Unified Data Management Framework (UDMF)©

End-to-end Data Migrations Capabilities on Oracle E-Business Suite Application
Agenda

- UDMF – Overview and Features
- Solution and Value proposition
- A glimpse of the Tool
- Case Study
Unified Data Management Framework

For Reliable, Repeatable, and Reusable Migrations, Data Analysis, Cleanse & Reconciliations

- Data Profiling
- Unit of Migration Analyzer
- Candidate List Generation
- Availability Reporting

**Data Analysis Engine**
- Data Profiling
- Unit of Migration Analyzer
- Candidate List Generation
- Availability Reporting

**Rule Engine**
- Selection Rule
- Exclusion Rule
- Data Quality Rule
- Mapping Rule

**Transformation Engine**
- Cleanse
- Transformation
- Exception Handling
- Fallout Management

**Loading Engine**
- Data Type Validation
- Data Loading
- Real time and Batch processing

**Orchestration Engine**
- Dashboard & Reports
- Fallout Manager
- Scheduling & Audit
- Playlist Manager

**Source Systems**
- Database
- Mainframe
- Dump
- CSV
- Other

**Target Systems**
- RDBMS
- HDFS
- XML
- Other

**Data Distribution Area**
- Product Specific Reusable Adaptors

**Data Reconciliation Engine**
Key UDMF Components

- **Data Receiving Area**
  - Receive Data from source via various protocols by establishing topology (db connector, Mailbox, etc.)
  - Extract data using custom APIs, web service
  - Supports multiple data formats – XLS, data dump, flat files/CSV, etc.

- **Transformation Engine**
  - Perform data transformations in line with the target data model
  - Transformations based on in-built logical models
  - Standardized pattern for Field & Product Mapping, Process Orchestration, Exception Handling, Failouts and Error Handling
  - Ability to seamlessly integrate with Commercial ETL tools
  - Report Failouts with drill down up to record level

- **Data Analysis Engine**
  - Understand data variances, patterns, dependencies and relationships of Source Data
  - Discover underlying data complexities and formulate migration strategies
  - Define criteria to slice datasets & UoM
  - Define functional rules for analysis
  - 3 levels of data profiling to identify DQ issues
  - Fix standard DQ issues and generate DQ Reports to highlight non-compliant data
  - Generate Candidate List

- **Loading Engine**
  - Perform Data Validation during Loading
  - Data Type Validations and business validations
  - Real time and batch processing
  - Set up of automatic loading
  - Load using target specific API or adapters
  - Triggering custom actions post loading

- **Data Reconciliation Engine**
  - Data Audits throughout the migration journey
  - Data Integrity checks between systems during the journey and within targets post migration
  - Entity and Attribute level reconciliations
  - Statistical and Detailed Level Reconciliations

- **Control Center**
  - Web-based UI for Analysts, Business Users and Execution Team to manage E2E migration journey
  - Enable real-time viewing of migration progress, data quality metrics, execution of migration jobs
  - Handling of failouts and errors
  - Data Reconciliations
  - Provides user access controls and management
  - Extensive Reporting and Dashboards

- **Rule Engine**
  - Tightly coupled with the Data Analysis component
  - Rule Engine enables the definition and management of functional & technical rules for analysis, quality and candidate list generation
  - Various Rules usually fall under the categories of Data selection, Exclusion & validation, Data quality and transformation rules
Key Features of UDMF

- Better Governance and Data Traceability
  - Auditable, Controlled and automated migration process

- Proven Solution with shorter project lifecycles
  - Increased reliability and project success assurance

- Available in multiple flavors for varied Migration needs
  - Can address multiple source, target
  - Multiple options for the Base technology stack to suit customer’s existing landscape

- Reusable Components coupled with suitable migration strategy
  - Enables reduced overall cost

- Process and Tool Driven approach
  - Data Analysis, multi-level profiling and data integrity checks ensure migration success increases in each iteration of data mgmt.

- Built for the organizations of the digital era
  - Ability to support Real – time Synchronization, High data volumes, Cloud migrations, etc.

