Development of Maintenance Form Oracle FLEXCUBE Universal Banking Release 14.5.1.0.0 Part No. F45406-01 [June] [2021]



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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.

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	04-Development_WorkBench _Screen_Development-I.docx
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

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

1.2 Related Documents

<u>04-Development_WorkBench _Screen_Development-I.docx</u> <u>05-Development_WorkBench _Screen_Development-II.docx</u>

2. Introduction

2.1 How to use this Guide

The information in this document includes:

- <u>Chapter 2 , "Introduction"</u>
- Chapter 3 , "Overview of Call Form"
- <u>Chapter 4 , "Screen Development"</u>
- 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>4-Development_WorkBench</u>

<u>_Screen_Development-I.docx</u>

4.1 Header Information

Provide the header information as shown in the figure.

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- 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 \rightarrow Maint Audit

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	g 12.2: Save icon used for saving the		

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

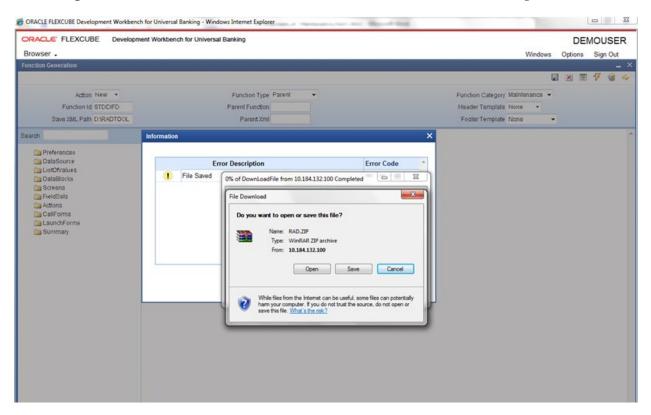


Fig 12.3: Saved File Information page

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>04-Development_WorkBench_Screen_Development-I.docx</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>Development_WorkBench_Screen_Development-I.docx</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>Development_WorkBench_Screen_Development-I.docx</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	
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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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• 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>Development_WorkBench_Screen_Development-I.docx</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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Fig 12.13: Creating new section in TAB_MAIN in the body of screen CVS_MAIN

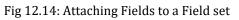
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4.6 Field Sets

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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• 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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Save XML Path D:\RADTOOL	Parent Xml		r Template None	-
Search	Fieldset Properties	~		- 🛛 🌍
 Preferences DataBlocks DataBlocks FieldSets FieldSets Actions CallForms Summary 	Fieldset Name FST_CUST1 Fieldset Label FST_CUSTOMER Multi Record No View Type Single Fieldset Height Data Block Fields CNTY NLTY LANG	Screen Name CVS_MAIN Screen Portion Body Tab Name BSc_CUST Partition Name SEC_CUST Partition Name CARCE PART1 Number Of Rows V Field Set Fields CUSTNO CUSTNO CUSTYPE ADDR1 44	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	
MOGINO	Authorization Status	

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).

E New P Enter Query Customer No		1	
Customer No			
Name Type Address			
I	Go to Page		+ - =
Group Id	Customer No	Relation	
Maker Checker		Date Time: Date Time:	
Mod No		cord Status tion Status	Exit

