High performance. Delivered.

Accenture and the U.S. Air Force
Business Process Integration Using Business Process Execution Language

Foundations of Our Repeatable SOA Practice

- 5-year $450M SOA investment
- Repeatable, evolutionary processes and tools across the corporation
- Standard training for Accenture's 41,000-person SOA practice (18,900 are Oracle-focused)
- Accenture and Oracle have a master alliance agreement that facilitates joint development and delivery and extensive training
- Pioneered SOA Reference Architecture for Oracle V2 / Fusion Architecture Framework
- Methodology driven implementation to reduce time and cost

Accenture Innovation Center, the first and only center of its kind to be located on Oracle's main campus

SOA Project Services: Vendor Strategies Ovum report by Angel Dobardziev, October 8, 2007

"Accenture's strengths lie in its extensive business and industry understanding, which it is able to link closely to its rapidly expanding SOA technology capability and broad SOA project experience with a variety of SOA technology platforms."

SOA Sample Methods and Tools

- Accenture Delivery Methods
- Accenture Fusion Value Roadmap
- SOA Strategy Roadmap
- Accenture Value Realization Tool
- SOA Assessment Model
- Delivery Methods Estimator for Oracle and SOA
- SOA Training Curriculum – Intro to SOA, Oracle BPEL Designer Kit

Introduction to Business Process Execution Language (BPEL)

Markup language for composing a set of discrete services into an end-to-end process flow
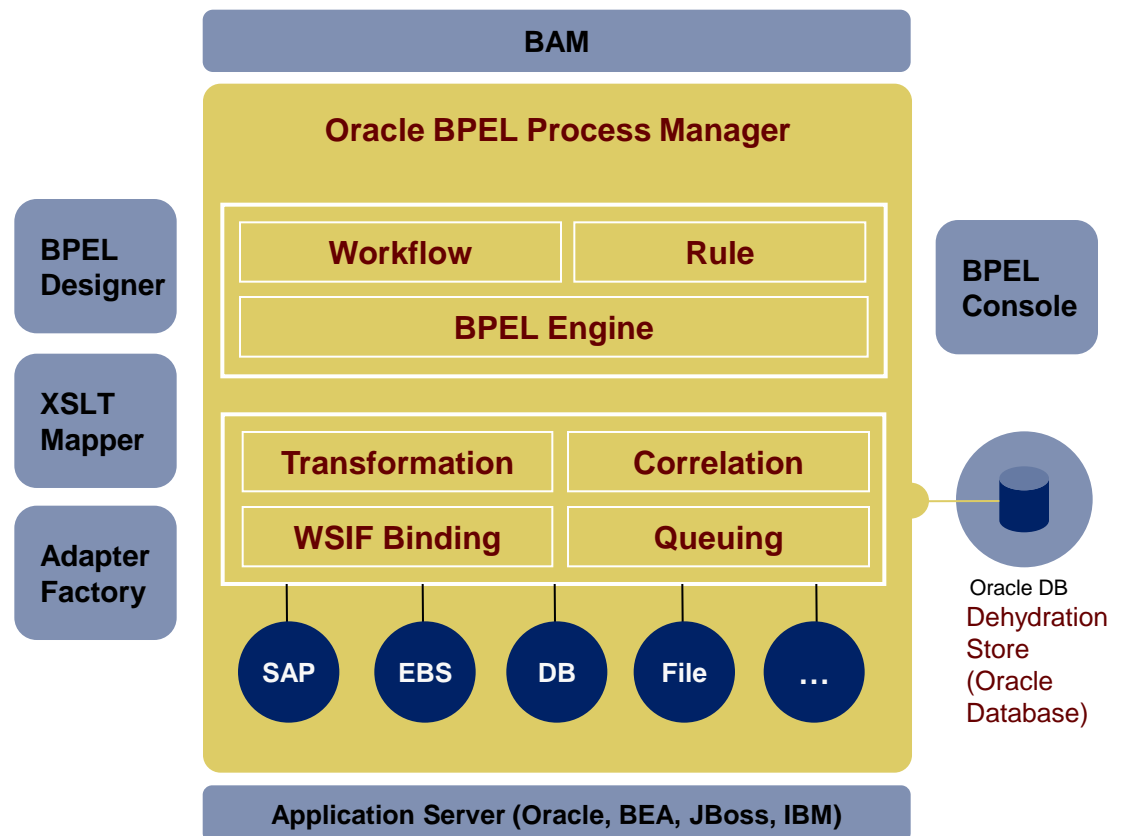
- The best integration solution for XML and Web services but also Java, JCA and JMS

