Oracle Banking Trade Finance Cloud Service

Adapter for Blockchain Interface

Release 14.8.1.0.0
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Oracle Banking Trade Finance Cloud Service Adapter for Blockchain Interface, Release 14.8.1.0.0

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Contents

Preface

Purpose

This document helps you to get acquainted with the information on inter-connecting any version of Oracle Banking Trade Finance Cloud Service with Blockchain systems. Oracle Banking Trade Finance Cloud Service Blockchain adapter enables easy transformation of information between OBTFCS and Blockchain datasets.

Audience

This manual is intended for the following User/User Roles:

Role	Function
Back office data entry Clerks	Input functions for maintenance related to the interface
Implementation Teams	For setting up integration

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Organization

This topic is organized into following topics:

Topic	Description
Preface	This topic gives information on the intended audience. It also lists the various chapters covered in this User Manual.
Oracle Banking Trade Finance Blockchain Adapter	This topic explains the interface between Oracle Banking Trade Finance and Blockchain Adapter.

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.
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.

Related Information Sources

Along with this user manual you may also refer the following related resources:

- Oracle Banking Trade Finance Installation Manual

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.

Acronyms and Abbreviations

Abbreviation	Description
System	Unless and otherwise specified, it always refers to Oracle Banking Trade Finance system
OBTF	Oracle Banking Trade Finance
OBTFCS	Oracle Banking Trade Finance Cloud Service
SWIFT	Society for Worldwide Interbank Financial Transaction
FT	Funds Transfer
BC	Bills and Collections
LC	Letter of Credit

Symbols and Icons

The list of symbols and icons available on the screens are as follows:

Table 1 Symbols and Icons - Common

Symbol/Icon	Function
	Open a list
	Date Range
	Add a new record
	Navigate to the first record
	Navigate to the last record
	Navigate to the previous record
	Navigate to the next record
	Grid view

Table 1 (Cont.) Symbols and Icons - Common

Symbol/Icon	Function
	List view
	Refresh
	Click this icon to add a new row.
	Click this icon to delete a row, which is already added.
	Calendar
	Alerts
	Unlock Option
	View Option
	Reopen Option

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Oracle Banking Trade Finance Cloud Service Blockchain Adapter

Oracle Banking Trade Finance Cloud Service Blockchain Adapter enables OBTFCS to interface to blockchain systems facilitating easy transformation of information between traditional applications and blockchain datasets. You can use this adapter with any version of OBTFCS and information to be transformed can be configured at the Module level of OBTFCS. Blockchain transactions, generated from or impacting the core banking system, can be queried and viewed from OBTFCS itself. The adapter allows transformation and processing of information, between OBTFCS and blockchain systems, with minimal human intervention thereby improving process efficiency, reducing risks and enhancing straight through processing. The adapter can be used not only to interface OBTFCS to blockchain systems but also any other similar third party applications to interface to blockchain systems.

A blockchain is an append only distributed data store/log, in a peer to peer network, where un-trusted parties come to a consensus on the order of data sets (financial or non-financial data), based on previously agreed upon rules. Block chains can be classified, as public or private and permissioned or unpermissioned, based on the read and write access respectively allowed to the participating entities. Block chains allow an immutable record of transaction log, when multiple parties need shared control of data, without the need to depend on a central trusted authority. Smart contracts allow business logic to be triggered and processed based on pre-defined events mutually agreed upon by the contracting parties.

