Data Exchange

- Propagate selected data from a source data store to a target data store (existing or new)
  - In near real time
  - Bulk Data load

- Transform data while it is being propagated
Data Exchange Capabilities

• **User-defined Transformations**: User workbench defines how to transform propagated source data for each target database

• **Changed Data Capture**: Propagation of source database updates, as they occur, to one or more target databases

• **Bulk Data Transformation**: Transfer of source database selected contents to one or more target databases
Data Exchange Design Goals

• Updates guaranteed to appear in the destination database
• Updates appear in destination databases in ‘near real-time’
• Transactional updates processed in sequence to maintain information integrity
• Minimal overhead and footprint on ClearPath servers
• Maximize use of commodity platform processing
• Failure recovery must guarantee information consistency in destination databases
Data Exchange Overview

• Integrate Business Processes
  – Integrate data between applications in near real-time
  – Run on heterogeneous operating systems

• Acquire Data for Reporting and Business Intelligence

• Reduce software development costs
  – Avoid developing, testing, and supporting home grown tools
  – Work with existing applications and databases
  – Eliminate/minimize application and schema changes
Data Exchange Supported Databases

• Data Exchange 1.0 (*technical preview*)
  – Supports DMSII to SQL Server transformation

• Data Exchange 2.0 (*technical preview*)
  – Supports RDMS to SQL Server transformation

• Data Exchange 3.0
  – Supports SQL Server to DMSII transformation

• Data Exchange 4.0 (to be released in Q1 2017)
  – Supports RDMS & DMSII to Oracle transformation
Client project

- Large bank in Belgium
- Propagate data in real time to an Oracle database
- Datawarehouse for reporting, trend analysis, ...
- Connection to CRS (Common Reporting Standard) system
  - CRS = agreement to automatically exchange information on residents' assets and incomes, to fight fiscal fraud
  - the idea is based on the USA Foreign Account Tax Compliance Act (FATCA) implementation
  - It starts in Belgium in 2017
Client reasons to choose Data Exchange …

• Easy installation
• MCP side
  – Alternate Audit-pack
• Development Workbench
  – User-friendly / intuitive interface
  – Inbuilt functions
  – Auto-mapping
  – Filters
  – XML export / import
… Client reasons to choose Data Exchange

• Administration Site
  – User-friendly interface
  – Centralized solution
    • Operations
    • End-to-end Monitoring
    • Troubleshooting

• Availability feature (supports SQL AlwaysOn)
• Future capabilities (DMSII to DMSII, Oracle to DMSII, …)
• Partnership with Unisys engineering for future development
Data Exchange Architecture
Data Exchange Architecture

Source Data Store MCP

MCP Agent

Description File

Source Data Store DMSII

Audit Trail

Cloned Source Data Store

Source Data Store

Target Data Store system

Windows Server

Development Workbench

Repository

Transformation

Administration Site

Administrative Service

Transformation

Admin DB

Runtime Service

WinMQ

Changed Data

DMSII

OLEDB

Bulk Data

Tracking DB

Oracle (DE rel 4)

SQL Server (DE rel 1)
Data Exchange Architecture
Data Exchange Topology for DE 4.0
In practice
Data Exchange installation
DDW - repository
DDW – Load Schema’s
DDW - Transformations
DDW - Transformations
DDW - Transformations
DDW – Expressions – Functions …
DDW - … Functions …
DDW - … Functions …
DDW - … Functions
Complex expressions

If(cmsgfmt == 1, IngDEExtensionLibrary.ParseLinesBlock(cmsgfmt) + cmsgfmt, 4, IL ELSE ConvertToInt64(IngDEExtensionLibrary.ParseLinesBlock(cmsgfmt + cmsgfmt, 4, 60, 8, 52, 1) )

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DDW – Complex expressions
DDW - Deploy
Admin Site - Transformations
Admin Site – BDT
Admin Site – BDT Statistics
Admin Site – CDT
Admin Site - CDT
Admin Site – CDT Statistics
Site Admin - Events
Questions ?