Real Alternative DBMS ALTIBASE, Since 1999

Migration from ORACLE to ALTIBASE HDB

ALTIBASE 6.1.1

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ALTIBASE

PERFORMANCE SOLUTIONS

Document Control

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Contents

Introduction

This migration white paper aims to provide a broad idea on how to migrate data, object and application from Oracle to ALTIBASE HDB. We provide tools such as MigrationCenter to speed up the migration process. MigrationCenter migrate data from Oracle to ALTIBASE HDB.

Migration process is straight forward.

First, you need to create user and tablespace on ALTIBASE HDB. Then, you can use MigrationCenter to migrate data from Oracle to ALTIBASE HDB. The next step is migrating objects such as stored procedure, trigger and views. At last, application has to be migrated to complete the migration.

Analysis

First of all, source DBMS(Oracle) and its application have to be analyzed to build a migration process. By doing so, you can estimate how long the migration take and what you need to work on. Some DBMS objects exist but they may not be used currently. These have to be identified and excluded from the migration process.
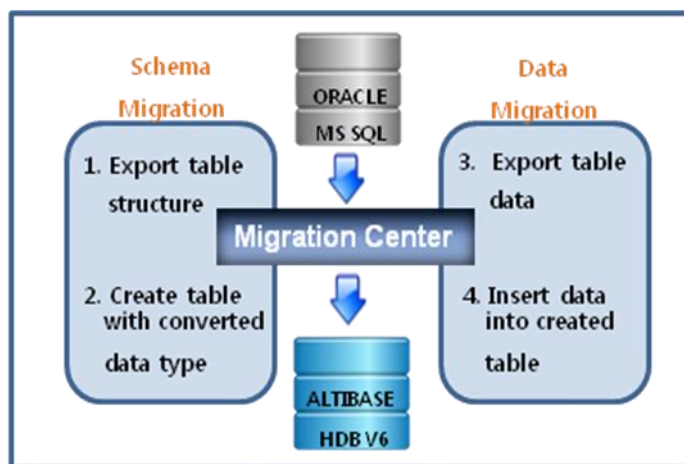
Data Migration

User account and tablespace have to be created on ALTIBASE HDB before data migration.

Creating user account on ALTIBASE HDB is similar with Oracle.

ALTIBASE HDB is a hybrid relational DBMS that delivers extreme speed while supporting large data sets. Therefore, you need to decide which data need a performance and which does not. Depending on the characteristic of data, you can create a memory or a disk tablespaces.

After user and tablespace are created, you can use MigrationCenter to migrate data from Oracle to ALTIBASE HDB. MigrationCenter is a tool of ALTIBASE HDB and it is free to use. MigrationCenter creates table schemas and transfer data automatically for you.
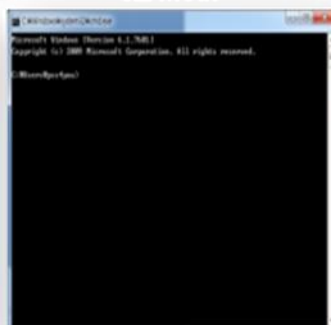
You are always welcome to use other 3rd party tools. However, you need to manually create tables first before transferring data by using 3rd party tools.
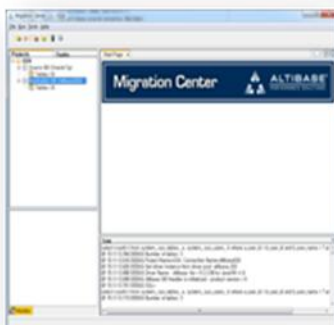
Object Migration

View, Trigger, sequence, synonym and index have to be manually created. However, syntax of Oracle objects is similar to that of ALTIBASE HDB objects. Each object has to be reviewed manually, but not much thing has to be modified.

Overall syntax and structure of ALTIBASE HDB stored procedure are similar to Oracle stored procedure. Therefore, it can be migrated easily except for some functions that ALTIBASE HDB does not support. Work-around for those functions that ALTIBASE HDB does not support is provided.

Application Migration

SQL syntax of ALTIBASE HDB is also similar to that of Oracle. ALTIBASE HDB supports full specification of SQL 92 standard. Furthermore, ALTIBASE HDB also supports nonstandard SQL feature such as outer join syntax with the (+) qualifier.

For those functions that ALTIBASE HDB does not support have to be converted and work-around is also provided.

Application is also needed to be modified depending on which language you use. If you use Java, then you may not need to modify many things. For example, one of customers were doing POC(Proof of Concept) with their existing java web application, and it worked with ALTIBASE HDB after changing a connection string only.

If you use Pro*C of Oracle, you need to convert it to APRE(Altibase PRE-compiler). Syntax is the only difference between Pro*C and APRE, and the full conversion guide document is also provided.