- Easy Monitoring and Scheduling features
  - Customized Reporting capability across Analysis, Fallout Management, Migration Scheduling enables even Business users to have up to date visibility over Migrations
Solution and Value Proposition
Data Migration as a Solution

UDMF is used in Reliable, Repeatable, and Reusable Migrations in the process of migrating data from various sources into the Oracle E Business Suite.

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Why UDMF

Current Challenges

- Extraction latency over DB links due to huge volume of data extracted without filter
- Predictability of Data migration success
- Getting a consolidated report is currently and needs lots of queries to be executed to get one
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- Change management process is normally time consuming process due to tightly coupled program
- Getting a consolidated report is currently and needs lots of queries to be executed to get one

DM Lifecycle Phases

- Source Data Extraction
  - Data profiling and Data Analysis Report
- Change Management
- Validation and Loading Fallouts

Using UDMF

- The data extract volume can be reduced by using filters and data pump utilities which reduces volumes for transfer
- Data analysis profiling and reporting will ensure data quality problems are addressed and only clean data is transferred to target
- Fallout management process helps to highlight the extraction & transformation Fallout
- Reconciliation report will be available against the source data loaded into UDMF staging
- Modular, scalable & reusable framework of UDMF assist in getting the changes incorporated in shorter time frame
- Using UDMF, Fallout management process helps to highlight the extraction & transformation Fallout
Value Proposition

- **End to End Data Services** that helps our customers derive value out of data at every stage of the Data journey
- **Industrialised approach** that enable quicker ROI through fast tracked deployments and 20 - 30% saving on cost
- **Proven Solutions** delivered successfully for large Oracle E Business Suite engagements; Partnership with leading Data vendors – Informatica, IBM, etc.
- **Processes and Services** delivered on the foundation of the 3 R – Reliable, Repeatable and Reusable
- **Easily configurable solutions** for multiple domains, repository of domain specific data rules, industry frameworks, etc. 500+ Pre-built rules comes integrated with the tool
A glimpse of the tool
Extraction using data pump
The data is extracted into UDMF from dump file using the data pump.
Source Data

<table>
<thead>
<tr>
<th>Source Data</th>
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</thead>
<tbody>
<tr>
<td>Module</td>
<td>AR_CUSTOMER</td>
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<tr>
<td>Table Name</td>
<td>HC_CUSTOMER</td>
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<table>
<thead>
<tr>
<th>Source Data</th>
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<tbody>
<tr>
<td>Cust Account Id</td>
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Download
Create Rule
Set of industry standard rules for selection, exclusion and transformation built into the tool
Rule Manager
Request Submission
# Profiling Controller - CV015 Profiling

<table>
<thead>
<tr>
<th>Profiling Details</th>
<th></th>
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<tbody>
<tr>
<td>Run Date</td>
<td>20-AUG-15</td>
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<tr>
<td>Profiling ID</td>
<td>2003 - PROFILING - DEMO</td>
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<tr>
<td>Profiling Type</td>
<td>CV015 Profiling</td>
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</table>

![Image of Profiling Controller interface](image-url)
Profiling Controller – CV040 Profiling
Profiling Report
Migration Controller

![Migration Controller Screenshot](image)

### Migration Controller Details

**Run Date:** 20AUG15  
**Migration ID:** 2033 - MIGRATION - DEMO  
**Parent Module:** AR

### Migration Controller Table

<table>
<thead>
<tr>
<th>Sub Entity</th>
<th>Migration Status</th>
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<tbody>
<tr>
<td>AR_INVOICE</td>
<td>Partial</td>
</tr>
<tr>
<td>AR_INVOICEDIST</td>
<td>Partial</td>
</tr>
<tr>
<td>AR_RECEIPT</td>
<td>Partial</td>
</tr>
<tr>
<td>CUST_ACCOUNT</td>
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<tr>
<td>CUST_CONTACT</td>
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<tr>
<td>CUST_SITES</td>
<td>Partial</td>
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<tr>
<td>CUST_SITES_TAX</td>
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<tr>
<td>CUST_TAX</td>
<td>Partial</td>
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</tbody>
</table>

*Note: The screenshot shows a user interface for managing migration tasks, with options for selecting and managing sub-entities and their migration status.*
Execution Status

