

Product Release Note
Oracle FLEXCUBE Universal Banking
Release 12.4.0.0.0
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Version 12.4.0.0.0

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Table of Contents

1. RELEASE NOTES	1-1
1.1 BACKGROUND	1-1
1.2 PURPOSE.....	1-1
1.3 ABBREVIATIONS	1-1
1.4 RELEASE HIGHLIGHTS	1-2
1.5 ENHANCEMENTS TO THE EXISTING MODULES	1-2
1.5.1 Multi Currency Account.....	1-2
1.5.2 ISO 20022 Account Statement CAMT 053 Support	1-2
1.5.3 Oracle FLEXCUBE Block Chain Adapter.....	1-3
1.5.4 Trade Enhancements.....	1-3
1.5.5 Origination Module Enhancements	1-4
1.5.6 Islamic Financing Enhancements	1-4
1.5.7 SAML 2.0 Enhancements for SSO.....	1-5
1.5.8 SWIFT SRG 2017 Changes.....	1-5
1.5.9 SEPA (2017) Rulebook 1.0 Changes.....	1-5
1.5.10 UK Localization Changes.....	1-5
1.5.11 External Accounting Interface	1-6
1.5.12 IC Intraday Performance Changes.....	1-6
1.5.13 FCUBS Integration with OFCL Systems	1-6
1.5.14 FCUBS Integration Payments Systems	1-6
1.5.15 Islamic Liability Module Enhancement	1-7
1.5.16 Core Module Enhancement.....	1-7
1.5.17 Integrated Liquidity Management (ILM) Account Balance	1-7
2. COMPONENTS OF THE SOFTWARE	2-1
2.1 DOCUMENTS ACCOMPANYING THE SOFTWARE	2-1
2.2 SOFTWARE COMPONENTS.....	2-1
3. ANNEXURE – A: ENVIRONMENT DETAILS	3-1
3.1 TECH STACK – ORACLE.....	3-1
3.2 TECH STACK – IBM.....	3-5
4. ANNEXURE – B: THIRD PARTY SOFTWARE DETAILS.....	4-8
5. ANNEXURE – C: MODULE CODE AND DESCRIPTION.....	5-1

1. Release Notes

1.1 Background

Oracle Financial Services Software Limited has developed Oracle FLEXCUBE Universal Banking to enable banks to create a distributed network of branches for effective marketing and efficient handling of customer transactions. Oracle FLEXCUBE Universal Banking is a real-time online solution, enabled for multi-currency, multilingual, multi-entity, multi-instance operations. Its mission-critical and robust architecture and use of leading-edge industry standard products ensure almost limitless scalability.

1.2 Purpose

The purpose of this Release Note is to highlight the enhancements in Oracle FLEXCUBE Universal Banking 12.4.0.0.0

1.3 Abbreviations

Abbreviation	Description
APR	Annual Percentage Rate
BIB	Bank in a Box
BIC	Bank Identifier Code
BPEL	Business Process Execution Language
BPMN	Business Process Management and Notation
CAMT	Cash Management
CASA	Current account and Savings Account
ECA	External Credit Approval
EAC	External Account Check
EOD	End of Day
FCUBS	Oracle FLEXCUBE Universal Banking
FX	Foreign Exchange
ILM	Integrated Liquidity Management
ISO	International Organisation for Standardization
LOV	List of Values

Abbreviation	Description
OFCL	Oracle FLEXCUBE Corporate Lending
ReST Services	Representational State Transfer services
SAML	Security Assertion Markup Language
SEPA	Single Euro Payments Area
SSO	Single Sign On
SWIFT	Society for Worldwide Interbank Financial Telecommunication
UI	User Interface
XML	eXtensible Markup Language

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

1.4 **Release Highlights**

The scope of the current release Oracle FLEXCUBE Universal Banking 12.4.0.0.0 includes enhancements in Islamic Finance, Core, Messaging, Trade modules, Interface changes, Block Chain Adapter changes and forward porting of applicable fixes related to incidences reported in previous versions along with Technical Qualification changes to comply with Latest Tech Stack.

1.5 **Enhancements to the Existing Modules**

1.5.1 **Multi Currency Account**

- FCUBS CASA has been enhanced to support Multi Currency Accounts. The system would generate Multi Currency Account number when the primary account for the customer is opened in FCUBS, under a multi currency product.
- Additional accounts in supported currencies can be opened subsequently using the multi currency account number as reference.
- FCUBS has been enhanced to support transactions on the multi currency account*, where system would internally route the transaction to appropriate account.