- Rich support for async interactions, parallel processing and exception management

- Leverages XML Schema, XSLT, XML Query, WS-Security, WS-Addressing and WSIF

start

Legacy

Legacy

Payables
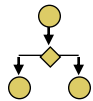
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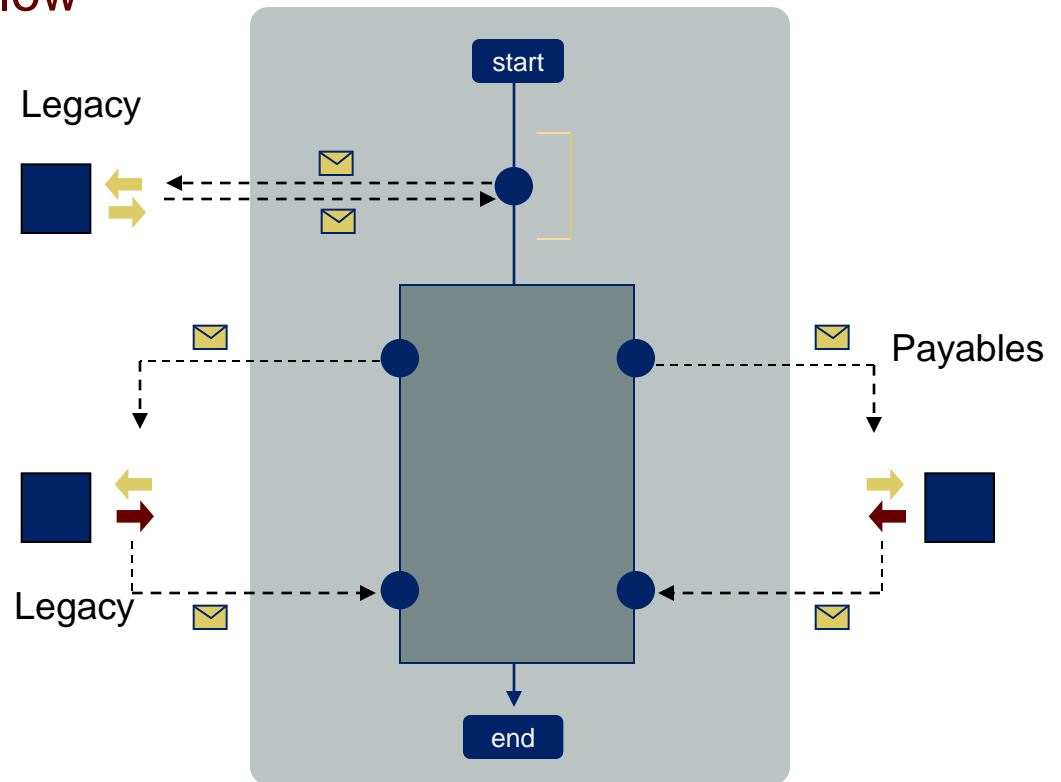
BPEL Process Manager

Enterprise-strength infrastructure for designing, deploying and managing BPEL business processes

- Comprehensive and native BPEL implementation

- Easy-to-use modeling tool

- Scalable and reliable engine

- Flexible binding framework

- Rich management and monitoring

- Support for Oracle AS, WebLogic and WebSphere

- Get up and running in less than 15 minutes!