![Execution Status Dashboard]

### Execution Details
- **Run Date:** 20-AUG-15
- **Run ID:** 2033 - PROFILING - DEMO
- **Parent Module:** AR

### Execution Status

<table>
<thead>
<tr>
<th>Event Description</th>
<th>Status</th>
<th>Start</th>
<th>End</th>
<th>Duration</th>
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</thead>
</table>

1 - 3
Reconciliation Report
Data Loading
Deployment Architecture for Oracle EBS
# ERP Migration from Oracle 11i to R12

**Customer:** UK's leading Infrastructure Services Organization

<table>
<thead>
<tr>
<th><strong>Source and Target Systems</strong></th>
<th>Migration of ERP data from legacy Oracle 11i, Payroll system, InspHire, Workforce into Oracle R12 Enterprise Edition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Migration</strong></td>
<td>Big Bang</td>
</tr>
<tr>
<td><strong>Tools Used</strong></td>
<td>UDMF, ERP Adaptor, ODI &amp; PL/SQL scripts</td>
</tr>
</tbody>
</table>

### Unique Proposition

- Extraction of data directly from the 11i Source using reusable data pump scripts (if the source is 11i)
- Extraction of data from Peripheral system through extraction templates
- Conversions of wide number of Tracks and Modules
- Migration delivered through UDMF, our in–house built Migration platform
- ERP Packages & Views built in within UDMF for conversion and generating data load file for target Oracle R12 system
- Consolidation of Legacy ERP systems and Peripheral systems across 6 OPCOs and associated JV’s to one ERP R12 system

### Tracks & Modules Migrated

- **Finance** – General Ledger, Account Payables & Receivables, Cash Management & Fixed Assets, Supplier and Invoices
- **Procurement** – Purchase Order
- **Projects** – Costing & Billing
- **HRMS & Payroll** – Core HRMS, Learning Management, Payroll and Time & Labour
- **Customer Modules** – Sub-Contractor Management & Customer Billing
# ERP Migration from Oracle 11i to R12

**Customer:** UK's leading Infrastructure Services Organization

## Business Requirement
- As part of a larger transformation program, the customer's business critical functions are being moved to the Oracle R12 Enterprise platform.
- The project driver was to consolidate the ERP Landscape operating on Oracle 11i and other legacy systems and migrated them on to Oracle R12.
- Customer had earlier attempted to execute the migration project in-house and did not get the expected results.
- For the 2nd Phase of this project the customer was looking for a vendor who can ensure effective and efficient data extraction & transformation process.

## Challenges Faced
- Extracting the Ocos specific data set based on the legacy setups.
- Defining the common template for extraction from Peripheral systems.
- Conversion LOVs baselining.
- Maintaining Data integrity needs across the Oracle R12 with respect to Oracle 11i / Peripheral source systems.

## TechM Scope & Solution
- Formulate a Detailed Data Migration plan & Strategy and Data Migration Testing Strategy
- Define the data extract File format for peripheral applications and finalize columns for data extraction from 11i
- Legacy source system analysis to understand DQ issues, data constraints & interdependencies
- Setup different validation and transformation rules specific to each OPCO and also provide a repeatable Transformation Engine
- Highlight duplicates, discrepancies and incorrect records periodically through DQ reports
- Define and the field mappings i.e. mappings between the extracted data and CV40 file formats
- ERP Adaptor deployed to convert both customer and transactional data to R12 data model and generate output load file for Account Payable, Account Receivables, General Ledger and Finance modules
- Robust end to end reconciliation process and fallout management

## Benefits
- System operating costs lowered by rationalizing various legacy ERP systems
- Periodic DQ reports generated highlighting the key data quality issues for source data cleansing, prior to migration
- Migration success predictability shown through profiling reports during the initial phases of the project
- ERP PLSQL Scripts designed to transform master & transactional data to R12 data model and also generate the output load file
- Consolidated data in the target system providing a single version of truth
- Providing End to End traceability for the Records via Fallout reports
- Preventing data losses by providing a robust source to target data reconciliation mechanism
Thank you

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