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Forging the Future



MB Foster

Database Synchronization Options for MPE Databases



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Technical Manager
Core Product Development

- MBF-UDALink ODBC/JDBC/RPC Driver & ODBCLink/SE maintenance and enhancements
- New Product Architecture



Overview

- Why use Synchronization
- Considerations
- Modification Options
 - Modify application code
 - Modifications within database
 - Use 3rd party software

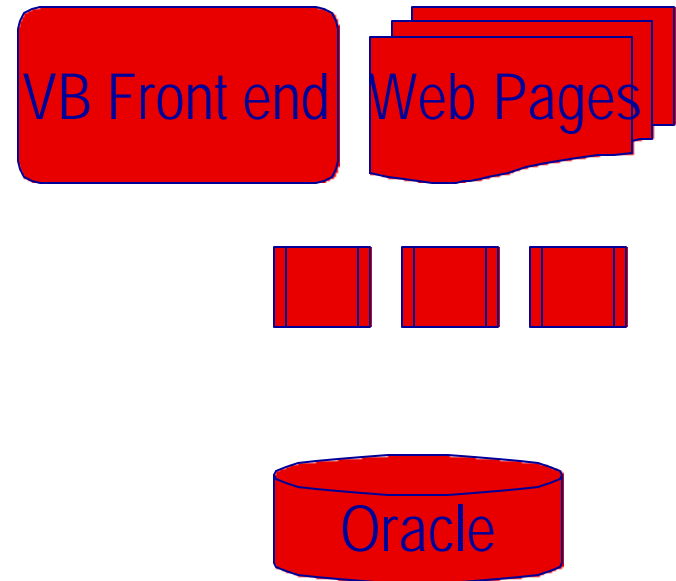
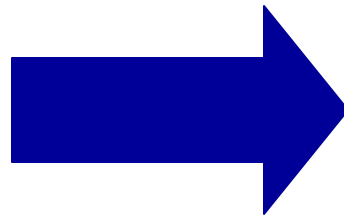
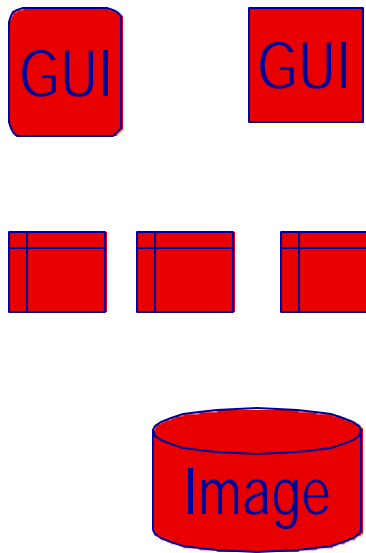


Why use Synchronization?

- Data access for mobile/disconnected users
- Isolation of data for security
- Data Warehouse
- Migration



Migration





Considerations

- What options are available for a phased migration
 - Move minor apps first
 - Move major apps first
- Number/complexity of tables that are staying or moving to remote Database (DB)
- What is your Target DB and Source DB and what tools (and at what cost) are available for synchronization



Considerations

- What timeframe do you need the changes to be completed in?
 - Do you have the time to develop your own mechanism?
- How long will the databases need to be kept synchronized?
- Complexity of application that is to continue running on MPE for now?
 - Is it easy to modify to add multiple update code?



Considerations

- Complexity of Application that is to run on new platform with new DB?
 - Is it easy to modify to add multiple update code
- Do you have/own the source code for your Existing Application?
- Do you have/own the source code for your New Application?



Considerations

- Do you have IT staff that can make the changes?
- Do you have a budget to hire external resources to implement this?
- How important is it to have concurrency between the two databases? What is the maximum latency between updates?



Considerations

- Is one database read only or do you need two way synchronization?
- Is the table structure the same?
- Are the data rules the same?



