO	N	•	
DataBlocks			<b>A</b>					
BLK_CUSTOMER			line al					
BLK_GROUP			44	J				
Creens CVS_MAIN								
HEADER								
TAB_MAIN								
EC_CUST								
SEC_GROUP								
FieldSets FST_CUST1								
- Actions								

~

#### Fig 12.18: Properties for Single View Multi Record Field set

🔶 Main		
🗗 New 🔄 Enter Query		
Customer No Name Type Address		1 of 1
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

action Generation								
						×	E 77	9
Action Load -		Function Type Parent		Function Cate	gory Maintenance 👻			
Function Id STDCIFD	Pa	irent Function		Header Tem				
Save XML Path STDCIFD_RAL	BROWSE	Parent Xml		Footer Temp	olate Maint Audit 👻			
arch	List Of Values Details						- [	x G
	LOV Name * LOV_O LOV Query select c	ountry_code,description from sttm		' and record_stat = 'O'				
LOV_OCUNTRY							Popul	late
DataBlocks	Query Columns	Data Type Visible	Reduction Field	Reduction Field Type	Reduction/Colum	nn Labe	el 🛛	~
) 🧰 Screens ) 🤄 FieldSets 🛅 Actions								$\overline{\mathbf{v}}$
CallForms								
aunchForms								
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	7 🤘	⇔
Action Load 👻	F	unction Type Parent	-			Funct	ion Category Maintenance	-				
Function Id STDCIFD	Pa	rent Function				Head	der Template None 👻					
Save XML Path STDCIFD_RAL	BROWSE	Parent Xml				Foo	ter Template Maint Audit	•				
Search	List Of Values Details									-	Aï 🧉	•
Preferences  DataSourcestomER  STTM_CUST_GROUP  ListONalues  ListOValues	LOV Name * LOV_OC LOV Query select co	CUNTRY puntry_code, description	from sttm_co	ountry where auth_stat =	= 'A' and record	1_stat = 'O'	]			Рор	ulate	
🗄 🧰 DataBlocks	Query Columns	Data Type	Visible	Reduction Field	Reductio	n Field Type	Reduction/Colu	mn La	bel		^	
Greens     FieldSets	COUNTRY_CODE	VARCHAR2 -	Yes 👻	Yes 👻	TEXT	•	LBL_CNTRY		×=			
Actions CallForms	DESCRIPTION	VARCHAR2 -	Yes 🔻	Yes 🔻	TEXT	- (	LBL_COUNTRYCD		<b>*</b> =		-	
Summary												

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 C	ategory Maintenance
Function Id STDCIFD	Parent Function	Header Te	mplate None 🔻
Save XML Path STDCIFD_RAI	BROWSE Parent Xml	Footer Te	mplate Maint Audit 👻
Search	Block Field Properties		- 🗷 📮 🌍
	Field Name • CNTY Field Labei DataSource STTM_CUSTOMER Column Name • COUNTRY Data Type • Varchar2 • Display Type • Lov • Item Type Database Item • Parent Field • Related Block • Related Field • LOV Name • Fieldset Name •	XSD Tag CNTY XSD Annotation Field Size * 3 Maximum Length 3 Minimum Value 4 Maximum Value 4 Maximum Decimals 4 TextArea Rows 4 TextArea Columns 4 Default Value 4 Preview Value 4 Mask Id 4	
	Custom Attributes Events Bind Variables Return Fields Return Fields Mapping		Default From Lov Definition
CallForms	Query Column	Block Name	Return Field Name
Carl Summary	COUNTRY_CODE BLK_CUSTO		JTY -
	DESCRIPTION BLK_CUSTO	DMER -	<b>-</b>
		g LOV to a block Field	

#### 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 Land	Function Type Parent	14	Function Category 11	antian ance Terr			
Function Id STDCH/F	Parent Function		Header Template No				
Save XML Path DIRADTOOLY	Parent Xml		Foster Template	aint Audit 🐱			
Search	Block Field Properties					- (A) =	0
Proferences DataSource DataSource Lov_COUNTRY Lov_ACCOUNT CUSTNO CUSTNO CUSTNO CUSTNO ACCOUNTRY ADDRLN1 COUNTRY ANDE ADDRLN1 CUSTSRP CUSTSRP CUSTSRP CUSTNO	Field Name CUSTNO     Field Label LBL_CUSTNO     XSD Tag CUSTNO     Display Tipe     Database film      Parent Field     Related Field     Related Field     Max Decimals     LOV Name     LOV_ACCOUNT Fieldset Name FST_GROUP		Data Type Varchar2 M     DataSource STTME_CUET     Max Length 9     Field Size     Column Name     CUBTOMER_*     Default Value     Preview Value     Accessive/Code     TextArea Cols     Max Val     Mask Id     Off Line LOV Name     Image Source		Popup Edit Regd Regured Visible Input by LOV Only Calender Text Select Multiple Uppercase Only Uppercase Only Regd In Xad Report Parameter Read Only		
	Custom Attributes Events Dind Variables Bind Variables Napping Block Name BLX_CUSTOMER	Ratum Fields	Bind Variable	Oxfault Koon LoV definitio Oxfaultype 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						
							 	+-	_
				Field Na	me	_	 Data Type		^
	1	BTM_MIS					•		
									Ŧ
								Ok	Cancel
				1001 5 (		<b>6</b> 11			