Below image shows a multiple view multi record field set



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

ORACLE FLEXCUBE Development Workben	ch for Universal Banking - W	indows Internet Explorer	na familia di	and the state			
	nent Workbench for Unive	rsal Banking					DEMOUSER
Browser -						Window	vs Options Sign Out
Function Generation							_ ×
							📱 🗶 🗏 7 🧃 🔿
Action Load -		Function Type Parent			Functio	n Category Maintenance	*
Function Id STDCIFD		Parent Function				r Template None 👻	
							_
Save XML Path STDCIFD_RAI	BROWSE	Parent Xml			Foot	r Template Maint Audit	•
Search	Fieldset Properties						- R 🥱 🔺
Carl Preferences	Fieldset Name	FST_CUST2	So	reen Nam	CVS_MAIN	•	Horizontal Fieldset
DataSource	Fieldset Label	×=	Sci	een Portio	Body	•	ReadOnly
	Data Block	BLK_GROUP -		Tab Name	TAB_MAIN	•	Navigation Button
CUSTOMER_NO CUSTOMER_TYPE	Multi Record	Yes 🔻	0.0	ction Name		-	Visible
CUSTOMER_NAME1	View Type	Single -				-	• VISIBIC
address_Line1				tition Nam			
COUNTRY	Fieldset Height		Numb	per Of Rows			
D NATIONALITY							
🚞 LANGUAGE							_
STTM_CUST_GROUP		Data Block Fields			FieldSet Fields	Subpartition Name	
CROUP_ID				GROU	IP ID	▼	
CUSTOMER_NO					-		
RELATIONSHIP					_		
ListOfValues DataBlocks			44	E RELA	TION	▼	
BLK_CUSTOMER							
			44				
Screens							
CVS_MAIN							
🖃 🚞 BODY							
🖃 🧰 TAB_MAIN							-
Disc_CUST							
SEC_GROUP							
FieldSets							
FST_CUST1 FST_CUST2							
FSI_CUSI2							

Fig 12.18: Properties for Single View Multi Record Field set

🔶 Main		X X X X X X X X X X X X X X X X X X X
🗗 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

Action Loa Action Id STDC/FD Parent Function Type Parent Function Field Type Reduction/Column Label Function Field	_ >							
					🔚 🗶] 🔳 1	۶ 📢] 🔿
Action Load 👻	Function Type	Parent -		Function Catego	Maintenance 👻			
Function Id STDCIFD	Parent Function			Header Templa	ite None 👻			
Save XML Path STDCIFD_RAI	BROWSE Parent Xml			Footer Templa	te Maint Audit 👻			
Search	List Of Values Details					-	A	b
DataSource STTM_CUSTOMER DataSource DataSource DataSource DataSource DataSource DataSource		escription from sttm	i_country where auth_stat =	'A' and record_stat = 'O'		Pop	oulate	1
	Query Columns Data Typ	e Visible	Reduction Field	Reduction Field Type	Reduction/Column Lal	bel	*	
							-	
CallForms								

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					Function Category Maintenance Header Template None Footer Template Maint Audit Footer Template Maint							
									×	= 1	3	⇔
Action Load + Function Id STDCIFD Save XML Path STDCIFD_RAI		ent Function Parent Xml				Head	er Template None 👻	▼				
Search	List Of Values Details									-	Aï 🗳) ^
Preferences DataSource DataSource Distrin_cOUSTOMER Distrin_cOUST_GROUP ListOfValues LoV_CCUNTRY	LOV Name * LOV_OCI LOV Query Select cou		from sttm_co	untry where auth_stat :	= 'A' and record	_stat = 'O']		(Рор	ulate	
DataBlocks	Query Columns	Data Type	Visible	Reduction Field	Reduction	n Field Type	Reduction/Colu	mn La	bel		^	
Greens FieldSets	COUNTRY_CODE	VARCHAR2 -	Yes 🔻	Yes 👻	TEXT	- /	LBL_CNTRY		× E			
CallForms CallForms LaunchForms Summary	DESCRIPTION	VARCHAR2 -	Yes 🔻	Yes -	TEXT	• (LBL_COUNTRYCD		*=		Ŧ	

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		-
		📰 🗵 🗐 7 🤢
Action Load -	Function Type Parent	Function Category Maintenance
Function Id STDCIFD	Parent Function	Header Template None 👻
Save XML Path STDCIFD_RAI	BROWSE Parent Xml	Footer Template Maint Audit 👻
Search	Block Field Properties	- N 📮 🎙
Preferences DataSource DataSource STTM_CUSTOMER DataBlocks DataBlocks BLK_CUSTOMER CUSTNO CUSTNYE CUSTNYE CUSTYPE CNAME ADDR1 CNTY LANG DUB	Field Name CNTY Field Label EL_CNTY FE DataSource STTM_CUSTOMER Column Name COUNTRY Data Type Varchar2 ~ Display Type Lov ~ Item Type Database Item ~ Parent Field Related Block ~ Related Field LOV Name COUNTRY ~	XSD Tag CNTY Required XSD Annotation Visible Read Only Field Size Calender Text Calender Text Maximum Value Oppercase Only Uppercase Only Maximum Decimals VISUAL Oppercase Only TextArea Rows Input by LOV Validation Required TextArea Columns Input by LOV Only Not Required In Xsd Preview Value FE Report Parameter
a) BLK_GROUP b) Screens b) Fieldsts c) CallForms c) CallForms c) Summary b)	Fieldset Name Custom Attributes Events Bind Variable Return Fields Mapping COUNTRY_CODE BLK_CUSTOMER DESCRIPTION BLK_CUSTOMER Fig 12.22: Attaching LC	Block Name Return Field Name

