Oracle® FLEXCUBE Investor Servicing

Development Workbench Rest Services Development

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Oracle FLEXCUBE Investor Servicing Development Workbench Rest Services Development, Release 14.7.6.0.0

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Primary Authors: (primary author), (primary author)

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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

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

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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.
italic	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 Development II*
- *Development Workbench - Screen Customizer*
- *Development Workbench - Notifications*
- *Development Workbench - Bulk Generation*
- *Development Workbench - Source Upgrade*
- *Development Workbench - Tracking Changes*
- *Child and Screen Childs - Concept and Design*
- *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

Set up Rest services

This topic describes the steps involved in setting up Rest services.

The purpose of this user manual is to guide users on the end-to-end setup of the REST Services. The following are the steps involved in setting up REST Services:

1. Enable REST in RADXML using ODT
2. Generate REST Artifacts using Silent ODT
3. Build REST Property files using Installer
4. Generate EXEC sources using Installer
5. EAR building using Installer

This topic contains the following sub-topics:

- Enable Rest in RADXML
  This topic provides the systematic instructions to enable REST in RADXML.
- Generation of REST Artifacts Using Silent ODT
  This topic gives an overview on generation of REST Artifacts using Silent ODT.
- ODT Silent Utility
  This topic gives an overview of the operations of ODT Silent Utility.

1.1 Enable Rest in RADXML

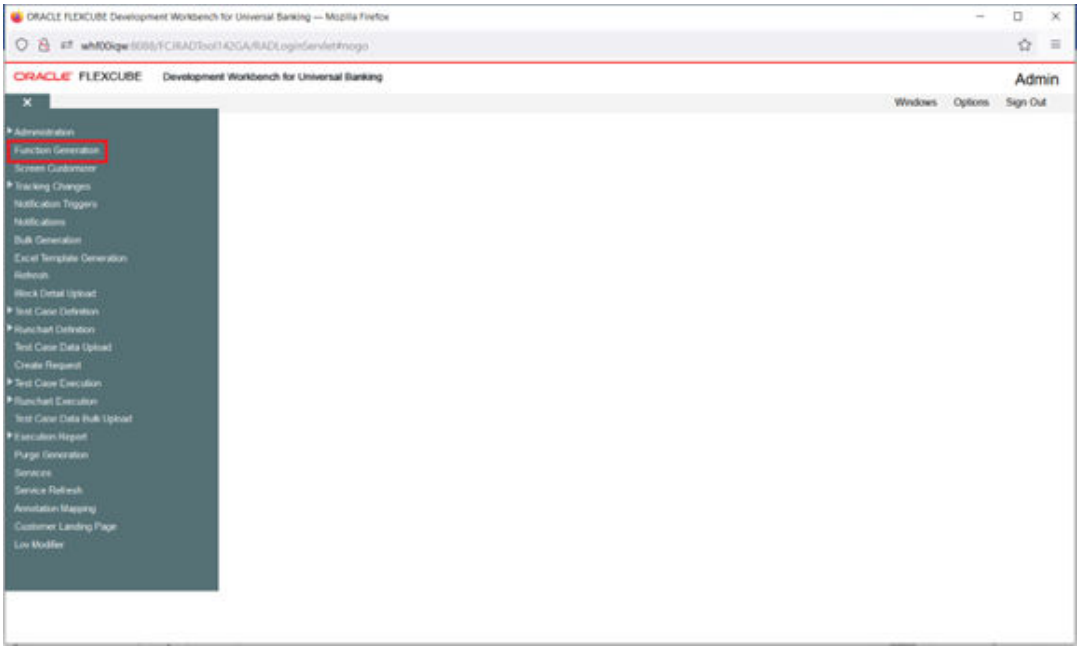
This topic provides the systematic instructions to enable REST in RADXML.

On the Development Workbench login page, specify the **Username** and **Password** and login to the Development Workbench landing page.

1. On **Home Screen**, click **Function Generation** node under the **Browser** menu.

   The **Function Generation** screen is displayed.