1.5.2 **ISO 20022 Account Statement CAMT 053 Support**

- FCUBS will support generation of CAMT053 message as XML-based Customer Statement Message based on ISO 20022 format, for Bank to Customer statement for cash management.
- This will be supported for CASA where it provides account holder with the necessary information about all booked entries, including the SEPA transactions within unified euro payments

1.5.3 Oracle FLEXCUBE Block Chain Adapter

- One adapter that can work with any version of FLEXCUBE with minimal changes
- Adapter enables FLEXCUBE to be interface with Block Chain systems
- Enable easy transformation of information between FLEXCUBE and Blockchain datasets
- Block Chain transactions can be viewed from FLEXCUBE.

1.5.4 Trade Enhancements

1.5.4.1 Negative Interest - BC

- System enhanced to support Negative Interest Rate in Bills and Collections module during Purchase / Discount of Export Bills and Advance of Import Bills.

1.5.4.2 Guarantee Claim Settlement

- System enhanced to settle claims against Bank Guarantees. Documents related to claim can be captured during guarantee issuance. Guarantee claim lodgement will be enhanced to handle receipt of documents. Claims can be settled through Guarantee Claim Settlement process.
- During claim settlement, in case of inadequate funds, collateral and loan facility can be used to settle the claim.

1.5.4.3 Trade Interface Requirements

- Gateway operations will be supported for consumption by front office systems to get the commissions, charges, taxes calculated from FCUBS and also to validate the transaction data without creating a contract in FCUBS for the following operations
 - LC Contract Simulation (entire lifecycle)
 - Guarantee Claim Lodgement and
 - Guarantee Claim Settlement

Note: The LC contract simulation in query mode will enable external systems to fetch the contract reference number from FCUBS that can be later used as reference, while sending LC Contract creation request.

- The relevant SWIFT messages generation will be supported as part of the above simulation
- XML based notification will be supported for any authorized changes in following maintenances in FCUBS, for consumption by external systems
 - User Maintenance
 - Role Maintenance
 - LC Product Maintenance
 - BC Product Maintenance
 - Document Type Maintenance

- BIC Maintenance

ReST based services will be supported for Amount Conversion based on exchanged rate maintained in FCUBS

1.5.5 Origination Module Enhancements

1.5.5.1 Corporate Islamic Process changes

- Corporate Islamic financing process flows (BPMN) have been modified to support the below features
 - Balloon payment
 - Support for Window of repayment
 - Support for Guarantor limit days
 - Vendor payment related enhancement

1.5.5.2 Retail Islamic Process changes

- System is enhanced to introduce new BPMN process flows for various retail Islamic financing product categories

1.5.6 Islamic Financing Enhancements

- Deferment functionality is enhanced to
 - Support it for Istisna accounts.
 - Display the payment schedules prior to deferment processing.
 - Display the amount due against each date in “Defer Schedule From” and “Defer Schedule To” Values
- System is enhanced to allow modification of rebate amount calculated by the system in case of asset pre closure of a Murabaha account
- System is enhanced to display the history of down payment details in down payment screens
- For Mudarabah accounts, payment screen is enhanced to display the loss in profit for the bank which is the difference between the actual profit and notional profit when the actual profit is less than the notional profit
- Following Usability changes are made
 - Instalment query option provided in simulation screen.
 - In CI Account screen,
 - Re-order the fields to display them in order of relevance for the operations.
 - ‘Amount Financed’ value made it as derived value using Total Sale value, Takaful Cost, Maintenance Cost and Down Payment values.
 - Down Payment value will be derived from Total Sale Value.

1.5.7 SAML 2.0 Enhancements for SSO

- FLEXCUBE supports Security Assertion Markup Language (SAML) 2.0 responses to support Single Sign On(SSO).
- A new interface layer is introduced in the login process which will also support any token based validations other than SAML; provided code is handled at custom/cluster layer

1.5.8 SWIFT SRG 2017 Changes

- System enhanced to support mandatory changes as per SRG 2017 changes

1.5.9 SEPA (2017) Rulebook 1.0 Changes

- System enhanced to support mandatory changes as per SCT, SDD Core and SDD B2B rulebook 1.0.
 - If debtor bank or creditor bank is located outside non-EEA SEPA region, respective bank BIC and Address Code of Debtor will be mandatory.