Fig 12.24: Defining Button field

• Add Call form details to Call form node

						🔚 🗶	■ 7	9
Action Load -		Function Type Parent	*	Funct	ion Category Mair	itenance 🔻		
Function Id STDCIFD		Parent Function		Head	ler Template Non	e 🔻		
Save XML Path STDCIFD_RAI	BROWSE	Parent Xml		Foo	ter Template Mair	nt Audit 👻		
irch	Call Form Details							9
DataSource								
TTM_CUSTOMER			1		creen Arguments		Fields <mark>+</mark> -	1
STTM_CUST_GROUP     ListOfValues	Function ID	Parent Data Block	Parent DataSource	Relation	Relation Type	Callform Screen	Display 1 4	
LOV_COUNRTY     DataBlocks	MICCUSTM	BLK_CUSTOMER -	STTM_CUSTOMER -	;TTM_CUSTOMER.COSTOMER_NO =	One To One 🔻	•	Button	
CNTY NLTY NLTY LANG TIL MIS TIL MIS TIL MIS TIL GROUP Screens FieldSets CallForms CallForms LaunchForms Summary								
	٢		m				•	r

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	XSD An       Fi       Maximum       Minimur       Maximum       Maximum       Maximum       TextAre       C       Defata       V       Previe	eld Size *	Required     Visible     Read Only     Calender Text     Popup Edit Required     Uppercase Only     LOV Validation     Required     Input by LOV Only     Not Required In Xsd     Report Parameter
□ LANG □ BTM_MIS ④ □ BLK_GROUP ○ □ Screens □ □ CVS_MAIN ❸ □ HEADER	Off Line LOV Name Fieldset Name Custom Attributes Events Related Field Event Name Funct	ction Name     Event Type	Maskid PE Button Screen CallForm Name	Screen Name
<ul> <li>BODY</li> <li>TAB_MNN</li> <li>SEC_CUST</li> <li>SEC_GROUP</li> <li>FieldSets</li> <li>Actions</li> <li>CallForms</li> <li>LaunchForms</li> <li>Summary</li> </ul>	✓ onunload ▼ 2.26: Defining event to the second	Caliform •	CVS_MAIP • MICCUSTM •	CVS_CUSTO

• Check the preview.

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

unction Generation								
						×	<b>I</b> 7	S
Action Load -	Function	Type Parent 👻		Function Category Maintenand	e –			
Function Id STDCIFD	Parent Fun	iction		Header Template None 👻				
Save XML Path STDCIFD_RAI	BROWSE Paren	t Xml		Footer Template Maint Audit	•			
arch	Preferences							Ľ
Dreferences	🔽 Head Office	Function	Module	ST				
DataSource     DataSource     DataSource	Logging Red	uired	Module Description	Static Maintenance				
B STTM_CUST_GROUP	Auto Authoriz	ation	Branch Program Id					
🗉 🚞 ListOfValues	🔽 Tank Modific	ations	Process Code					
DataBlocks	Field Log Re	quired	SVN Repository URL		_	1		
BLK_CUSTOMER BLK_CUSTNO	Multi Branch	Access	Transaction Block Name		•			
CUSTTYPE	Excel Export	Required	Transaction Field		•			
			Name					
DDR1								
					Car	atral Ci	ring 🕂	
LANG							iniy 🛨	
BTM_MIS     BLK GROUP	Function Id		Module *	Module Descript	ion			
Screens	STDCIFD	ST	1	Static Maintenance		_		
I CVS_MAIN	STSCIFD	ST	×1	Static Maintenance				
FieldSets								-
CallForms								
aunchForms								
🚞 Summary								
			een details in Prefere					

