Prototype for PowerExchange to Essbase Client Java based Designer

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  - Informatica PowerCenter, Powerexchange and APIs
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Introduction

- Informatica Corporation
  - About
  - Software
  - Market

- Founded: 1993
- Headquarters: Redwood City, CA
- Employees: 1,300+
- Offices: N. & S. America, Europe, Asia Pacific
- Revenue: $391 million (2007)
- 3-year Compound Annual Growth Rate: 21% per year
- Market share leader (Gartner Dataquest)
- Customers: 2,950+
  - 91 of Fortune 100
  - 80%+ of Dow Jones
  - Government organizations in 20 countries
- Partners: Over 400 major SI, ISV, OEM and On Demand

Singular focus on Data Integration Products and Services
Development Environment

Extract-Transform-Load (ETL)
PowerCenter Repository Manager
PowerCenter Designer

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Workflow Manager
WorkFlow monitor

[Image of WorkFlow monitor software interface]
**PowerConnect SDK**

- **Client API**
  - to create plug-ins for the Designer
  - access metadata

- **Server API**
  - plug-ins for the PowerCenter Server
  - extract data

- **Repository API**
  - to access and define the metadata for third-party applications in the PowerCenter repository
• Hyperion Essbase
Essbase Application

- External Data Source File
- Rules
- Database
- Calc Script
- Report Script

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Understanding Essbase

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Essbase architecture

- Client Tier
  - Essbase Server Clients
    - Smart View
    - Spreadsheet Add-in
    - Smart Search
    - Administration Services
    - MaxL
    - XMLA
    - C API or VB API Applications
    - Oracle Business Intelligence Enterprise Edition Plus
    - Partner Tools

- Middle Tier
  - Services
  - Hyperion Provider Services
  - Essbase Administration Services
  - Essbase Studio / Essbase Integration Services

- Database Tier
  - Essbase Servers

TCP/IP or HTTP

- ODBC / JDBC Driver
  - Metacata Catalog
  - RDBMS Source

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**Essbase API**

- C API
- Visual Basic API
- Java API
- XMLA API

**Java API**
- `com.essbase.api.base`
- `com.essbase.api.dataquery`
- `com.essbase.api.datasource`
- `com.essbase.api.domain`
- `com.essbase.api.metadata`
- `com.essbase.api.session`
Programming Environment

- Java Programming Language
- Sun Java J2SE 1.6
- Eclipse IDE
- SWT Framework
Project Details

- Prototype for the Java Version of the PowerExchange for Essbase Client and feature comparison with the Visual Basic APIs for Unicode support
- Subproject: Automation of Build Process and understanding make file architecture used in Informatica
- Subproject: Compilation of three of the Informatica Adapters on different platforms for version 8.6.1 recertification
PowerExchange to essbase

- Repository Manager
  - Essbase Connector Client Plug-in (B)

- Designer

- Workflow Manager
  - Essbase Metadata Definition (A)
  - Register
  - Repository Server
  - Native
  - Repository Agent
  - Repository Database

- Informatica Server
  - Essbase Connector Reader Plug-in (C)
  - Essbase Connector Writer Plug-in (D)

Native/ODBC
PowerExchange to Essbase

- Essbase Client
  - Client Library
  - Designer Wizard
- Essbase Reader
- Essbase Writer

1. Informatica PowerCenter Designer calls -import Essbase Source/Target

2. Event Handlers defined in the library invoke the Designer Wizard

3. Create DSN, tables and columns and export the definitions

4. Parse the exported definition

5. Use the repository SDK to create source definitions and fields in the repository.
Essbase Client Library (C++) creates utility library (C++) which parses information flow and returns through Essbase C++ API. The utility library calls designer wizard (VB) which returns through Essbase VB API. Proposed Java client connects through Essbase Java API.
Design Specifications

Old workflow

(1)

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New workflow(1)
New workFlow(2)
Project Working

XML for DSN

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <LIST>
  - <DSN Desc="This is sample DSN" Name="DSN1" Pwd="•••••••" Server="in158111" User="admin">
    
    Information about the tables goes here
    
    
  </DSN>
- </LIST>
```
DSN Page

Connect to Essbase
Select/Create DSN to connect to Essbase

Connect
Select
Import

DSN Information

DSN Name: DSN1
Description: This is sample DSN

Create DSN Modify DSN

Server Information

Server Name: In1SS111
User Name: admin
Password:

Connect

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• DSN Page (Modify Mode)
DSN Page (connected)
DSN Page (Create Mode)
XML for Table Creation

```
<DSN>
  - <TABLE App="Sample" DB="Basic" DBOTl="Basic" DBOTlType="Block Storage Outline" Desc="This is sample Table 1" Filter=""
           Name="Table 1" ParentDsn="in158111" RuleFile="" RuleSeparator="" Type="1">
    Column Details
  </TABLE>
</DSN>
```
Table Creation Page

Create Essbase Table

Table Information:
- DSN Name: DSN 2
- Table Name: Table 1
- Description: This is sample Table 1

Create New Table
Modify Table
Delete Table

Database Information:
- Application: Sample
- Database: Basic
- Outline: Basic
- Outline Type: Block Storage Option (BTO)
- Table Type: Type 1: Account Dimension Member as a Column

Create
Table Types
- Type 1
- Type 2
- Type 3
Essabse Rule Files
XML for Column

```xml
<TABLE>
  <COLUMN AssociatedDimen="Product" ColumnType="1" DTS="" Datatype="Text" DimenName="Product" Filter="<SORTNONE
  <ICHILDREN "Product"" Name="Product" ParentTable="Table 1" Precision="80" Scale="0" UDA="" />
</TABLE>
```
Column Mapping Page
Column Popup (with DTS and UDA)
Essbase Report Page
Essbase Summary Page

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Automation of Build Process and understanding make file architecture used in Informatica

```
Message#    {"Message to be a part of standard printf C++ function"

#define MSG_NAME Message#
```

```xml
<?xml version="1.0" ?>
<group name="ebiz_msg.msg" prefix="EB ">
<!- WARNING! Do not change parameters order during translation! This message is going to be used in C++ code. ->
<error code="40001" key="ERR_CONNECTION_FAILED" text="The Integration Service could not connect to Oracle E-Business Suite." />
```

`sed /s <Source String> /<Target String> /g <Source File> 
><Target File>

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Compilation of three of the Informatica Adapters on different platforms for version 8.6.1 recertification

AIX : XLC
HP-UNIX : ACC
Windows 64-bit : ICL

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Results, Conclusions and Future Scope of Work

- The prototype does not fully implement the functionality and is just for demonstration purposes.
- Actual implementation will require rigorous exception handling and error checking as well as proper logging into various logging levels.
- Only Type 1 sources are currently running, others need to be supported.
- The filter conditions are currently not functional.
- Rigorous testing is still to be done to use the experience with the old adapter into the new one.
- New features that are suggested by the clients can be incorporated.

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Thank You

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