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 Load (w)	Function Type Farent	-	Function Category Mai	nternance (w)			
Function Id STDCINF	Parent Function		Header Template Nor				
Save XML Path DIRADTOOLI	Parent Xml		Footer Template Mai				
arch	Block Field Properties					- 80	9
Preferences DataSource DataSource DataSource LoV_COUNTRY LOV_ACCOUNT OutaBlocks CUSTNO CUSTNO CUSTNO CUSTNO CUSTNO LANG ADDRLN1 COUNTRY LANG ADDRLN1 CUNTRY LANG CUSTNO CUSTNO CUSTNO CUSTNO CUSTNO RELATON	Field Name CUSTNO Field Label LBL_CUSTNO XSD Tag CUSTNO Display Type Text Mem Type Database item Parent Field Met Annual State State Inn Val Max Decimals LOV_ACCOUNT Fieldset Name FST_GROUP		Data Tipe Varchar2 Data Source STTMS_CUST_ MaxLength 9 Field Ste Column Name CUSTOMER_N Default Value Preview Value Accessivey Code TertArea Cols MaxVal MaskId OffLine LOV Name Image Source		Popup Edit Reg3 Required Visible Input by LOV Only Calender Text Select Nutlsple Uppercase Only LOV Validation Reg3 Not Reg in Xs3 Report Parameter Res3 Only		
Screens FieldSets Actions Calif coms LaunchForms Summary	Custom Attributes Events Bind Variables Bind Variables Mapping Block Name BLK_CUSTOMER	Return Fields	Bind Variable CUSTNO	elsuit Som 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>14-</u> <u>Development of Call Form.docx</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.

Select Fields & Add UI Fields	×
DataSource fields UI Fields	
Field Name Data Type	^
BTM_MIS -	
	-
	Canad
Ok	Cancel

Fig 12.24: Defining Button field

• Add Call form details to Call form node

						E 7 🧐
Action Load -		Function Type Parent		Function Category Main	tenance 👻	
Function Id STDCIFD		Parent Function		Header Template None	e 🔻	
Save XML Path STDCIFD_RAI	BROWSE	Parent Xml		Footer Template Main	t Audit 🔻	
arch	Call Form Details					9
Preferences						
B D STTM_CUSTOMER				Screen Arguments	Dependent	Fields+-
TTM_CUST_GROUP ListOfValues	Function ID	Parent Data Block Parent Data	Source Relation	Relation Type	Callform Screen	Display 1 ^
LOV_COUNRTY	MICCUSTM	BLK_CUSTOMER - STTM_CUS		ER_NO = 💭 One To One 🔻	-	Button
CNTY LANG LANG TM_MIS LANG ETM_MIS EXCreans FieldSets Adions CallForms LaunchForms Summary						
	٢		III			*

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 Categor	y Maintenance 💌
Function Id STDCIFD	Parent Function			Header Templat	e None 🔻
Save XML Path STDCIFD_RAI	BROWSE Parent Xml			Footer Templat	e Maint Audit 👻
Search	Block Field Properties				- 🛛 📮 🌍
Preferences Control Control Preferences Strun_CUSTOMER Control Contro Control	Field Name + BTM_MIS Field Label BL_MIS DataSource Column Name + Data Type + - Display Type Parent Field Related Field LOV Name	#	XSD Tag XSD Annotation Field Size * Maximum Length Minimum Value Maximum Value Maximum Decimals TextArea Rows TextArea Columns Default Value Preview Value Mask Id	MIS MIS MIS	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 BLK_GROUP GROUP G CV_MAIN B HEADER BODY	Fieldset Name Custom Attributes Events Related Field	oction Name		tton Screen CallForm N MAIN MICCUSTM	ame Screen Name
THE MAIN TSEC_CUST SEC_COUT SEC_COUT FOOTER FieldSets Califorms Califorms Summary FieldSet	2.26: Defining event to t				

