Service Enabling E-Business Suite
with
Oracle Applications Adapter

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Agenda

• FMW Overview

• Oracle E-Business Suite Architecture

• Oracle E-Business Suite Adapter
  • PL/SQL API’s
  • Business Event System
  • Interface Tables / Concurrent Programs

• Key Features of Oracle E-Business Suite Adapter

• Demo of EBS Adapter
FMW Overview
Fusion Terminology

**FUSION Applications**
Next generation of Oracle Applications.

**FUSION Middleware**
Oracle Fusion Middleware, our market leading best-of-breed middleware technology, which is in use at over 50,000 customers worldwide.

Our focus here is what can developers build today using FMW to extend E-Business Suite Applications on the AppsUnlimited track.
ORACLE FUSION MIDDLEWARE

User Interaction
- Web 2.0 Portal, Rich Internet Apps, Mobile, Search, Desktop, Presence, VoIP

Enterprise Performance Management
- Planning, Budgeting, Financial Management & Reporting, Scorecards

Business Intelligence
- Data Integration, Query & Analysis, OLAP, Dashboards, Reports, Alerts, Real-Time

Content Management
- Web Content, Documents, Digital Assets, Imaging, Records, Information Rights

SOA & Process Management
- ESB, BPEL PM, Workflow, BAM, Rules, B2B, MDM, Registry, SOA Governance

Application Server
- Java EE, Web Services, Complex Event Processing, XTP, RFID & Sensors, SIP

Grid Infrastructure
- Application Clusters, In-Memory Data Grid, Common Metadata Services

Enterprise Management
- Provisioning, Diagnostics, Tuning, Configuration Management

Identity Management
- Provisioning, Access Management, Federation, Audit, Directory
Oracle SOA & Webcenter Technologies

metadata

Oracle AS, JBoss, WebLogic, WebSphere
Oracle E-Business Suite Integration
Oracle E-Business Suite Architecture

Oracle Application Server
- Java Engine
- User Interface
- BI & Reporting
- Personalization
- Business Event
- Concurrent Manager
- LDAP/SSO
- JDBC/SQL Net
- Grid Control

Oracle Database
- Materialized Views
- Data Guard
- Partitioning
- OLAP
- Spatial
- Grid
- Global Single Data Model
- Workflow

Client
- Web Server: Apache
- Excel Add-In

HTTP/S
- Portal Services
- SOA & Integration Services
- Identity Management Services
- Administration & Monitoring
- BPEL, BAM, ESB, ...
Oracle E-Business Suite Adapter Overview
SOA Principles

@ Oracle EBusiness Suite Adapter

<table>
<thead>
<tr>
<th>SOA Concept</th>
<th>Oracle EBusiness Suite SOA</th>
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<tbody>
<tr>
<td><strong>Service Broker</strong>: Describe Service’s Location</td>
<td>Integration Repository</td>
</tr>
<tr>
<td><strong>Service Provider</strong>: An agent to implement a service</td>
<td>Oracle EBS Adapter</td>
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Integration Repository

Source of truth

- An integral part of Oracle E-Business Suite
- Pre-built catalog of information all annotated public integration interfaces
- Oracle EBS Adapter introspects the annotated interfaces to expose them as standard web services
Oracle E-Business Suite Adapter

Schematic Architecture
Overview

- Oracle Adapter for E-Business Suite supports
  - bidirectional,
  - synchronous,
  - and asynchronous interfaces.

- Exposes E-Business Suite Interfaces as web services.

- Interfaces with IREP to expose only recommended public integration interfaces.

