Web Services and SOA Integration Options for Oracle E-Business Suite

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The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Agenda

• Overview
  – Integration Tools & Technologies
• Oracle Applications Adapter
• Integrated SOA Gateway (ISG)
  – Service Provider
  – Service Invocation Framework
  – Business Use Case
• Takeaways
• Q&A
Overview

Current Integration Tools & Technologies

- **Fusion Middleware**
  - Oracle SOA Suite
  - Oracle Applications Adapter

- **E-Business Suite**
  - Integration Repository
  - Integrated SOA Gateway

- **Application Integration Architecture**
  - Foundation Pack
  - Pre-built PIPs

All Supported E-Business Suite Releases

R12.1.x

R11i – R12
Oracle Applications Adapter

Key Features

- Multiple Oracle EBS versions supported
- Leverages Integration Repository
- Customization Support
- Secured and Trusted Connection
- Functional Security Enabled
- Application Context Ready
- Transaction Support
Oracle Applications Adapter
Integration Solution Overview

- PL/SQL API, Views, Business Events
- XML & e-Commerce Gateway
- Open Interface Table & Concurrent Programs

Oracle SOA Suite
- EBS Adapter
- BPEL PM
- BAM
- ESB
- B2B
Oracle Applications Adapter

Service-Enabled Integration Interfaces

Oracle E-Business Suite Adapter

PL/SQL APIs (1200+)

Business Event (1400+)

Concurrent Program (214+)

Interface Tables (147+)

XML Gateway (140+)

Open Interface Views (40+)

e-Commerce Gateway (24+)

Oracle E-Business Suite

Web Services
Oracle Applications Adapter
Service Enabled Integration Interfaces

Oracle EBS Security
Access Control

JDeveloper
Develop

Adapter Framework
Integrate: Technology

Integration Repository
Integrate: Content

BPEL PM / ESB
Orchestrate / Event

Enterprise Manager
Monitor & Manage
Oracle Applications Adapter

Design Time: BPEL PM
Oracle Applications Adapter

Roadmap

• Support for Flexfields
• Support for Group Business Events
• Error and Exception Handling Features
• Uptake of SOA Governance Suite
• Support for Custom Concurrent Programs
Integrated SOA Gateway
Integrated SOA Gateway
Architecture

- Service Invocation Framework
- Service Provider
- Integration Repository
- Logistics Service
- External Web Service
- Std WS Client
- Apache Axis
- BPEL PM / OSB
- HRMS Service
- SCM Service

Integrated SOA Gateway

Oracle E-Business Suite
Integrated SOA Gateway

Service Provider

Service Invocation Framework

Business Use Case
Integrated SOA Gateway

Service Provider: Key Features

• Expose integration interfaces as Web services
• Simple UI action to Generate & Deploy WS
• Supports Synchronous & Asynchronous WS
  – Sync: Request – Response & Request Only
  – Async: Request – Call back & Request Only
• Supports WS – Security
  – Username Token-based Web Service authentication
  – Supports SAML 1.0
• Logging Infrastructure
• Monitoring and Auditing
Integrated SOA Gateway
Service-Enabled Interfaces

- PL/SQL APIs (1200+)
- XML Gateway (140+)
- Business Service Objects (40+)
- Concurrent Program (200+)
- Java API for Forms (40+)

Integrated SOA Gateway

Oracle E-Business Suite
Web Services
Service Provider
How does it work?
Integrated SOA Gateway
Service Provider: Life Cycle

Invoke Service

Process Manager

Enterprise Integration

Generate Deploy

Publish

Grant

Execute

Authenticate

Monitor

Authorize

WS WS WS

WS WS WS

ORACLE

E-BUSINESS SUITE

WS WS

WS WS

ORACLE

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Integrated SOA Gateway

Generate Service
Integrated SOA Gateway

Deploy Service
Integrated SOA Gateway

Create Grant

This package can be used to Create, Update and Copy Ship & Debit Request.

Select Object and Create Grant

- CREATE_SD_REQUEST: Active
  - Procedure creates a new Ship & Debit Request.

- UPDATE_SD_REQUEST: Active
  - Procedure updates existing Ship & Debit Request.

- COPY_SD_REQUEST: Active
  - Procedure copies existing Ship & Debit Request.
Integrated SOA Gateway

Invoke Service
Service Provider
What’s new in R12.2?
Integrated SOA Gateway
Technology Stack Upgrade: SOA Suite 11g and WLS 11g

EBS Release 12.1.3

Integrated SOA Gateway
WS Framework
Standalone JCA Libraries
Oracle AS – OC4J 10g

EBS Release 12.2

Integrated SOA Gateway
WSIF
SOA Suite
Weblogic Server 11g
Integrated SOA Gateway
What’s new - in a Snapshot

• Built on top of Oracle SOA Suite 11g
  Which translates to:
  ▪ Latest and greatest technology stack
  ▪ Greater Web Services standards support
  ▪ Improved decoupled and scalable architecture
  ▪ High performance in integration transactions
  ▪ Next level of product maturity for ISG

• Supports Asynchronous Web Services
Integrated SOA Gateway
Decoupled Architecture in R12.2

Oracle E-Business Suite

Oracle SOA Suite

Over HTTP

Over T3
Integrated SOA Gateway
Asynchronous Web Services Support
Integrated SOA Gateway

Future Considerations

• Support more Web Services Standards
  ▪ WS Policy
  ▪ WS Reliable Messaging
  ▪ WS Atomic Transaction
• Enhance Composite Service & Automate its lifecycle
• Advanced customization features
• Improve UI for more developer-friendly experience
• SOA Governance solutions
  – Oracle Enterprise Repository Uptake
Integrated SOA Gateway

- Service Provider
- Service Invocation Framework
- Business Use Case
Integrated SOA Gateway

SIF: Key Features

• Supports Synchronous MEP
  – Request – Response & One-way/Notification Only

• Ability to perform XSLT based transformation
  – Outbound & Inbound messages

• Supports WS – Security
  – Username Token-based Web Service authentication.