1.5.10 UK Localization Changes

- Support for maintaining address codes and use the same as proxy to input address details in various FCUBS screens is provided.
- Support for maintaining 'Company Code' which can be later used to validate CIF creation for corporate customer.
- Standing Instruction maintenance has been enhanced to support
 - First Instalment amount
 - Final Instalment amount, and
 - Number of Instalments.
- 360 degree customer view screens enhanced to display queried customer's
 - Obligation details i.e. where queried customer is guarantor to other entities
 - Reverse relationships i.e. queried customer's linkage to other primary customers.

1.5.10.1 APRC

- Support for APR calculation and display as part of loan creation and simulation, as per EU regulation.

1.5.10.2 CASS Enhancements

- Banks that participate in Account Switching Service can be identified through Bank Directory Maintenance.
- Account Switch request can be initiated at new bank only for accounts belonging to participating banks (old) as per Bank Directory Maintenance.

- It will be possible to update the account number as part of the redirection stage of account switch.
- A dedicated screen for 'Complete' action is provided.
- XML notifications are supported for contract data creation and deletion by the new bank and old bank respectively

1.5.11 External Accounting Interface

External systems can trigger accounting entries to FLEXCUBE via the external accounting interface. System enhanced to allow accounting handoff for transactions from product processors.

FLEXCUBE accounting module would handle ECA requests from external systems and process the external transactions. ECA help users to perform balance check and account related validation for upcoming external debit transactions.

Transactions from external systems would not require to send transaction code in the accounting handoff External interface changes would impact accounting in the below stages viz,

- Account service validations (EAC check)
- ECA request for accounts and related operations
- Debit transactions from external systems (ECA)
- Credit transactions from external systems

1.5.12 IC Intraday Performance Changes

- System enhanced to reduce the ICEOD batch timing by calculate the interest as part of Intraday activity.
- Value dated SDE changes, which will skip daily interest recalculations. Recalculation would be performed only if any balance / rate change happens.

1.5.13 FCUBS Integration with OFCL Systems

- FCUBS is enhanced to display the loan details of OFCL contracts in 'Loans' tab of 360 degree customer view of FCUBS in an integrated FCUBS and OFCL environment

1.5.14 FCUBS Integration Payments Systems

- New notifications of GL Code and transaction code can be sent on creation of GL Code and transaction code to the external system from FCUBS.
- Exchange rate lookup from external (payment) system can be made via web-service and also web-service is available to utilize / de-utilize the FX contract of FCUBS by external (payment) system for their transactions.

1.5.15 Islamic Liability Module Enhancement

- System is enhanced to display the final profit based on the final adjusted annualized rate in account class wise profit distribution block of profit distribution batch screen

1.5.16 Core Module Enhancement

System is enhanced to support for delete of track receivable marked on the account from the modules RT, CG, UP, DD and IC

1.5.17 Integrated Liquidity Management (ILM) Account Balance

- A new web service introduced to fetch value dated balance(s) or credit debit turnover for single/many accounts.
- A file can be generated at End of Day, containing the credit debit turnover and balance for all accounts participating in Liquidity Management

2. Components of the Software

2.1 Documents accompanying the software

The various documents accompanying the software are as follows:

- Release Note
- Installer Kit
- User Manuals and Installation manuals - These can be accessed from the link http://docs.oracle.com/cd/E86273_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(xdmz), Reports(xdoz,)),Subtemplate(xsbz)
 - Process Framework components (BPEL,BPMN,BAM,BRE)
- New UI Application Server
 - Java Sources
 - Configuration files used for deployment
- Interface
 - Clearing interface sources
 - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
 - ASCII interface sources
 - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
 - ODI interface
 - Stored Procedures (Packages, Views)
 - Models, Scenarios
- Branch
 - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
 - UI Components (JS,XML)
 - Java sources
- Gateway

