A Framework for Data Migration in FLEXCUBE Investor Services

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ABSTRACT

Oracle FLEXCUBE Investor Servicing is a comprehensive transfer agency and/or fund distribution system, with multilingual, multi-currency and multi-entity features. These help fund management companies service investors professionally, automate the complete transfer agency function and help create innovative products for organizations to stay ahead of their competition. Data Migration is an essential action in almost all organizations right from the constant effort to improve data retrieval and storage processes. Data Migration is generally seen as an expensive method, which is being the part of the system setup, and hence the strain, stress and method preferred for data migration is calculated to be straightforward which involves lesser strain and proven solutions. This paper discusses some of the existing methods preferred by organizations to perform data migration. It is important to note that existing migration from legacy systems to FLEXCUBE Investor Servicing Application involves manually writing up custom PL/SQL scripts to perform migration which is more time consuming and human error prone. Hence to overcome this overhead, this paper covers the methods involved to build standard data migration utility which will help customers to perform data migration activities from their legacy system to the application effectively instead of hard coding from scratch which helps to fast track overall implementation of the product.

Keywords: OFSS, data migration (DM), FCIS, FDS

INTRODUCTION

The process of migrating data from legacy system to that of target system is referred as data migration. Usually the data is migrated from an old platform to a novel platform. [1]

Companies who have the objective of implementing Business Strategic Migration exercise to transform its Unit Trust System (UTS) into a new and improved, business driven and client centric system. After the rigorous qualifying exercise, companies choose Flexcube Investor Services (FCIS) as the new fund distribution system (FDS), developed by I-Flex Solution Limited, India and currently owned by Oracle within Oracle Financial Services Software (OFSS), replacing the UTS system.

With the FDS implementation, it will meet the strategic business requirements and help the project owner, and the project sponsor,

in achieving their corporate mission and vision. At the same time FDS is also estimated to set the stage and framework for the future planning of company in terms of organizational excellence and client facing services. With this new system, it intends to provide its growing number of customer with better and improved means of service, management and care.

There are six phases of a data migration project. The phases may occur synchronously or in an iterative fashion. Entry and exit criteria must be described for every phase and milestones should be set to trigger auditing, reviews as well as stakeholder expectation and communication processes. The Phases are Data Assessment, Data Cleansing, Mock Conversion, Pilot Migration, Final/Live Migration and Post Migration as depicted in figure 1. To make it simple, the overall process flow can be divided into three phases namely pre-migration, migration and post migration

RELATED WORK FOR DATA MIGRATION

Multiple technologies and best practices are available for use with data migration, and more than one of these may be useful to a single project. Every data migration will have a unique combination of preexisting systems, plus requirements for the new system and its end users. Then there are the technology requirements common to all data migration projects (described next). IT should select technologies based on these factors, tempered by a consideration of how often and deeply they will perform data migration and similar projects in the future.

First and foremost, one of the most favorable technologies for data migration is Extract, Transform and Load (ETL). Almost 41% of organizations prefer ETL followed by hand-coded solutions (27%), ahead of replication (11%) and EAI (3.5%) as represented in figure 2. The unique ability of ETL is to handle the uttermost requirements for data immigration which includes multi-pass data transformation, terabyte datasets, deep data profiling, many-to many data integration

capabilities and interoperability with data quality tools. [2] [3]

The second favorable method is Hand coding. Regardless of lack of productivity some organization appeals for hand coding. Researchers say that data integration development and maintenance tool is high yielding and more economical compared to hand-coded solutions. Since developers can't discourage themselves of using hand coding method, it continues to exist. Also consultants use it as an exempt to pull off billing hours and near sighted managers does not spend in the nearby term to get long period cost reductions of tool productivity. Hence it is necessary to use the tools in to recognize economic superiority at best for projects on data integration. [4]

Next method is replication. Data replication is easy and accessible, but omits some requirements. Most of the data management experts are familiar in replication, with relational database license a sensible extent of replication functionality is provided without additional charge. This type of replication is for data movement which is one way and no transformation between instances of the same database. But high end replication tools indulge in bidirectional, heterogeneous data organization, reconstructional which is needed when old and new data of various types operate parallel. [5]

Enterprise application Integration (EAI) is yet another existing technique for data migration. It is not suitable for Data migration. EAI aims at fast movement of minute amounts of information in between logical layers of applications. The disadvantage of EAI tool with that of data migration is that it cannot deal very large amount of data, profiling, many to one integration requirements, transformation and data quality of data migration. [6]

PROPOSED SYSTEM

The proposed system involving data Migration from legacy system to FCIS is based on the target-based approach. In the target-based approach, client will provide extracted Source Data to Migration Team (OFSS) in FCIS

Migration Templates. Migration Templates will depict the column/attribute details of entities to be migrated. OFSS Migration team will provide Migration Templates to the client for data extraction from legacy system and client is expected to handover source data as per Data Migration templates.

