

Oracle® FLEXCUBE Investor Servicing Development Workbench – Screen Development II



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Preface

Oracle FLEXCUBE Investor Servicing is a comprehensive mutual funds automation software from Oracle® Financial Servicing Software Ltd.©.

You can use the system to achieve optimum automation of all your mutual fund investor servicing processes, as it provides guidelines for specific tasks, descriptions of various features and processes, and general information.

This topic contains the following sub-topics:

- [Purpose](#)
- [Audience](#)
- [Documentation Accessibility](#)
- [Critical Patches](#)
- [Diversity and Inclusion](#)
- [Conventions](#)
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Purpose

This manual is designed to help FLEXCUBE Application developers/users to familiarize with ORACLE FLEXCUBE Development Workbench for Investor Servicing.

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:

Table 1 Proficiency and Resources

Proficiency	Resources
FLEXCUBE Functional Architecture	Training programs from Oracle Financial Software Services.
FLEXCUBE Technical Architecture	Training programs from Oracle Financial Software Services.
FLEXCUBE Object Naming Conventions	Development Overview Guide

Table 1 (Cont.) Proficiency and Resources

Proficiency	Resources
Working knowledge of Web based Applications	Self-Acquired
Working knowledge of Oracle Database	Oracle Documentations
Working knowledge of PLSQL developer	Respective vendor documents
Working knowledge of PLSQL and SQL Language	Self-Acquired
Working knowledge of XML files	Self-Acquired

Documentation Accessibility

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

Access to Oracle Support

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

Critical Patches

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

Diversity and Inclusion

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

Conventions

The following text conventions are used in this document:

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

Screenshot Disclaimer

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

Prerequisite

Specify **User ID** and **Password**, and log in to **Home Screen**.

Related Resources

The functions of ORACLE FLEXCUBE Development Workbench for Investor Servicing system is organized into various guides, each discussing a component.

For more information, see these Open Development Tool documents:

- *Open Development Tool Installation*
- *Development Workbench - Getting Started*
- *Development Workbench - Administration*
- *Development Workbench - Screen Development I*
- *Development Workbench - Screen Customizer*
- *Development Workbench - Notifications*
- *Development Workbench - Bulk Generation*
- *Development Workbench - Source Upgrade*
- *Development Workbench - Tracking Changes*
- *Development of Maintenance Form*
- *Development of Online Form*
- *Development of Call Form*
- *Development of Launch Forms and Other Screens*
- *Development of Dashboard Form*
- *Development Workbench Service XML Development*
- *Development Workbench Performance Tuning Enhancements*
- *Development Workbench - Rest Services Development*

1

Generate Files

This topic provides systematic instructions to generate files from the Development Workbench.

1. On the **Function Generation** screen, click on the **Launch** icon to generate the files.

Generation of the screen has to be done after the design of the screen is completed. Refer *Development WorkBench - Screen Development* for a detailed explanation of on-screen development.

The **File Generation** screen displays.

Figure 1-1 File Generation

The screenshot shows the 'Function Generation' window with a 'Generate' tab. It contains several sections with checkboxes for file generation:

- Front-End Files:** RadXML, Screen Xml (checked), System JS (checked).
- System Packages:** Main Package Spec (checked), Main Package Body (checked), Notification Triggers, Upload Package Spec, Upload Package Body, Java Classes.
- Hook Packages:** Kernel Package Spec, Kernel Package Body, Cluster Package Spec, Cluster Package Body, Custom Package Spec, Custom Package Body.
- Meta Data:** Menu Details, Datasource Details, LOV Details, Block Details, Screen Details, Amendable Details, Call form Details, Summary Details, XSD Details.
- Others:** Label Details, Block PK Columns, Function Call Forms, Gateway Details, Notification Details, Function Parameters, Purge Details, ELCM MetaData Class, Xsds, Screen Html, Upload Table Trigger, Upload Tables Definition, Archive Table Definition.

Below these sections is a table with columns: SI.No, File Name, File Type, and Status. At the bottom right are 'Generate' and 'Exit' buttons.

Development Workbench generates files as shown in the figure above. For action New, Workbench automatically selects all files. If function ID has been loaded, then hook packages will not be checked.