- Java application layer
 - Java sources
 - Configuration files used for deployment
- Messaging layer
 - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
- Services
 - The WSDL files for the service supported
 - The XSDs of the messages involved
 - Structure (dictionary) of the XSD documented as excel sheets (Message-dictionary-xls)
 - The service documents – describing the services
- ReST Services
 - Java application layer
 - Java sources
 - Configuration files used for deployment
- Adapters
 - Oracle GL Adapter
 - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
 - Java sources
 - Oracle MANTAS Adapter
 - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
 - UI Components (JS,XML)
 - Oracle BIB Adapter
 - Stored Procedures (Packages, Functions, Procedures, Triggers, Views)
 - Java sources
- Conversion Utilities
- Installation utilities
 - Front end based installation for host
 - Front end based installation for branch database
 - Front end based installation for branch front end
 - Script based installation for interface backend
 - Script based installation for interface application server components
 - Front end based installation for Gateway backend
 - Script based installation for gateway application server components
 - Script based installation for ReST Services
 - Installation documents for
 - Oracle FLEXCUBE Installer documents
 - Gateway
 - Switch Interface
 - ReST Services
- SMS Related Components
- Oracle FLEXCUBE Information Server

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

3. Annexure – A: Environment Details

3.1 Tech Stack – Oracle

Component	Deployment option	Machine	Operating System	Software	Version Number
Oracle FLEXCUBE Universal Banking	UI-Host and Centralized	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 121
				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
		FLEXCUBE Information Server –	Oracle Enterprise Linux Server 6.6	Oracle WebLogic	12.2.1.2.0
				JDK	JDK 1.8 Update 121

		Analytics	(x86 64 Bit)	Oracle Database (for RCU)	12.1.0.2.0
				Repository Creation Utility	12.2.1.2.0
				Oracle Business Intelligence Enterprise Edition (OBIEE)	12.2.1.2.0
		FLEXCUBE Information Server - Data warehouse	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle Golden Gate	12.2.0.1.0
				Oracle Database (for RCU)	12.1.0.2.0
				Repository Creation Utility	12.2.1.2.0
				Oracle Data integrator	12.2.1.2.0
				Oracle Data integrator Java EE Agent	12.2.1.2.0
				Oracle Fusion Middleware Infrastructure	12.2.1.2.0
		# Client Machines	Windows 7	Internet Explorer	Microsoft Internet Explorer Release (11.*)
				Mozilla Firefox	Mozilla Firefox 1 Release(50+)
				Google Chrome	Google Chrome 1 Release(55+)
			Windows 8	Internet Explorer	Microsoft Internet Explorer Release (11.*)
				Mozilla Firefox	Mozilla Firefox Release(47+)
				Google Chrome	Google Chrome Release(54+)
			Windows 10	Internet Explorer	Microsoft Edge
				Mozilla Firefox	Mozilla Firefox 1 Release(47+)
				Google Chrome	Google Chrome 1 Release(54+)
			Mac OS X	Mozilla Firefox	Mozilla Firefox for Mac (50+)
				Safari	Safari 10+

		Single Sign On Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Google Chrome	Google Chrome Release(55+)
				JDK	JDK 1.7 Update 121
				Oracle WebLogic	10.3.6
				Repository Creation Utility	11.1.1.9.0
				Oracle Identity Management (OID)	11.1.1.9.0
				Oracle SOA	11.1.1.9.0
				Oracle Identity And Access Management	11.1.2.3.0
				Oracle Webtier Utilities	11.1.1.9.0
				Oracle Webgate	11.1.2.3.0
				OID Connector	OID 11.1.1.6.0
	UI Decentralized branch	Branch Application Server – Decentralized	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	JDK	1.8 Update 121
				Apache Tomcat	8.0.32
				Oracle WebLogic Server	12.2.1.2.0
		Database Branch for Decentralized mode		Oracle RDBMS Standard Edition (SE2)	12.1.0.2.0
Oracle FLEXCUBE Universal Banking BPEL/BPMN Processes and Process Framework	UI-Host and Centralized	Application Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	JDK	1.8 Update 121
				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 Universal Banking Integration Gateway	Web services (incoming)	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	Oracle WebLogic Server	12.2.1.2.0
	HTTP Servlet (incoming)				

	EJB (incoming)				
	MDB (incoming)				
	Notifications (outgoing)				
Oracle FLEXCUBE Universal Banking Switch Integration Gateway	Switch Integration Gateway	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	JDK	1.8 Update 121
Oracle FLEXCUBE Universal Banking ReST	Web services	Integration Server	Oracle Enterprise Linux Server 6.6 (x86 64 Bit)	JDK	1.8 Update 121
				Oracle WebLogic Server	12.2.1.2.0
				Oracle Toplink	12.2.1.2.0

Note: # Browser support is no longer based on Operating Systems but strictly tied to the browser themselves, no matter which Operating Systems they are installed on. Current release is certified on client workstations with Windows 7, 8, 10 and Mac OS X.

