Development Workbench Web Service Units Generation
Oracle FLEXCUBE Universal Banking
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Contents

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1. Preface

This document describes the process of generating units required for building web service in FLEXCUBE through FLEXCUBE Management and Integration Console

1.1 Audience

This document is intended for FLEXCUBE Application developers/users that use FLECUBE 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 Object Naming conventions	*Development Overview Guide*
FLEXCUBE Web Services Development	*FLEXCUBE User Manuals*
Working knowledge of Oracle Database	Oracle Documentations
Working knowledge of PLSQL & SQL Language	Self Acquired
Working knowledge of XML files	Self Acquired
Essential knowledge on FLEXCUBE Development Workbench	*02- Development_Workbench_ Administration.docx 03-Development_Workbench_Getting Started.docx*

1.2 Related Documents

- *Development Workbench Getting Started*
- *Development Workbench Deployment and Release of files*

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2. Introduction

2.1 How to use this Guide

The information in this document includes:

3. Overview of Web Services Development for FLEXCUBE

Web Services are self-contained, self-describing, modular applications that can be published, located and invoked across the web. A Web Service is an interface that describes a collection of operations that are network accessible through standardized XML messaging.

3.1 Components of web service

Following are the components of FLEXCUBE UBS Web service:

- XSD files
  - Message XSDs
    This represents the "Message" portion on WSDL file that is used to define the message communicated in web service. A message can have one or more data types.

  - Type XSDs
    This represents the "Types" portion on WSDL file that used to define the data types that are part of messages.

- WSDL file
- Implementation Java files
- Gateway static data

Example:
For a hypothetical function id , JKDMOBILE, assume that developer wants a web service for Create operation . For this following units will be required
  - *XSD files*
    - *CS-Mobil-Types.xsd*
    - *CS-CreateMobil-Req-Full-MSG.xsd*

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- - *CS-CreateMobil-Req-IO-MSG.xsd*
    - *CS-CreateMobil-Res-Full-MSG.xsd*
    - *CS-CreateMobil-Res-PK-MSG.xsd*
  - *WSDL file*
    - *FCMobileService.wsdl*
  - *Implementation Java files*
    - *FCMobileServiceImpl.java*
  - *Gateway static data*
    - *GWTB_AMEND_FIELDS__JKDMOBIL.INC*
    - *GWTB_AMEND_NODES__JKDMOBIL.INC*
    - *GWTM_AMEND_FIELDS__JKDMOBIL.INC*
    - *GWTM_AMEND_MASTER__JKDMOBIL.INC*
    - *GWTM_AMEND_NODES__JKDMOBIL.INC*

Here FCMobileService is the name of the web service application

Note that one web service can contain multiple operations across multiple function ids. For instance all online operations in Letters of Credit module can be clubbed together under one web service

4. Generation of Web Service Components

All the units required for a web service development can be generated through ODT.
- XSD Files
  These are generated from ODT for individual function ids contained in the web service.
- Gateway Static data
  Gateway static data is also generated for individual function ids through ODT Function Generation feature
  Refer *Development_WorkBench_Screen_Development-I.docx* and *Development_WorkBench_Screen_Development-II.docx* for detailed explanation on generation of these units

- Wsdl File
- Impl File
- Config Files
  Wsdl, impl and config files for a particular web service can be generated through Web Service Units Generation Feature in FLEXCUBE Workbench. Process of generation of these files through Workbench is explained in below sections

4.1 Process Steps

Login to FLEXCUBE Workbench by providing your user credentials.