Table 1-1 Front-End Files

Field	Description
RADXML	This file contains the Data Used to Design screen. Radxml is Input to Workbench. File Name : <Function_ID>_RAD.xml
Screen Xml	This file is an XML markup of presentation details, for the designed Function ID specific to a language. XSL Transformation is applied to this XML file by linking it to an XSL file. This results in HTML Markup which is displayed by the browser. File Name : <Function_ID>.xml

Table 1-1 (Cont.) Front-End Files

Field	Description
System JS	<p>This JavaScript file mainly contains a list of declared variables used by FLEXCUBE Infra.</p> <ul style="list-style-type: none"> • msgxml: This variable is used by the system to build FCUBS Request XML. • dataSrcLocationArray: This variable is an array of DATA BLOCKS. • relationArray: This array contains relation and relation type details of blocks. This is used for data binding. • retflds and bndFlds: These arrays contain LOV information. • CallFormArray, CallFormRelat, CallRelatType: These arrays contain call form details, call form relation, and relation type. • actionsAmmendArray: This array contains information for enabling fields based on actions. <p>File Name : <Function_ID>_SYS.js</p>
Release Specific JS	<p>Note: Release Specific JavaScript File will not be generated by Workbench. This file, if required, has to be created by the developer.</p> <p>This JavaScript file allows the 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 KERNEL release would add functions based on two categories:</p> <ul style="list-style-type: none"> • Functions triggered by screen loading events Eg: fnPreLoad_KERNEL(),fnPostLoad_KERNEL() • Functions triggered by screen action events Eg: fnPreNew_KERNEL (),fnPostNew_KERNEL () <p>A developer working in CLUSTER release would add functions based on two categories:</p> <ul style="list-style-type: none"> • Functions triggered by screen loading events Eg: fnPreLoad_CLUSTER(),fnPostLoad_CLUSTER() • Functions triggered by screen action events Eg: fnPreNew_CLUSTER (),fnPostNew_CLUSTER () <p>In case if any function in KERNEL JavaScript file has to be modified, this can be achieved by overriding the function in CLUSTER JavaScript file. The functions in this file are generally triggered by screen events. A developer working in CUSTOM release would add functions based on two categories:</p> <ul style="list-style-type: none"> • Functions triggered by screen loading events Eg: fnPreLoad_CUSTOM(),fnPostLoad_CUSTOM() • Functions triggered by screen action events Eg: fnPreNew_CUSTOM (),fnPostNew_CUSTOM () <p>In case if any function either in the KERNEL JavaScript file or CLUSTER JavaScript file has to be modified, this can be achieved by overriding the respective function in the CUSTOM JavaScript file. File name: <Function_ID>_<RELEASE_TYPE>.js</p>

Table 1-2 System Packages

Field	Description
Main Package Specification	The Main Package Spec Contains all the Declarations.
Main Package Body	<p>The main Package would contain all the business logic and persistence code for the functioned. It will also contain call-to-hook packages. Different flavors of the main Package generated are:</p> <ul style="list-style-type: none"> a. Maintenance FunctionId b. Transaction FunctionId c. Others Category FunctionId d. Report Parameter Screen e. Notification f. Purge Entity <p>The main package has the below stages in case of a maintenance function:</p> <ul style="list-style-type: none"> • 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 <p>Each of these stages has Pre and Post hooks in the Release Specific Packages.</p> <p>Note: Main Package has the system-generated code and should not be modified by the developer.</p>
Upload Package Specification and Upload Package Body	Upload Packages would support adapter upload flow of any Function ID. The package will contain code to convert upload table data to function id specific PL/SQL composite type. The main package of the functioned would be called to upload the data.
Notification Triggers	This will be generated only for notification trigger screens. Refer <i>Development Workbench - Notifications</i> for further reference.

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.

Table 1-3 Hook Packages

Field	Description
Kernel Package Spec and Kernel Package Body	The Kernel package is solely for the Kernel Team to modify. The Main package has designated calls to the Kernel package for executing any functional checks or validations included in the Kernel Package. All the user level validations and conditional operations should be included in Fn_Post_Default_and_Validate . This function is called from the Main Package after the execution of Fn_Default_and_Validate . The user should avoid putting validations or code in any other function. In case the user needs to add a separate function, the existing Workbench generated structure should not be changed. Instead, the user can create a new package. For Example: <MODULE>PKS_<FID>_UTILS package. The desired function can be included in this package and the call can be made from the Kernel Package.
Cluster Package Spec and Cluster Package Body	The Cluster package is available to the Cluster Team to add any validations or Checks specific to the Cluster Team over and above the Kernel Team. The Kernel Team or the Custom Team should not modify the contents of this package.
Custom Package Spec and Custom Package Body	The Custom package is available to the Custom Team only to add any validations or Checks over and above those already present in the Kernel and Cluster Packages.

Workbench generates INC files that contain insert scripts. These are static data required for the functioning of the function id. The developer needs to deploy generated INC's in FLEXCUBE schema.