BAM

Oracle BPEL Process Manager

| **Workflow** | **Rule** |

BPEL Engine

BPEL Designer

XSLT Mapper

Adapter Factory

| **Transformation** | **Correlation** |
| **WSIF Binding** | **Queuing** |

SAP   EBS   DB   File   …

BPEL Console

Oracle DB Dehydration Store (Oracle Database)

Application Server (Oracle, BEA, JBoss, IBM)

BPEL - Key Features

BPEL DESIGNER	**WSDL/JCA**	**WORKFLOW**	**BPEL ENGINE**	**BPEL CONSOLE**

| **MODELING**	**ADAPTERS**	**WORKFLOW**	**EXECUTION RUN-TIME**	**MANAGEMENT**
• Comprehensive BPEL 1.1 • Visual Modeling Tool • Native Java Embedding • XML Facade • XQuery Transformation • Detailed Error Reporting • Ant-based build and deployment framework • Versioning	• Bindings to 100+ backend systems (JCA) • JMS Bridge • .NET, Axis, Workshop, Glue, Systinet, interop • User Tasks/Workflow • Email with Attachment	• Worklist UI • LDAP Integration • Notification • Expiration/Escalation • Attachments • Built-in Approval Patterns • Auditing	• Comprehensive BPEL 1.1 • Sync. Messaging • Async. Messaging • Context Dehydration • Reliability • Side-by-side versioning • Compensating Transactions • Clustering • Large XML documents	• Visual Monitoring • Auditing • BPEL Debugging • In-flight Administration • Performance Tuning • Task Management • Partitioning/Domains

BPEL, XQuery, XSLT, WS-ADDRESSING

Application Server (Oracle, WebLogic, WebSphere, JBoss)

Client Example: DEAMS

RTS

CDS

WAWF

?