• 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	^	
			Ψ	
•			4	
MIS Change Log				
Maker	I	Date Time:		
Checker		Date Time:	E	xit
Mod No		ord Status		
	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

earch Preferences DataSource STM_CUSTOMER	Fundion Typ Parent Fundio BROWSE Parent Xr Preferences V Head Office Fun V Logging Require Auto Authorization	on	Static Maintenance
B STTM_CUST_GROUP C Stablocks BLK_CUSTOMER CUSTNO CUSTTYPE COAME	i Addo Addinatada i Tank Modificatio i Field Log Requi □ Multi Branch Acc □ Excel Export Rei	Ins Process Codi Ired SVN Repository URL cess Transaction Block Name	Choose Fleid
🚞 LANG 🛅 BTM_MIS	Function Id	Module *	Module Description
BLK_GROUP	STDCIFD	ST	Static Maintenance
Greens CVS_MAIN CVS_MAIN FieldSets Actions CallForms LaunchForms Summary	STSCIFD	57 78	Static Maintenance

- 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 .

									×	I 📝	 § 	
Action Load		Eurotian Tune Paran	_			Function (Category Maintenance		_		-	
							emplate None -	<u> </u>				
Save XML Path STDCIFD_RA	AL BROWSE	Parent Xml				Footer T	emplate Maint Audit	•				
irch	Summary Deta	ails									Q	9
		Title			Default Where Clause			5				
Action Load · Function Type Parent ·· Function Id STDC/FD Parent Function Save XML Path STDC/FD_RAI BROWSE Parent Xml Parent Xml ************************************	•		Default Order By			1						
	Data So	urce STTM_CUSTOMER	•		Multi Branch Where			1				
	Summary T	Type Summary	•		Clause							
			•		Main Summary Screen							
						WebServie Required	ces					
	2		-			rtequireu						
	Data Block Fields	Custom Buttons Fields Orderin	ng									
Function Id STDCIFD Parent Function Save XML Path STDCIFD_RAI BROWSE Parent Xml Search Summary Details Image: DataSource Title Image: DataSource Title Image: DataSource Title Image: DataSource Title Image: DataSource Data Blocks Image: DataSource StTM_CUSTOMER Image: DataSource Summary Type Image: DataBlocks Summary Streen Size Image: DataBlocks Data Block Fields Image: DataBlock Data Block Fields												
ADDR1												
DDR1 CNTY NLTY		Data Block Fields			Fields Selected	Query	LOV Name					
□ ADDR1 □ CNTY □ NLTY □ LANG		Data Block Fields				Query	LOV Name	•				
Action Load Function Type Parent Function Id STOCIFD Save XML Path STDCIFD_RAI BROWSE Preferences DataBlocks STTM_CUSTORER Data Blocks STIM_CUSTOMER Data Blocks STIM_CUSTOMER Summary Type DataBlocks Stimary BLK_CUSTOMER Summary Type SUMMary Type Summary CUSTNYPE Summary Screen Size CUSTTYPE Custom Buttons CUSTYPE Data Block Fields CUSTYPE Data Block Fields CUSTYPE Data Block Fields CUSTYPE Data Block Fields CUSTOR BLK_GROUP Screens CVS, MANN FieldSets Cutons					LOV Name	•						
ADDR1 CNTY CNTY LANG BTM_MIS BK_GROUP Screens		Data Block Fields			CUSTNO CNAME		LOV Name	• •				
ADDR1 CNTY CNTY LANG BTM_MIS BLK_GROUP Screens CVS_MAIN		Data Block Fields		Г	CUSTNO CNAME CUSTTYPE		LOV Name	• • •				
ADDR1 CNTY NLTY LANG BTM_MIS B.BLK_GROUP Screens D.CVS_MAIN FieldSets		Data Block Fields			CUSTNO CNAME CUSTTYPE ADDR1		LOV Name	¥ ¥				
ADDR1 CNTY CNTY LANG BTM_MIS BTM_MIS Screens CVS_MAIN FieldSets Actions		Data Block Fields		ר ר ר ר •••	CUSTNO CNAME CUSTTYPE ADDR1 CNTY		LOV Name	• • •				
ADDR1 CNTY CNTY LANG BTM_MIS BLK_GROUP Screens CVS_MAIN FIddSets Actions Califorms		Data Block Fields			CUSTNO CNAME CUSTTYPE ADDR1 CNTY		LOV Name	• • •				
Parent Function Save XML Path STDCIFD_RAI Parent Function Save XML Path STDCIFD_RAI BROWSE Parent Function Save XML Path STDCIFD_RAI BROWSE Parent Function Search Summary Details Image: DataSource Title DataSource Image: DataSource Summary CustomER Summary Screen Size DataBlocks DataBlocks Data Block Fields Custom Data Block Fields Custom Buttons Data Block Fields Custom Buttons Data Block Fields Custom Buttons Data Block Fields Data Block Fields Custom Buttons Data Block Fields Data	Data Block Fields		ר ר ר ר •••	CUSTNO CNAME CUSTTYPE ADDR1 CNTY NLTY		LOV Name	V V V V					