Table 1-4 Meta Data

Field	Description
Menu Details	Under menu Details below 4, table entry Insert Scripts will get generated. <ul style="list-style-type: none"> • SMTB_MENU • SMTB_FUNCTION_DESCRIPTION • SMTB_ROLE_DETAIL • SMTB_FCC_FCJ_MAPPING If any one of the table entry missing while designing a new function ID, FLEXCUBE won't allow launching function ID.
Data source Details	Generates INC for CSTB_FID_DATA_SOURCES . This data is required for uploading data to FLEXCUBE for the function id through excel.
Lov Details	Generates INC for CSTB_LOV_INFO . FLEXCUBE will be using this information to get data for the List of values provided on the screen.
Block Details	Generates INC for CSTB_FID_DATA_BLOCKS . This data is required for uploading data to FLEXCUBE for the function id through excel.
Screen Details	Generates INC for CSTB_FID_SCREEN .

Table 1-4 (Cont.) Meta Data

Field	Description
Amendable Details	Generates INC for the below table. These scripts provide information regarding the amendable fields on the screen. Entry has to be present for the required field in these tables to make that field amendable through FLEXCUBE and gateway operation. <ul style="list-style-type: none"> • GWTM_AMEND_MASTER • GWTM_AMEND_NODES • GWTM_AMEND_FIELDS • GWTB_AMEND_NODES • GWTB_AMEND_FIELDS
Call form Details	Generates INC for CSTB_CALL_FORM_NODES . These will be generated only if the screen is a Call Form. It is required for attaching the particular Call form to any other function id.
Summary Details	Generates INC for CSTB_SUMMARY_INFO . Dat in this table is required for fetching records in the summary screen of the particular function id.
Label Details	Generates INC for CSTB_FIELD_LABELS and CSTB_OTHER_LABELS . Labels can be used for Language translation of screens. These scripts provide information regarding the label codes attached to each field. These are useful while developing language packs for FLEXCUBE. <ul style="list-style-type: none"> • CSTB_FIELD_LABELS : Contains Field Label details. • CSTB_OTHER_LABELS: Contains SCREEN, TAB, FIELDSET, BLOCK, etc label details. <p>Note: Workbench does not generate scripts for CSTB_LABELS. Data in CSTB_LABELS is maintenance required for the Tool.</p>
Block Pk Columns	Generates INC for STTB_AUDIT_PK_COLS .
Function Call Forms	Generates INC for CSTB_FID_CALLFORMS . This data is required for uploading data to FLEXCUBE for the function id through excel.
Gateway Details	Generates INC for the below tables. Data in these tables are required for gateway operations (web services) for the particular screen. <ul style="list-style-type: none"> • GWTM_FCJ_FUNCTIONS • GWTM_OPERATIONS_MASTER
Notification Details	Generates INC for the below tables. Notification INCs will get generated only for Notification screens. <ul style="list-style-type: none"> • GWTM_NOTIFICATION_TRIGGERS • GWTM_NOTIFICATIONS_MASTER
Function parameters	Generates INC for the below tables. This INC gets generated only for Reports screens (i.e. Function Category – Report). <ul style="list-style-type: none"> • AETB_FUNC_MASTER • AETB_FUNC_DETAIL
Purge Details	Generates INC for the below tables. These scripts will be generated only for Purge Entity Definitions screens. <ul style="list-style-type: none"> • STTM_PURGE_MASTER • STTM_PURGE_TBL_DETAILS • STTM_PURGE_FILTERS

Table 1-5 Others

Field	Description
Xsds	The XSD files are used for the creation of XMLs, which are in turn used during the execution of operations through Gateway.
Screen html	The HTML files are used to take screenshots by converting them to images, which are in turn used for Document preparation.
Upload Table Trigger	Trigger will be generated for inserting records into adapter upload process tables (CSTB_EXT_CONTRACT_STAT ,STTB_UPLOAD_MASTER) from upload tables.
Upload Table definition	DDL for upload tables would be generated. If existing upload tables are being re-used, the generated DDL's can be ignored.
Archive Table definition	DDL for archival tables would be generated for Purge Entity Radxml. Synonyms for the tables would also be generated.