SPS
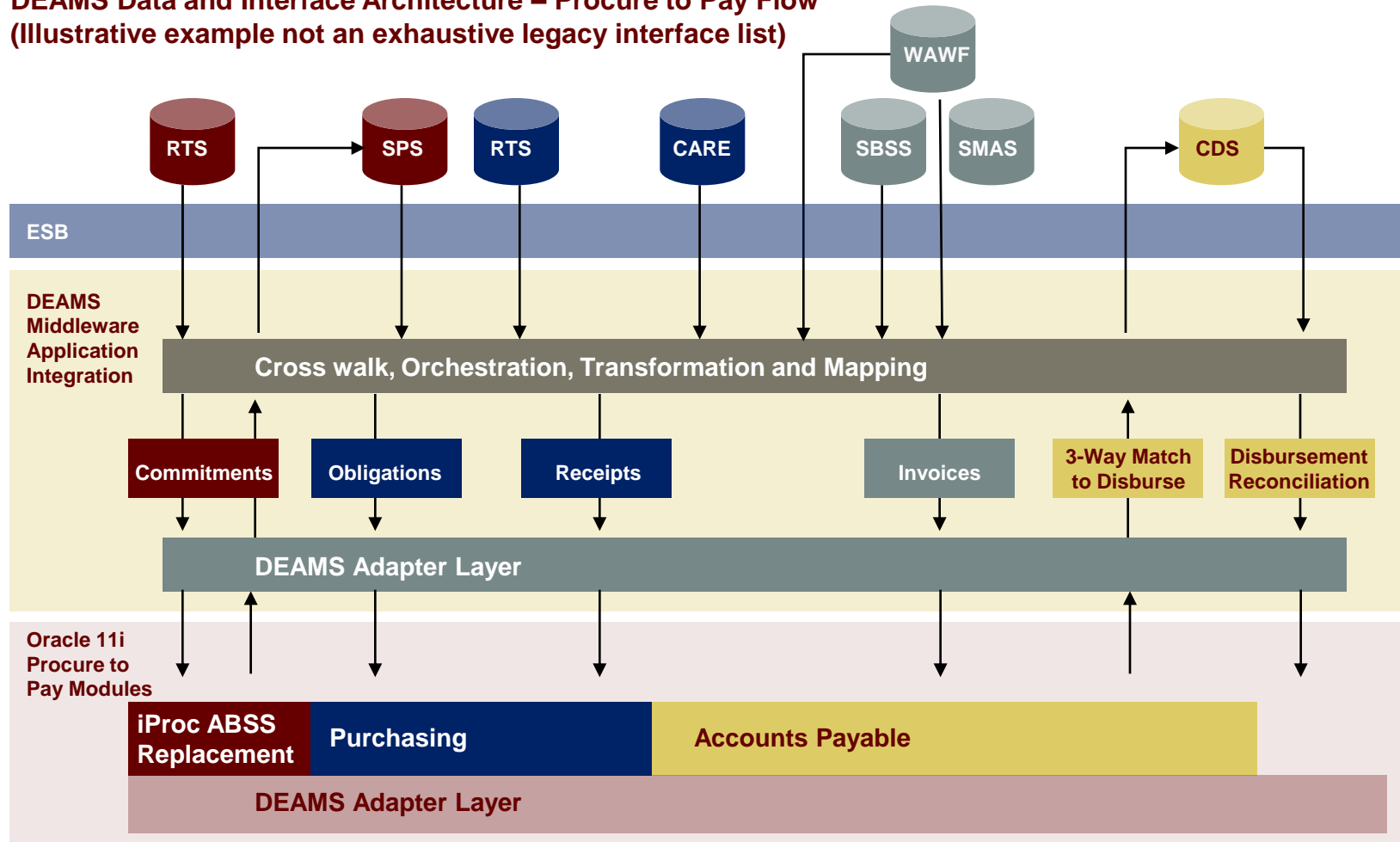
DEAMS

Exception Task

CARE

SBSS

SMAS
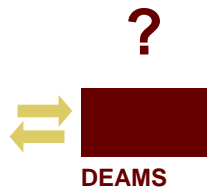
Integration Challenges

- Disparate legacy systems
- Different communication protocols
- How to tie these systems into a standard process flow
- Processes must have proper exception handling
- Processes must be scalable
- Processes must have automatic notifications
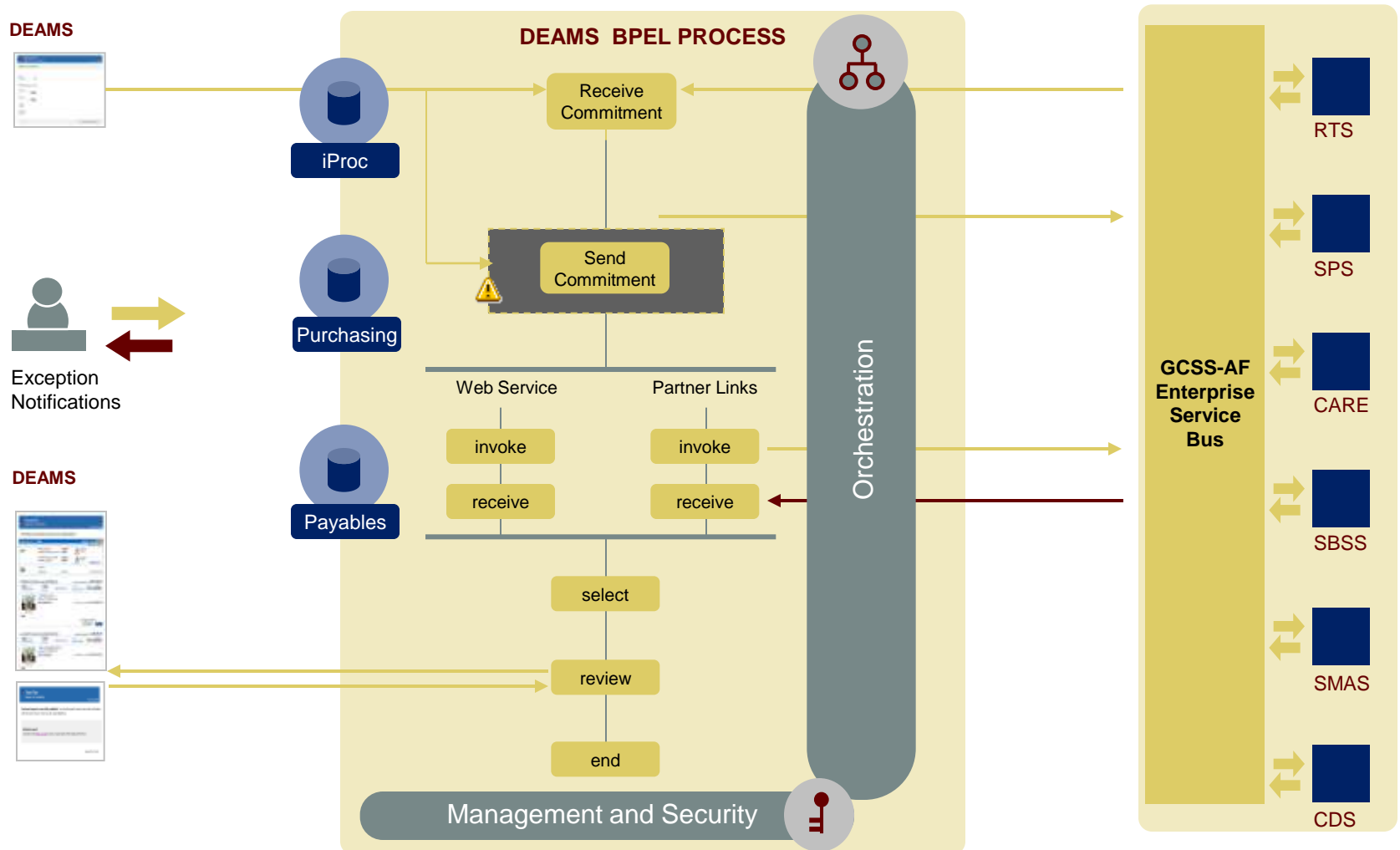
DEAMS Integration Architecture

