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PeopleTools and Service-Oriented Architecture

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Sr. Principal Instructor

Agenda

- SOA
- SOA standards
- PeopleTools 8.48 and SOA
- Q & A

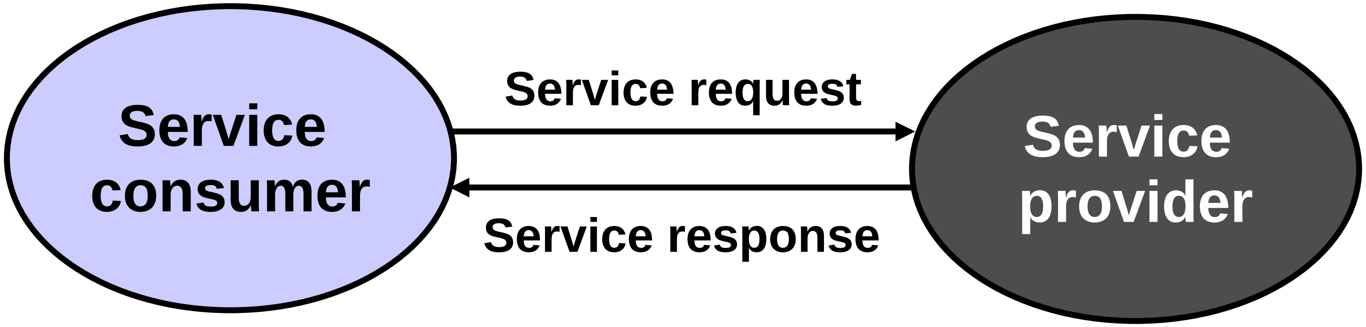
SOA

SOA

- Service-oriented architecture
- How SOA achieves loose coupling
- SOA and Web services

Service-Oriented Architecture

- SOA is an architectural style whose goal is to achieve **loose coupling** among interacting software agents.
- SOA arose in response to demands for better ways to integrate large-scale systems.
- **Interoperability** is achieved with an emphasis on eliminating low-level application interfaces.
- SOA is enabled through a set of standards.


Service consumer
Service request
Service response
Service provider

How SOA Achieves Loose Coupling

SOA employs a set of open XML-based standards, including:

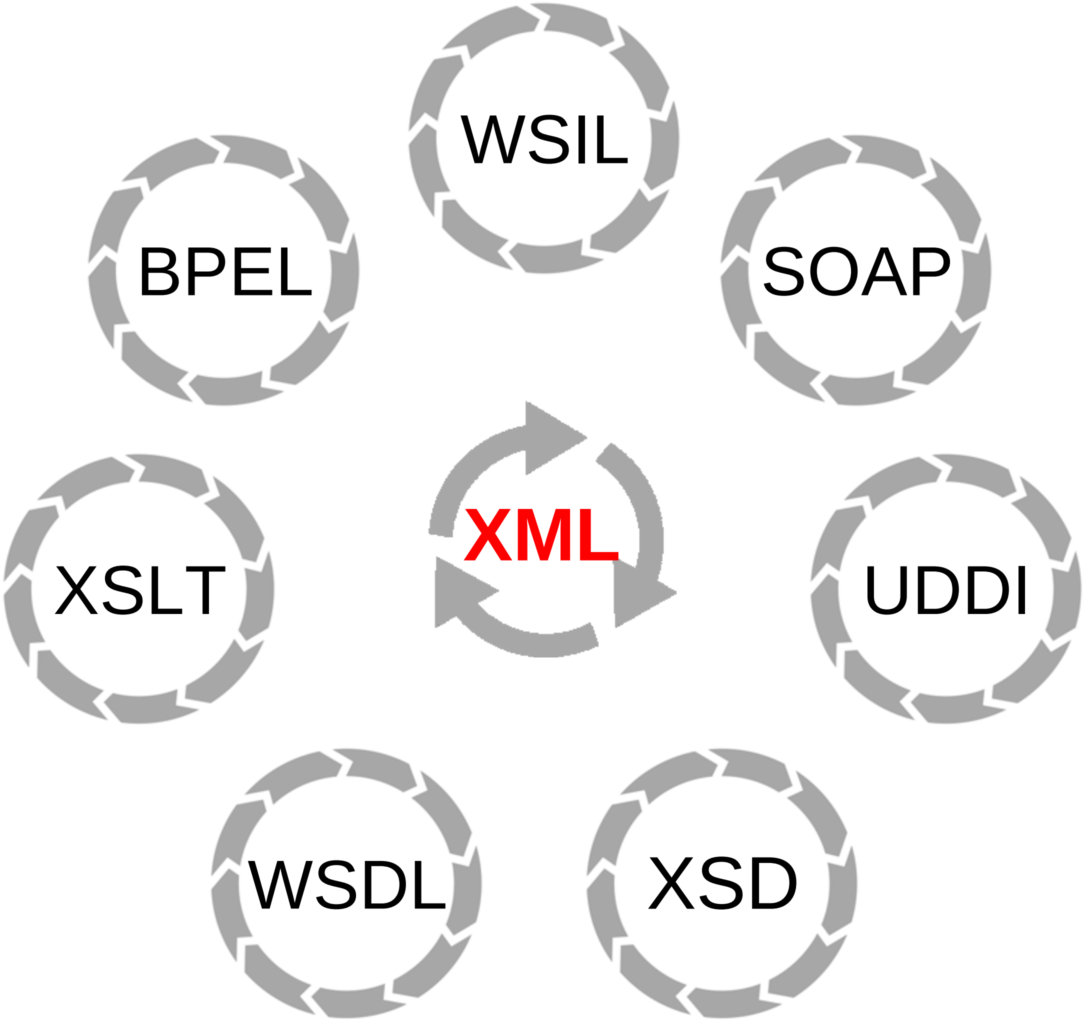
- **SOAP:** Simple Object Access Protocol
- **WSDL:** Web Services Description Language
- **UDDI:** Universal Description, Discovery, and Integration
- **WSIL:** Web Services Inspection Language

Data is transmitted by using standard Internet protocols such as HTTP, HTTPS, SMTP and FTP.

SOA and Web Services

- **What is a service?**
  - A service is a unit of work done by a service provider to achieve the desired end results for a service consumer.
  - Both provider and consumer are roles played by software agents on behalf of their owners.
- **What is a Web service?**
  - A Web service is a service in which data is sent in the form of XML by using standard internet protocols (HTTP, HTTPS, SMTP, FTP).

