Oracle® FLEXCUBE Investor Servicing

Oracle FLEXCUBE Investor Servicing Adapter for Blockchain Mutual Fund Transactions

Release 14.7.6.0.0
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Oracle FLEXCUBE Investor Servicing Oracle FLEXCUBE Investor Servicing Adapter for Blockchain Mutual Fund Transactions, Release 14.7.6.0.0

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Preface

Oracle FLEXCUBE Investor Servicing is a comprehensive mutual funds automation software from Oracle® Financial Servicing Software Ltd.©.

You can use the system to achieve optimum automation of all your mutual fund investor servicing processes, as it provides guidelines for specific tasks, descriptions of various features and processes, and general information.

This topic contains the following sub-topics:

Purpose

This guide helps you to get acquainted with the information on inter-connecting any version of **Oracle Flexcube Investor Servicing** with Blockchain systems. Oracle FLEXCUBE Blockchain adapter enables easy transformation of information between Oracle FLEXCUBE and Blockchain datasets.

Audience

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

Table 1 Users and Roles

Users	Roles
Back office data entry Clerks	Input functions for maintenance related to the interface.
Implementation Teams	For setting up integration.

Documentation Accessibility

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Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

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 or the glossary.
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.

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

The list of the acronyms and abbreviations used are as follows:

Table 2 Acronyms and Abbreviations

Abbreviation	Description
FCIS	Oracle FLEXCUBE Investor Servicing
OEM	Oracle Enterprise Manager

Table 2 (Cont.) Acronyms and Abbreviations

Abbreviation	Description
EMS	Electronic Messaging Service
EJB	Enterprise Java Bean
MDB	Message Driven Beans

1

Blockchain Adapter for Mutual Fund Transactions

This topic provides information about the blockchain adapter for mutual fund transactions.

Oracle FLEXCUBE Blockchain Adapter enables Oracle FLEXCUBE 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 Oracle FLEXCUBE. Blockchain transactions, generated from the system, can be queried and viewed from Oracle FLEXCUBE itself.

The adapter allows transformation and processing of information between Oracle FLEXCUBE 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 Oracle FLEXCUBE 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.

Blockchains 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.

This topic contains the following sub-topics:

1.1 Scope

This topic provides information onscope of FCIS Blockchain Adapter for Mutual Fund Transactions.

FCIS Blockchain Adapter for Mutual Fund Transactions allows you to:

- Transmit real time data across smart contracts allowing simplified and efficient auditing process.

- Reduce SWIFT message cost.

1.2 Prerequisites

This topic provides information on the prerequisites for the interface.

The following are the prerequisites for the interface:

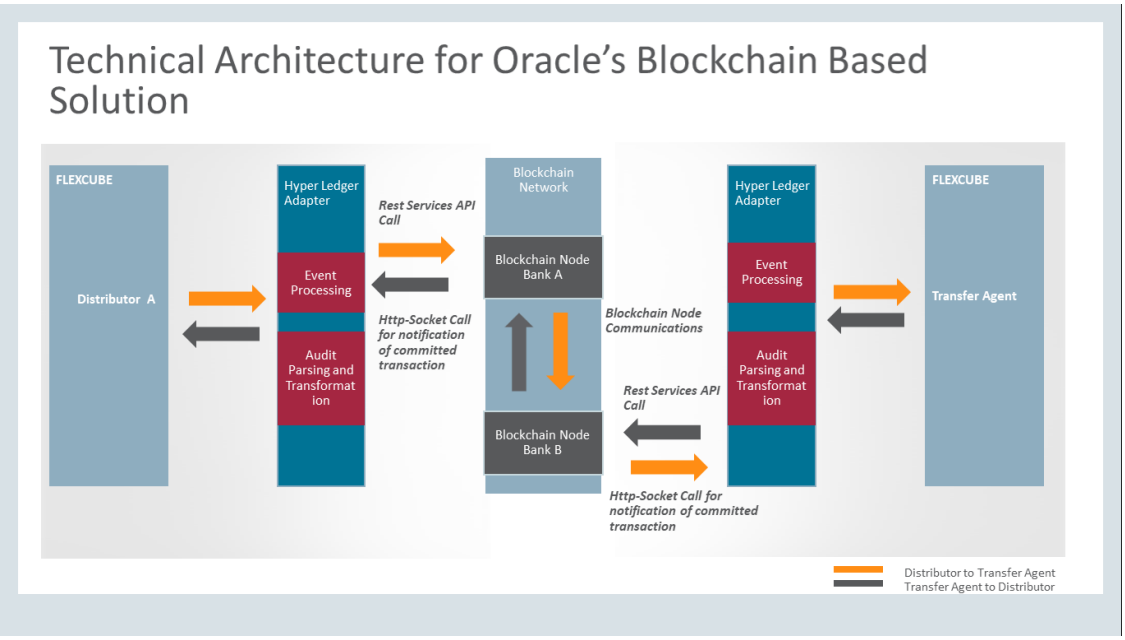
- Set up **Oracle FLEXCUBE Investor Servicing**
- Set up Blockchain Adapter for Mutual Fund Transactions
- Set up WebLogic server to deploy FCIS Blockchain adaptor