**DEAMS Data and Interface Architecture – Procure to Pay Flow
(Illustrative example not an exhaustive legacy interface list)**

ESB

DEAMS Middleware Application Integration

Cross walk, Orchestration, Transformation and Mapping

| Commitments | Obligations | Receipts | Invoices | 3-Way Match to Disburse | Disbursement Reconciliation |

DEAMS Adapter Layer

Oracle 11i Procure to Pay Modules

iProc ABSS Replacement | Purchasing | Accounts Payable

DEAMS Adapter Layer

DEAMS BPEL Process Flow

DEAMS

iProc

Purchasing

Payables

Exception Notifications

DEAMS

DEAMS BPEL PROCESS

Receive Commitment

Send Commitment

Web Service — invoke — receive

Partner Links — invoke — receive

select

review

end

Orchestration

Management and Security

GCSS-AF Enterprise Service Bus

RTS

SPS

CARE

SBSS

SMAS

CDS

Extensible BPEL Designer Palette

JDeveloper

Library of reusable BPEL fragments
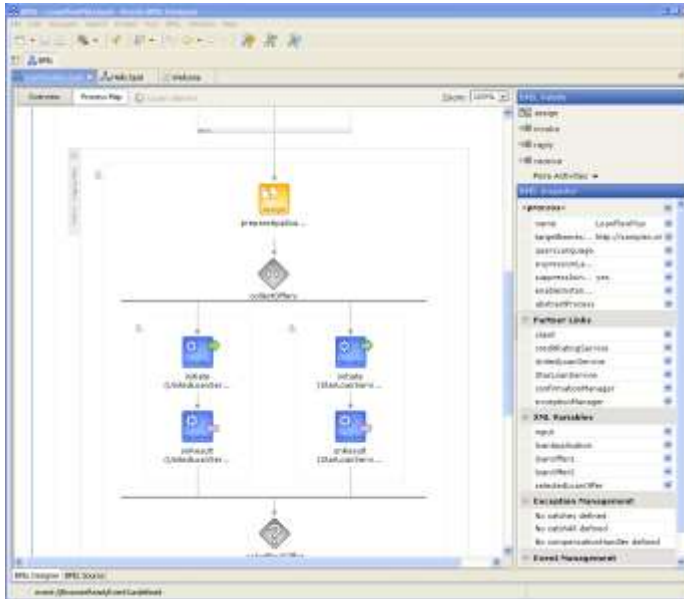
Order Transform

