Product Release Note
Oracle FLEXCUBE Corporate Lending
Release 12.4.0.0.0
[May] [2017]

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FINANCIAL SERVICES

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Version 12.4.0.0.0

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1. Release Notes

1.1 <u>Background</u>

Oracle Financial Services Software Limited has developed Oracle FLEXCUBE Corporate Lending Solution to service a big corporate customer, for a huge value transaction in the form of loan. Oracle FLEXCUBE Corporate Lending suite enables large value corporate loans and syndicated loans. It enables banks to play multitude of roles in syndication. Trading platform enables trading of syndicated loans and keeps track of position and balances of different portfolio's of bank.

Oracle FLEXCUBE Bilateral Loans
Empowers financial institutions of varied sizes to offer and manage complex commercial loan products catering to large corporate and SMEs. Product manufacturing enables the bank to create innovative products, cuts down time to market and respond to competition efficiently and effectively. Rule driven delinquency handling provides better control over stressed loan assets enabling timely action.

Oracle FLEXCUBE Syndicated Loans
Empowers large multinational banks and Financial Institutions to structure complex syndicated loans under three tier architecture. Robust multi currency, multi borrower, multi region participation support makes it easier for arrangers to structure ultra flexible deals seamlessly. High volume processing is supported to cater to deals with thousands of participants.

Oracle FLEXCUBE Secondary Loans Trading
SLT Module tracks the trading of syndicated loans in the secondary market. It allows the booking and settlement of trades under Lead and Participated facilities. It supports Par and distressed loan trading. It also supports the Assignment and Participation (Silent) type of trades.

1.2 <u>Purpose</u>

The purpose of this Release Note is to highlight the enhancements in Oracle FLEXCUBE Corporate Lending 12.4.0.0.0

1.3 <u>Abbreviations</u>

Abbreviation	Description
FIFO	First In First Out
LIFO	Last In First Out
ODT	Oracle Development Tool
UI	User Interface

For module code and description details, please refer Annexure C.

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1.4　Release Highlights

The scope of the current release Oracle FLEXCUBE Corporate Lending 12.4.0.0.0 includes conversion of Bilateral Loans, Loan Syndication(LS) & Secondary Loans Trading (SLT) modules of Oracle FLEXCUBE Corporate Lending 12.1.0.0.0 from Forms to ODT-UI Framework and few functional enhancements.

1.5　Features of Loan Syndication Module

1.5.1　Agency Fees

System capability enhanced to automate collection of agency fees in Advance / Arrears. Automatic accrual of agency fees and liquidation is possible.

1.5.2　Forward Processing

System capability enhanced to process certain events (Initiation, Rollover, Schedule liquidation, Fee liquidation) 'N' days in advance. However the messages will be put on hold until spot date or value date. The payment messages needs to be released manually by the user on the actual event date. Contracts where events are forward processed will be available for view in a separate browser.

1.5.3　Netting Payments

Flexibility to net across drawdown of a tranche is introduced. When a drawdown matures and another drawdown is effective from the maturity date, then only the net amount will be paid by the borrower.

1.5.4　Participant Transfer

Participant Transfer System capability enhanced to perform participant transfer by entering amount. System capability enhanced to process more than 300 participants in participant transfer screen. Facility to support back dated participant transfer is enabled in the system. Also facility to perform future dated participant transfer is provided. System capability enhanced to cater to One to Many and Many to Many participant transfers.

1.5.5　Billing Notice

Facility to generate billing notice 'N' days in advance before the due date of interest/fees to Borrower and Participants is provided. Generation of billing notice for fees in advance is also enabled. Facility to review, amend and cancel all notices generated as part of batch or online process is provided.

1.5.6　Fees (Utilized, Unutilized, Margin)

System capability enhanced to compute utilized fees based on utilized amount tranche amount. The fees can be slab /tier based on utilized tranche amount. Unutilized fees is computed based on unutilized tranche amount. Margin is based on outstanding tranche amount. Margin revision schedules can be defined with effective date in the past i.e., if maintenance is created with past effective dates, then margin revision on Drawdowns should happen.

Support of the above fees extended to revolving and Non-Revolving tranches.

