DATA MIGRATION SYSTEM IN HETEROGENEOUS DATABASE

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Abstract

With information becoming an increasingly valuable corporate asset, today's IT organizations need the right tools to store, manage, and move that information in the most reliable and cost efficient manner. As part of an Information Lifecycle Management (ILM) best-practices strategy, organizations require innovative solutions for migrating data between storage systems, especially in heterogeneous environments.

To support this need, we as planed to design a powerful tool that enables affordable, high- performance data migration in a wide range of storage environments. This project is the unique challenges of data migration in dynamic IT environments and the key business advantages that we have designed to provide over traditional tools used for migration.

Keywords: - *Data Migration, Database, Design.*

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1. INTRODUCTION

There are data migrated   in the old system manually. The cost and error ratio of these   approach are relatively high. Typically, these data are those necessary for the new system while the old systems cannot provide.

A "Database Migrator" is usually developed for individuals and organizations to save time for converting to a new database if a database already exists. Instead of creating all the tables etc. of the already existing database, one can simply use the software to convert it into new database, if required. It can also be used by organizations that deal with complex data import, export and migration issues. After all, importing, exporting or migrating data between different sources is very complicated and time consuming especially if these data sources store data in different formats.

2. LITERATURE REVIEW

Issues concerning the transference of data from existing databases to other applications are discussed. The process of transferring data is called data migration, and it is divided into two processes extracting data from existing systems in the form of an extracted file, and loading data from the extracted file into the new application. The new application usually requires data in different formats, and so transformation of data is generally needed. Moreover, the new application frequently requires data from more than one source database system, so integration of data is necessary in the migration process.
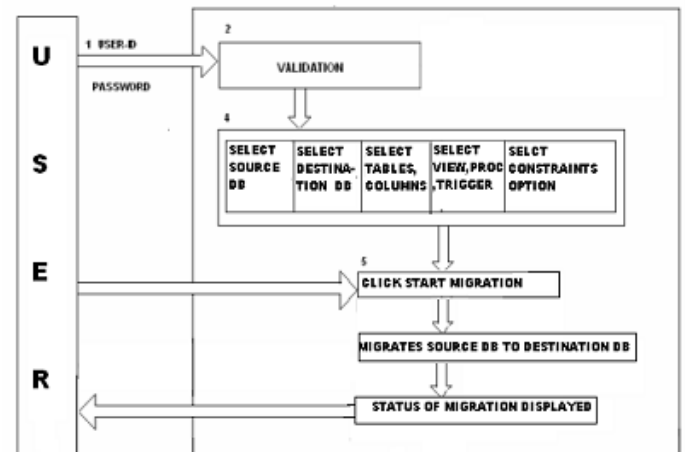
3. SYSTEM ARCHITECTURE

Fig 1: System Architecture

Step 1 - The user is provided with the login facility. The user will first enter its username and password which are encrypted in our coding. The user's entered information is validated.

Step 2 - The user is then asked to select the source database which is to be migrated. The source database consists of Access, SQL Server and Oracle. After selecting the source database the user has to fill the details of the selected source database to create the connection.

Step 3 - After the connection is tested the user is asked to select the destination database to which the migration will take place. After selecting the destination database the user has to fill the details of the selected destination database to create the connection.

Step 4 - The user is asked to select the tables, columns of the table, views which are to be migrated.

Step 5 - the user is also provided with the facility to select either the schema of the table or rows of the table along with the constraints which are applied to the tables.

Step 6 - Click start migration button to start the migration. After the complete and successful migration of source database to destination database it displays the status report of the complete migration process.

4. OBJECTIVES

1) Migration of source databases schema to the destination database.
2) Then follows the migration of tables to the destination database.
3) And then it is topped by the actual migration of data from source to destination database.
4) To prompt the user to select the source database and destination database. Connections for source and destination are tested.
5) Tree view structure is designed to enable the user to select and deselect tables, views for migration from source structure to the target structure.
6) This form will display a summary of all the selected items. User is allowed to select constraints to be applied such as primary key, foreign key and unique key.

5. METHODOLOGY

In this approach, following factors that affect the Component Selection Efforts have been proposed.
Portability: This factor is defined as the ability of a component to be transferred from on environment to another with little modifications, if required.
Functionality: Functionality of a component depends upon the number of functions and their properties in these functions.
Security: The primary goals of software security are the preservation of the confidentiality, integrity, and availability of the information assets and resources that the software creates, stores, processes, or transmit, including the executing programs themselves

6. SCOPE

The purpose of the project keeps the scope of project limited to following categories.
They are:
1) The initial part deals with conventional migration keeping in mind i.e. we strictly adhere to the definition that the source of data to be migrated is a database and the destination is also a database .While doing so the only part that undergoes any visible change is the structure of the source and destination database while all the data, attributes, table name etc remains unaffected..

2) The next part deals with migrating Tables applying constraints such as primary key, foreign key, unique key, index key and check constraints. Migrations of views are also supported.
3) We have also provided facility for selecting and deselecting the fields of a table or an entire table itself for migration. The mapping rules have been defined in an MS Access which is referenced by our migrator tool to map the various data types in the process of migration. After the migration has occurred a status report will be displayed which will indicate if the table schema is migrated, records are inserted, constraints like primary key, foreign key, unique key, check constraints have been migrated successfully or pending or failed.

7. ADVANTAGES OF PROPOSED SYSTEM

- **Security**: The application is such that it allows the authorized user.
- **Time efficient**: Migrating every record manually would take quite a lot of time but using a migration tool would take the application few seconds to migrate from the specified source to the specified destination.
- **Flexible**: The inherent nature of this application is flexible. The initial concept of data migration that we have implemented on typical case of Access to Sql can be further extended to any source database and to any destination database.
- **Interactive**: The highly interactive nature of this application ensures that minimum special training is required to handle it.

8. FUTURE WORK

- Scheduling :
  One can migrate the data at any time. If you want to migrate the data at 5 o'clock then you can set the time.
- Migration can be done in small area network :
  One can migrate the data in LAN or Wi-Fi.

9. CONCLUSIONS

We know that various organizations use different type of databases to store their user's information. If we want to use the existing databases of such organizations then we have to convert the database in the format which is compactable to our application. This database migration is achieved by database migration tool. A Database Migration Suite is usually developed for individuals and organizations to save time for converting to a new database if a database already exists. The purpose of our project is to migrate data from an existing database to another database. Our migrator tool provides source databases as MS Access, destination databases as SQL Server and Oracle. We also have implemented migration from SQL Server to Oracle and vice versa.

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