Drop-and-configure
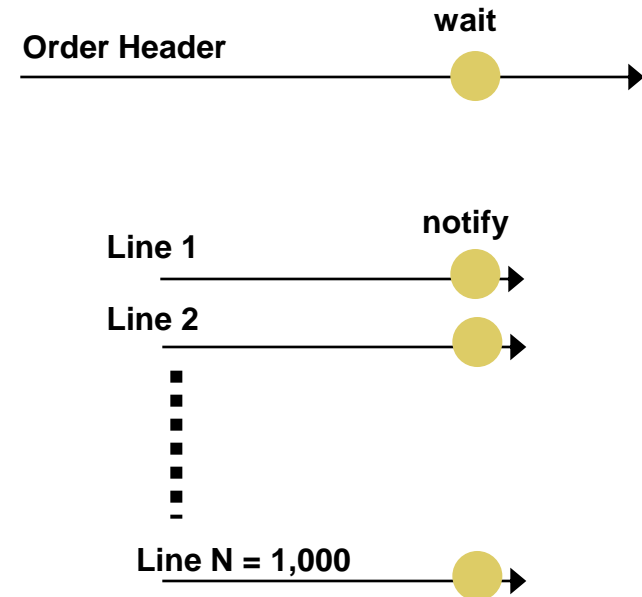

Approval

fx

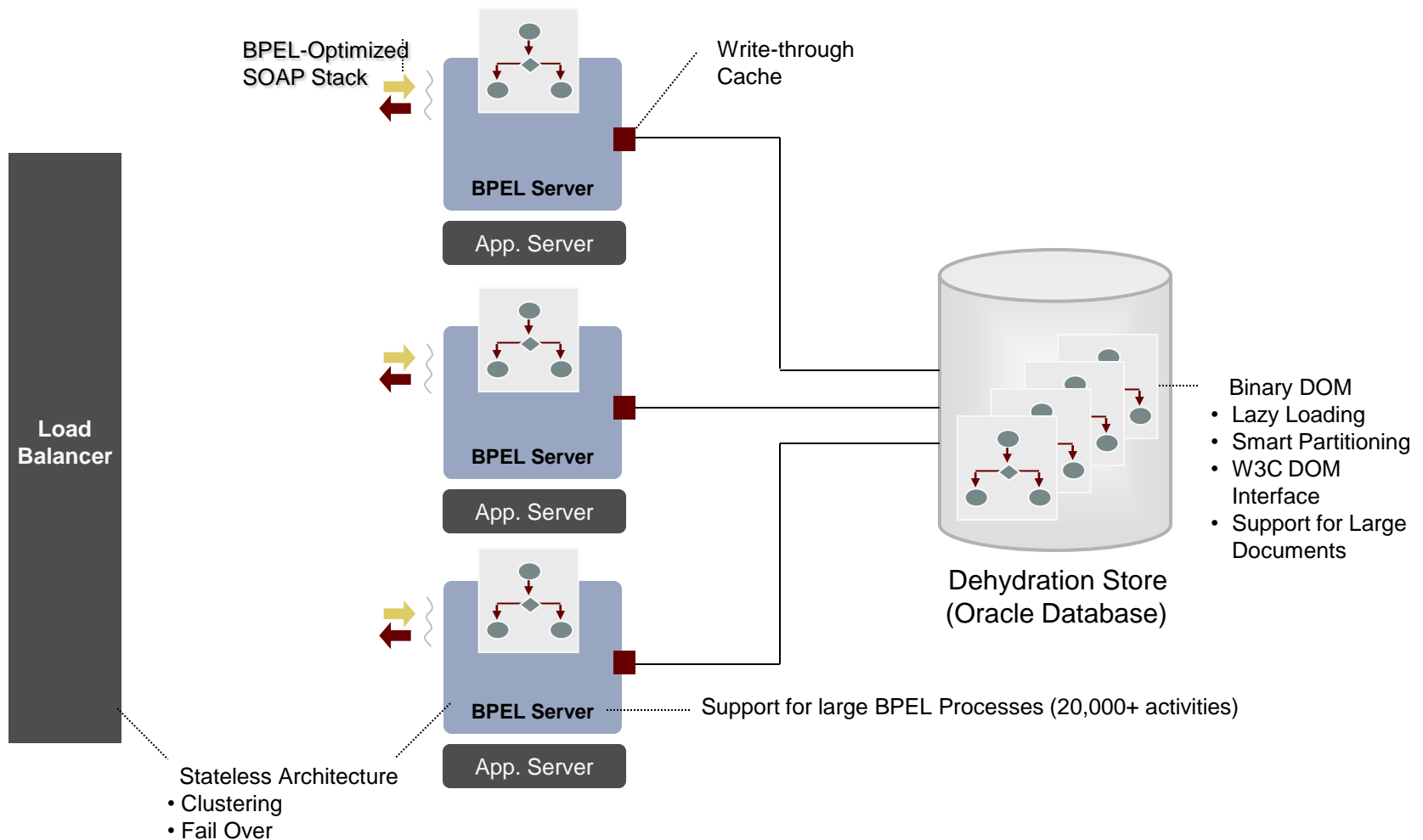**Validation Rule**

Master/Detail Relationship

Problem

- A purchase header can include 1000s line items
- The header flow needs to be able to wait all associated detail flows are completed
- Details flow need to be able to notify the header flow that the are completed

Solution

- Add a <wait> and <notify> activities to BPEL for intra master/detail communication
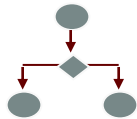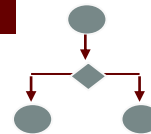
Order Header   **wait**

Line 1   **notify**

Line 2

Line N = 1,000

Scalable for Performance

BPEL-Optimized SOAP Stack

Write-through Cache

BPEL Server

App. Server

BPEL Server

App. Server

BPEL Server

App. Server

Load Balancer

Dehydration Store (Oracle Database)

Binary DOM
- Lazy Loading
- Smart Partitioning
- W3C DOM Interface
- Support for Large Documents

Support for large BPEL Processes (20,000+ activities)

Stateless Architecture
- Clustering
- Fail Over

GCSS-AF Enterprise BPEL

Eclipse, JDeveloper

BPEL Designer

BPEL Process Manager

DEAMS	ECSS
Validate	Validate
Invoke	Invoke

Dehydration Store
(Oracle Database)