SOA and Standards



WSIL

BPEL

SOAP

XML

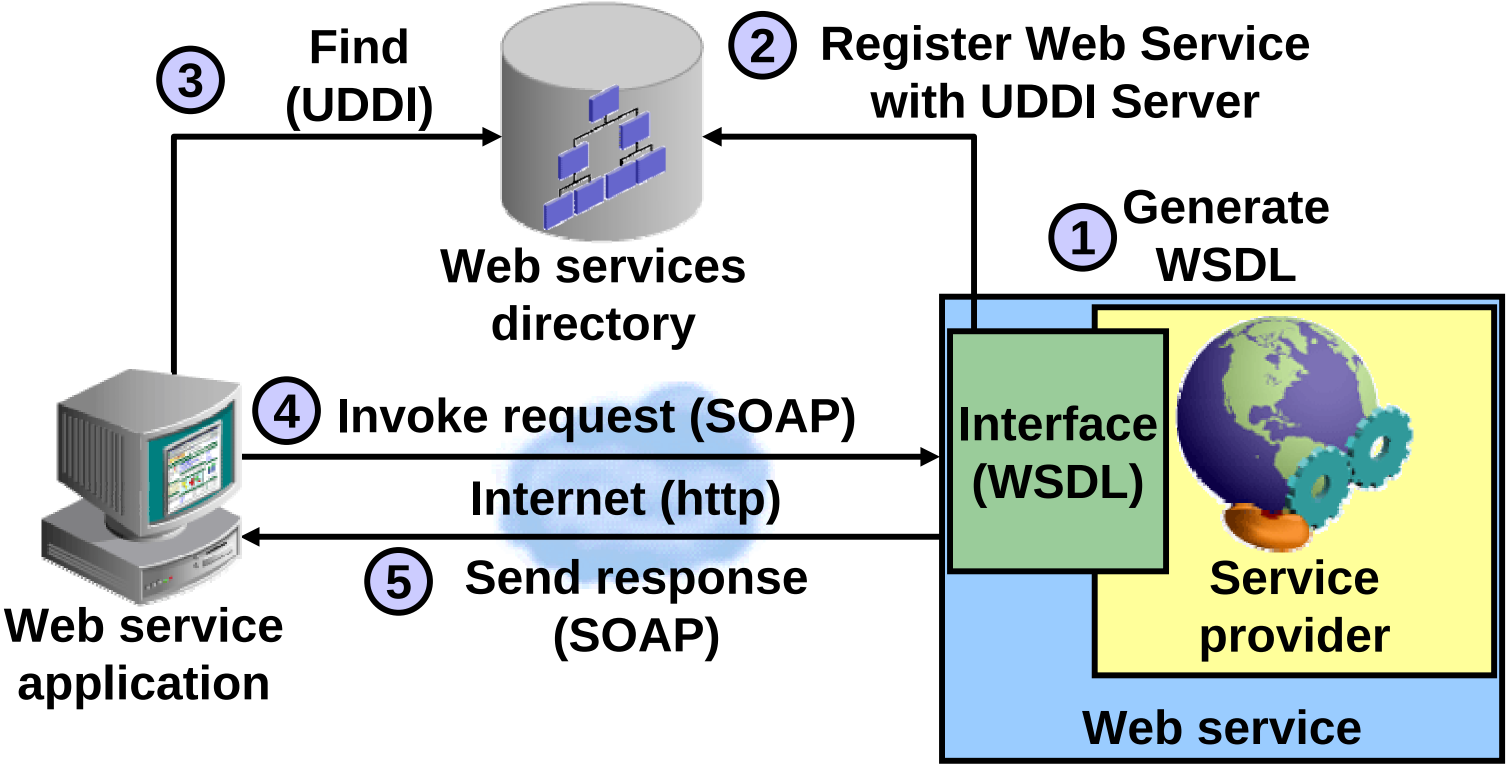
XSLT

UDDI

WSDL

XSD

Web Service Architecture and Standards

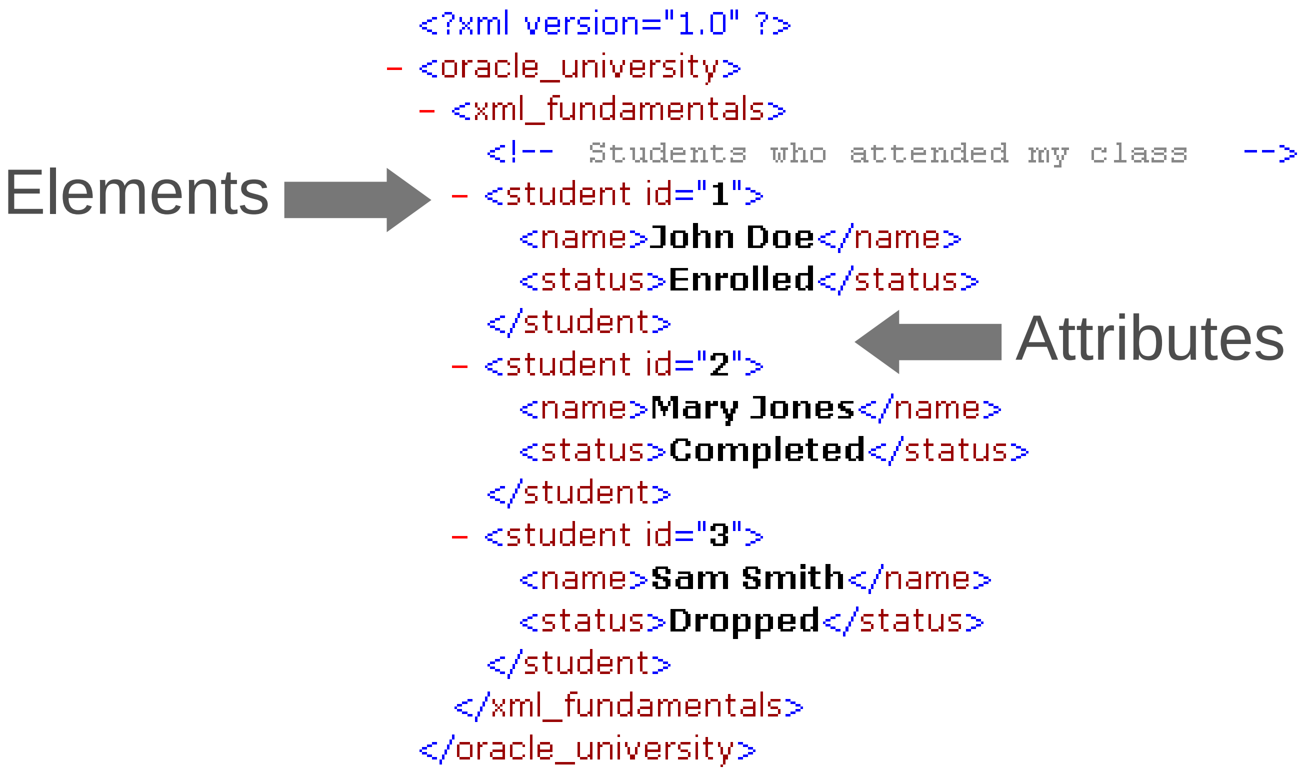


③ Find (UDDI)
② Register Web Service with UDDI Server
① Generate WSDL
Web services directory
④ Invoke request (SOAP)
Internet (http)
⑤ Send response (SOAP)
Web service application
Interface (WSDL)
Service provider
Web service

SOA Standards: XML

- XML is a markup language for documents containing structured information.
- A markup language is a mechanism to identify structures in a document.
- Structured information contains both content and some indication of what role this content plays.
- The XML specification defines a standard way to add markup to documents.

XML: Example



Elements

```
  <?xml version="1.0" ?>
- <oracle_university>
  - <xml_fundamentals>
      <!--  Students who attended my class   -->
    - <student id="1">
        <name>John Doe</name>
        <status>Enrolled</status>
      </student>
    - <student id="2">
        <name>Mary Jones</name>
        <status>Completed</status>
      </student>
    - <student id="3">
        <name>Sam Smith</name>
        <status>Dropped</status>
      </student>
    </xml_fundamentals>
  </oracle_university>
```

Attributes

SOA Standards: XSD

XML Schema Definition

- The XML specification defines a standard way to describe the structure of an XML document.
- XML schema: XML-based alternative to DTDs (document type definitions)
- Advantages of XSD over DTD:
  - XSD schema is an XML document, so there is no real need to learn new syntax (unlike DTDs).
  - XSD schema supports inheritance, in which one schema can inherit from another schema (promotes reusability).
  - XSD schema provides the ability to specify data types for both elements and attributes.

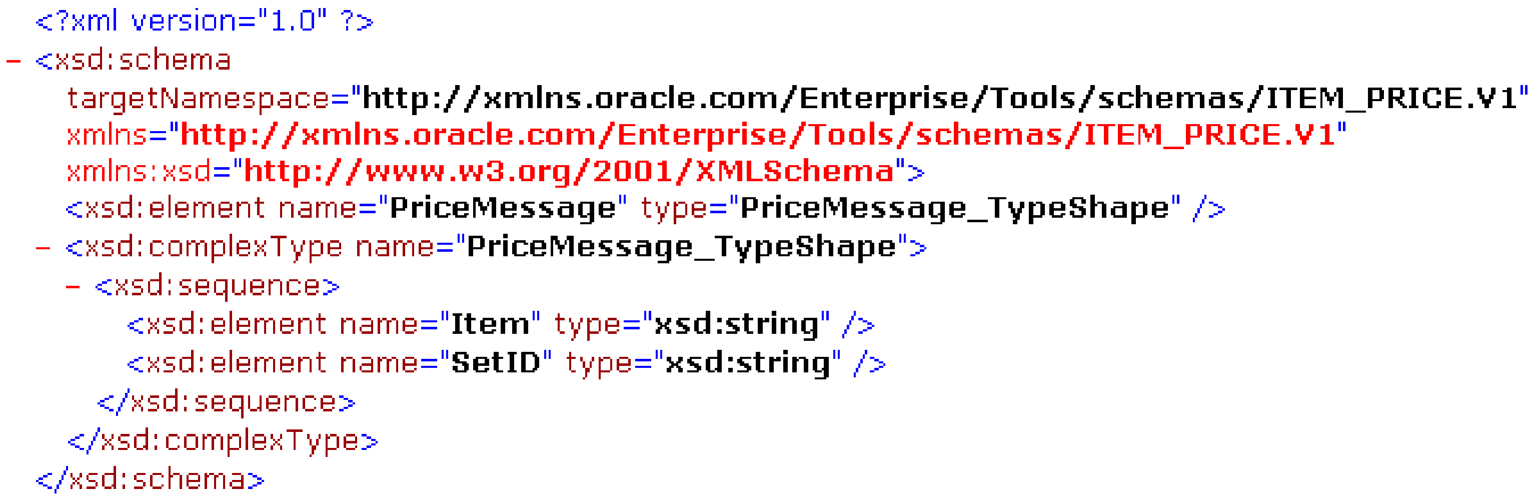
Schema Objectives

A schema defines:

- Elements and attributes that can appear in a document
- Data types for elements and attributes
- Default and fixed values for elements and attributes
- Which elements are child elements
- Number and order of child elements
- Whether an element is empty or can include text

XSD: Example

- This simple schema declares two string elements: **Item** and **SetID**.
- Note that the **PriceMessage** element is a considered to be a <u>complex type</u> because it contains other elements.
- The **Item** and **SetID** elements are <u>simple types</u> because they do not contain other elements.
- Note that the child elements **Item** and **SetID** are surrounded by the **<sequence>** element, indicating that they must appear in the same order as they are declared.



```
  <?xml version="1.0" ?>
- <xsd:schema
    targetNamespace="http://xmlns.oracle.com/Enterprise/Tools/schemas/ITEM_PRICE.V1"
    xmlns="http://xmlns.oracle.com/Enterprise/Tools/schemas/ITEM_PRICE.V1"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <xsd:element name="PriceMessage" type="PriceMessage_TypeShape" />
  - <xsd:complexType name="PriceMessage_TypeShape">
    - <xsd:sequence>
        <xsd:element name="Item" type="xsd:string" />
        <xsd:element name="SetID" type="xsd:string" />
      </xsd:sequence>
    </xsd:complexType>
  </xsd:schema>
```

SOA Standards: XSLT

Extensible Stylesheet Language for Transformation

- XML-based language that is used to transform XML documents into other XML documents
- An XSLT parser reads the input XML document and follows the instructions in the XSLT program. It then outputs a new XML document.
- This is very useful in system-to-system integration.

XSLT: Example

Here is a partial snippet of XSLT code demonstrating the usage of the **value-of** function.

Input XML

```
<ORDER_STATUS>
   open
</ORDER_STATUS>
```

XSLT Function

```
<PO_STATUS>
   <xsl:value-of select="ORDER_STATUS“/>
</PO_STATUS>
```

Output XML

```
<PO_STATUS>
   open
</PO_STATUS>
```

SOA Standards: SOAP

SOAP: Simple Object Access Protocol

- SOAP is a lightweight XML-based communication protocol used for the exchange of information in a decentralized, distributed environment.
- SOAP is both language and platform independent.
- SOAP is the protocol used to access a Web service.

SOAP Request: Example

```
<?xml version="1.0"?>
<soap:Envelope xmlns:soap="http://www.w3.org/2001/12/soap-envelope“
    soap:encodingStyle="http://www.w3.org/2001/12/soap-encoding">
      <soap:Body xmlns:m="http://www.example.org/stock">
            <m:GetStockPrice>
                  <m:StockName>ORCL</m:StockName>
            </m:GetStockPrice>
      </soap:Body>
</soap:Envelope>
```

SOA Standards: WSDL

WSDL: Web Services Description Language

- Specification that defines how to describe Web services in a common XML grammar
- Describes how to access a Web service and what operations it will perform
- A WSDL document outlines four critical pieces of data:
  - Interface information describing all publicly available functions
  - Data type information for all message requests and message responses
  - Binding information about the transport protocol to be used
  - Address information for locating the specified service

SOA Standards: UDDI

UDDI: Universal Description, Discovery, and Integration

- XML-based online directory providing businesses with a standard way to publish and discover other companies' Web services
- Uses WSDL to describe interfaces to Web services

SOA Standards: WSIL

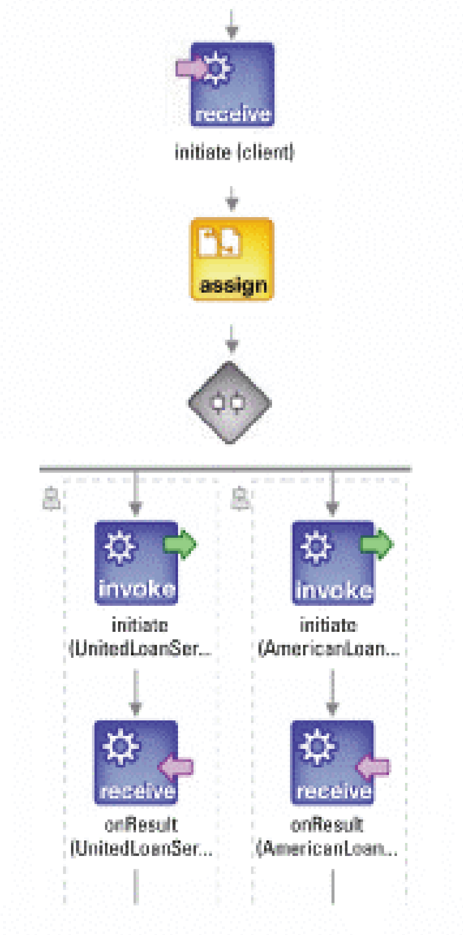
WSIL: Web Services Inspection Language

- Similar to UDDI, this specification provides an XML format for assisting in the inspection of a site for available Web services.
- Advantage of WSIL over UDDI: WSIL is a simpler, document-based approach.
- UDDI implements service discovery using a centralized model of one or more repositories containing information on multiple business entities and the services they provide.
- WSIL approaches service discovery in a decentralized fashion, in which service description information can be distributed to any location using a simple extensible XML document format.

SOA Standards: BPEL

BPEL: Business Process Execution Language

- XML-based language providing the ability to orchestrate Web services into a process flow
- *Orchestrate*: To compose multiple discrete services into an end-to-end process flow (You can think of it as a form of electronic workflow.)


receive
initiate (client)
assign
invoke
initiate
(UnitedLoanSer...
invoke
initiate
(AmericanLoan...
receive
onResult
(UnitedLoanSer...
receive
onResult
(AmericanLoan...

http://www.oracle.com/technology/products/ias/bpel/htdocs/orabpel_faq.html

PeopleTools and SOA

- Where SOA fits in to PeopleSoft
- Integration Broker architecture
- Overview of services and service operations

Where SOA Fits In to PeopleSoft

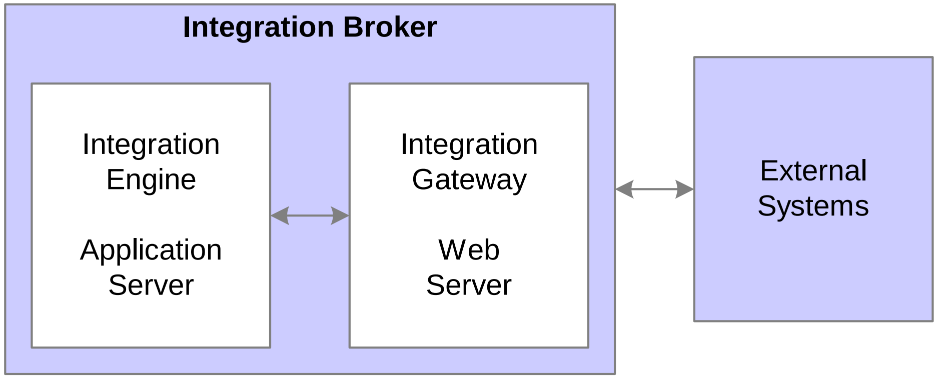
- **Integration Broker**
  - IB was re-architected to fit in to the SOA standard:
    - Services
    - Service operations
    - XML schema definition support
    - Provide/consume Web services
  - BPEL Process Manager integration
    - Ability to use a feature of the BPEL Process Manager called the XSL Mapper in development of XSLT transform programs
- **XML Publisher**
  - Stand-alone Java-based reporting technology
- **Oracle Application Server**
  - OAS support as a Web server (as of PeopleTools 8.47)