Click on Web Service Units Generation from the browser tree as shown in the figure
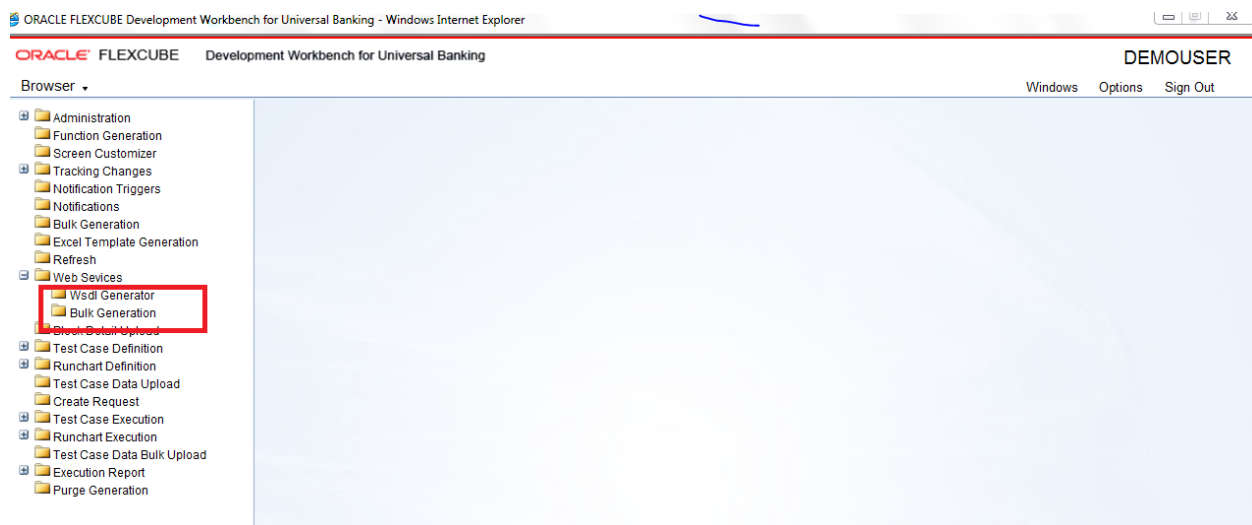

Fig 4.1.1 Launching Screen for Generating Web Service Units

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The below screen will be launched. Provide values to the fields as required

Fig 4.1.2 Web Service Units Generation Screen

4.1.1 Connect to

This field specifies the environment from which ODT should collect data for generating the files.

Options provided to the user are:

i) **FLEXCUBE**

ODT will fetch data from the FLEXCUBE environment to which the Tool is mapped .

Environment details will be fetched from the user preferences maintained

ii) **Trax**

ODT will fetch data from Trax database if the option selected is Trax

This option is meant to be used only for in-house developers who have access to Trax Tool.

4.1.2 Release Code

Release code is to be entered by the user only if the environment chosen is Trax.

If the environment is FLEXCUBE, release name will be defaulted from the value maintained in user preferences

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If the environment selected is Trax, user has to choose the Release name in Trax for which units has to be generated. List of values will fetch all open releases in Trax server

4.1.3 Service Name

This name of the web service for which the units has to be generated has to be provided in this field

If the environment is FLEXCUBE, the list of web services will be populated from the values maintained in GWTM_SERVICES_MASTER

If the environment is Trax, all the services maintained in Trax server for the particular release name provided will be populated in the LOV.

4.1.4 Service Description

This is a read only field. It populates the description of the Service name which was selected

4.1.5 Type System

This field specified whether the web service is strongly typed or weakly typed. By default, it is strongly typed. Note that all versions from 11.0 are strongly typed. This field has been provided for backward compatibility.

If the environment is Trax, this field will be defaulted as per the maintenance in Trax server

4.1.6 XSD Path

This field is introduced to validate the data fetched from the FLEXCUBE schema. This field is applicable only if the environment is FLEXCUBE.

A path containing all the Xsd's which would be copied to the server for the particular service has to be mentioned in this field.

Note that this is an optional field, but is highly recommended to avoid errors in the generated files. Refer section on *Need of Validate button* for further explanation

If the Save Mode is Client, path should be accessible from client.
If the Save Mode is Server Path/Zip, path should be accessible from server.

4.1.7 SOAP Fault

This has to be checked for all FLEXCUBE versions from 12.0.2

4.1.8 Files Generation- Option list

Three checkboxes-Config Files, Wsdl Files and Impl Files, specifies the files which will be generated by the tool. User has the option to selectively generate the files. User can uncheck any file which need not be generated.

4.1.9 Populate Button

After providing the values to all fields as explained above, click on Populate button. This will populate all the operations maintained for the particular service from the environment specified.

If the environment is FLEXCUBE, it will populate from GWTM_OPERATIONS_MASTER table.

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If the environment is TRAX , it will populate all the operations maintained for the particular service in the particular release in Trax server.