Summary Preview

Right click on summary node and click on preview.

🔷 🛃 Exe	ecute Query 💓 Advance	ed Search 🏼 🏟 Res	et 🖓 Clear All							×
Authorization Status Customer No				Record Status			•	-		
Reco	rds per page 15 🔻 🚺	🛯 1 of 1 🕨 🔰		e						*
	Authorization Status	Record Status	Customer No	Name	Туре	Address	Country	Nationality	Language	
										=
										-
•									•	•
									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	;
JSTOMER 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		×	4	lela Data	Others		
Error Description Request successfully Processed				Menu Details Datasource Details Datasource Details Datasource Details Datasource Details Dov Details Dov Details Sectore Details Nythtcshon Details		V Xsds Xsd Wilh Annotations Screen Html V Upload Table Trigger V Upload Tables Delinition	
		0% of DownLoadFile from 10.184	.132.100 Completed	nction Parameters	Archive Table Definition		
		File Download		X Hyb Levens			
		Do you want to open or sa	ve this file?				
		Name: RAD.ZIP Type: WinRAR ZIP archive		ые Туре	Status		
					Generated 👻		
		From: 10.184.1	32.100		Generaled *		
		Op	oen Save Cancel		Generated 👻		
					Generaled *		
5 STDCIFD_CVS_MAIN_TAB_FOOTER.html 6 slpks_stdolfd_main.spc 7 stpks_sidclfd_kernel.spc		While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. What's the risk?		ally	Generated 👻		
				x'	Generaled *		
					Generated 👻		
	slpks_stdcifd_main.sql		SQL	-	Generaled *		
	stpks_sldclfd_kernel.sql		SOL		Generated 👻		
	CSTB_FIELD_LABELSSTDCIFD.INC		INC		Generaled +		
	CSTB_OTHER_LABELSSTDCIFD INC		INC		Generated 👻		
	CSTB_FID_CALLFORMSSTOCIFD.INC		INC		Generaled *		

Fig 12.30: Generation of Files

Deploy files

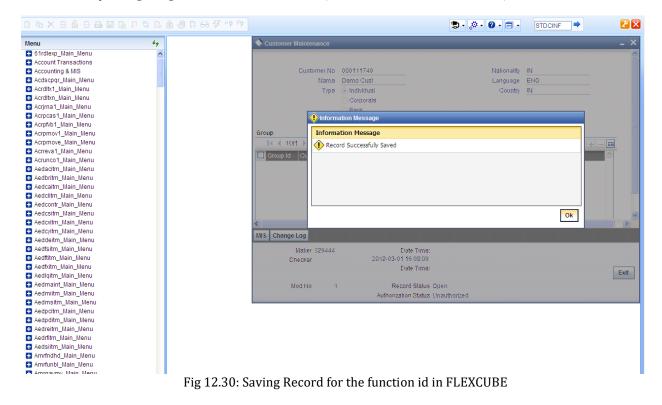
• Click on deploy button select the required files to deployed to server and click on deploy. On successful deployment status will be displayed as Deployed.

