Agenda

- DataStage
- DataStage 7.5
Ascential Enterprise Integration Suite™

- ProfileStage™
- QualityStage™
- DataStage™

Service-Oriented Architecture

- DISCOVER
- PREPARE
- TRANSFORM and DELIVER

Enterprise Connectivity

- IT — Web Services, XML, J2EE, JMS

End-to-end Solution

One Vendor

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**Data Requirements**

- Data Extraction Criteria

**Data Assessment**

- Discover, Assess, & Validate

**Data Alignment**

- Cleanse
- Standardize

**Data Harmonization**

- Consolidate, Integrate, Cleanse, Normalize, & Harmonize

**Solution Implementation**

- Prepare, Transform, Load

**Common Target Format**

- Individual Sources
- Across Sources

**Initial Extraction**

- Extract & Load into Stage 1

**Problem Sources**

- Custom Apps on Mainframe
- Custom Apps on UNIX
- 3rd Party SW
- SAP
- Oracle
- Siebel
- PeopleSoft
- External Data

**Solution Applications**

- OLTP & 3rd Party SW
- SAP
- Oracle
- Siebel
- PeopleSoft

**Solution Compliance**

- Compliance – BASEL II, Sarbanes Oxley
Data Extraction
Deliverables:
Staged Extracted Data

Data Assessment
Deliverables:
Data Quality Rpt
- Gap Analysis Reports
- Business Rules & Requirements
- Technical Specs/Design

Data Alignment
Deliverables:
An Application that Splits Domains and Translates each source
- The Aligned Data Structure

Data Harmonization
Deliverables:
An Application that Translates, Integrates, Enriches, Standardizes and Consolidates
- The Harmonized Data Structure
- Cross Ref Tables
- Match Index Tables

Solution Implementation
Deliverables:
An Application that Prepares, Transforms and Loads Data into the final Solution
- A procedure for handling daily transactional processing

ProfileStage & AuditStage

QualityStage

DataStage & Connectivity PACKs
DataStage TX & RTI

Metadata Management
Deliverables: Metadata Repository
MetaStage & MetaBrokers
Iterations II - Roles, Process, Architecture

- **Individual Source Level**: 1 to 1 movement
- **Integrated Across Sources**: many to 1 movement
- **Business Solution Level**: system movement

**Extended Teams**
- **Source Data**
- **Source Definitions**
- **Data Requirements**
  - DQ Report, Gap Report, Bus Rule Requirements
  - Business and Technical Specifications

**Core Team**
- **Harmonized Data** (Logical View)
- **Cross-Ref Keys, Solution Keys & Match Index Tables**

**Blueprint (Design)**
- **Data Extraction**
  - Access Filter Stage

**Realization (Build)**
- **Data Assessment**
  - Discover Validate Gap Analysis

**Test**
- **Data Alignment**
  - Translate Standardize (Split Domains)
- **Data Harmonization**
  - Consolidate Cleanse Integrate

**Go Live (Final)**
- **Solution Implementation**
  - Transform Load Transact

**Information Flow**
- **Flow of Data**

**Source Definitions**

**Data Extraction**

**Stage**

**Data Requirements**

**Data Assessment**

**Data Alignment**

**Data Harmonization**

**Solution Implementation**

**Harmonized Data (Logical View)**

**Cross-Ref Keys, Solution Keys & Match Index Tables**

**Flow of Data**

**Source Data**

**Blueprint (Design)**

**Realization (Build)**

**Test**

**Go Live (Final)**

**Information Flow**

**Flow of Data**

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<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
</table>
| ProfileStage | Data Profiling       | • Feature 1
• Feature 2                                                                 |
| AuditStage  | Auditing             | • Feature 1
• Feature 2                                                                 |
| QualityStage |                     | • Feature 1
• Feature 2                                                                 |
| DataStage  |                      | • Feature 1
• Feature 2
• GUI
Staging Area

Profile
Consolidate
Harmonize
Cleanse
Standardize

Central Master Data

- Custom Apps on Mainframe
- Custom Apps on UNIX
- 3rd Party SW
  - SAP
  - Oracle
  - Siebel
  - PeopleSoft
- External Data

SOURCE SYSTEMS
RTI Architecture

- RTI Console
  - Auditing
  - Authentication
  - Authorization
  - Logging
  - Platform Load Balancing