1.5.7   Back valued interest

System restriction relaxed to allow rate change prior to interest liquidation date. Interest is recalculated for the paid scheduled and payable / receivable is tracked for the difference amount.System generates notices to borrowers and participants on rate revision and margin revision events giving details of amount due, amount received and payable or receivable amount. Provision to liquidate the payable / receivable amount created at any time during the contract life cycle without affecting the contract life cycle is provided.

1.5.8   Cascade participation and non-pro rate drawdowns

System facility to cascade the participation ratio to drawdowns from the tranche is provided. However when a new non-prorata drawdown it is possible to define new participating ratio different from the original ratio defined at tranche level. In such cases, the cascading will be disabled at tranche level.

1.5.9   Back valued activities

System restrictions relaxed to perform back valued initiation, back dated VAMI, and back dated liquidation beyond the last trade (PRAM) of drawdowns belonging to revolving or non-revolving tranches. System restriction relaxed to allow definition of back value dated interest and fee schedules.

1.5.10   Consol Re-pricing

System capability enhanced to support merge of one or more child contracts into a single parent on any date between the value date and maturity date of the drawdown contract (value date inclusive).

1.5.11   Floor and Ceiling

User can specify Floor and ceil rate. The interest and margin components rate should be within the floor and ceil set at the contract level. System capability enhanced to support Floor and Ceil for

Agency contracts
• For All-in rate, Margin and Base rate for drawdowns propagated from tranche level.
• Only for Base rate based on preference at tranche contract level.

Loans
•For All-in rate for commitments.
•Propagated to loans under commitments

1.5.12   Fees Processing

System capability enhanced to collect adhoc fees (Participant Driven Fee). Also system restriction relaxed to have the start date of fee schedule as the fee association date. For prepayment of drawdown each participant will have their own fees. Facility provided to capture breakage fee for each participant of the drawdown. The total is collected from the borrower and distributed to the participants. Also system facility provided to liquidate a single fee component only even though there may be other fee components due.

System support provided for

- o   Origination fees, prepayment fee, non-service fee for bilateral loans
- o   Extension fees, utilized and unutilized fee for bilateral commitments

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      o   Extension fees, utilized and unutilized fee facility fee for LS Tranche contracts

1.5.13 <u>Grace Period and Late Payment Charges</u>

System provides facility to allow a grace period for payment of interest by the borrower. Penal interest will be charged if not paid within the grace period. Late payment charges is a onetime penalty that will be applied when the borrower does not make a payment within the grace period. This can be a flat amount or a percentage of total outstanding schedule amounts.

1.5.14 <u>Sighting Funds</u>

System capability enhanced to block release of payment messages during authorization for events where funds are disbursed to borrower. Only when the funds are received from the corresponding participants, payment messages can be released

1.5.15 <u>FPML Notices</u>
System capability enhanced to generate the following FPML messages to participants

- o Drawdown notice
- o Rate reset notice
- o Interest payment notice
- o Scheduled principal repayment notice
- o Unscheduled mandatory & voluntary repayment notice
- o On-Going Fee payment notice
- o One-off fee payment notice
- o Pricing change notice

1.5.16 <u>STP Processing</u>

System capability enhanced to automatically create commitment and loans contract in OL module for Tranche and drawdown created in LB module for self-participants. STP browser is provided where the user can monitor the STP failures and initiate corrective action. Browser capability enhanced to unlock and mark records as processed.

1.6 <u>Features of Secondary Loans Trading Module</u>

1.6.1 <u>Different settlement days for Par and Distress loans</u>
Specify the number of days after the trade, within which settlement should happen.

1.6.2 <u>Track both settled and unsettled positions</u>

Positions will be maintained for each CUSIP for a combination of Desk, Branch Code, and Expense Code & Swap ID/Settlement party of silent participation. Position will be updated on booking of the trade. Every Buy deal will result in an Open position which will be reduced with a subsequent sell of the CUSIP for the same Desk, Branch Code, and Expense Code & Swap ID/Settlement party of silent participation. Since, it is possible to have a Short position before Settlement date; positions can be positive or negative. Any short sell will result in a negative position. However, there should not be any short sells positions during the trade settlements In the event of any amendment to the trade amount (for example due to commitment reduction), the position will be recomputed.