1.3 Integration Architecture

This topic provides information on the integration architecture.

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

Figure 1-1 Technical Architecture for Oracle Blockchain based solution



1.4 Integration Process

This topic provides information about the integration process.

This topic describes FCIS Blockchain technology.

This topic contains the following sub-topics:

- Business Process Workflow for FCIS Transaction
  This topic provides information about the business process workflow for FCIS transaction.

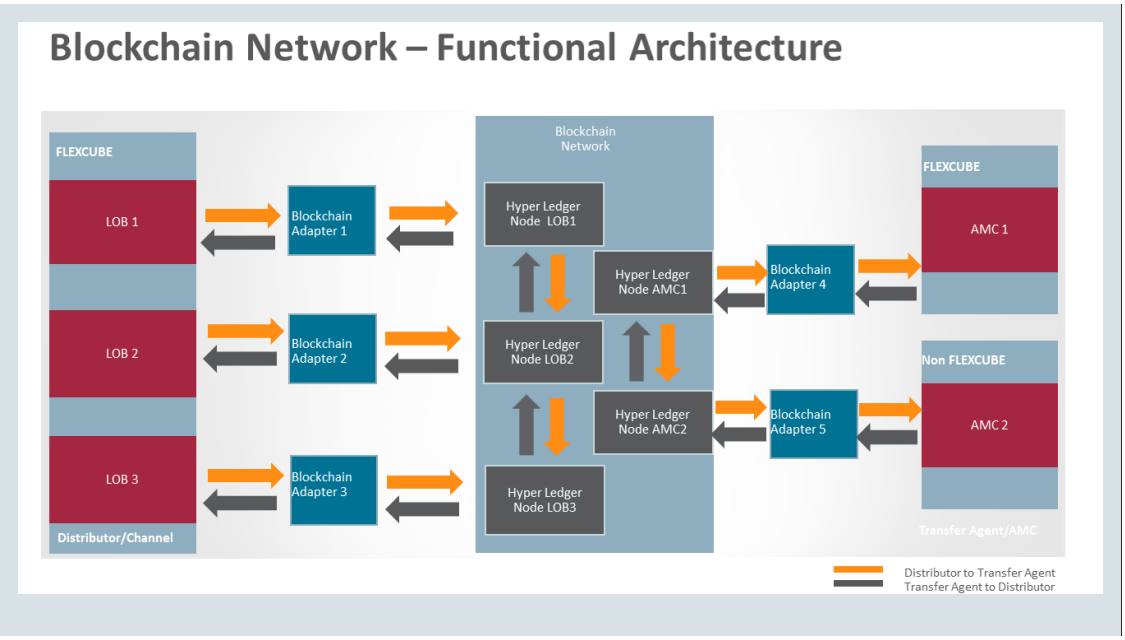
- Detailed Use Case for FCIS Transaction using Blockchain
  This topic provides information on detailed Use Case for FCIS Transaction using Blockchain.

1.4.1 Business Process Workflow for FCIS Transaction

This topic provides information about the business process workflow for FCIS transaction.