Integration Broker

Integration Broker: Architecture

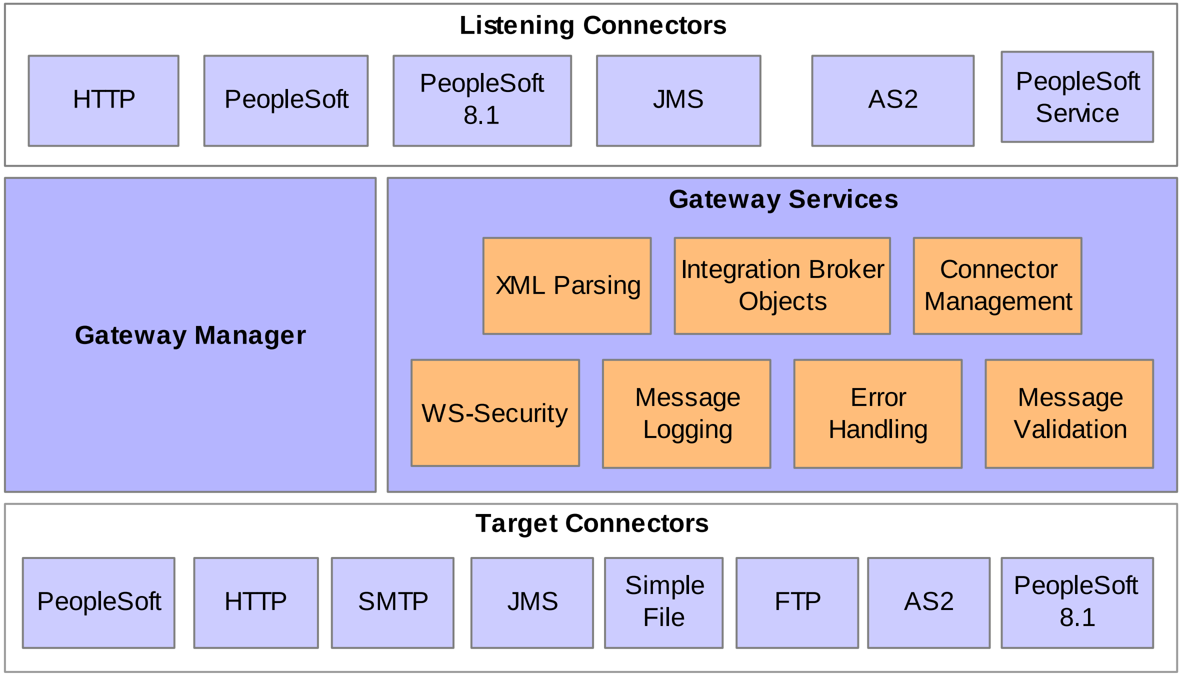
PeopleSoft Integration Broker comprises two-high-level subsystems:

- **Integration gateway** (resides on Web Server)
  The integration gateway is a platform that manages the receipt and delivery of messages passed among systems through PeopleSoft Integration Broker.
- **Integration engine** (resides on App Server)
  The integration engine uses a variety of PeopleTools elements to create, implement, manage, and enhance integrations.


Integration Broker
Integration Engine
Application Server
Integration Gateway
Web Server
External Systems

Integration Gateway

- Resides on the Web Server
- Manages the receipt and delivery of messages
- Provides support for leading TCP/IP protocols via connectors



Listening Connectors

HTTP

PeopleSoft

PeopleSoft 8.1

JMS

AS2

PeopleSoft Service

Gateway Manager

Gateway Services

XML Parsing

Integration Broker Objects

Connector Management

WS-Security

Message Logging

Error Handling

Message Validation

Target Connectors

PeopleSoft

HTTP

SMTP

JMS

Simple File

FTP

AS2

PeopleSoft 8.1

Overview of Services and Service Operations

Service operation: Web-based function containing the following parts

- **Message** (describes the shape of the data)
- **Routing** (describes the flow – source/target)
- **Handler** (defines code to handle the request)
- **Queue** (logical pipeline that defines dependencies/order for async)
- **Security** (who has access)

Overview of Services and Service Operations

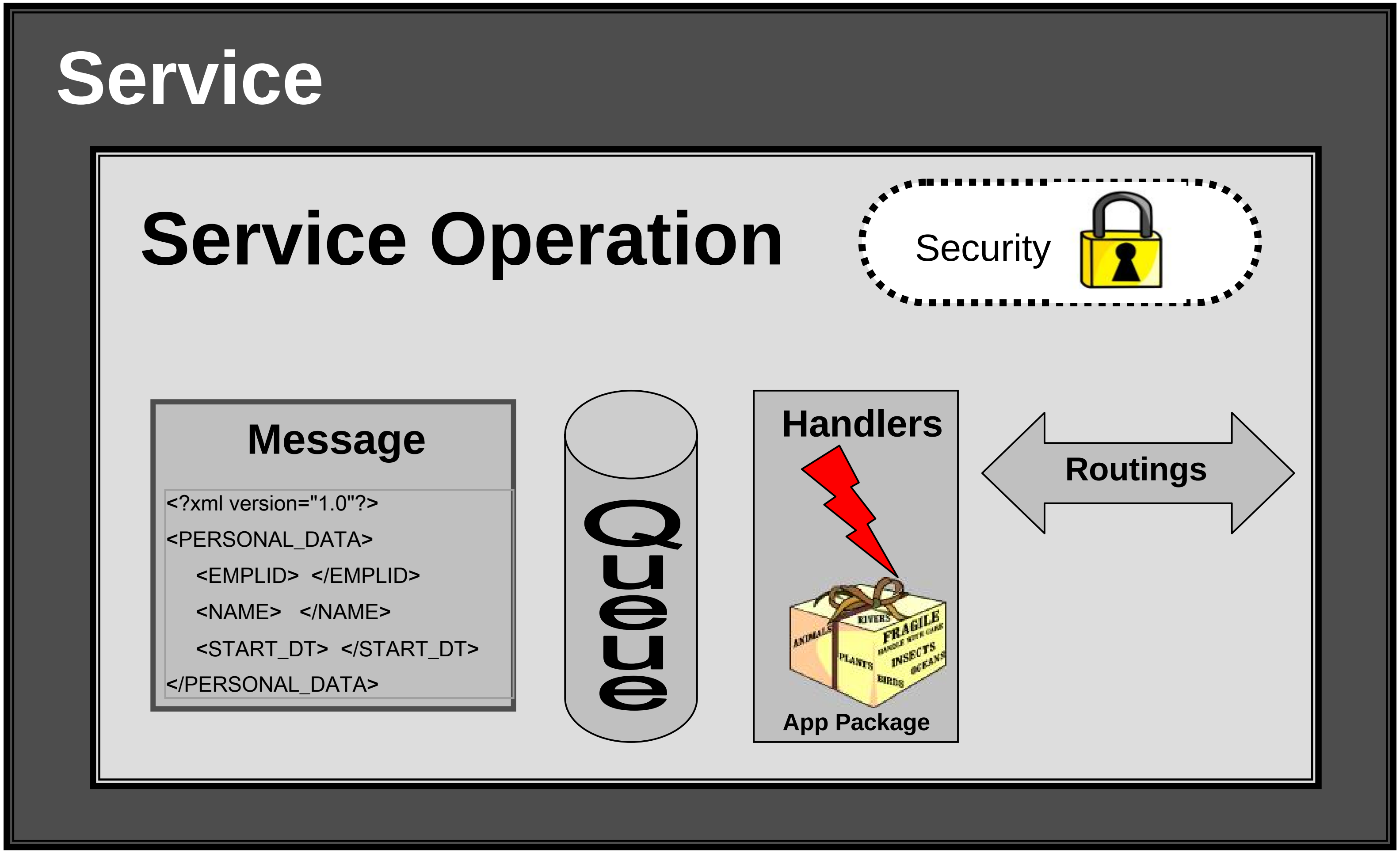
- **Service:** A collection of operations
- Example:

Service: **`UPS_SHIPPING`**

Could contain the following **service operations**

- *Track a package*
- *Calculate cost*
- *Calculate delivery time*

Services and Service Operations



Service

Service Operation

Security

Message

```
<?xml version="1.0"?>
<PERSONAL_DATA>
    <EMPLID>  </EMPLID>
    <NAME>   </NAME>
    <START_DT>  </START_DT>
</PERSONAL_DATA>
```