All the operations with the corresponding function id and action code will be populated in the table.
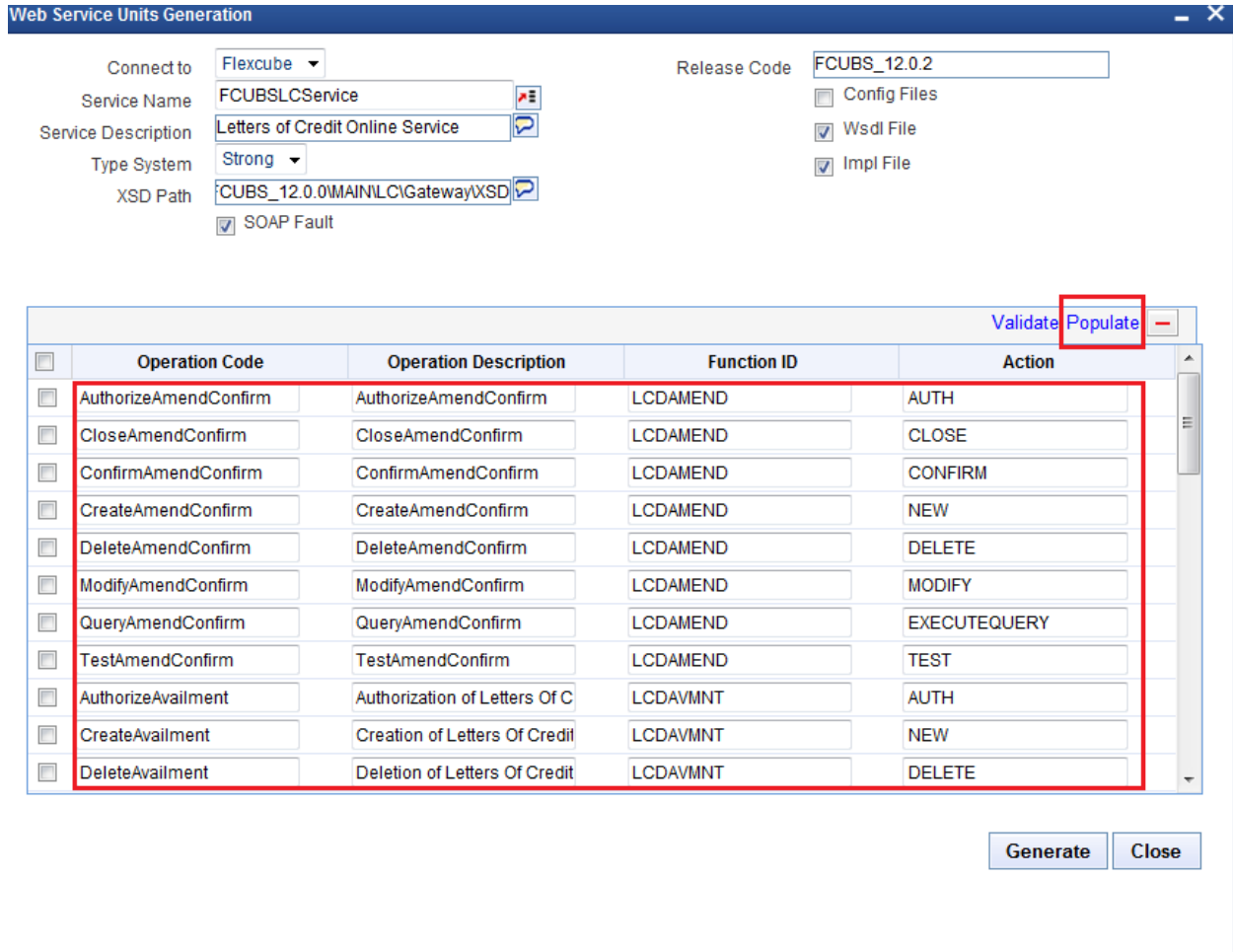

Fig 4.1.4   All Operation Codes Populated after clicking on Populate button

4.1.10   Validate Button

Validate button is applicable only if the environment is FLEXCUBE. This button will be enabled on clicking of Populate button. Xsd path has to be provided for validating the data fetched from GWTM_OPERATIONS_MASTER.