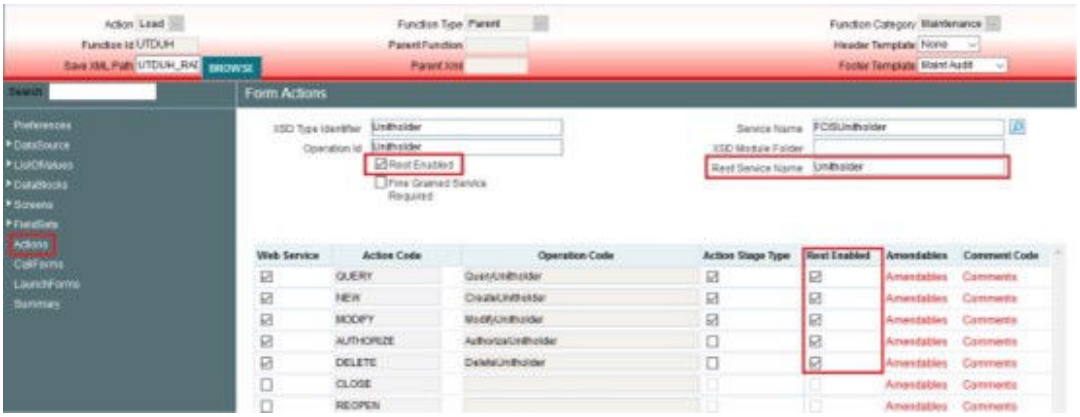
Figure 1-1 Function Generation



2. Click the **Actions** node at the left panel.

   The **Form Actions** screen is displayed.

Figure 1-2 Form Actions



3. On the **Form Actions** screen, specify the fields.

   Refer to the topic *Create Action Screen* for the detailed information.

4. On the **Form Actions** screen, select the **Rest Enabled** checkbox to enable REST Services for a function ID.

5. Specify the **Rest Service Name**.

6. Select the **Action Code** in the **Rest Enabled** column which needs to be enabled as part of REST Services.

7. Specify the **Service Name** and **Operation ID** fields which are mandatory for REST Services to generate static data.

8. Compile all the INC's generated as part of RAD Artifacts.

1.2 Generation of REST Artifacts Using Silent ODT

This topic gives an overview on generation of REST Artifacts using Silent ODT.

This topic contains the following sub-topics:

- Components of REST Services
  This topic gives an overview of components of the Oracle FLEXCUBE Investor Servicing REST Services.

1.2.1 Components of REST Services

This topic gives an overview of components of the Oracle FLEXCUBE Investor Servicing REST Services.

Components of REST Services

The following are the components of the Oracle FLEXCUBE Investor Servicing REST Services:

- **dto files** - REST Messages and Data Transfer Objects. In Patterns of EnterpriseApplication Architecture, Martin Fowler defines a Data Transfer Object (DTO) as: Anobject that carries data between processes in order to reduce the number of methodcalls.
- **Service File** - File used to perform the actual actions of the REST Service.
- **Util File**
- **Web.xml**

1.3 ODT Silent Utility

This topic gives an overview of the operations of ODT Silent Utility.

This topic contains the following sub-topics:

- Prerequisites
  Before the run utility operation in Open Development Tool, ensure the installation of the following technologies:
- Utility Run on Windows/Unix
  This topic gives an overview on Utility Run on Windows/Unix.
- Configuration of SilentODTUtility
  This topic gives an overview on configuration of SilentODTUtility.
- Generation of REST Service Artifacts through SilentOdtUtility
  This topic gives an overview on generation of REST Service Artifacts through SilentOdtUtility.

1.3.1 Prerequisites

Before the run utility operation in Open Development Tool, ensure the installation of the following technologies:

The following are the prerequisites for ODT Silent Utility:

1. JDK Instructions

2. apache-ant-1.10.1 Instructions
3. Silent Utility Instructions

JDK Instructions

Installer requires JDK version to be downloaded in the system and the same should be set as environmental variable.