3.2 Tech Stack – IBM

Component	Deployment option	Machine	Operating System	Software	Version Number
Oracle FLEXCUBE Universal Banking	UI-Host and Centralized	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
		#Client Machines	Windows 7	Internet Explorer	Microsoft Internet Explorer Release(11.*)
				Mozilla Firefox	Mozilla Firefox Release(45+)
				Google Chrome	Google Chrome Release(55+)
			Windows 8	Internet Explorer	Microsoft Internet Explorer Release(11.*)
				Mozilla Firefox	Mozilla Firefox Release(47+)
				Google Chrome	Google Chrome Release(54+)
			Windows 10	Internet Explorer	Microsoft Edge
				Mozilla Firefox	Mozilla Firefox Release(47+)
				Google Chrome	Google Chrome 1 Release(54+)

			Mac OS X	Mozilla Firefox	Mozilla Firefox for Mac (50+)
				Safari	Safari 9+
				Google Chrome	Google Chrome Release(55+)
Oracle FLEXCUBE Universal Banking 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
	Switch Integration Gateway	Integration Server		JDK	IBM JDK 1.8_64
Oracle FLEXCUBE Universal Banking ReST	Web services	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
				Oracle Toplink	12.2.1.2.0

Note: # Browser support is no longer based on Operating Systems but strictly tied to the browser themselves, no matter which Operating Systems they are installed on. Current release is certified on client workstations with Windows 7, 8, 10 and Mac OS X.

4. Annexure – B: Third Party Software Details

Licensor Name	Licensed Technology	Version
Apache	Commons Collections	4.1
OpenSymphony	Object-Graph Navigation Language (OGNL)	3.0.19
Apache	Apache Commons Transaction 1.2	1.2
MetaStuff, Ltd.	Dom4j	1.6.1
Apache	Velocity	1.7
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	Xalan	2.7.2
Yahoo	YUI Compressor	2.4.8
Apache	XML Commons Resolver	1.2
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	commons-io	2.5
QOS.ch	Simple Logging Façade for Java (SLF4J)	1.7.23
Terracota	Quartz Job Scheduler	2.2.3
The Apache Software Foundation	commons-beanutils	1.9.3
Apache	Ant	1.10.1
Apache	Apache POI	3.15

Apache	Log4J	2.8.1
Apache	Commons Lang	2.4
Oracle	Java Transaction API (jta.jar)	1.1
Apache	commons-collections	3.2.2

5. Annexure – C: Module Code and Description

Module Code	Module Description
AM	Asset Management
ATM	Auto teller machine
BC	Bills & Collections
CASA	Current and Savings accounts
CD	Corporate Deposits
CE	Core Entities
CI	Islamic loans
CL	Consumer Lending
CN	Collection
CO (Core)	FLEXCUBE Core
CS	Core Services
DE	Data Entry
DL	Deposit locker
DS	Delivery System
DV	Derivatives
ED	Exchange Traded Derivatives
EG	Enterprise GL
FA	Fixed Assets
FC	FLEXCUBE Corporate
FGL	FLEXCUBE General Ledger
FI	Islamic Fixed assets
FT	Funds Transfer
FX	Foreign Exchange
IA	Islamic Asset Management

IB	Islamic Bills for collection
IC	Interest & Charges
ID	Islamic Derivatives
IF	Interface
II	Islamic ILM
ILM	Integrated Liquidity Management
IN	Intermediary
IP	Islamic Profit
IRM	Industry Reference Model
IT	Interactions
IV	Inventory
IZ	Islamic Securitization
LC	Letters of Credit
LD	Loans and Deposits
LE	Leasing
LI	Islamic letter of Credit
LM	Limits Maintenance
LQ	Liquidation Management
LS	Loan Syndication
MF	Micro Finance
MIS	Management Information System
MM	Money market
MO	Mortgages
OR	Origination
OT	Options
PC	Payments & Collections

PD	Post Dated Cheques
RB	Retail Bills
RE	Nostro Reconciliation
RP	Relationship Pricing
SE	Securities
SF	Structured Deposits
SI	Standing Instructions
SW	Switch Gateway
TD	Term Deposit
WB	Web Branch
WF	Work Flow
XP	Expense Processing