On click of the button, system will validate whether Xsd's for all operation codes are present in the path provided. If Xsd's are not present, then the particular operation codes will be removed from the list; or if partially present, data will be modified accordingly. Refer section on *Need of Validate button* for further explanation .
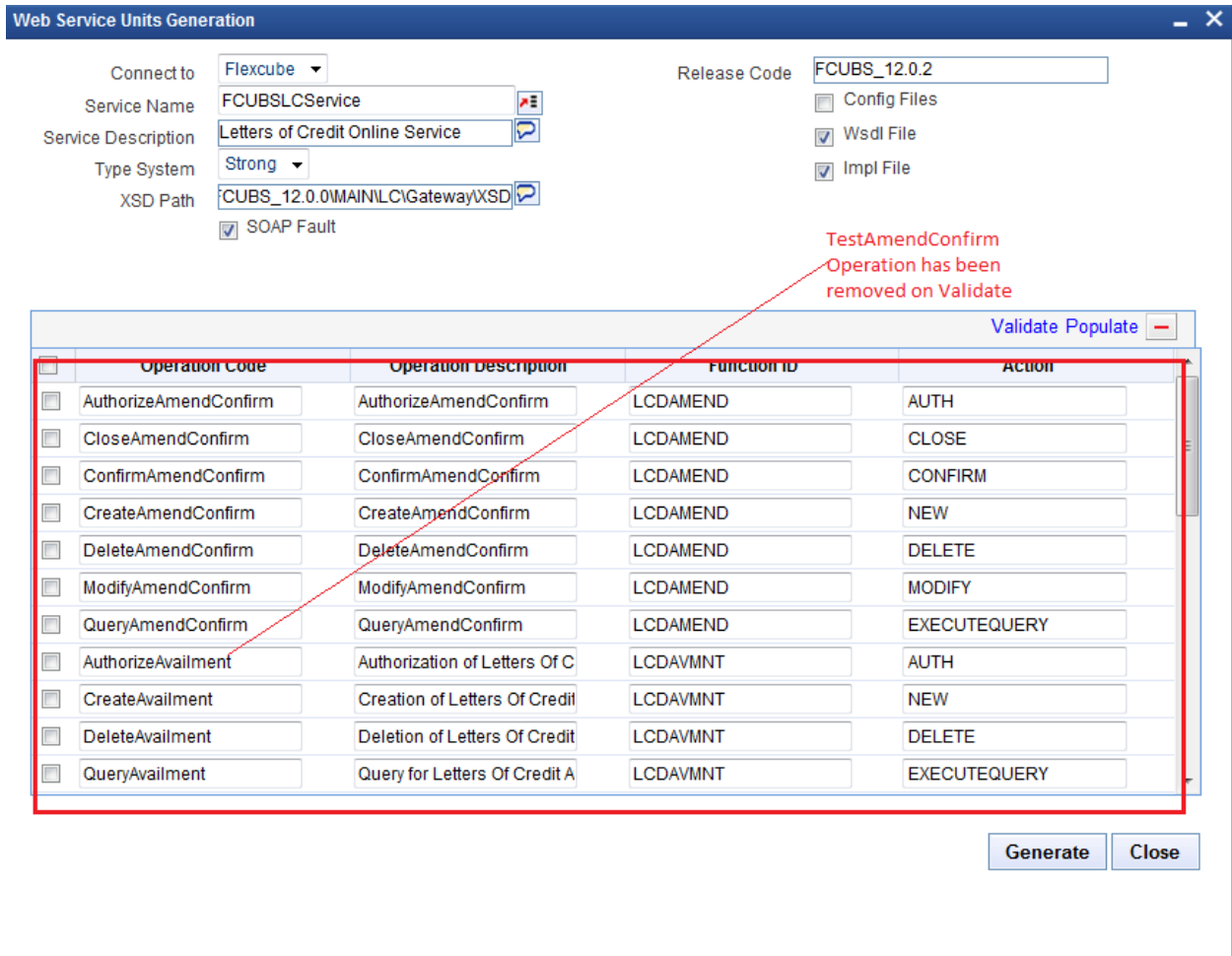
Fig 4.1.6   Operation Codes after Validating and Correcting based on Xsd's

If user wishes to remove any particular operation code from the web service, he can check the corresponding operation code in table and click on **Delete Row** button (next to Populate button).