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1.6.3   Funding Memo Generation

Funding Memo is a type of Advice which is sent to the Trade counterparty. The Funding Memo contains all the details related to the deal like Counterparty, Agency Contract details, Trade Date, Global commitment amount, Drawdown Details, Fee Details, Settlement Accounts, etc. 1-11 Various tags will be provided for population of details required in the Advice. The values for these tags will be picked up from the SLT contract, and Settlement Instructions. A new screen shown below will be provided to facilitate the funding memo generation and trade settlement or both. User will have option to specify if funding memo advice generation is required.

1.6.4   Trade Settlement - Current / Future / Past dated

If the actual settlement date is less than or equal to the system date, funding memo generation, payment message generation and trade settlement will happen together. If the actual settlement date is a future date, then funding memo and payment messages are generated in advance and trade settlement happens as part of the BOD batch process on actual settlement date. Payment message can be generated either during trade settlement authorization or during the EOD batch process, depending on the number of settlement days maintained for the combination of branch and currency.

1.6.5   Reversal of settlement

Reversal of settlement (RSTL) will be allowed. Any fee liquidated as part of settlement will also be reversed during trade settlement reversal.

1.6.6   Agency confirmation for trade settlement

Agency confirmation is applicable only for trades where bank is the lead agent. The trade settlement details for all trades that have been saved in the Trade settlement or Ticket settlement screen get displayed in the 'Agency Confirmation' screen. The agency needs to confirm or reject each trade that appears in this screen

1.6.7   Ability to handle multiple fees
Different types of fees are involved in the trading of a syndicated loan. The following are the various Types of fees involved in trading:
• Assignment fee
• Amendment fee
• Line/Accommodation fee
• Delayed compensation fee
• Break funding fee
• Waiver Fee
• Benefit of commitment reduction fee
• Upfront fee

The following two adhoc fee components are also involved in the trading process:
• Buyer to seller fee
• Seller to Buyer fee

1.6.8   Trade Capture
• Trade details can be manually entered in SLT module
• Trade details can be uploaded from the external system, Loans QT
• Trade deal can originate from the LS module
• New or Amendment of existing trade
• Reversal of Trade (both settled and unsettled)
• Route all trade of own portfolio through an internal sell to trading desk

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1.6.9　PNL Tracking

System capability to compute Realized PNL for trades using WAC/LIFO/FIFO methods. MTM revaluation is performed for Unrealized PNL.

1.6.10　Reserve calculation for unsold inventories

Inventory or transactions that have not been sold for a period greater than 90 days since trade date attract reserve calculation. Reserve calculation will be displayed in a secondary FLEXCUBE window in an on-demand basis and posted to the GL only at month end i.e., on the last day of the month

1.6.11　Handle Silent participation and elevation of silent participants

Silent Participation contracts would be captured as Normal Buy/Sell contracts in the SLT module. Every deal in FLEXCUBE will be input either as Assignment or Participation. During elevation the silent participant becomes a direct participant with the agency

1.6.12　Computation of DCF Cost of Carry with Rule 25

DCF computation in SLT module considers the rule of 25 factor based on the balances on the expected settlement date and the actual settlement date and applies the same rule for the entire delayed period. For distress trades, the Rule-25 factor will be computed starting from the Expected settlement date (T+20) till the actual settlement date

1.6.13　SLT Browser

An online browser screen is available to view the status of the LQT files, message and manual upload facility.

1.6.14　STP of Drawdowns for Trades captures in SLT

A new screen is available to process LT LS STP for net position for the combination of CUSIP and position identifier for the trades settled in combined ticket settlement screen

1.7　Enhancements to the Existing Modules

1.7.1　Loan Origination

The process of loan origination gets initiated when a prospective customer approaches the bank, with a loan account opening request or when the bank approaches a prospective customer, taking lead from its database. In case of a bank–initiated request, the process moves forward only if the prospective customer is interested. The entire process is carried out in multiple stages and on successful completion of each stage, it moves automatically to the next stage.

Corporate lending process flow uses Oracle BPMN framework with multiple human tasks for workflow stages. The capture and enrichment of information in multiple steps can be dynamically assigned to different user roles, so that multiple users can take part in the transaction. Oracle Business rules are used for dynamic creation of multiple approval stages.