BPEL Console

J2EE Application Server
(Oracle AS, WebLogic, JBoss, WebSphere)
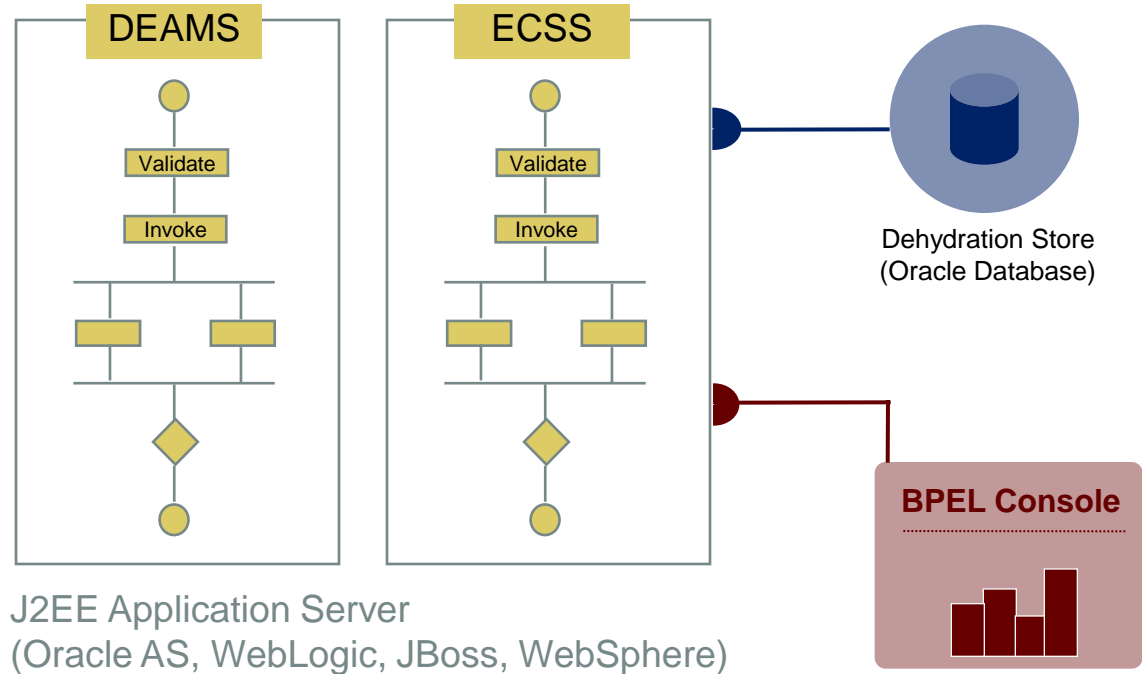
Supporting Clients Through BPEL Efforts

Client	Project Highlights
Global PC Manufacturer	• Teaming with client on an SOA assessment to integrate numerous disparate systems. • Standardizing technology and business processes across different regions and geographies, seamlessly integrating disparate systems with the Oracle EBS Suite and reducing data duplication. • Working to define the SOA reference architecture for integration activities, performing an Oracle SOA capability assessment, preparing an integration architecture roadmap and recommending necessary infrastructure for SOA implementation. • Implementing in a modular fashion, targeting the business-critical "Quote-to-Collect" process to establish the root for SOA.
Large West Coast Retailer	• Teamed with client to develop SOA roadmap to transform the client's integration space into a streamlined, structured, reusable platform. • Addressed issues related to evolution of client's IT application portfolio—e.g., inconsistent error handling, data leakage, low component reuse and integration logic spread out among the applications. • Effort grew into a global SOA program comprising a core architecture team and three separate projects delivering 80+ interfaces. • The SOA program leverages a large portion of the Oracle Fusion suite including BPEL, ESB, ODI, B2B, OWSM and BAM.
Large US Institution	• Teaming with client to transform the creation, deployment and management of new value-added services. • Client aiming to improve regulatory requirements, customer satisfaction and service quality by redesigning and integrating more efficient middle-office processes through automation. • Working on a production pilot program to demonstrate the value of process orchestration and process monitoring and an ability to model a complex and long-running process in the toolset; as well as to confirm elements of the required delivery model (i.e., tasks, effort, skills, and infrastructure requirements). • SOA components include Oracle BPEL and BAM, as well as IBM ESB – MQ, IBM Data Power – Security, Siebel – CRM Front-End Solution, and PI – SunGard Financial Back-End System.
Large Steel Manufacturer	• Provide an agile integration framework to achieve application integration for the enterprise with more than 300 systems in a global environment. • Reduce number of point-to-point interfaces and overhead associated in maintaining point-to-point interfaces due to changes in the business processes. • Provide capabilities for event-driven applications.

Begin Integrating Your Business Processes

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