- 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	-				Category Maintenance Template None -	-			
Save XML Path STDCIFD_RAI BROWSE	Parent Xml				Footer	Template Maint Audit	•			
arch Summa	ary Details								C	<b>7</b> 9
B ListOfValues St	Data Source STTM_CUSTOMER	× • •		Default Where Clause Default Order By Multi Branch Where Clause Main Summary Screen	WebSen Required		2 2 2	] ]		
CUSTTYPE Data Bit CNAME ADDR1 CNTY NLTY	Ock Fields Custom Buttons Fields Ordering	_		Fields Selected	Query	LOV Name				
LANG				CUSTNO	Query ▼	LOV Name	-			
□ BTM_MIS ■ □ BLK GROUP				CNAME	<u>п</u>		-			
Screens			~	CUSTTYPE			-			
CVS_MAIN		ÞÞ		ADDR1			-			
TieldSets Actions		44		CNTY			_			
		N		NLTY						
CallForms				LANG						
				5.00	-		_			

#### **Summary Preview**

Right click on summary node and click on preview.

	auto Querri d <b>t</b> Advense	d Search O Dec	et D Clear All							×
EX EXE	Advance Advance Advance Authorization Status Customer No	v search +9 kes			Reco	ord Status	•			
Reco	rds per page 15 👻 📊	▲ 1 of 1		2						*
	Authorization Status	Record Status	Customer No	Name	Туре	Address	Country	Nationality	Language	
										E
										-
•									Þ	Ē
									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.

ndable DetailsQUERY		
Data Blocks	DataBlock Fields	;
ISTOMER ROUP	New Allowed Delete Allowed All I	Records 🔲 Mandatory
	Field Name	Amendable
	CUSTNO	
	CUSTTYPE	
	CNAME	
	ADDR1	
	CNTY	
	NLTY	
	LANG	
	BTM_MIS	
		Ok Cance

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.

ation		×		Aeta Data	Others
Error Description           I         Request successfully Processed		Error Code RD-SAVE-007	Henu Details     Dalasource Details     Double Details     Bick Details     Screen Details 4.132.100 Completed	Label Dietails Block PK Columns Function Call Forms Gateway Details Notification Details	Xsd With Annotations Screen Html Upload Table Trigger Upload Tables Definition Archive Table Definition
		File Download		rge Details	
		Do you want to open or sa		ile Type	Status
		Type: WinRAF From: 10.184.1	R ZIP archive		Generated * Generated *
			Open Save Cancel		Generaled *
STDCIFDCVS_MAINTAB_FOOTER html stpks_stdoitd_main.spc While files from the Inter stpks_stdoitd_main.spc		temet can be useful, some files can potent f you do not trust the source, do not open of	ially or	Generated  Generated	
	stpks_sldcifd_kernel.spc	save triis file. write.s	une hisk <u>y</u>		Generated 👻
	stplos_stdold_main.sql		SQI		Generaled *
	stpks_sldclfd_kernel.sql		SO		Generated *
	CST0_FIELD_LABELSSTOCIFD.INC		INC		Generaled *
	CSTB_OTHER_LABELSSTDCIFD INC		INC		Generated 👻
	OSTB_FID_CALLFORMSSTOCIFD.INC		INC		Generaled *

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.

Front-End Files	System Packages	Hook Packages	Me	ta Data	Others	^
RadXML Screen Xml System JS	Main Package Spec     Main Package Body     Notification Triggers     Upload Package Spec     Upload Package Body	Kernel Package Spec Kernel Package Body Uluster Package Body Uluster Package Body Uluster Package Spec Custom Package Body	Menu Details     Datasource Details     LOV Details     Block Details     Screen Details     Amendable Details     Call form Details     Summary Details	Label Details     Details     Diock PK Columns     Function Call Forms     Gateway Details     Notification Details     Function Parameters     Purge Details	Xsds Xsd With Annotations Screen Html Upload Table Trigger Upload Tables Definition Archive Table Definition	
3	CSTB_FIELD_LABELSSTDCIFD.INC		INC		Deployed -	*
4	CSTB_OTHER_LABELSSTDCIFD.INC		INC		Deployed -	
5	CSTB_SUMMARY_INFOSTDCIFD.INC		INC		Deployed -	
6	STTB_AUDIT_PK_COLSSTDCIFD.INC		INC		Deployed -	
7	CSTB_FID_DATA_BLOCKSSTDCIFD.INC		INC		Deployed -	
8	CSTB_FID_DATA_SOURCESSTDCIFD.INC		INC		Deployed -	
9	CSTB_FID_SCR_TABSSTDCIFD.INC		INC		Deployed -	E
10	CSTB_FID_SCREENSSTDCIFD.INC		INC		Deployed -	
11	SMTB_MENUSTDCIFD.INC		INC		Deployed -	
12	SMTB_ROLE_DETAILSTDCIFD.INC		INC		Deployed -	
13	SMTB_FUNCTION_DESCRIPTIONSTDCIFD.II	1C	INC		Deployed -	
14	SMTB_FCC_FCJ_MAPPINGSTDCIFD.INC		INC		Deployed -	
15	STDCIFD RAD.xml		RADX	ML	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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