1.1 Scope

Oracle Banking Trade Finance Cloud Service Blockchain technology allows you to:

- Automate loan creation
- Automate liquidation of bills under LC
- Automate liquidation of loan contract
- Reduce SWIFT message cost
- Maintain single contract which will be operated by all the parties
- Transmit real time data across smart contracts allowing simplified and efficient auditing process

1.2 Prerequisites

The following are the prerequisites for the interface:

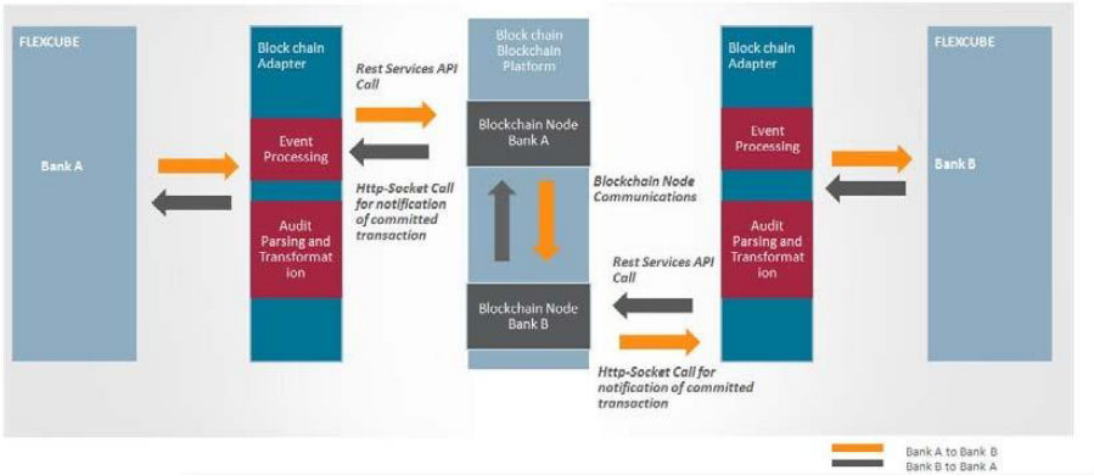
- Set up Oracle Banking Trade Finance Application

- Set up Blockchain Network
- Set up Weblogic server to deploy OBTFCS Blockchain adaptor

Refer the ‘Oracle Banking Trade Finance Installation’ manual to set up Oracle Banking Trade Finance Application.

1.3 Integration Architecture

The following diagram provides information on technical architecture for Oracle’s Blockchain based solution:



1.4 Integration Process

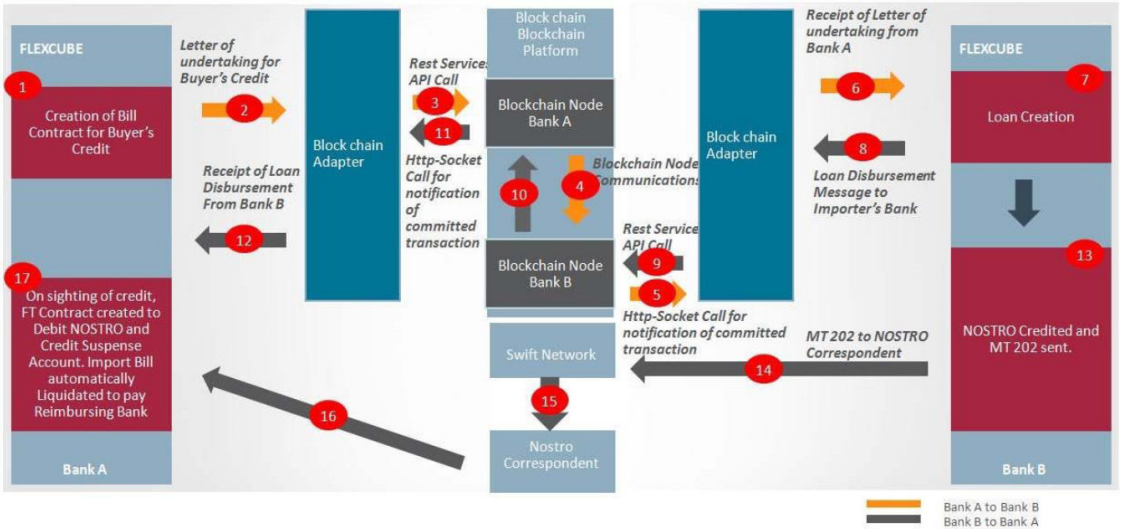
In this section we will take a use case to describe Oracle Banking Trade Finance Cloud Service Blockchain technology.

