

Development Workbench Rest-Services Development  
Oracle Banking Trade Finance  
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# 1. Introduction

Purpose of this user manual is to guide user on end to end setup of Rest Services.

Steps involved in Rest Services setup:

- a. Enabling REST in RADXML using ODT.
- b. Generation of Rest Artifacts using Silent ODT.
- c. Building of Rest Property files using Installer.
- d. Generation of EXEC sources using Installer.
- e. EAR building using Installer.

## 2. Enabling of Rest in RADXML

Please find below the screenshot of the RAD Tool after loading RADXML.

The screenshot shows the Oracle Flexcube Development Workbench for Universal Banking. The 'Function Generation' section is active, with the following configuration:

- Action: Load
- Function Type: Parent
- Function Category: Maintenance
- Function Id: STDDTOP
- Parent Function: (empty)
- Header Template: None
- Save XML Path: STDDTOP\_R
- Parent Xml: (empty)
- Footer Template: Maint Audit

The 'Form Actions' section is also visible, with the following configuration:

- XSD Type Identifier: TDDTopUp
- Operation Id: TDDTopUp
- Rest Enabled
- Fine Grained Service Required
- Service Name: FCUBSAccService
- XSD Module Folder: (empty)
- Rest Service Name: TermDepositsTopUp

The 'Form Actions' table is as follows:

Web Service	Action Code	Operation Code	Action Stage Type	Rest Enabled	Amendables	Comment Code
<input checked="" type="checkbox"/>	QUERY	QueryTDDTopUp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Amendables	Comments
<input checked="" type="checkbox"/>	NEW	CreateTDDTopUp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Amendables	Comments
<input checked="" type="checkbox"/>	MODIFY	ModifyTDDTopUp	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Amendables	Comments
<input checked="" type="checkbox"/>	AUTHORIZE	AuthorizeTDDTopUp	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Amendables	Comments
<input checked="" type="checkbox"/>	DELETE	DeleteTDDTopUp	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Amendables	Comments
<input type="checkbox"/>	CLOSE		<input type="checkbox"/>	<input type="checkbox"/>	Amendables	Comments
<input type="checkbox"/>	REOPEN		<input type="checkbox"/>	<input type="checkbox"/>	Amendables	Comments
<input type="checkbox"/>	REVERSE		<input type="checkbox"/>	<input type="checkbox"/>	Amendables	Comments
<input type="checkbox"/>	ROLLOVER		<input type="checkbox"/>	<input type="checkbox"/>	Amendables	Comments
<input type="checkbox"/>	CONFIRM		<input type="checkbox"/>	<input type="checkbox"/>	Amendables	Comments
<input type="checkbox"/>	LIQUIDATE		<input type="checkbox"/>	<input type="checkbox"/>	Amendables	Comments
<input type="checkbox"/>	SUMMARYQUERY		<input checked="" type="checkbox"/>	<input type="checkbox"/>		Comments

Steps to enable Rest Services for a Function Id-

In the Actions Section of Rad

- 1) Select Rest Enabled Flag
- 2) Provide the Rest Service Name
- 3) Select the Action Code which needs to be enabled as part of Rest Services
- 4) Compile all the INC's generated as part of Rad Artifacts

---

## 3. Generation of Rest Artifacts using Silent ODT.

### Components of Rest service

Following are the components of FLEXCUBE UBS Rest service:

- dto files  
**REST Messages And Data Transfer Objects.** In Patterns of Enterprise Application Architecture, Martin Fowler defines a Data Transfer Object (**DTO**) as: An object that carries data between processes in order to reduce the number of method calls.
- Service File  
File used to perform the actual actions of the Rest Service.
- Util File
- Web.xml

---

## 4. ODT Silent Utility

### Prerequisites

- JDK

#### ***License Information:***

JDK is distributed by Sun Microsystems, Inc under Java Development Kit Binary Code License agreement.