Front-End Files	System Packages	Hook Packages		Meta 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 Cluster Package Spec Cluster Package Body Custom Package Spec Custom Package Body	Menu Details Datasource Details Dotasource Details Block Details Srcren Details Amendable Details Call form Details Summary Details	Label Details Jeoc PK Colun Function Call Fi Gateway Detail: Notification Det Function Param Purge Details	orms Screen Html s Dyload Table Trig ails Dyload Tables De	ger finition
	CSTB_FIELD_LABELSSTDCIFD.INC		INC	0	Deployed -	^
	CSTB_OTHER_LABELSSTDCIFD.INC		INC	C	Deployed 👻	
	CSTB_SUMMARY_INFOSTDCIFD.INC		INC	0	Deployed 👻	
	STTB_AUDIT_PK_COLSSTDCIFD.INC		INC	C	Deployed -	
	CSTB_FID_DATA_BLOCKSSTDCIFD.INC		INC	0	Deployed 👻	
	CSTB_FID_DATA_SOURCESSTDCIFD.INC		INC	C	Deployed 👻	
	CSTB_FID_SCR_TABSSTDCIFD.INC		INC	C	Deployed 👻	-
0	CSTB_FID_SCREENSSTDCIFD.INC		INC	C	Deployed -	
1	SMTB_MENUSTDCIFD.INC		INC	0	Deployed 👻	
2	SMTB_ROLE_DETAILSTDCIFD.INC		INC	0	Deployed -	
3	SMTB_FUNCTION_DESCRIPTIONSTDCIFD.	INC	INC	C	Deployed 👻	
4	SMTB_FCC_FCJ_MAPPINGSTDCIFD.INC		INC	0	Deployed -	
5	STDCIFD RAD.xml		RA	DXML	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.docx</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_dbAny 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

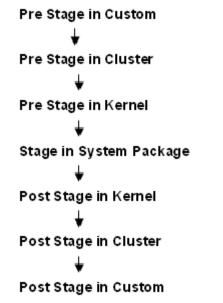
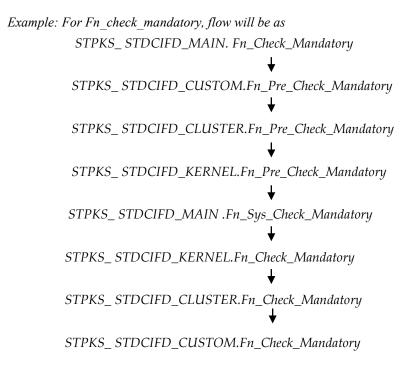


Fig 12.31: Flow of control through Hook Packages



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:

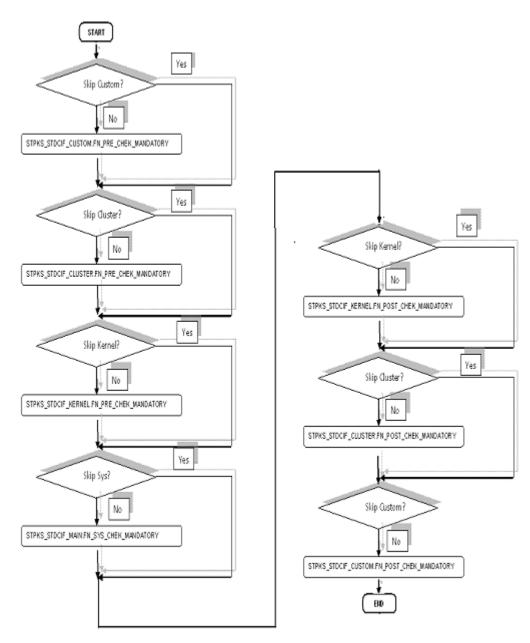


Fig 12.31: Flow of control explaining skip logic in pacakges



Development of Maintenance Form [June] [2021] Version 14.5.1.0.0

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