Library required for executing **ANT jaxb-xjc-2.2.11.jar** and **ojdbc8.jar**

apache-ant-1.10.1 Instructions

Installer requires **ANT 1.10.1** version to be downloaded in the system and the same should be set as environmental variable.

Set JAVA_HOME and ANT_HOME in CMD or set in environment variable

Set JAVA_HOME=D:\JAVA18_161\JDK18161

Set ANT_HOME= `..\INSTALLER\SOURCE\Library\installer\apache-ant-1.10.1`

Set PATH=`%PATH ANT_HOME\bin`

Silent Utility Instructions

SilentUtility.jar is required for executing silent ODT.

Copy the **SilentUtility.jar** from `/INSTALLER/SOURCE/Library/odt to /TOOLS/ODT/SOURCE/Consol/SilentUtility/lib` before executing.

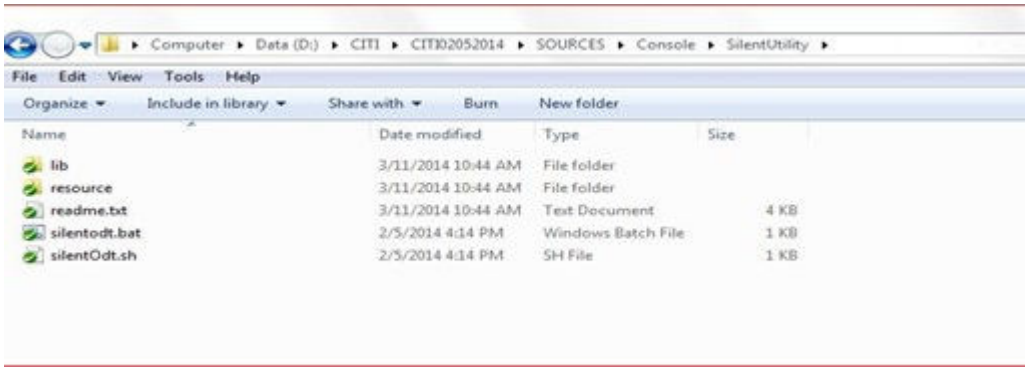
1.3.2 Utility Run on Windows/Unix

This topic gives an overview on Utility Run on Windows/Unix.

After copying the installer sources and library folder to the local system, make sure to uncheck the read-only check box in source properties and apply the same to all the subfolders.

The figure below shows the source folder in the local system:

Figure 1-3 Path of SilentODTUtility Source



1.3.3 Configuration of SilentODTUtility

This topic gives an overview on configuration of SilentODTUtility.

All Configuration files can be found inside/resource folder of the utility.

This topic contains the following sub-topics:

- SilentOdt.properties
  This topic gives an overview on SilentOdt.properties.
- OdtOperations.properties
  This topic gives an overview on OdtOperations.properties.

1.3.3.1 SilentOdt.properties

This topic gives an overview on SilentOdt.properties.

SilentOdt.properties

Table 1-1 SilentOdt.properties

Field	Description
ODT Data Source Detail Credentials	This section displays the following fields.
OdtJdbcUrl	JDBC *jdbc:oracle:thin:@10.184.xx.xx:1521:FCDEMO* (should be encrypted using utility)
OdtDbUser	DB User name (should be encrypted using utility)
OdtDbPassword	DP Password (should be encrypted using utility)
Logger Properties	This section displays the following fields.
Logreqd	**Y/N**, Default set to **N**. If the value is set to **Y** the logger will be enabled for the generation of the log. If the value is set to **N** logger will be disabled.
Logpath	Provide the path where the Logger files will be generated.
Level	Provide the Logger Level. This can be either **DEBUG/INFO/WARNING/ SEVERE**. Provide as **DEBUG** for writing detailed log. Default value would be set to **INFO**.
System Properties	This section displays the following fields.
JAVA_HOME	Maintain the Java installed location.
WEBLOGIC_HOME	Maintain the oracle Weblogic installed location.
WAS_HOME	Maintain the IBM Websphere installed location.