• Supports passing values for any SOAP header part
  – To embed application context into SOAP envelopes
Integrated SOA Gateway
SIF: Transactional Architecture

Invoked Event
Transform Out
SOAP Request

Transform In
SOAP Response

External Web Service

Invocation Source

Service Invocation Framework

Consumption Destination
Service Invocation Framework (SIF)
How does it work?
Integrated SOA Gateway

SIF: Process

**PROCESS**

- Create / Use Invoker Event
- Configure Invoker Subscription
- Create Error Subscription
- Create Receive Response Event
- Create Receive Response Subscription
- Execute Service Invocation

For Sync Request / Response
Integrated SOA Gateway

SIF: Create Invoker Event
Integrated SOA Gateway
Create Invoker Subscription .. 1

<table>
<thead>
<tr>
<th>Action Type</th>
<th>Invoke Web Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Error</td>
<td>Stop and Rollback</td>
</tr>
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</table>

**Select a WSDL Source**

Enter the URL of the WSDL to consume in the Business Event Subscription

* Indicates required field

<table>
<thead>
<tr>
<th>WSDL URL</th>
<th>Example: <a href="http://supplier.company.com:8888/webservices/supplier_service.wsdl">http://supplier.company.com:8888/webservices/supplier_service.wsdl</a></th>
</tr>
</thead>
</table>

**Select Service**

Select a service to consume in Business Event Subscription

* Indicates required field

<table>
<thead>
<tr>
<th>URL</th>
<th>OZF SD REQUEST PUB Service</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://rws60063rems.us.oracle.com:8094/webservices/SoapProvider/plsql/ozf_sd_request_pub/?wsdl">http://rws60063rems.us.oracle.com:8094/webservices/SoapProvider/plsql/ozf_sd_request_pub/?wsdl</a></td>
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</table>

**Select Service Port**

Select a service port to consume in Business Event Subscription

<table>
<thead>
<tr>
<th>URL</th>
<th>OZF SD REQUEST PUB Port</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://rws60063rems.us.oracle.com:8094/webservices/SoapProvider/plsql/ozf_sd_request_pub/">http://rws60063rems.us.oracle.com:8094/webservices/SoapProvider/plsql/ozf_sd_request_pub/</a></td>
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Integrated SOA Gateway
Create Invoker Subscription .. 2

<table>
<thead>
<tr>
<th>Select Operation</th>
<th>Port Type</th>
<th>Operation Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPDATE_SD_REQUEST</td>
<td>OZF_SD_REQUEST_PUB_PortType</td>
<td>REQUEST_RESPONSE</td>
</tr>
<tr>
<td>CREATE_SD_REQUEST</td>
<td>OZF_SD_REQUEST_PUB_PortType</td>
<td>REQUEST_RESPONSE</td>
</tr>
<tr>
<td>COPY_SD_REQUEST</td>
<td>OZF_SD_REQUEST_PUB_PortType</td>
<td>REQUEST_RESPONSE</td>
</tr>
</tbody>
</table>

**Subscription Parameters**

Select Object: [ ] Delete

Select All | Select None

<table>
<thead>
<tr>
<th>Select Name</th>
<th>Value</th>
</tr>
</thead>
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<td></td>
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</table>

[Add Another Row]
Integrated SOA Gateway
SIF: In 12.2
Integrated SOA Gateway

SIF: Future Considerations

• Support asynchronous external WS calls
• Introduce SIF Monitoring
• Support more Web Services Standards
• Improve UI for more developer-friendly experience
Integrated SOA Gateway

- Business Case
- Service Invocation Framework
- Business Use Case
Integrated SOA Gateway
Ship Debit Request

**Inception**
- Locate SDR API
- Generate SDR WSDL
- Deploy SDR Service

**Design**
- Locate WSDL URL for SDR: in Integration Repository
- Configure the Web Service Client
- Pass the Web Service Parameters

**Execution**
- Execute the SOAP Request
- View SOAP Response
- Verify SDR creation in Oracle Trade Management

Integration Administrator
Integration Developer
Trade Management User
Takeaways
Key Takeaways
Integration Options

R11i CU2+
- Oracle Applications Adapter

R12.1
- Oracle Applications Adapter
- Integrated SOA Gateway

R12.2
- Integrated SOA Gateway, Leveraging Oracle Apps Adapter & Oracle SOA Suite
Key Takeaways

• Best-in-Class SOA Platform
  – Oracle SOA Suite
  – Oracle Applications Adapter
  – Oracle Enterprise Repository
  – Oracle E-Business Suite SDK for Java

• Capability for custom content

• Aligned with Applications Unlimited Strategy
  – Co-existence with Fusion Applications
Additional Resources

• E-Business Suite Integration Blog

• Oracle Support Notes
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