- RTI Agent
- DataStage Server 1
  - "Always on"
- DataStage Server 2
  - Transformer
  - RTI Input
  - QualityStage
- DataStage Server N
  - "Always on"
  - RTI Output

- J2EE
  - Web Service Client
  - Java Messaging Service
  - Enterprise Java Beans
  - Enterprise Application

- RTI Agent

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RTI Bindings

- Web Services (SOAP/HTTP)
- Enterprise Java Beans
- Java Messaging Services

WSDL File

Session Bean

Message-Driven Bean

Generates

Generates

Generates
Room Solutions

- Insurance Data Service
- Underwriting Database
- Environmental Data
- Occupancy Data
- Geo Data
- Text Files
- Excel
- Web
- Schedules
**ROOM Solutions**

- **RTI Server**
  - **Web Service**
    - **RTI Server**
    - **DataStage/QualityStage**
      - **Web services**
        - **QualityStage**
        - **DataStage**
    - **IT**
    - **80%**
Agenda

- DataStage
- DataStage 7.5
- Ascential DataStage Parallel Extender

- DBMS
Ascential Parallel Extender

- Ascential Parallel Extender
  - Oracle, Sybase ASIQ, IBM DB2 EEE, IBM Informix XPS
  - RDBMS

- Application Execution: Sequential or Parallel
  - Sequential
  - 4-Way Parallel
  - 64-Way Parallel
Parallel Extender

- (Partitioning)
  - Parallel Extender

- (Pipelining)
  - Pipelining

- (Repartitioning)
  - Repartitioning
- データを操作するための処理を含む
- 既存データベースからデータを読み込む
- データソースからデータを読み込む
- Partitioning

- Data Warehouse

- LOAD

- ENRICH

- TRANSFORM

- Source Data
DataStage

- Parallel Extender
- Configuration File
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Parallel Extender™
Configuration File

• Configuration file
• Parallel Extender Engine
  (degree)

```json
{
  node "n1" {
    fastname "s1"
    pool " " "n1" "s1" "sort"
    resource disk "/data/n1/d1" {} 
    resource disk "/data/n1/d2" {} 
    resource scratchdisk "/scratch" {"sort"} 
  }
  node "n2" {
    fastname "s2"
    pool " " "n2" "s2" "app1"
    resource disk "/data/n2/d1" {} 
    resource scratchdisk "/scratch" {} 
  }
  node "n3" {
    fastname "s3"
    pool " " "n3" "s3" "app1"
    resource disk "/data/n3/d1" {} 
    resource scratchdisk "/scratch" {} 
  }
  node "n4" {
    fastname "s4"
    pool " " "n4" "s4" "app1"
    resource disk "/data/n4/d1" {} 
    resource scratchdisk "/scratch" {} 
  }
  ...
}
```
<table>
<thead>
<tr>
<th>Feature</th>
<th>Blueprint</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMP</td>
<td>MPP</td>
</tr>
<tr>
<td>(Parallelism)</td>
<td>(time-to-market)</td>
</tr>
<tr>
<td>(automatic Partitioning)</td>
<td></td>
</tr>
<tr>
<td>(Checkpoint restart)</td>
<td></td>
</tr>
</tbody>
</table>

- Blueprint: Oracle, Sybase ASIQ, IBM DB2 UDB EEE, IBM Informix XPS, Teradata.

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Agenda

- 

- **DataStage**

- **DataStage 7.5**
Ascential DataStage Enterprise Edition

- Lookup
- Multi-node import
- Transformer, Lookup
- Complex flat file
- Job validation
- Sequential file
- Multi-node import
Version 7.5 – DS and DS EE

- HTML Job Reporting
- Job Sequencer
- Table
- Transformer
- Multi-Client Manager
- Director/Manager

Ascential DataStage Standard Edition

- Job
- Operational Meta Data
Version 7.5

- Platform and Connectivity
  - OS
  - Connector
- RTI Mobile Director
- USS Ascential DataStage Enterprise Edition
- MVS Edition Enhancements
  - DB2 bulk load
  - Null handling
Lookup stage editor

Primary link

Lookup key

Lookup
Lookup Conditions

Lookup

Lookup Conditions
Job Validation

- Job Canvas

- Toolbar

- Error: No Columns defined for 'Input.DSLnk2'
- Error: Property 'File' for 'Input' is required but empty