JAVA_HOME, **WEBLOGIC_HOME**, **WAS_HOME** are optional and can be used for generating template Ant scripts.

1.3.3.2 OdtOperations.properties

This topic gives an overview on OdtOperations.properties.

Configure the Operations files as per requirement.

The following operations are supported in the silent utility of ODT:

1. **LOGIN**
2. **SETRELEASE**: Setting Release and Environment Details
3. **BULKGENERATION**: Bulk Generation of RADXML units
4. **REFRESH**: Bulk refresh of RADXML
5. **SXML_REFRESH**: Bulk refresh of Service XMLs

6. **SXML_UPDATER**: Bulk Updater of service XMLs based on the changes in RADXMLs
7. **SXML_BULKGENERATION**: Bulk Generation of web service artifacts.
8. **REST_GENERATION**: Bulk Generation of Rest Service Artifacts

Execution of Operation will be as per the sequence maintained in **OdtOperations.properties**.

For Example:

1. Operation = **LOGIN**
2. Operation= **SETRELEASE**
3. Operation= **REST_GENERATION**

If the sequence of operations is as above, then **LOGIN**, **SETRELEASE**, and **REST_GENERATION** Operations would be processed in the respective sequence.

> **Note:**
>
> **LOGIN** and **SETRELEASE** are mandatory operations to be performed.

All Configuration files can be found inside/resource folder of the utility.

1. **LOGIN**
   User ID: Provide the ODT User ID which is created in the ODT Application.

   Password: Provide the ODT Password which is created in the ODT Application.

   Login should always be the first operation to be configured as part of any execution.

Figure 1-4 Login Operation

```
1  ###Login to Tool
2  ## 1.operation = LOGIN
3  ## 1.userId=RADTOOL
4  ## 1.password=PASSWORD
5
```

Table 1-2 LOGIN Operation

Field	Description
Operation	LOGIN
User Id	ODT User Id which is created in the ODT Application.
Password	ODT Password which is created in the ODT Application (should be encrypted using Utility).

2. **SETRELEASE**
   This operation is used for setting Release and Environment Preferences for SilentODTUtility. Connection to the FLEXCUBE schema would be established based on data maintained in ODT or through the data in **env_config.xml** as explained in an earlier section.

Figure 1-5 SETRELEASE Operation

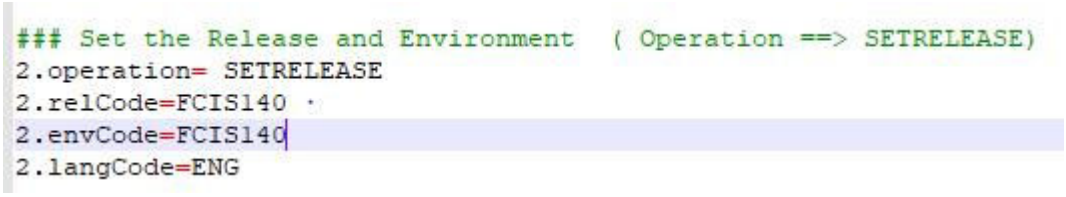


Table 1-3 Release and Environment Details for User

Field	Description
Operation	SETRELEASE
relCode	ODT Release Code which is created in the ODT Application.
envCode	ODT Environment Code which is created in the ODT Application.
langCode	Lang code for the above-mentioned release code.

3. **REST_GENERATION**
Web service artifacts can be generated through this operation.

Table 1-4 REST_GENERATION

Field	Description
radxmlListFile	Prepare text file which contains absolute path of all RADXMLs which are used for those services.
srcPath	Provide source folder path which is an option (Tool will create **radxmlListFile** by itself from the **srcPath**. Note that if **srcPath** is provided, **radxmlListFile** need not be provided.
destpath	Provide the path where the files will be generated.
gen	Provide the type of files to be Generated (separated by comma). Options are **REST**.