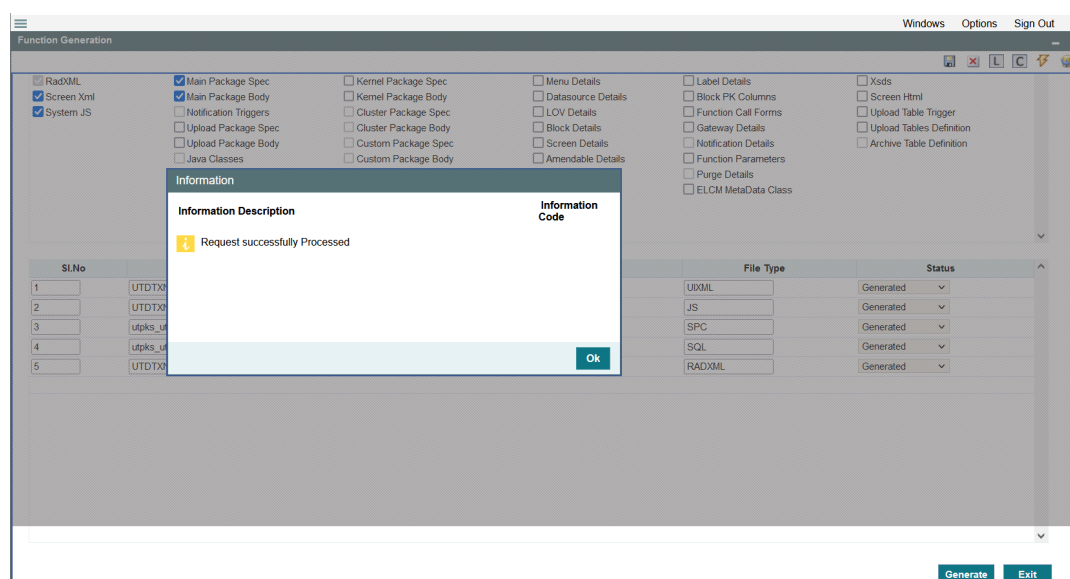
 **Note:**

For the new screen, all file options will be checked automatically. For modification only system-generated files will be checked, based on user requirements can opt for other file generation.

- Click on **Generate** button to generate the files selected.

The **File Generated Message** screen displays with the message of successful generation of files.

Figure 1-2 File Generated Message



2

Release

This topic provides an overview of release files to SVN through Development Workbench.

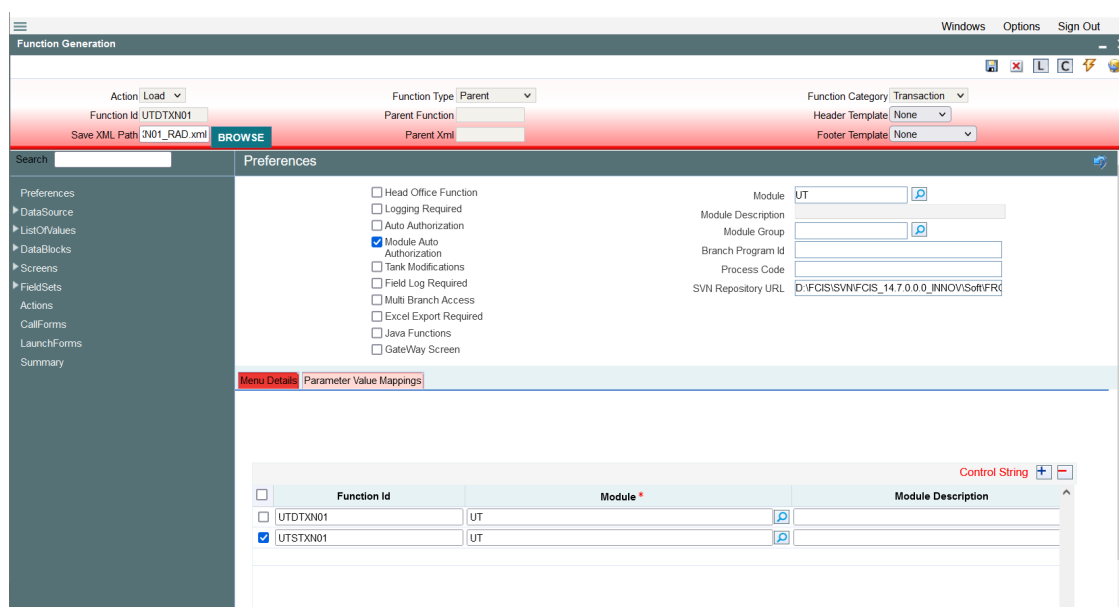
The release feature of Workbench is applicable only for developers within Oracle Financials. It involves the integration of the Tool with other in-house tools (repository/version control tools). Oracle FLEXCUBE Development Workbench is integrated with SVN.

SVN Integration

Workbench provides an interface to release the units generated to SVN. The following prerequisite should be adhered to before attempting to release units to SVN:

1. SVN Repository URL should be provided in the Preferences Node of Function Id against the field SVN Repository URL. Path till the module name has to be given. For Example:- For an FT module RADXML path can be given as Z:\FCUBS_11.3.0\Soft\MAIN\FT

Figure 2-1 Preferences Screen highlighting SVN Repository URL



The following files can be released to SVN through Development Workbench:

1. RADXML
2. Main Package(spc and sql)

For releasing files to SVN, the user has to check on the units to be released to SVN and click the OK button from the Release screen. SVN credentials have to be provided on the screen. SFR number has to be provided if it is not a simple check-in and if checked in successfully, the status will be displayed as released.

Glossary

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