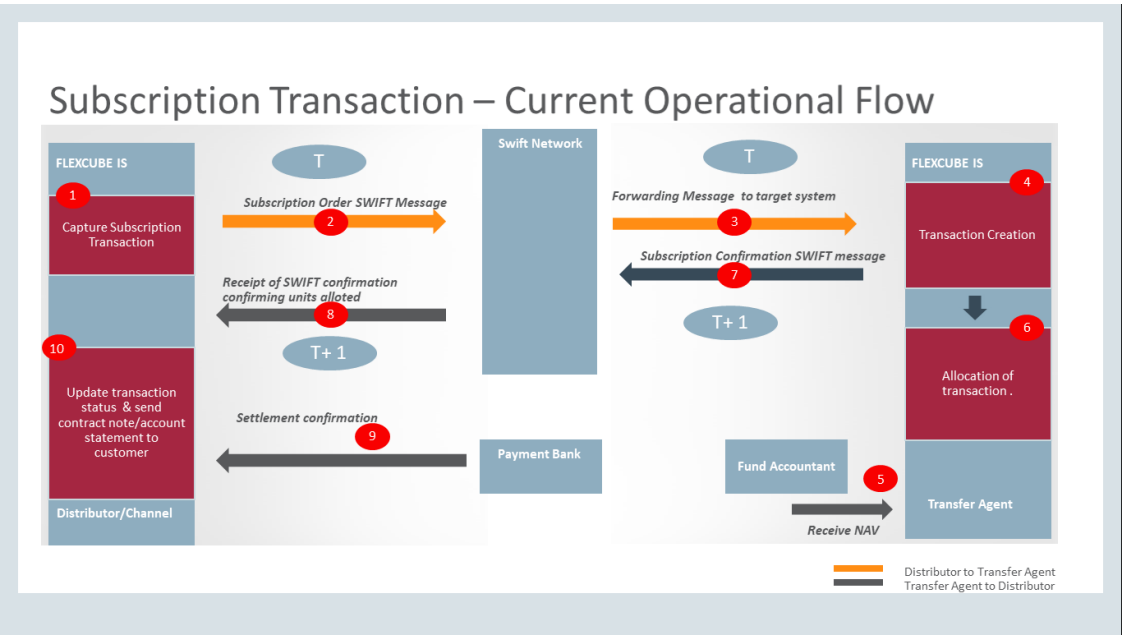
The following image represents the overall functional flow using blockchain for the transaction.

Figure 1-2 Functional Architecture of Blockchain Network



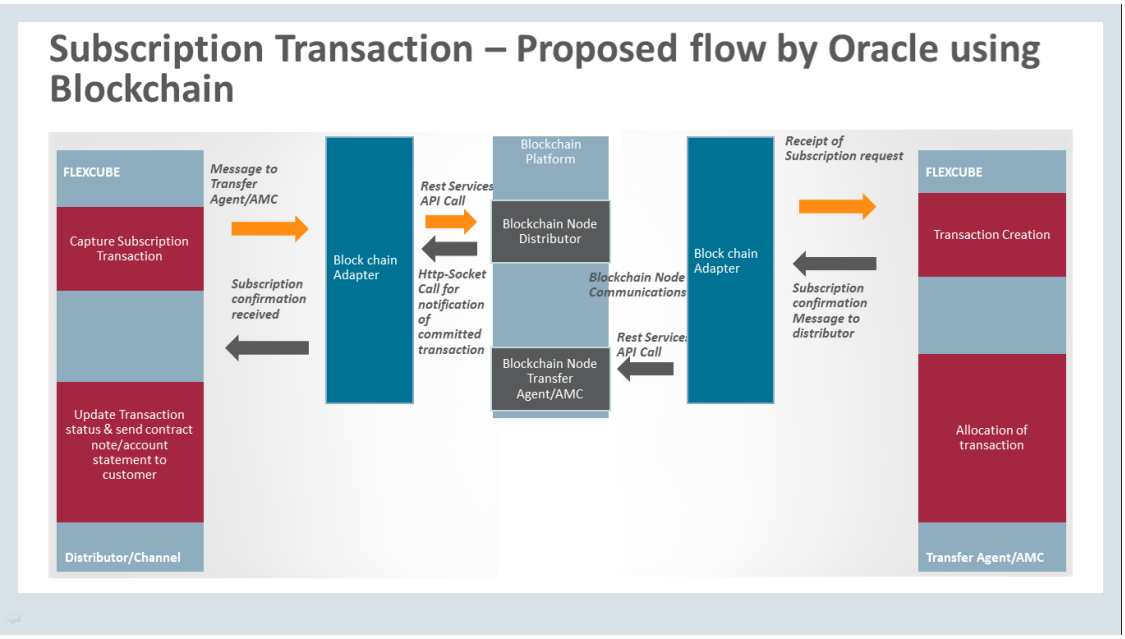
The following image represents the current Transaction flow:

Figure 1-3 Current Operational Flow of Subscription Transaction



The following image represents the proposed Transaction flow:

Figure 1-4 Proposed Flow by Oracle using Blockchain for Subscription Transaction



1.4.2 Detailed Use Case for FCIS Transaction using Blockchain

This topic provides information on detailed Use Case for FCIS Transaction using Blockchain.