The Corporate Loan origination process flow is composed of following stages:

- Application Entry
- Application Verification
- Underwriting
- Loan Approval
- Document Verification

- Manual Retry

1.7.2   <u>Payments in Corporate Lending</u>

Facility provided in Corporate Lending payment module to post payments and process the account entries once it is approved by external system.

1.7.3   <u>CASA Interface</u>

Facility provided in Corporate Lending where system is capable of interfacing with external system where CASA account is present.

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2. Components of the Software

2.1 Documents accompanying the software

The various documents accompanying the software are as follows:

- Release Note
- Installer Kit

Note: User Manuals and Installation Guide can be accessed from

http://docs.oracle.com/cd/E85703_01/index.htm

2.2 Software Components

Software Components of Oracle FLEXCUBE 12.4.0.0.0 that form part of this release are as follows:

- Host
  - UI Components (JS,XML)
  - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
  - Reporting Components(Data models(xdm), Reports(xdo and rtf))
  - Process Framework components (BPEL)
- New UI Application Server
  - Java Sources
  - Configuration files used for deployment
- Interface
  - ASCII interface sources
    - → Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
- Gateway
- Java application layer
    - → Java sources
    - → Configuration files used for deployment
  - Messaging layer
    - → Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
- Installation utilities
  - Front end based installation for host
  - Front end based installation for Gateway backend
  - Installation documents for
    - → Oracle FLEXCUBE Installer documents
    - → Gateway
- SMS Related Components

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- Reports
  - Stored Procedures (Packages, Functions, Procedures, Views)
  - Repositories and pre-defined Reports
- Online Help Files

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3. Annexure – A: Environment Details

3.1.1   Tech Stack – Oracle

Component	Deployment option	Machine	Operating System	Software	Version
Oracle FLEXCUBE Corporate Lending	Stand Alone	Application Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle Fusion Middleware Infrastructure	12.2.1.2.0
				Java HotSpot(TM) JDK (with WebLogic Application Server)	JDK 1.8 Update 121
				Open Symphony Quartz	2.2.3
				Oracle Toplink	12.2.1.2.0
		Document Management System	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle WebLogic	10.3.6
				JDK	JDK 1.7 Update 131
				Oracle Database (for RCU)	12.1.0.2.0
				Repository Creation Utility	11.1.1.9.0
				Oracle WebCenter Content Imaging	11.1.1.9.0
		Database Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle RDBMS Enterprise Edition	12.1.0.2.0
		Reporting Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle WebLogic	12.2.1.2.0
				JDK	JDK 1.8 Update 121
				Oracle Database (for RCU)	12.1.0.2.0
				Repository Creation Utility	12.2.1.2.0
				Oracle BI Publisher	12.2.1.2.0

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			Windows 7	Internet Explorer	Microsoft Internet Explorer Release(11.*)
				Mozilla Firefox	Mozilla Firefox Release(45+)
				Google Chrome	Google Chrome Release(53+)
			Windows 8	Internet Explorer	Microsoft Internet Explorer Release(11.*)
				Mozilla Firefox	Mozilla Firefox Release(45+)
				Google Chrome	Google Chrome Release(53+)
			Windows 10	Internet Explorer	Microsoft Edge
				Mozilla Firefox	Mozilla Firefox 1 Release(45+)
				Google Chrome	Google Chrome Release(53+)
		Client Machines	Mac OS X	Mozilla Firefox	Mozilla Firefox for Mac (45+)
				Safari	Safari 9.1.1
				Google Chrome	Google Chrome Release(53+)
				JDK	JDK 1.7 Update 131
				Oracle WebLogic	10.3.6
				Repository Creation Utility	11.1.1.9.0
				Oracle Identity Management (OID)	11.1.2.3.0
				Oracle SOA	11.1.1.9.0
				Oracle Identity And Access Management	11.1.2.3.0
			Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle Webtier Utilities	11.1.1.9.0
				Oracle Webgate	11.1.2.3.0
		Single Sign On Server		OID Connector	OID 11.1.1.6.0
Oracle	Stand Alone	Application	Oracle	JDK	1.8 Update 121