For easier verification, user can order the operation codes on the basis of any of the four fields in the table by clicking on them
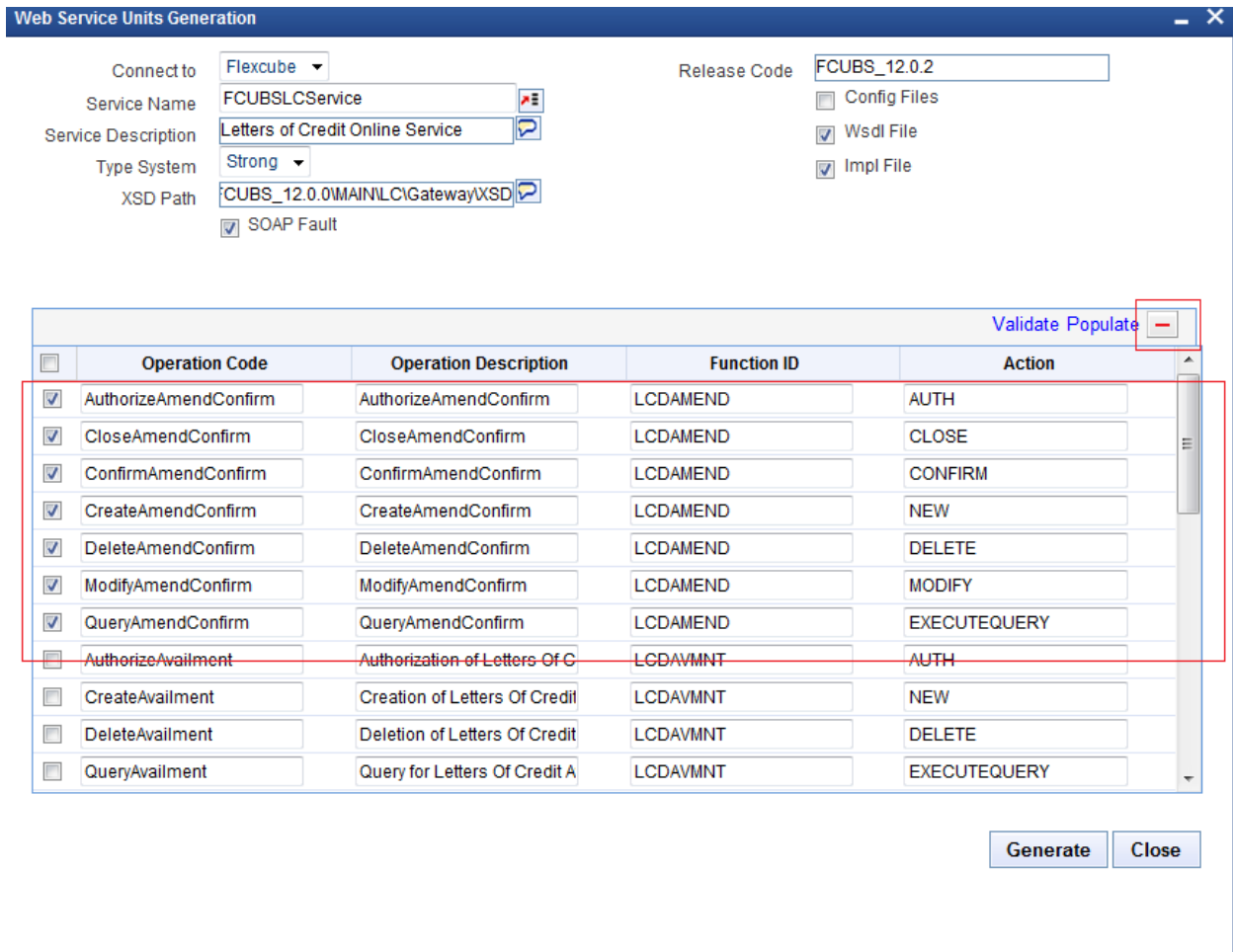
Fig 4.1.5   Removing all the operations on function id LCDAMEND from the service