#### ***Instructions:***

Installer requires JDK 1.8.0 version to be downloaded in the system and the same should be set as environmental variable

- Apache Ant 1.7.1

#### **Instructions:**

Installer requires ANT 1.7.1 version to be downloaded in the system and the same should be set as environmental variable

## **How to run utility on Windows/Unix**

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

The screen shot below shows how the source folder in your local system should look like.

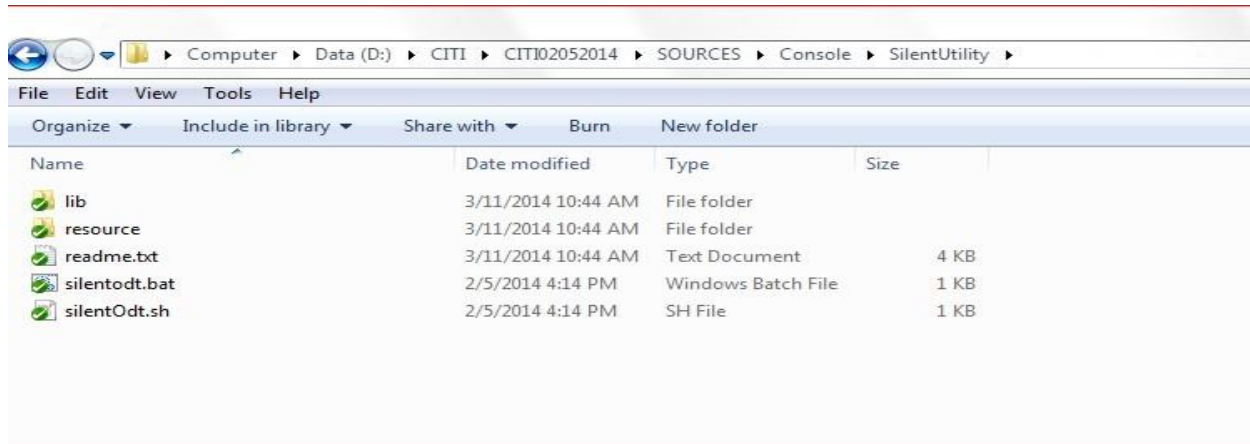


Fig 4.2.1: Source of SilentODTUtility.

## **Configuration of SilentODTUtility**

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

### **4.3.1 SilentOdt.properties**

Fig 4.3.1: SilentODT Properties.

<b>ODT Data Source Detail Credentials</b>	
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)
<b>Logger Properties</b>	
Logreqd	Y/N. Default set to N,
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
<b>System Properties:</b>	
JAVA_HOME	Maintain the Java installed location
WEBLOGIC_HOME	Maintain the oracle weblogic installed location
WAS_HOME	Maintain the IBM websphere installed location

### ODT Data Source Detail Credentials

Maintain ODT Database schema details as demonstrated in the figure above.

Maintain values for ***OdjJdbcUrl, OdtDbUser, and OdtDbPassword.***

### Logger Properties:

***Logreqd:*** Y/N. Default set to N,

If value set to 'Y' logger will be enabled for generation of log

If value 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:

***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) These are optional and would be used for generating template Ant scripts*

### 4.3.2 **OdtOperations.properties**

Configure the Operations files as per Requirement.

The Following operations are supported in 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 radxml's
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.

*Example:*

1. *Operation = LOGIN*

--

2. *Operation= SETRELEASE*

--

3. *Operation= REST\_GENERATION*



If sequence of operations is as above, then Login Operation , Set Release and REST\_GENERATION Operations would be processed in respective sequence

**Note: login and setrelease are mandatory operations to be performed.**

#### 4.3.3.1 Login

**Userid:** Provide the ODT Userid which is created in the ODT Application

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

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

Fig 4.3.3.1: SilentODT Login Properties

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

Login to Tool	
operation	Login
Userid	ODT Userid which is created in the ODT Application
password	ODT Password which is created in the ODT Application (should be encrypted using Utility)

#### 4.3.3.2 Set Release

This operation can be used for setting Release and Environment Preferences for SilentODTUtility