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Component	Deployment option	Machine	Operating System	Software	Version
FLEXCUBE Corporate Lending BPEL/BPMN Processes and Process Framework		Server	Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle WebLogic Server	12.2.1.2.0
				Oracle Repository Creation Utility (RCU) - To create SOA related schemas for BPEL	12.2.1.2.0
				Oracle SOA Suite, Oracle BPM Suite	12.2.1.2.0
Oracle FLEXCUBE Corporate Lending Integration Gateway	Web services (incoming) / HTTP Servlet (incoming) / EJB (incoming) / MDB (incoming) / Notifications (outgoing)	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle WebLogic Server	12.2.1.2.0

3.1.2   Tech Stack – IBM

Component	Deployment option	Machine	Operating System	Software	Version
Oracle FLEXCUBE Corporate Lending	Standalone	Application Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	IBM WebSphere Application Server with inbuilt JVM (IBM JDK 1.8_64)	8.5.5.9
				IBM WebSphere MQ Server	8.0.0.2
				Oracle Toplink	12.2.1.2.0
				Open Symphony Quartz	2.2.3
				Oracle WebCenter Content: Imaging	11.1.1.9.0
		Database Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle RDBMS Enterprise Edition	12.1.0.2.0

			Windows 7	Internet Explorer	Microsoft Internet Explorer Release(11.*)
				Mozilla Firefox	Mozilla Firefox Release(45+)
				Google Chrome	Google Chrome Release(53+)
		Client Machines	Windows 8	Internet Explorer	Microsoft Internet Explorer Release(11.*)
				Mozilla Firefox	Mozilla Firefox Release(45+)
				Google Chrome	Google Chrome Release(53+)
			Windows 10	Internet Explorer	Microsoft Edge
				Mozilla Firefox	Mozilla Firefox 1 Release(45+)
				Google Chrome	Google Chrome Release(53+)
			Mac OS X	Mozilla Firefox	Mozilla Firefox for Mac (45+)
				Safari	Safari 9.1.1
				Google Chrome	Google Chrome Release(53+)
Oracle FLEXCUBE Corporate Lending Integration Gateway	Web services (incoming)	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	IBM WebSphere Application Server with inbuilt JVM (IBM JDK 1.8_64)	8.5.5.9
	HTTP Servlet (incoming)	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	IBM WebSphere Application Server with inbuilt JVM (IBM JDK 1.8_64)	8.5.5.9
	EJB (incoming)	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	IBM WebSphere Application Server with inbuilt JVM (IBM JDK 1.8_64)	8.5.5.9
	MDB (incoming)	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	IBM WebSphere Application Server with inbuilt JVM (IBM JDK 1.8_64)	8.5.5.9
				IBM WebSphere MQ Server	8.0.0.2
	Notifications (outgoing)	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	IBM WebSphere Application Server with inbuilt JVM (IBM JDK 1.8_64)	8.5.5.9
				IBM WebSphere MQ Server	8.0.0.2

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4. Annexure – B: Third Party Software Details

Licensor Name	Licensed Technology	Version
Apache	xercesImpl.jar	2.11
Apache	xml-apis.jar	2.11.0
Sean Owen	PJL Compressing Filter	1.8.1
Apache	Apache XMLBeans	2.6.0
Apache	commons-logging	1.2
The Apache Software Foundation	Serializer	2.7.2
Apache	Apache Commons Codec	1.10
Apache	Commons Net	3.5
Apache	Xalan	2.7.2
Apache	commons-io	2.5
Apache	Ant	1.10.1
Apache	Apache POI	3.15
QOS.ch	Simple Logging Façade for Java (SLF4J)	1.7.23
Apache	Log4J	2.8.1
Apache	Apache Commons Transaction 1.2	1.2
MetaStuff, Ltd.	Dom4j	1.6.1
Yahoo	YUI Compressor	2.4.8
Apache	XML Commons Resolver	1.2
Terracota	Quartz Job Scheduler	2.2.3
Apache	Commons Collections	4.1

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5. Annexure – C: Module Code and Description

Abbreviation/ Acronym	Meaning
CO (Core)	Oracle FLEXCUBE Core
OL	Oracle Lending
LB	Loan Borrower
SMS	Security Management System

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