This topic contains the following sub-topics:

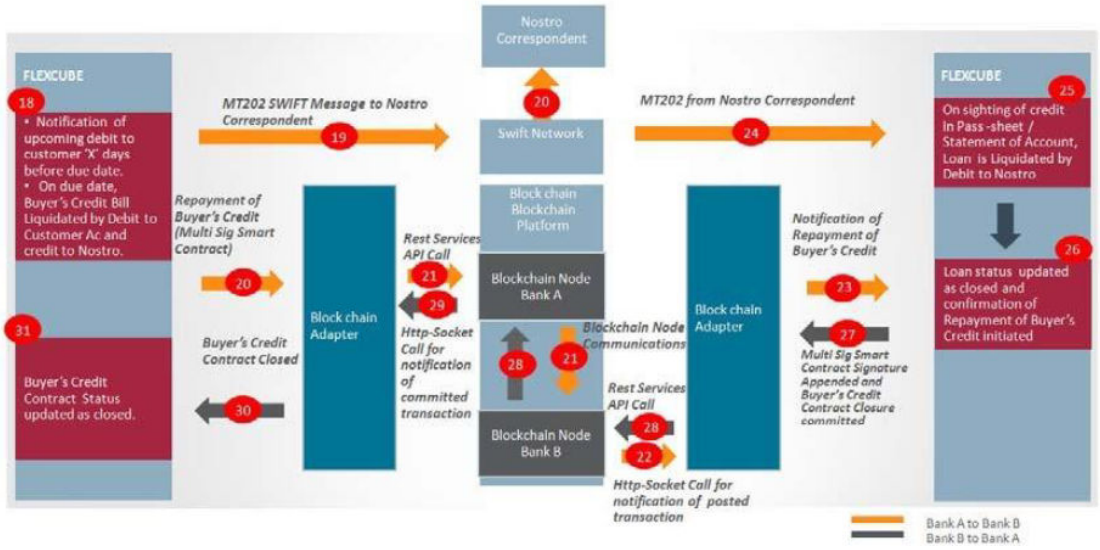
- Business Process Workflow for Buyer’s Credit
- Detailed Use Case for Buyer’s Credit Solution using Blockchain

1.4.1 Business Process Workflow for Buyer’s Credit

The following image represents the overall task flow using blockchain for liquidation of import bill under LC using Buyer’s Credit:



The following image represents the loan repayment task flow:



1.4.2 Detailed Use Case for Buyer's Credit Solution using Blockchain

This section describes buyer's credit solution using blockchain with a Use Case where Bank A is the Importer's Bank and Buyer's Credit is offered by Bank B or C at a different country. The requirement starts from the stage when Bank A which had received quote for Buyer's Credit and is accepting the offer from either Bank B or C for an Import Bill under LC received by them.

- Importer's Bank Accepting Buyer's Credit Offer
- Authorization of Buyer's Credit Bill Contract
- Receiving Data at Lending Bank
- Processing on Receipt of Loan Disbursement Confirmation
- Liquidating Buyer's Credit Bill Contract
- Data Receipt at Lending Bank

1.4.2.1 Importer’s Bank Accepting Buyer’s Credit Offer

When the Importer's Bank (Bank A) accepts the offer for Buyer's Credit provided by Bank B/ C, the Importer's Bank creates a dummy Import Bill which will have all the data of original Bill under LC like Shipment details and Goods details. In addition to these data, the Bill contract captures the following important details:

- Lending Institution (Bank B/C) as the Drawer in the Bill with Name and address.
- The Offer/Quote Reference Number.
- The amount (Buyer's Credit Bill Currency Amount should be the same as the Loan Amount).
- The offer rate and the spread (This has to be configured in the Bill as Interest rate to be charged so that during liquidation interest is automatically calculated and remitted to the Lending Institution at the same rate as the loan).
- Charges (This has to be configured as charges in the Buyer's Credit Bills Contract).
- Date of disbursement for the loan.
- Value date of Loan disbursement (This should be captured in such a way that on receipt of funds the Bill under LC is liquidated on due date. This should also be taken into account for interest calculation on the Buyer's Credit Bill Contract).
- Maturity date for the loan (The tenor of the loan with maturity date should coincide with the maturity date of Buyer's Credit Bill Contract).

1.4.2.2 Authorization of Buyer’s Credit Bill Contract

The following actions will be performed by default if Buyer's Credit Bill Contract in Bank A is authorized:

- The data will be passed on to the blockchain network for validation and creation of Smart Contract.
- The smart contract will be notified to Bank B/C by the blockchain network. The receiver will be identified based on the Lending Institution data captured in the Buyer's Credit Bill Contract.
- The smart contract will have a status to identify that the offer is accepted and is awaiting Loan creation/disbursement.

1.4.2.3 Receiving Data at Lending Bank

Bank B/C is notified about the smart contract through the blockchain network. When the notification is received:

- A loan contract will be created automatically
- The loan contract will be in unauthorized state.
- User has to identify pending loan contract authorization through query and authorize it.
- On authorization of loan contract, MT 202 will be generated and sent to Nostro Correspondent. The loan reference number will be updated in the Smart Contract and status will be updated to identify that the loan disbursement is made.
- When the loan is authorized in Bank B/C and the status is updated in Smart Contract as Loan Disbursed, a notification is sent to Bank A (Importer's Bank) through the blockchain network.

- The loan disbursement details will be sent to Bank A (Importer's Bank) through blockchain.

1.4.2.4 Processing on Receipt of Loan Disbursement Confirmation

- At Bank A, a facility is required to see the list of Buyer's Credit loans disbursed and pending approval.
- A query facility is provided to filter based on Currency, Importer and Value Date apart from the Buyer's credit reference number and the blockchain smart contract reference number.
- Once the user verifies the Pass-sheet credit, the user will have facility to select the records for further processing and submission.
- On submission of selected records, system generates a FT contract for the amount. Nostro Account will be debited and an Intermediary GL will be credited.
- The FT contract will hold the details of Loan reference of Bank B/C and the Original Bill under LC reference.
- Immediately after creation of FT, system automatically triggers the liquidation of the original Import Bill under LC.
- The status in the Smart Contract will be updated to denote that the disbursed funds have been applied/ utilized.

1.4.2.5 Liquidating Buyer’s Credit Bill Contract

System will send a reminder to the importer for repayment of Buyer's Credit loan two days before the due date.

- On the due date for liquidation, user will have to liquidate the Buyer's Credit import bill
- On authorization of the Import Bill system will update the Smart Contract in blockchain to indicate that the Importer has remitted funds for repayment of Buyer's Credit loan.
- Blockchain will trigger a notification to Lending Bank regarding the repayment of the loan by the Borrowing Bank.

1.4.2.6 Data Receipt at Lending Bank

Once the liquidation of Buyer's Credit contract is authorized in Bank A and status in blockchain, Smart Contract is updated as repayment, a message will be triggered to Bank B/ C through blockchain.

- A query screen will be available in Bank B/C to query the transactions for which remittance is made by Importer and loan is yet to be liquidated.
- Once the user gets a confirmation that nostro account is credited (either by way of MT910/940/950), the user will select the records from the query screen for liquidation and submit it.
- On submission system will trigger liquidation of the loan.
- Once the loan is liquidated, system will send a message to the blockchain network to update the status of smart contract to 'Closed’.
- Post validation of the request from the Lending Bank, the blockchain network updates the status of the smart contract to ‘Closed’ and sends a notification to Bank A.