Table 1-5 Service XML Component Generator

Input	Output
operation	REST in destination path
radxmlListFile	REST in destination path
srcPath	REST in destination path
fileType	REST in destination path
destpath	REST in destination path
gen	REST in destination path

1.3.4 Generation of REST Service Artifacts through SilentOdtUtility

This topic gives an overview on generation of REST Service Artifacts through SilentOdtUtility.

To generate Rest service artifacts for a service, configure the property files of the utility as explained in the previous section.

Following operations needs to be configured in **OdtOperations.properties** in the respective sequence:

1. **LOGIN**
2. **SETRELEASE**
3. **REST_GENERATION**

Provide the following values for **gen** parameter of **REST_GENERATION**. To generate Rest service Artifacts, the user has to double click on the batch file **silentOdt.bat/sh** present in the ODT source.

SilentODT Sources Folder

Figure 1-6 SilentODT Sources Folder

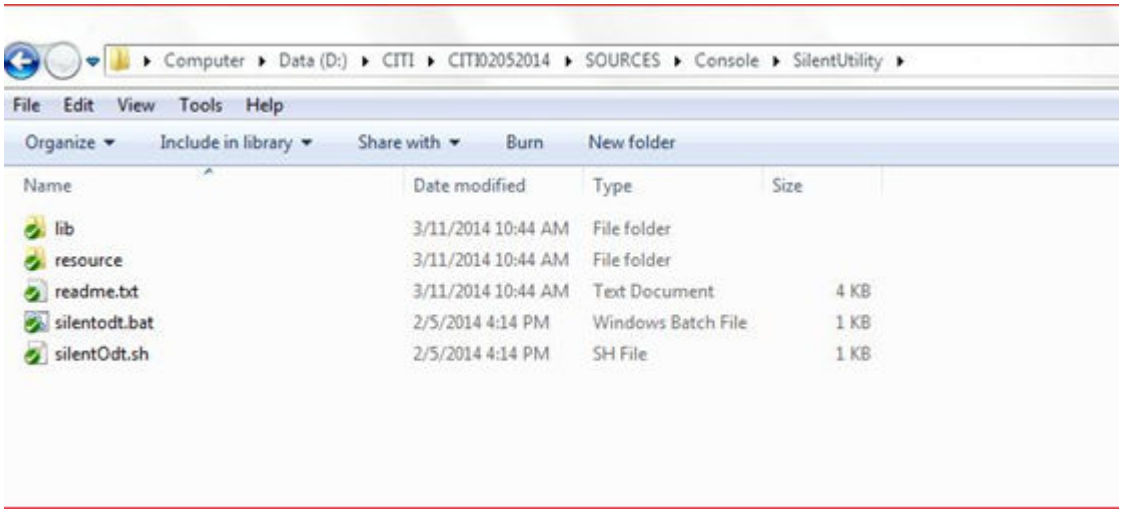
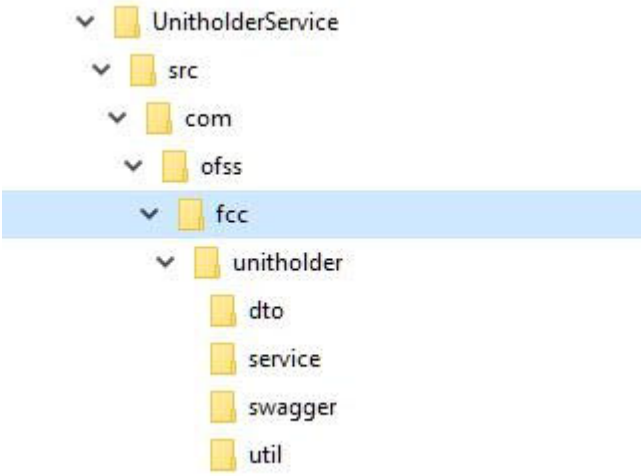


Figure 1-7 Path of silentOdt.bat

SilentODT in Command Prompt

After the successful built operation, The Rest artifacts files will be generated in the destination directory specified.

Figure 1-8 SilentODT in Command Prompt



Glossary

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