

Protection of Data during Data Migration

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Abstract - Protecting the database has become more significant these days due to rapid growth in technology and digital advent. Also in recent days due to the government's push on the economy to move towards a less cash or digital economy, storing digital data, monitoring it regularly, ensuring its confidentiality, integrity, protection of data during migration plays a very significant role. The government has already brought data protection acts and they are made effective.

Data protection needs to be ensured and alive all the time even during upgradation of the respective databases. A utility tool has been developed to overcome the requirement of creating tables while performing the data migration. The procedure includes automatic creation of tables in the preformat of the source database during the execution of stored procedures such that the respective created tables can be directly loaded into the target database after the extraction.

The developed utility tool enhances the efficiency by reducing the outage time with elimination of the problems encountered in the currently deployed systems. The tool enhances the best practices of high availability methods deployed in the IT industry and ensures safe and secure migration of Data.

Keywords: Data protection, software Upgradation, Source database, Target database, High Availability, Outage Time.

INTRODUCTION

Advances in software development are welcomed by users due to the fact that the improvements add values such as enhanced security, usability, efficiency, ease of administration and so on. Software solutions companies often upgrade their software to take advantage of the new changes and benefits to match to the software providers' pace of software releases and updates. Newer software releases are of advantageous due to their economical pricing instead of moving to new software altogether which of course must be considered.

The data security and availability of data is very critical during migrations of huge data and the data security of the critical data containing personal and protected information is of very significant while data upgradation.

Mail server software which is mostly used in IT companies is Microsoft exchange server which may need to be upgraded as and when needed for upgrading the software providing email services and the data protection is of key significance.

UTILITY TOOL:

Software utility tool creates to migrate the data from one system to another. This is used for upgrade projects where data in the legacy system has to be migrated to new system. Data to be migrated –

- Business Calendar
- Master data
- Planning Relationships
- Loaded Time Series
- Transactional data
- SW Calculated data
- Override Time series

Utility tool has two parts one is extraction and second is loading. Extract from system 1 and load to system 2.

This utility should prepare the extracted data in the standard loaded format.

This utility should be generic format so that this can be utilized in all the projects.

This paper discusses the contents of the utility developed to extract the migration records from the source database in a format in which they can be directly loaded into the target database. It also provides the scope, restrictions, details required and the changes to be made to this utility in order to utilize it for various migration projects.

The present system data migration is done for only a particular time series and every time the code for the migration is written afresh. But, it would be easier if there is a utility in which with minimal changes made it can be used for various migration projects instead of developing a code every time. So, for this purpose DataMigration_Schema has been created to make migration tasks easier. Also, this utility can be used to migrate the Planning Calendars, Master data and all types of time series.

However, there are certain things which are out of scope for the created utility. Time series with more than one quantity or value column i.e., where two time series are extracted from one, this utility can't be used. For those time series migration has to be done manually.

This utility comprises of 5 stored procedures.

Stored procedure for creating Input_Interface table and creating empty tables to store the extracted migration records.

Stored procedure to extract the data to be migrated for Planning calendars.
 Stored procedure to extract the data to be migrated for Master Data.
 Stored procedure to extract the data to be migrated for Loaded Time series.
 Stored procedure to extract the data to be migrated for Override Time series.
 This developed utility solves the problem of creation of tables while performing data migration job. When the first stored procedure is executed it automatically creates the tables in the pre format of the source database so that after the extraction is done they can be directly loaded into the target database. With minimal changes made to stored procedure where some column names and table names are client specific this can be utilized for all upgrade projects.

RESULTS AND CONCLUSIONS

The utility tool has to be used in a certain sequence. Firstly the first stored procedure has to be executed and after the schema has been successfully executed then execute second, third, fourth and fifth stored procedures in an order one after the other for the data protection during data migration.
 The stored procedures for tier-2 are applicable to Nissan. As mentioned in the General constraints, for implementation of this utility to other clients, changes have to be made accordingly.
 The proposed software is able to meet all the objectives of the system and the output of the system is efficient. It also eliminates the problems encountered in the current system. The employee will be free from the burden of the manual work involved in generating the migration code every time.

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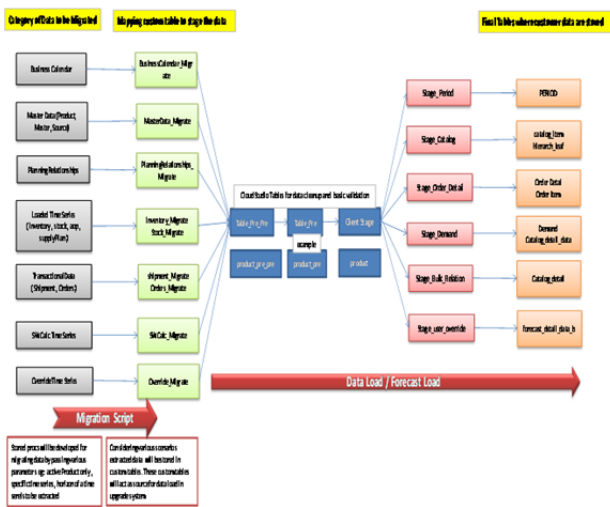


Figure 1: Data flow diagram