This topic describes the Transaction Use case as follows:

1.4.2.1 TA - Transactions

This topic provides information about the TA - transactions details.

Transactions captured in the TA will be handed over to the AMC using blockchain adapter.

The following transaction attributes will be shared to AMC via network. The assumption is TA and AMC will be having same FUNDID.

- FCISTRANSACTIONNUMBER
- TRANSACTIONDATE
- FUNDID
- UNITHOLDERIDTYPE
- UNITHOLDERIDNUMBER
- TOFUNDID
- TOUNITHOLDERIDTYPE
- TOUNITHOLDERIDNUMBER
- TRANSACTIONCCY
- TRANSACTIONMODE
- TRANSACTIONVALUE
- GROSSORNET

Unitholder ID Type which is maintainable in the TA side can be either:

- **U** - Unitholder ID
- **C** - Cash Nominee
- Unitholder ID Number will be either Unitholder ID or Cash Nominee ID which will be maintained in the AMC.
- Unitholder ID Type will be used as **C** - Cash nominee for Subscription, Redemption and Switch Transactions. Transfer transaction will not be posted if the Unitholder ID Type is **C**.
- For Transfer Transaction ID type will be **U** - Unitholder for both From and To unitholders.

1.4.2.2 Authorization of a Transaction

This topic provides information on the authorization of a transaction.

The following actions will be performed by default if transaction gets authorized:

- The data will be passed to blockchain network for validation and creation of **Smart Contract**.

- The **Smart Contract** will be notified to AMC by the blockchain network. The receiver will be identified based on the **Destination Entity**.
- The **Smart Contract** will have a status to identify current status of the transaction.

1.4.2.3 Receiving Data at AMC

This topic provides information on receiving data at AMC.

AMC is notified about the **Smart Contract** by the blockchain adapter. When the notification is received:

- A new transaction will be created automatically.
- Below are the status which will be updated in **Smart Contract**.

Table 1-1 Status and Transaction Status

Status	Transaction Status
1	Transaction Initiated
2	Transaction Acknowledged
3	Transaction Confirmed by AMC
4	Transaction Completed
5	Transaction Failed

The Transaction status will be notified to the TA using BlockChain Adapter.

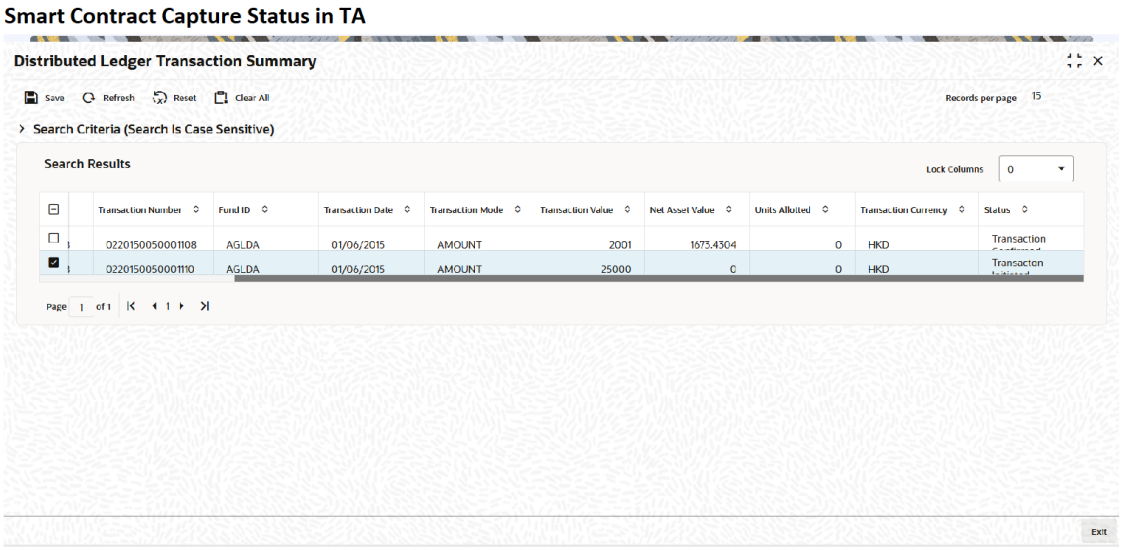
1.4.2.4 Smart Contract Summary

This topic provides information on smart contract summary.

At AMC/ TA, a facility is required to see the list of transactions which are posted along with the status.