Image Synchronization Issues

- SQL generation
- Data transformation / mapping
- Schema mapping



Allbase Synchronization Issues

- SQL mapping
- Data transformation/mapping
- Schema mapping
- Allbase procedures and triggers



Choose Primary DB

- Allbase/Image as Primary DB
- New DBE is Primary DB
- Phased migration with either being primary at some point



Basic Implementation Options

- Modifications in old or new Application code
- Modifications in Database (triggers etc.)
- 3rd party software
- Combination of the above



Update Timing Options

- Real Time
 - Consecutive Update
 - 2 phase commit
- Near Real Time
 - Queued Update
- Periodic Bulk load
 - XML file
 - CSV
 - SQL Stmt File



Modifications in App code

- Write updates to a file and xfer
 - Example, XML or CSV file
- Make temporary additions in the NEW code to also update desired tables in the old database using ODBC, JDBC or OLEDB



Modifications in App code

- Write to a new 'update indication' table and have another service read changes and update secondary database
- Write to another API, which will connect to remote database and perform the update



Modifications in DBE

Allbase:

- Add triggers and procedures that write to a 'update indication' table which describes which records have changed in various tables
- OR Alter tables to add timestamp info (each row)
- Have a service read the 'update indication' table for change indicators, then update remote db

Oracle:

- Use 'Oracle Generic Connectivity' to connect through ODBC and perform the updates



Oracle Generic Connectivity

- Feature of Oracle as of 8.1.6
- Uses “Heterogeneous Service Agents” to do SQL and Data mapping
- Limitations with blobs
- Stored procedures not supported
- Functions in where clause not supported

Note: Oracle Transparent Gateway is NOT supported for ALLBASE or Image



3rd Party Software

- Use 3rd party synchronization software to read changes in one database and update the other database