Queue

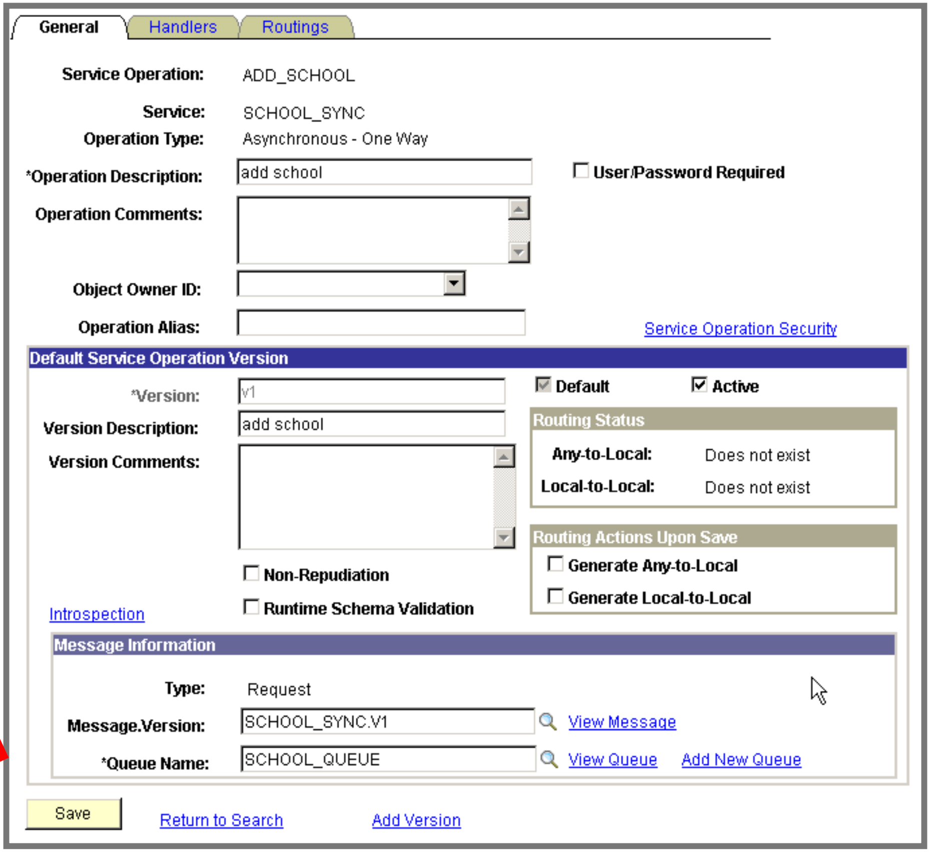
Handlers

App Package

Routings

Service Operations: Messages

Message definitions control the shape of the data.


General
Handlers
Routings

Service Operation: ADD_SCHOOL

Service: SCHOOL_SYNC

Operation Type: Asynchronous - One Way

***Operation Description:** add school

☐ **User/Password Required**

Operation Comments:

Object Owner ID:

Operation Alias:

Service Operation Security

Default Service Operation Version

***Version:** v1

☑ **Default** ☑ **Active**

Version Description: add school

Version Comments:

Routing Status

Any-to-Local: Does not exist

Local-to-Local: Does not exist

Routing Actions Upon Save

☐ **Generate Any-to-Local**

☐ **Generate Local-to-Local**

☐ **Non-Repudiation**

☐ **Runtime Schema Validation**

Introspection

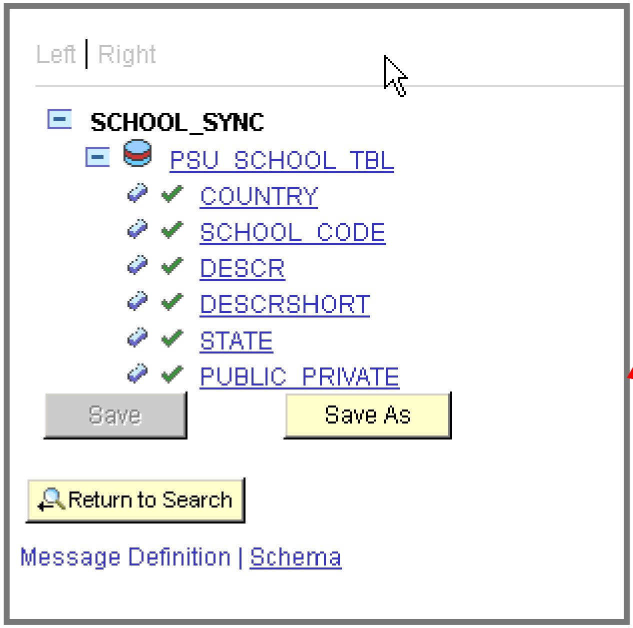
Message Information

Type: Request

Message.Version: SCHOOL_SYNC.V1 View Message

***Queue Name:** SCHOOL_QUEUE View Queue Add New Queue

Save
Return to Search
Add Version

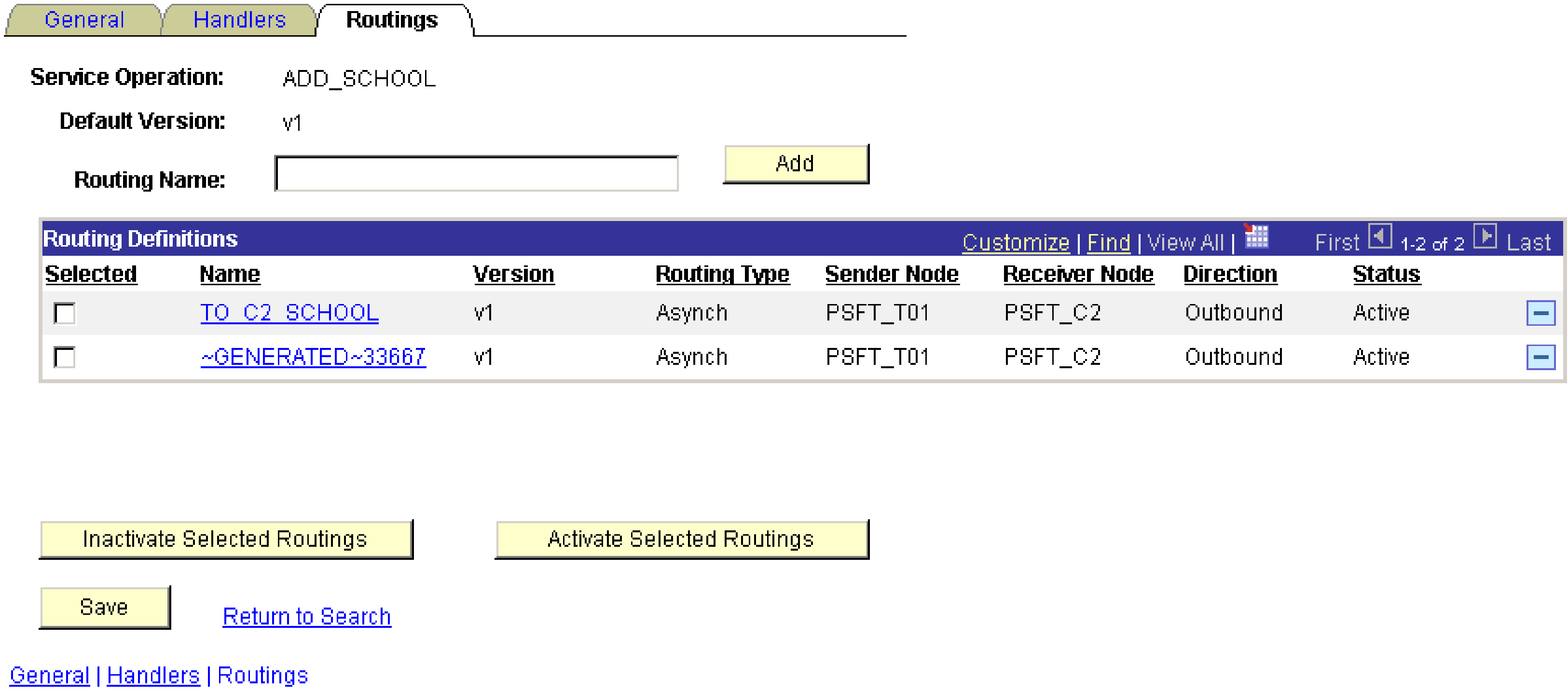

Left | Right

- SCHOOL_SYNC
  - PSU_SCHOOL_TBL
    - ✓ COUNTRY
    - ✓ SCHOOL_CODE
    - ✓ DESCR
    - ✓ DESCRSHORT
    - ✓ STATE
    - ✓ PUBLIC_PRIVATE

Save
Save As
Return to Search
Message Definition | Schema

Service Operations: Routings

Routings control the flow of service operations.