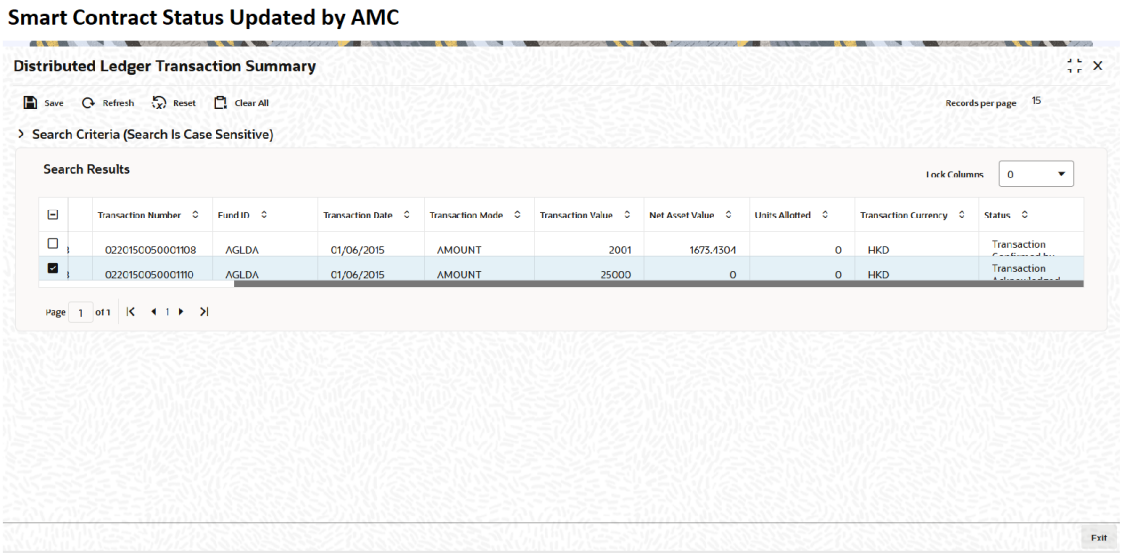
A **Smart Contract Capture Status in TA (DLSTXNFL)** screen is provided to view the details of the transaction. The smart contract capture status in TA screen is displayed as follows:

Figure 1-5 Smart Contract Capture Status in TA



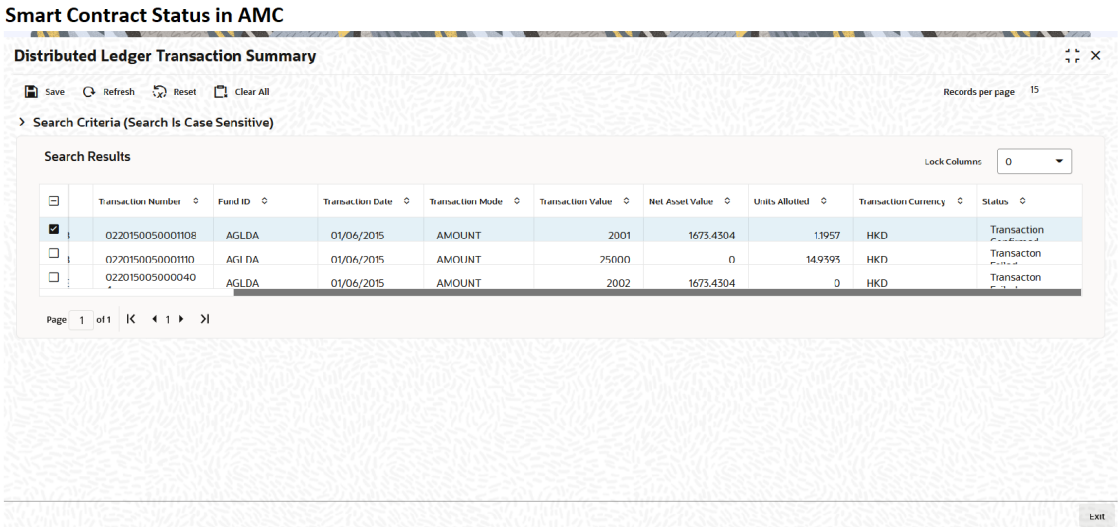
The **Smart Contract Status Updated by AMC** screen is displayed as follows:

Figure 1-6 Smart Contract Status Updated by AMC



The **Smart Contract Status in AMC** screen is displayed as follows:

Figure 1-7 Smart Contract Status in AMC



The **Smart Contract Unit Allocation Status** screen is displayed as follows:

Figure 1-8 Smart Contract Unit Allocation Status