- Road to adoption of Fusion applications…
Oracle Adapter Framework

- Bi-directional connectivity
- Service Oriented Architecture (SOA)
- Open Standards Support
- Broad range of connectivity
- Easy-to-use Wizards
- Managed through Oracle AS 10g
- Seamless integration with Oracle AS products
Service Oriented Architecture

E-Business Suite Adapter – Life Cycle

Adapter Framework
Integrate: Technology

JDeveloper
Develop

Oracle EBS Security
Access Control

Integration Repository
Integrate: Content

BPEL PM / ESB
Orchestrate / Event

Enterprise Manager
Monitor & Manage
Supported Interfaces

- PL/SQL APIs
  - Packaged IREP annotated for 11.5.10 (public APIs)
  - All for pre-11.5.10
  - Custom + Ones still not annotated in IREP

- Open Interface Tables & Concurrent Programs

- XML Gateway Interfaces
  - Seeded + custom maps

- ECommerce Gateway Interfaces

- Business Events
  - Seeded and custom events for outbound
  - Only custom events for inbound
Deep Dive
EBS Integration Interfaces
PL / SQL APIs

• Public PL/SQL are used for inserting and updating Oracle Applications data

• Multiple operations can be performed by the procedures for a Business Service

• The PL/SQL APIs are typically used for A2A integration purposes
PL/SQL APIs Architecture

Design Time

- IREP
- PL/SQL
- Simple Data Type
- JPub PL/SQL Wrappers
- Complex Data Type
- WSDL
- Apps Context Info

Run Time

- Apps.Initialize
- <soap:envelope>
  <payload>
  <data>
  <soap:envelope>

Data
Business Event System

• Events as business documents
  • Component of the Oracle Workflow
  • Based on Oracle Advanced Queues (Oracle AQ)
  • Allows Apps modules and external systems to raise events
  • Facilitates event subscriptions
  • Subscriptions can be synchronous or asynchronous

• Provides hooks into the E-Business Suite for,
  • Messaging Integration
  • Workflow Business Processes
  • Code Extensions

• Supports non-invasive changes
Business Event System

Component Architecture

Business Events System

Workflow Engine

Oracle Applications

Business Events (XML)

- New Order
- Update Order
- Cancel Order
Open Interface Tables

• Intermediate staging tables when the data is inserted / updated.

• The data from these tables is posted into the base tables via the concurrent programs

• The Open Interface Tables can be exposed as web service based integration interfaces

• The Open Interface Tables are typically used for internal and A2A integration purposes
Open Interface Tables

Schematic Diagram

Validation using the systems application logic

Oracle Form

Import Program

Interface Tables

EBS Adapter

SQL*Loader

Database

Gateway Technology

EDI Gateway / XML Gateway

EDAI Solution

Flat File

Oracle Database

Non Oracle Database

EDI or XML

Solution
Concurrent Programs

- An Execution file that can be an operating system file or database stored procedure which contains application logic (Example: PL/SQL, Java)

- Typical use is to move data from staging tables to base tables

- The concurrent program can be exposed as a web services based integration interface

- The concurrent program is typically used for internal and A2A integration purposes
 Concurrent Programs
 Architectural Diagram, Example

Design Time

Run Time

IREP

Concurrent Program

WSDL

Apps Context Info

Base Tables

Concurrent Program

Interface Tables

Apps.Initialize

ORACLE
Salient Features
Oracle EBS Adapter

- Widest range of interfaces supported
- Leverages Integration Repository
- Application Context Ready
- Transaction Support
- Open Standards based
- Multiple Oracle EBS versions supported
- Secured and Trusted Connection
- Functional Security Enabled
Application Context

- Organization ID
- Username
- Responsibility
- NLS
Global Transaction

Client Partner Link

Receive

invoke1

Adapter Partner Link1

invoke2

Adapter Partner Link2

Receive

Global Transaction implements Two Phase Commit

Failure causes Rollback

Dehydration Store Oracle BPEL PM

Order
Secured and Trusted Connection

- APPS Schema name / Password not required
- FND Username / Password works
- FMW, a trusted client
- Connection Managed by the EM

Oracle Fusion Middleware
Oracle EBusiness Suite
Function Security Enabled

- Enforcement of User Authorization for API Execution Privileges
- Implemented for EBS R12 as well as EBS 11i10
- Based on Role Based Access Control
- Profile Option `EBS ADAPTER FUNCTION SEC ENABLED`
  - By Default it will be set to N
  - To implement Function Security set to Y
- Feature available via the patches mentioned in Metalink Note: 464164.1
Demo