- Job
Complex Flat File -

Pane 1: Hierarchical record viewer

Pane 2: Standard columns grid

Pane 3: Column attribute
Complex Flat File - Layouts

Parallel Engine View

COBOL View
Enterprise Edition

- Suppress message [Informational & Warning messages only]
- Demote message [from Warning to Informational]
- Promote message [from Informational to Warning]
- Job
- Project

- Add, Edit, Remove

Edit Message Handlers on mk3

- Edit local runtime handler for job txtest18. Changes take effect next time the job is run.
- Edit project-level message handler. Changes take effect next time any job in the current project is run.
- Edit chosen message handler: MsgHandler07_Everything

<table>
<thead>
<tr>
<th>Message ID</th>
<th>Action</th>
<th>Example of message text</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOS000002</td>
<td>Suppress from log</td>
<td>main program: oocheneral. loaded</td>
</tr>
<tr>
<td>TFSC000001</td>
<td>Promote to Warning</td>
<td>main program: APT configuration file: /export/home/dsi</td>
</tr>
<tr>
<td>TFG000121</td>
<td>Defer to Informational</td>
<td>Sequential_File_5, When checking operator. When valid</td>
</tr>
<tr>
<td>USER000000</td>
<td>Suppress from log</td>
<td>File_Set_0, When checking operator. No nodes with ds</td>
</tr>
</tbody>
</table>
- Job GUI
  - Memory
  - CPU
  - Record Counts

- APT_PERFORMANCE_DATA

- XML, style sheet, HTML
HTML Job Report - Generate Report

- Use default stylesheet
- User defined stylesheet
  - C:\tmp\7.5\Job Report\DSJobReportH.xml

Directory to save report to
- C:\tmp\7.5\Job Report

- Overwrite without query
- Retain intermediate XML file
Job Sequencer
Job Sequencer – Checkpoint/Restart

Checkpoint/restart

- JOB1, JOB2, JOB3
- Trigger
- Checkpoint/restart

<table>
<thead>
<tr>
<th>JOB1 – fails</th>
<th>Reset JOB1 and run it again</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOB1 – OK, JOB2 – fails</td>
<td>Skip JOB1, reset JOB2 and run it again</td>
</tr>
<tr>
<td>JOB1 – OK, JOB2 – OK, JOB3 – fails</td>
<td>Skip JOB1 &amp; JOB2, reset JOB3 and run it again</td>
</tr>
<tr>
<td>JOB1 – OK, JOB2 – OK, JOB3 – OK</td>
<td>Start at JOB1 again.</td>
</tr>
</tbody>
</table>
Job Sequencer – Loop

- **StartLoop, EndLoop activities**
- **Loop**
  - For *firstnum* To *lastnum* Step *increment*
  - For Each In **delimited list**
Job Sequencer – Loop

- Loop
  - startloopname.$Counter
  - Loop

- Loop
  - EndLoop
  - StartLoop
  - loop counter
Job Sequencer – User Variables

- **Sequence**  
  BASIC Expression

- **Global**  
  Job Sequence
Job Sequencer – Terminator Stage

- Job
- Job Sequence
- abort
  - STOP
  - abort
Table Schema Views

Enterprise Edition
Internal Schema

Cobol

Standard Edition
Transformer –

- Expression: DSLink3.OrderCount + 1
  If (DSLink3.Total > 0) Then DSLink3.Total Else -1

- NullToZero: (DSLink3\.[a-z,A-Z,0-9]*)
  NullToZero($1)

- ... NullToZero(DSLink3.OrderCount) + 1
  If (NullToZero(DSLink3.Total) > 0) Then DSLink3.Total Else -1
Re-License Clients
Multi Client Manager

- 
- 
- 
- 
- 

![Multi Client Manager Interface](image)
Platform Updates

- ☐ ☐ ☐ ☐ Platform
  - Red Hat AS 3.0
  - z/OS 1.3 w/ Unix System Services
  - WinCE (for RTI Mobile Director)

- ☐ ☐ ☐ ☐ ☐ ☐ ☐ Platform
  - Windows NT
  - AIX 4.3.3
  - Red Hat ASE 2.1
DBMS

- Oracle 10g
- Informix XPS 8.5
- Sybase 12.5
- Teradata V2R5.1
- Informix IDS 9.4
RTI Mobile Director
Windows CE RTI Mobile Director

- PDA
- DataStage Director

- Viewing jobs
- Detailed Job View
- Event Log
- Detailed Event View
Windows CE RTI Mobile Director

Mobile Infrastructure

- DataStage Web Service
- Ascential RTI Services

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