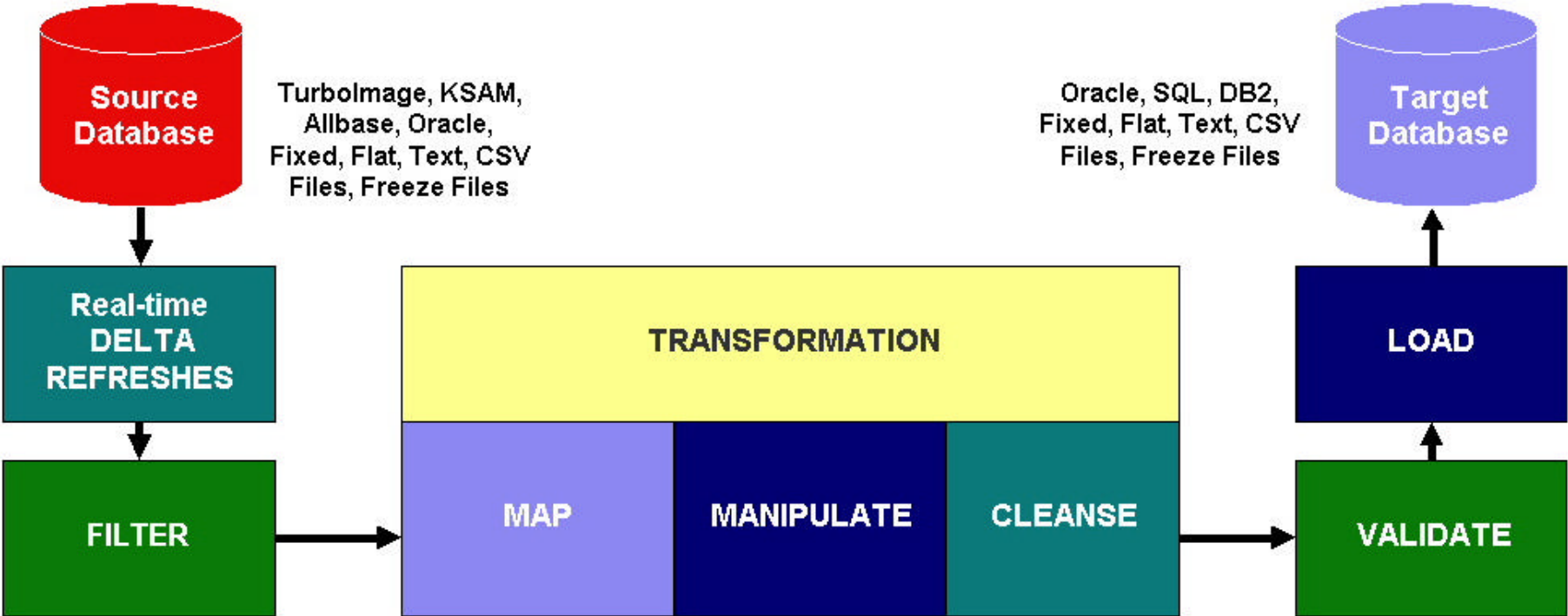


3rd Party Software Examples

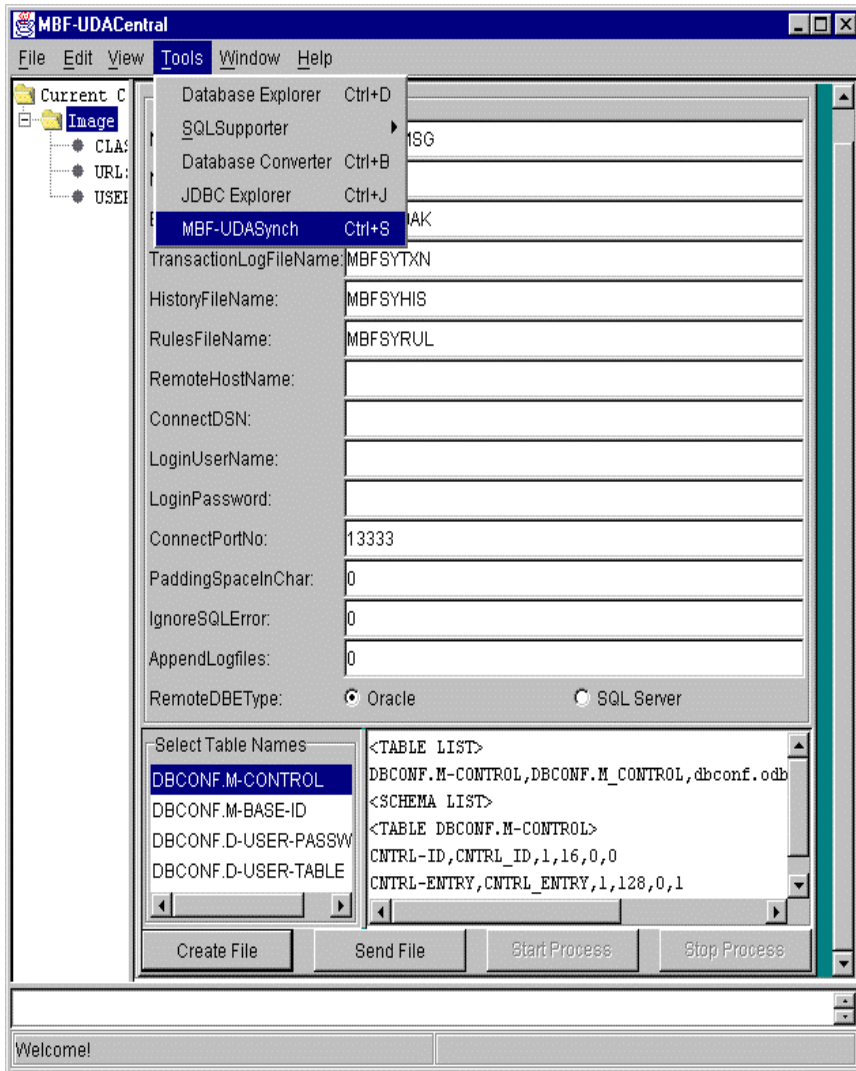
- BridgeWare
- MBF-UDASynch
- SQLServer Enterprise Manager
- Other