General | Handlers | **Routings**

Service Operation: ADD_SCHOOL

Default Version: v1

Routing Name: ______ Add

Routing Definitions Customize | Find | View All | First 1-2 of 2 Last

Selected	Name	Version	Routing Type	Sender Node	Receiver Node	Direction	Status	
☐	TO_C2_SCHOOL	v1	Asynch	PSFT_T01	PSFT_C2	Outbound	Active	⊟
☐	~GENERATED~33667	v1	Asynch	PSFT_T01	PSFT_C2	Outbound	Active	⊟

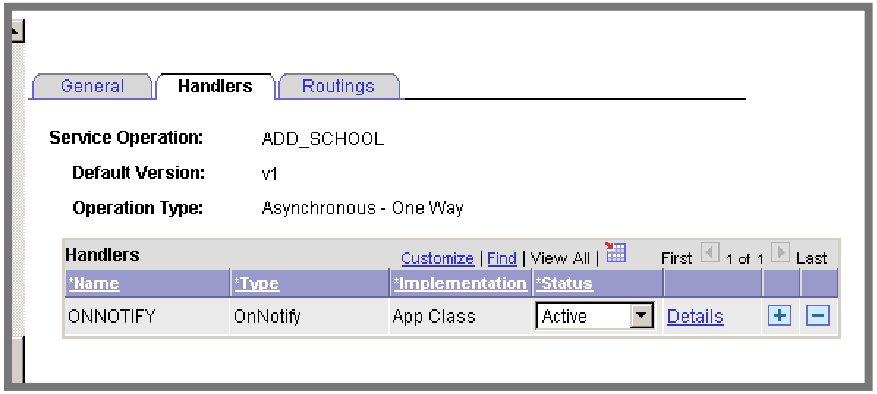
Inactivate Selected Routings   Activate Selected Routings

Save   Return to Search

General | Handlers | Routings

Service Operations: Handlers

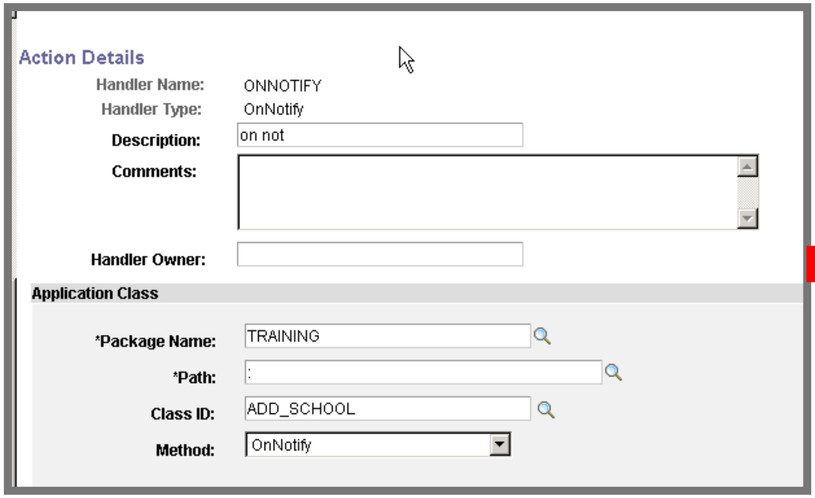
Handlers point to the PeopleCode business logic that resides in an application package.


General
Handlers
Routings
Customize | Find | View All |
First 1 of 1 Last
Details

Service Operation: ADD_SCHOOL
Default Version: v1
Operation Type: Asynchronous - One Way

Handlers

*Name	*Type	*Implementation	*Status		
ONNOTIFY	OnNotify	App Class	Active	Details	+ −

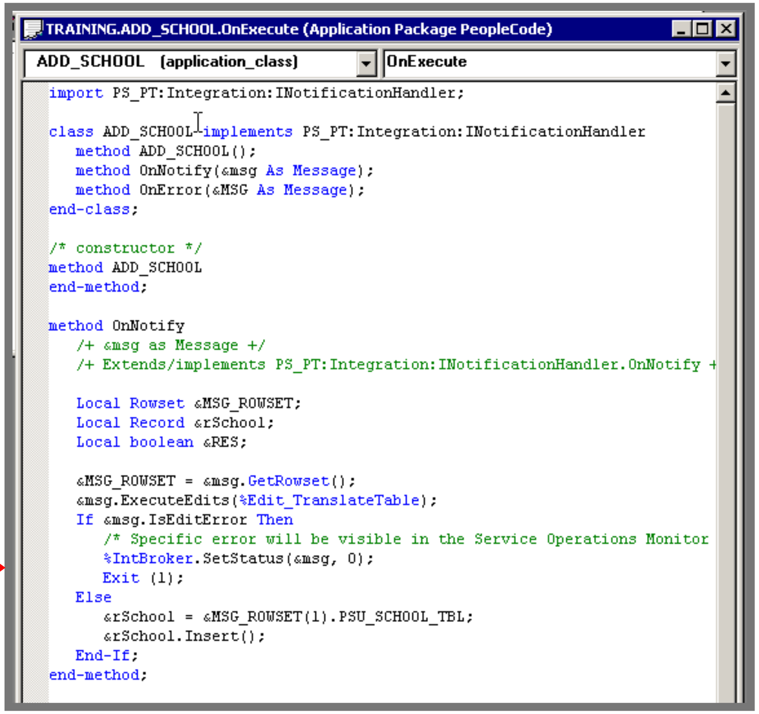


Action Details

Handler Name: ONNOTIFY
Handler Type: OnNotify
Description: on not
Comments:
Handler Owner:

Application Class

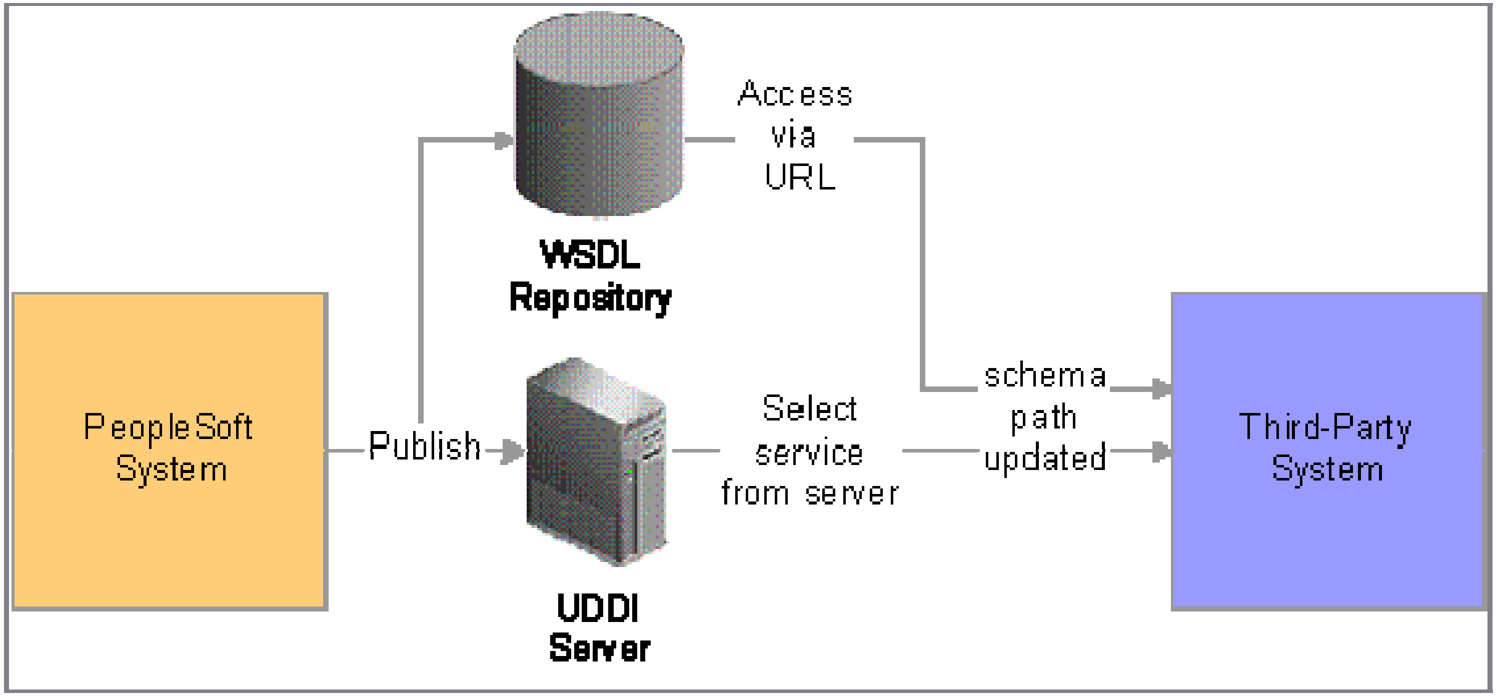
***Package Name:** TRAINING
***Path:** :
Class ID: ADD_SCHOOL
Method: OnNotify