One of the standard based methodologies that the oracle has is Oracle Unified Method (OUM). This method ensures the entire lifecycle i.e. IT lifecycle. OUM enables implementation approach which is quick, flexible and business focused. OUM supports exhaustive project management framework. Hence it presents an organized yet adaptive, approach. OUM goals are to concentrate on critical project requirements and its dependencies. With OUM a quick measurable business result can be obtained by efficiently going through IT lifecycle. The process of transferring data is depicted in the following figure 3.

1. All data in Flat Files shall be extracted from the source system.
2. The files shall be extracted and loaded via PL/SQL scripts into DM staging area.
3. Cleansing and data transforming by applying Business Rules are performed in the staging area.
4. Finally the successful data during the conversion exercise in staging area will be extracted and loaded (via batch upload) to the Target system (FCIS)

Data migration includes the following steps:

Step 1: This step is about data migration environment setup. It also involves FCIS application setup, staging table's creation, importing parameter setup into migration environment and migration script/Object compilation.

Step 2: Data cleansing of source data in the current system so that modified source data increases success of data conversion.

Step 3: Transferring of files which has extracted source data into Migration Staging area and loading it into FCIS Staging tables.

Step 4: Execution of Pre validation scripts on FCIS Staging tables. Scripts are developed to produce exception reports if present and updating them to good data in FCIS Staging tables.

Step 5: Transformation of extracted source data in FCIS formats and Load transformed source data into FCIS functional tables.

Step 6: Generating Reconciliation Reports, Verifying and Signing off Reconciliation Reports, generated Sanity Checks of FCIS Application with migrated data and Go Live Sign off.

CONCLUSIONS

With the change in technology, working with the same old technology would surely bear some losses which any organization wouldn't prefer. Hence the scenario of upgrading from the existing system to the new one do arises. And to do so the user needs to understand the new technology in order to work with it. Importing, exporting or migrating data between different applications is very complicated and time consuming process, especially if these data sources store data in different formats. The purpose of this paper is that migration would be carried out using Oracle PL SQL scripts/ procedures developed by OFSS Migration Team. Shell scripts/ batch programs will be provided to execute Oracle PL/SQL scripts/procedures in order to migrate it into FCIS

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Figure 1: Data migration phases

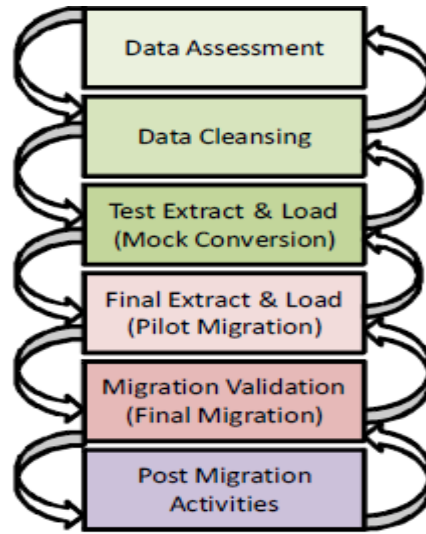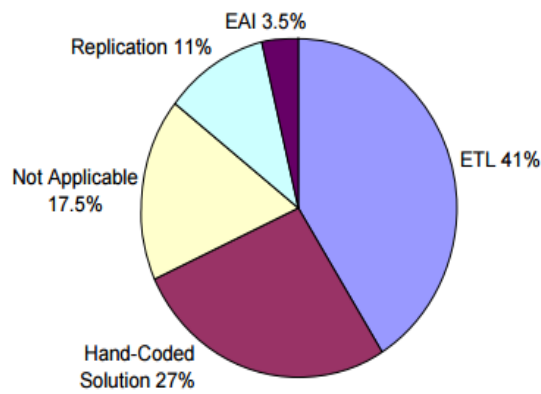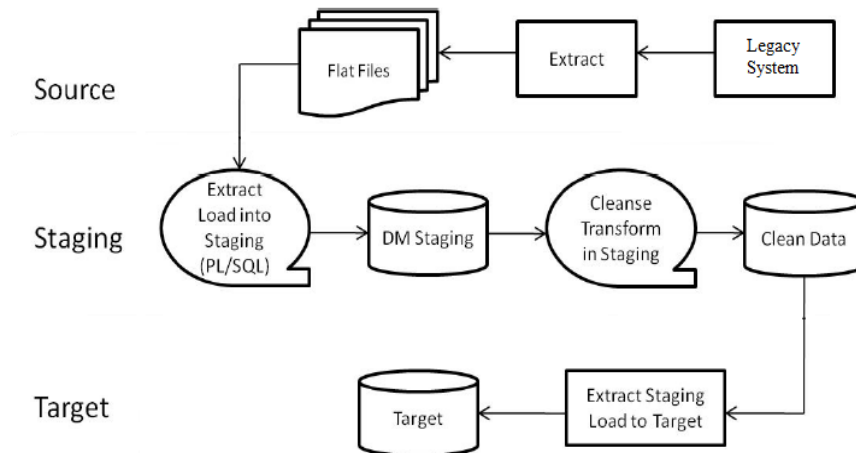**Figure 2: Comparison of Data migration technologies**

Figure 3: Data Migration Architecture