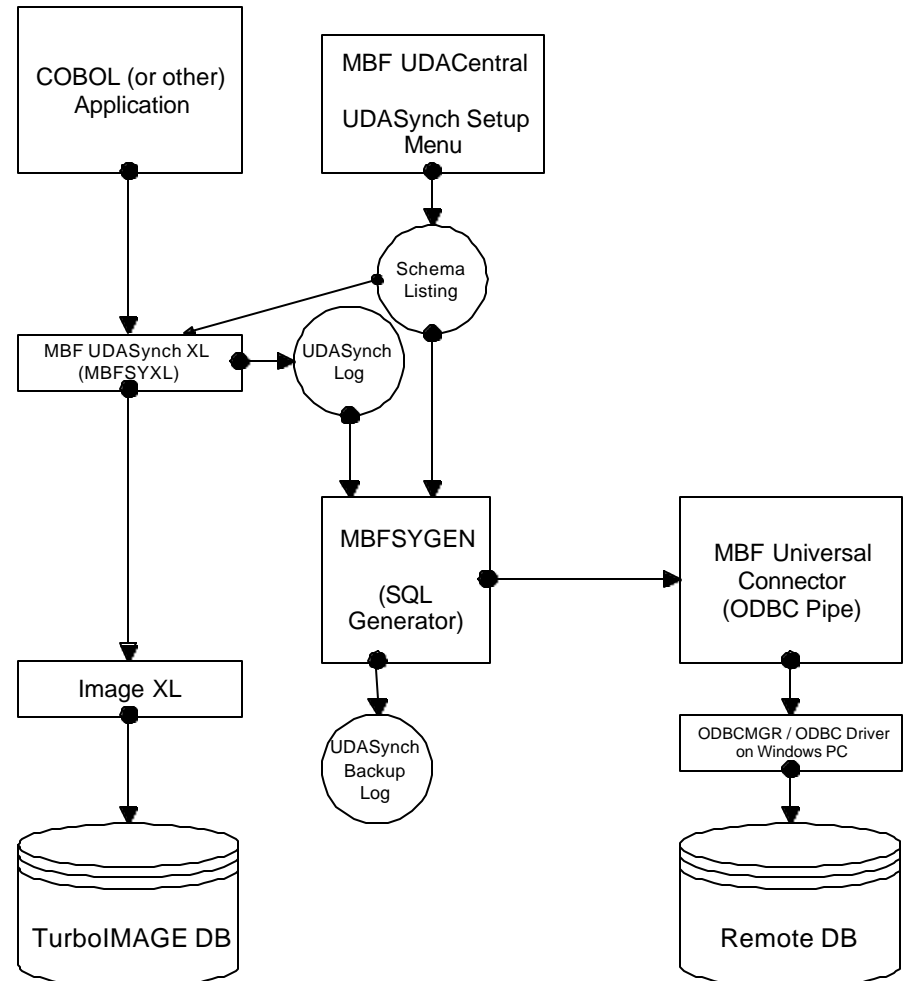
HP e3000 Migration to Open Systems



UDASynch



MBF-UDASynch TurboIMAGE to SQL DBE Replicator



SQL Server Enterprise Manager

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The screenshot displays the SQL Server Enterprise Manager interface for a DTS package named 'GROUP-M_Copy'. The workflow consists of three tasks: 'Truncate Table', 'Connect', and 'Transform Data'. The 'Transform Data' task is selected, and its properties dialog is open. The 'Transformations' tab shows a mapping between source and destination columns. The source columns are: GROUP#, ADJUSTMENTS, BALFORWARD, BILL_FORMAT, BILL_METHOD, BILLCONTACT, BILLREMARK, BUSINESS_UNIT, CARRIER, and CONTACT. The destination columns are: ADJUSTMENTS, BALFORWARD, BILL_FORMAT, BILL_METHOD, BILLCONTACT, BILLREMARK, BUSINESS_UNIT, CARRIER, CONTACT, and COUNTY. The 'Create New Transformation' dialog is also open, showing a list of transformation types: ActiveX Script, Copy Column, DateTime String, Lowercase String, Middle of String, Read File, Trim String, Uppercase String, and Write File.

SQL Server Enterprise Manager - [2:DTS Package: GROUP-M_Copy]

Package Edit Connection Task Workflow

Connection

Task

Truncate Table

Connect

Transform Data Task Properties

Source Destination Transformations Lookups Options

Define the transformations between the source and destination.

Name: DTSTransformation_2

Type: Copy Column

New Edit Delete Test

Source Destination

Source	Destination
GROUP#	ADJUSTMENTS
ADJUSTMENTS	BALFORWARD
BALFORWARD	BILL_FORMAT
BILL_FORMAT	BILL_METHOD
BILL_METHOD	BILLCONTACT
BILLCONTACT	BILLREMARK
BILLREMARK	BUSINESS_UNIT
BUSINESS_UNIT	CARRIER
CARRIER	CONTACT
CONTACT	COUNTY

Select All Delete All

OK Cancel Help

Create New Transformation

Specify the transformation you want to apply to the source and destination columns.

- ActiveX Script
- Copy Column
- DateTime String
- Lowercase String
- Middle of String
- Read File
- Trim String
- Uppercase String
- Write File

OK Cancel Help

Start

SQL Server Enterprise ... SQL Query Analyzer - [Q...]

1:57 PM





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