**relcode:** Provide the ODT Release Code which is created in the ODT Application

**envCode:** Provide the ODT Environment Code which is created in the ODT Application

**langcode:** Provide the Lang code for above mentioned release code

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 earlier section

```

6  ##Set Release and Environment for the User
7  ## 2.operation= SETRELEASE
8  ## 2.relCode=MODEL_BANK
9  ## 2.envCode=MODEL_BANK_DEV_ENV
10 ## 2.langCode=ENG
11
12

```

Fig 4.3.3.2: SilentODT Set Release Properties

Set Release and Environment for User	
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 above mentioned release code

### 4.3.3.3 Rest Generation

Web service artifacts can be generated through this operation

**radxmlListFile:** Prepare text file which contains absolute path of all radxmls which are used for those services .

**srcPath :** provide source folder path which is option (Tool will create radxmlListFile by itself from the srcPath

Note that if srcPath is provided, radxmlListFile need not be provided

**gen:** Provide type of Files to be Generated (separated by coma) . Options are REST

**destpath:** Provide the path where the files will be generated.

Service XML Component Generator	
Input	output
operation	REST in destination path
radxmlListFile	
srcPath	
fileType	
destpath	
gen	

## **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 respective sequence

- 1) LOGIN
- 2) SETRELEASE
- 3) REST\_GENERATION

Provide following values for gen parameter of REST\_GENERATION

*REST*

Double click the batch file silentOdt.bat/sh present in the ODT source.

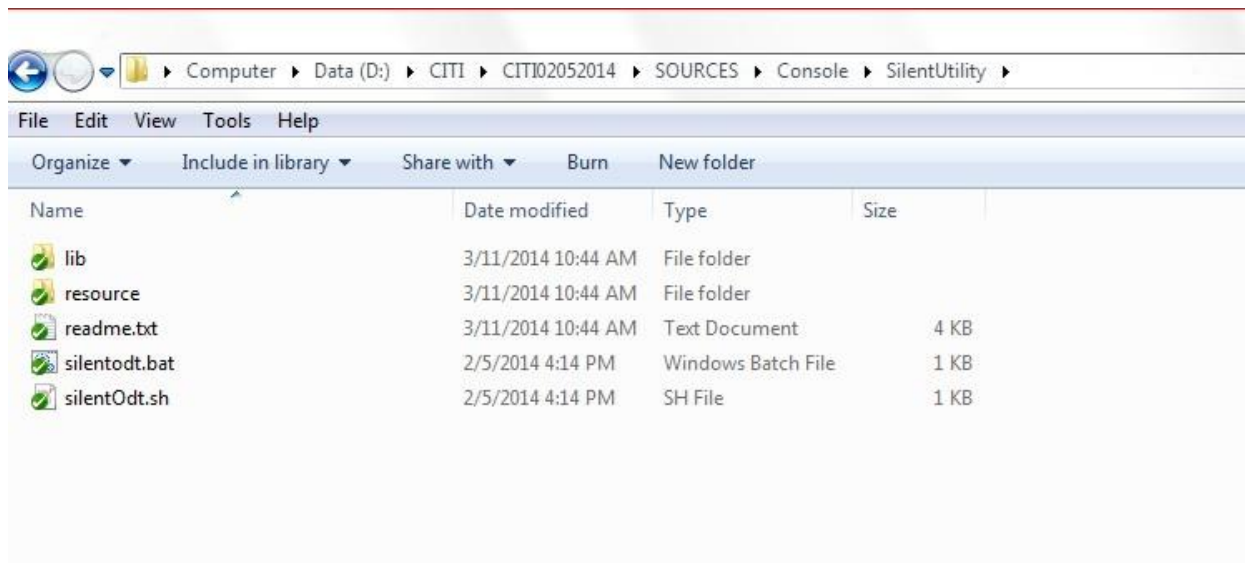
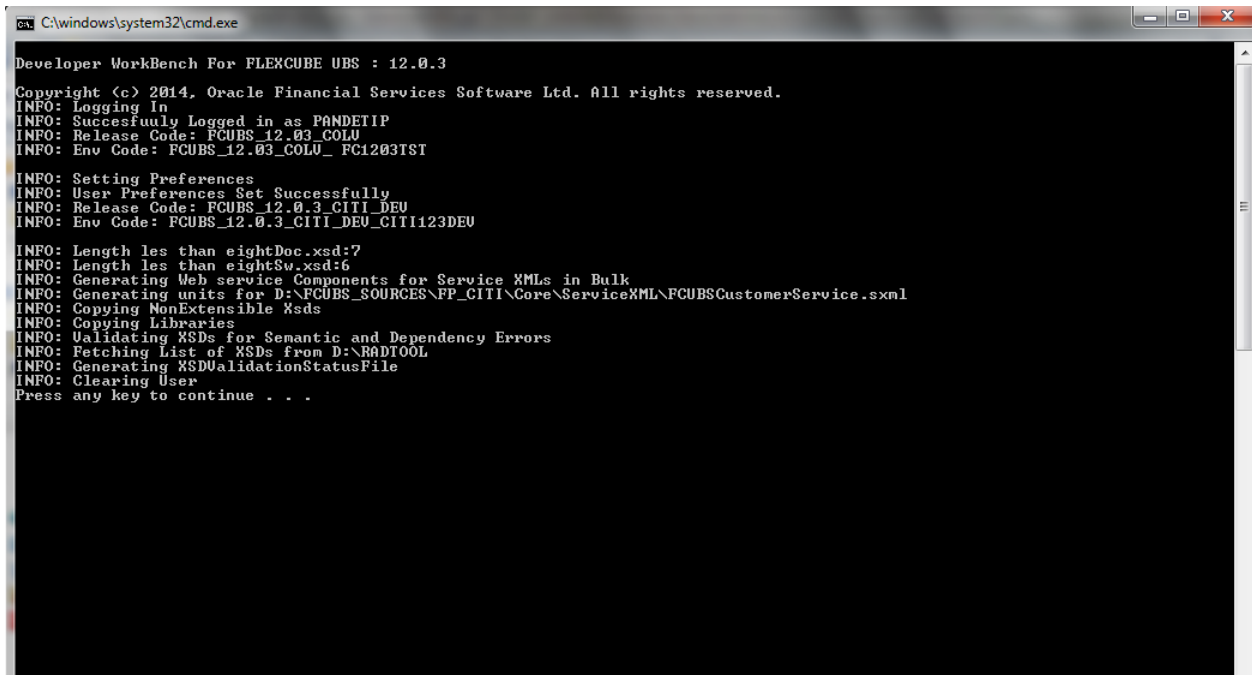