Sample Scenario

This sample scenario is based on POC (ERP solution) that we consulted.

Total time taken: 2 months

Data size: 70GB

Analyzing Source DB

First of all, we have analyzed database objects on Oracle. We have found 434 indexes, 3 LOBs, 1 sequence, 454 tables, 125 procedures and 24 views to migrate. Other objects including database link, functions, packages, procedures and triggers were excluded from the migration since the customer either does not use or want to update them.

Data Migration

User and tablespace are created before data migration. Data migration was done by MigrationCenter. Most tables are transferred to disk table of ALTIBASE HDB. Performance of MigrationCenter was about 10,000 TPS. (Transaction Per Second)

Object Migration

The next step was object migration.

- Procedure

    53 out of 125 procedures were compiled well after we changed data type from NVARCHAR2 to NVARCHAR.

    Others were needed little modification

1. Syntax difference
2. Dictionary view name difference
    - Oracle dictionary view name starts with "USER_", but ALTIBASE HDB starts with "SYSTEM_.SYS_"
3. Function use which ALTIBASE HDB does not support
    - Work-around was applied for this case.

- View

    All 24 views were complied without any modification.

- Trigger

    Customer created new triggers for ALTIBASE HDB. Syntax of ALTIBASE HDB is little bit different from that of Oracle. Therefore, we guided how to code triggers to customers.

- Function

    Syntax of ALTIBASE HDB is different from that of Oracle. Therefore, we guided how to code functions to customers.

Application Migration

We provided guide document for developing application. Customer did not have a critical issue while converting the application.

Customer asked for sample program which retrieve LOB data from ALTIBASE HDB. Moreover, some SQL syntax questions were received. Most SQL related questions were simple and we responded with converted SQL statement to customers.
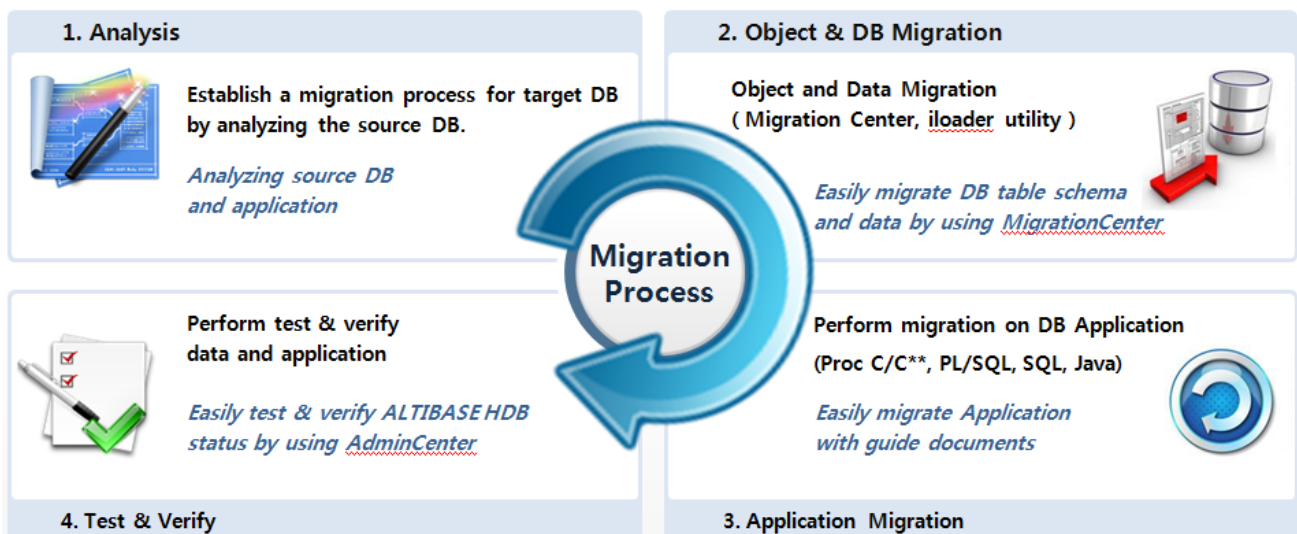
Conclusion

This document describes the steps of how to migrate from Oracle to ALTIBASE HDB. You need to migrate data, object and application to complete the migration, and we provides a tool and guide documents to help you.

Migration from the existing database to the new database might be a huge work and it may cost a lot. However, using ALTIBASE HDB on your system gives you extreme performance. Users will enjoy the improved access to their service and the system will handle more users without hardware upgrade.

For more detail information on migration, please refer to document below.

- Embedded_SQL_Programming_Oracle_to_ALTIBASE HDB

- ORACLE_to_ALTIBASE_Conversion_Guide

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