TRAINING.ADD_SCHOOL.OnExecute (Application Package PeopleCode)
ADD_SCHOOL (application_class)
OnExecute

```
import PS_PT:Integration:INotificationHandler;

class ADD_SCHOOL implements PS_PT:Integration:INotificationHandler
   method ADD_SCHOOL();
   method OnNotify(&msg As Message);
   method OnError(&MSG As Message);
end-class;

/* constructor */
method ADD_SCHOOL
end-method;

method OnNotify
   /+ &msg as Message +/
   /+ Extends/implements PS_PT:Integration:INotificationHandler.OnNotify +

   Local Rowset &MSG_ROWSET;
   Local Record &rSchool;
   Local boolean &RES;

   &MSG_ROWSET = &msg.GetRowset();
   &msg.ExecuteEdits(%Edit_TranslateTable);
   If &msg.IsEditError Then
      /* Specific error will be visible in the Service Operations Monitor
      %IntBroker.SetStatus(&msg, 0);
      Exit (1);
   Else
      &rSchool = &MSG_ROWSET(1).PSU_SCHOOL_TBL;
      &rSchool.Insert();
   End-If;
end-method;
```

Provide Web Services

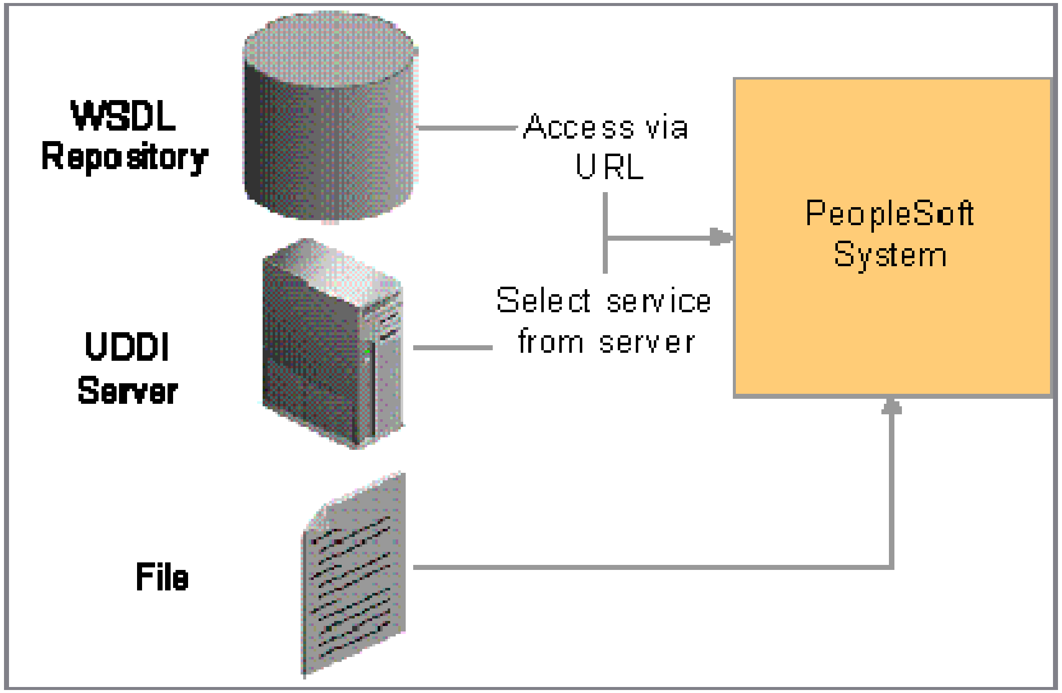
Ability to expose PeopleSoft service operations to third-party systems by generating WSDL and publishing to a UDDI server


WSDL Repository
Access via URL
PeopleSoft System
Publish
UDDI Server
Select service from server
schema path updated
Third-Party System

ORACLE

Consume Web Services

- Ability to import a Web service from a third-party system by consuming a third-party WSDL
- A wizard-like tool reads the WSDL and generates the corresponding PeopleSoft transactional metadata (for example, service operations, messages, and so on).


WSDL Repository
Access via URL
PeopleSoft System
UDDI Server
Select service from server
File

XML Publisher

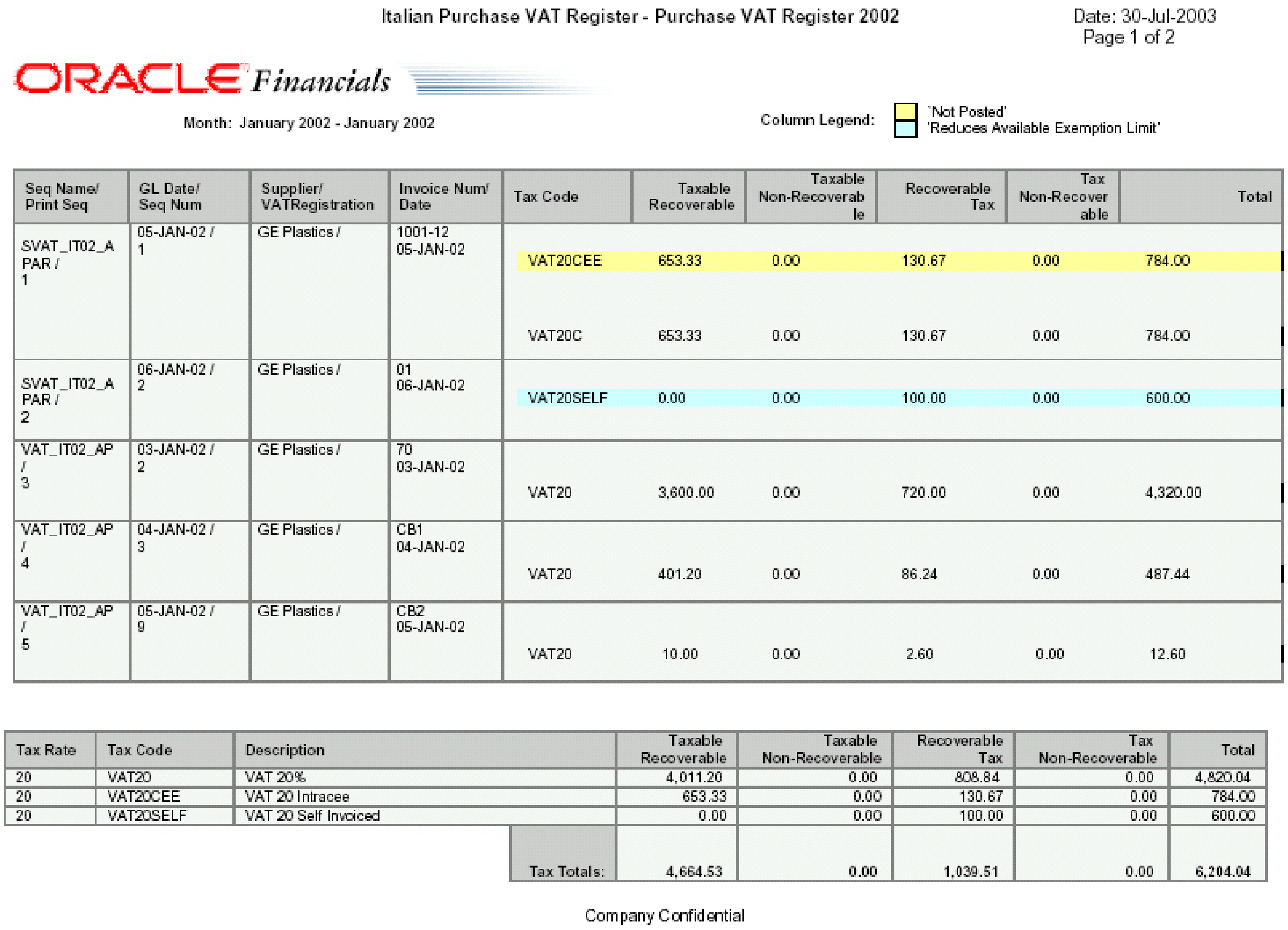
YEAR
$ 4,486,602
$ 4,316,
1,905
1,826,030
1,407,664
8,356,071
8,125,287
$14,498,455
$14,019,553
252,572
329,428
$14,751,027
$14,348,981
$19,537,852
$19,112
134.8%
136
132.5%
133
8.5%

What Is XML Publisher?