After verifying all the operation codes for the service, user can click on **Generate** button on bottom right of the screen.
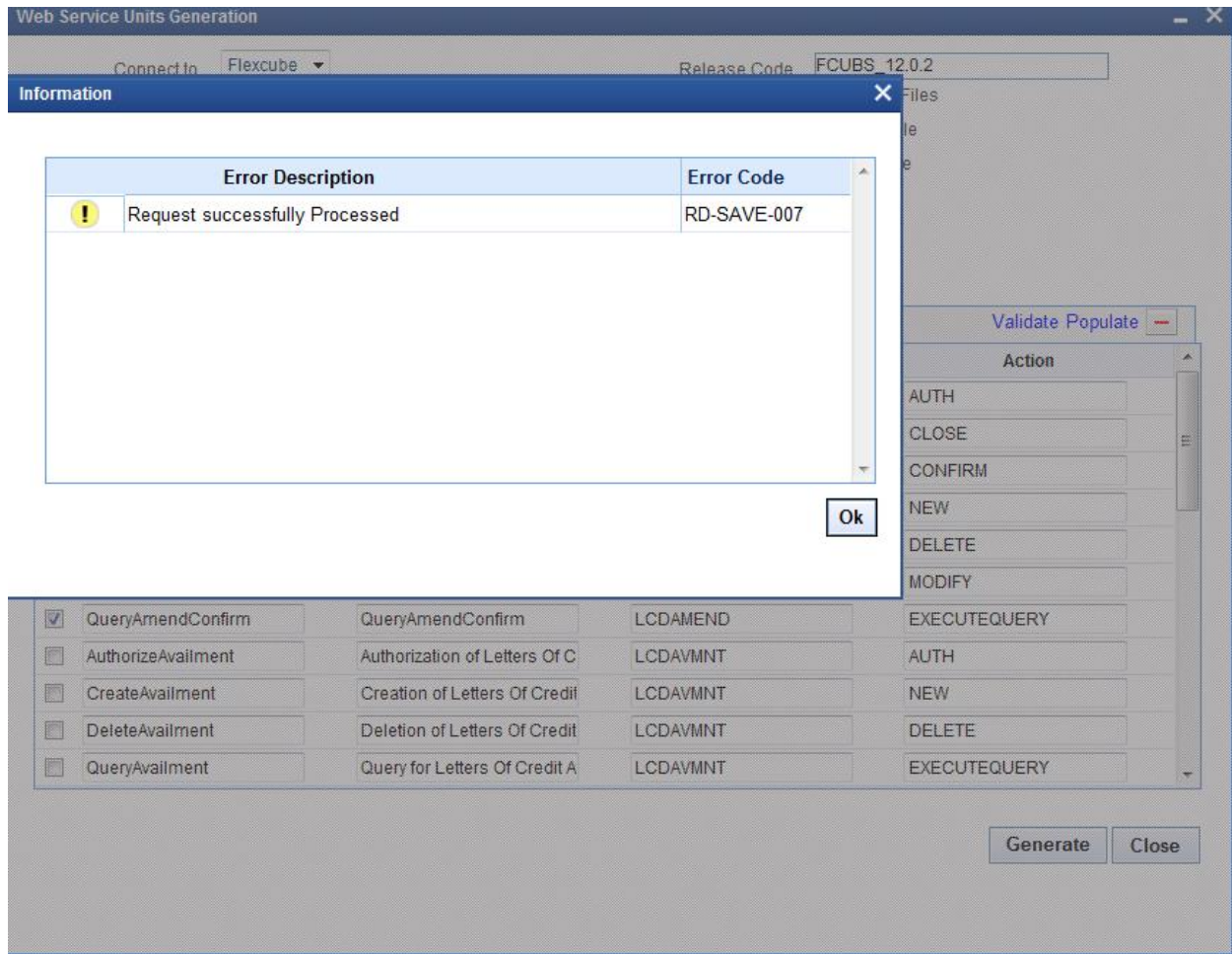
Fig 4.1.6   Success Message after clicking on Generate button

4.2 Generated Files

Following files will be generated by the process explained in above section.

4.2.1   Wsdl File

This will be generated inside *wsdl* folder in the work directory. This is required while creation of web service ear

Example: FCUBSLCService.wsdl

4.2.2   Impl File

This will be generated inside *Src* folder in work directory. It is a java file which is required while building web service ear.

Example: FCUBSLCServiceImpl.java

4.2.3   Config Files

Config files will be generated in the Config folder in the work directory.

Following config files will be generated.

i)   web.xml
ii)   web_WS file
iii)   webservices file

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iv)   application_ws file
These are xml files which can be used for specifying the properties .These files are optional as the installer will generate these files during creation of ear.

4.3 Guidelines

- Process of generating web service units can be simplified as
  Provide Service Name → Populate → Validate → Generate units

- For all releases of FLEXCUBE prior to 11.0,web services are weakly typed; while for later releases it has to be strongly typed
- Developer can use the delete option in the screen to delete unnecessary operation codes from the service
- SOAP Fault has to be checked for all version from 12.0.2

4.3.1   Need for Validate Button

It is found that data in GWTM_OPERATIONS_MASTER need not necessarily match with the data maintained in the Trax server .Hence files generated based on the data from GWTM_OPERATIONS_MASTER would not match with Trax generated files which would result in error while building ear .
To avoid this scenario, Validate button is provided, which will validate the data in GWTM_OPERATION_MASTER with the Xsd's for the particular service. System will correct the data and generates units accordingly.
Note that if a particular operation code itself is not present in GWTM_OPERATIONS_MASTER, then MICON won't be able to create new operation code .It can correct the data but not create new operation codes.
 If developer is creating a new service, Validate option would not be required

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Oracle Financial Services Software Limited
Oracle Park
Off Western Express Highway
Goregaon (East)
Mumbai, Maharashtra 400 063
India

Worldwide Inquiries:
Phone: +91 22 6718 3000
Fax:+91 22 6718 3001
www.oracle.com/financialservices/