Fig 4.4.1: SilentODT Sources

This displays the screen as follows.



```
C:\windows\system32\cmd.exe
Developer WorkBench For FLEXCUBE UBS : 12.0.3
Copyright (c) 2014, Oracle Financial Services Software Ltd. All rights reserved.
INFO: Logging In
INFO: Successfully Logged in as PANDETIP
INFO: Release Code: FCUBS_12.03_COLU
INFO: Env Code: FCUBS_12.03_COLU_FC1203TST

INFO: Setting Preferences
INFO: User Preferences Set Successfully
INFO: Release Code: FCUBS_12.0.3_CITI_DEU
INFO: Env Code: FCUBS_12.0.3_CITI_DEU_CITI123DEU

INFO: Length les than eightDoc.xsd:7
INFO: Length les than eightSw.xsd:6
INFO: Generating Web service Components for Service XMLs in Bulk
INFO: Generating units for D:\FCUBS_SOURCES\FP_CITI\Core\ServiceXML\FCUBSCustomerService.xml
INFO: Copying NonExtensible Xsds
INFO: Copying Libraries
INFO: Validating XSDs for Semantic and Dependency Errors
INFO: Fetching List of XSDs from D:\RADTOOL
INFO: Generating XSDValidationStatusFile
INFO: Clearing User
Press any key to continue . . .
```

Fig 4.4.2: SilentODT Running in Command Prompt

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



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Installation

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