- XML Publisher for PeopleSoft Enterprise is a template-based reporting solution that separates the data extraction process from the report layout and enables the reuse of extracted application data in multiple report layouts.
- Some key features and benefits include:

Feature	Benefit
Report layouts developed using standard desktop tools including Microsoft Word and Adobe Acrobat	• Speeds development time • Reduces maintenance • Empowers end users to develop reports
Separation of data extraction process from the report layout	• Promotes the reusability of extracted application data with multiple report layouts

Financial Reports



Italian Purchase VAT Register - Purchase VAT Register 2002

Date: 30-Jul-2003
Page 1 of 2

ORACLE Financials

Month: January 2002 - January 2002

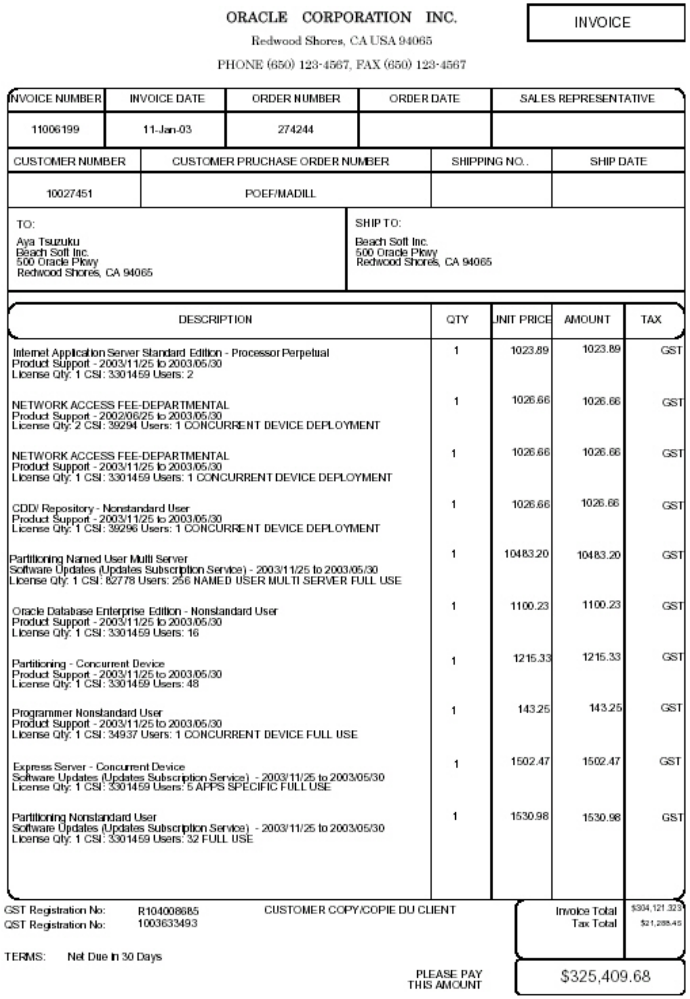
Column Legend: 🟨 'Not Posted' 🟦 'Reduces Available Exemption Limit'

Seq Name/ Print Seq	GL Date/ Seq Num	Supplier/ VATRegistration	Invoice Num/ Date	Tax Code	Taxable Recoverable	Taxable Non-Recoverable	Recoverable Tax	Tax Non-Recoverable	Total
SVAT_IT02_APAR / 1	05-JAN-02 / 1	GE Plastics /	1001-12 05-JAN-02	VAT20CEE	653.33	0.00	130.67	0.00	784.00
				VAT20C	653.33	0.00	130.67	0.00	784.00
SVAT_IT02_APAR / 2	06-JAN-02 / 2	GE Plastics /	01 06-JAN-02	VAT20SELF	0.00	0.00	100.00	0.00	600.00
VAT_IT02_AP / 3	03-JAN-02 / 2	GE Plastics /	70 03-JAN-02	VAT20	3,600.00	0.00	720.00	0.00	4,320.00
VAT_IT02_AP / 4	04-JAN-02 / 3	GE Plastics /	CB1 04-JAN-02	VAT20	401.20	0.00	86.24	0.00	487.44
VAT_IT02_AP / 5	05-JAN-02 / 9	GE Plastics /	CB2 05-JAN-02	VAT20	10.00	0.00	2.60	0.00	12.60

Tax Rate	Tax Code	Description	Taxable Recoverable	Taxable Non-Recoverable	Recoverable Tax	Tax Non-Recoverable	Total
20	VAT20	VAT 20%	4,011.20	0.00	808.84	0.00	4,820.04
20	VAT20CEE	VAT 20 Intracee	653.33	0.00	130.67	0.00	784.00
20	VAT20SELF	VAT 20 Self Invoiced	0.00	0.00	100.00	0.00	600.00
		Tax Totals:	4,664.53	0.00	1,039.51	0.00	6,204.04

Company Confidential

Invoices



ORACLE CORPORATION INC.
Redwood Shores, CA USA 94065
PHONE (650) 123-4567, FAX (650) 123-4567

INVOICE

INVOICE NUMBER	INVOICE DATE	ORDER NUMBER	ORDER DATE	SALES REPRESENTATIVE
11006199	11-Jan-03	274244		

CUSTOMER NUMBER	CUSTOMER PRUCHASE ORDER NUMBER	SHIPPING NO. .	SHIP DATE
10027451	POEF/MADILL		

TO:
Aya Tsuzuku
Beach Soft Inc.
500 Oracle Pkwy
Redwood Shores, CA 94065

SHIP TO:
Beach Soft Inc.
500 Oracle Pkwy
Redwood Shores, CA 94065

DESCRIPTION	QTY	UNIT PRICE	AMOUNT	TAX
Internet Application Server Standard Edition - Processor Perpetual Product Support - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 3301459 Users: 2	1	1023.89	1023.89	GST
NETWORK ACCESS FEE-DEPARTMENTAL Product Support - 2002/06/25 to 2003/05/30 License Qty: 2 CSI: 39294 Users: 1 CONCURRENT DEVICE DEPLOYMENT	1	1026.66	1026.66	GST
NETWORK ACCESS FEE-DEPARTMENTAL Product Support - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 3301459 Users: 1 CONCURRENT DEVICE DEPLOYMENT	1	1026.66	1026.66	GST
CDD/ Repository - Nonstandard User Product Support - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 39296 Users: 1 CONCURRENT DEVICE DEPLOYMENT	1	1026.66	1026.66	GST
Partitioning Named User Multi Server Software Updates (Updates Subscription Service) - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 82778 Users: 256 NAMED USER MULTI SERVER FULL USE	1	10483.20	10483.20	GST
Oracle Database Enterprise Edition - Nonstandard User Product Support - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 3301459 Users: 16	1	1100.23	1100.23	GST
Partitioning - Concurrent Device Product Support - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 3301459 Users: 48	1	1215.33	1215.33	GST
Programmer Nonstandard User Product Support - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 34937 Users: 1 CONCURRENT DEVICE FULL USE	1	143.25	143.25	GST
Express Server - Concurrent Device Software Updates (Updates Subscription Service) - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 3301459 Users: 5 APPS SPECIFIC FULL USE	1	1502.47	1502.47	GST
Partitioning Nonstandard User Software Updates (Updates Subscription Service) - 2003/11/25 to 2003/05/30 License Qty: 1 CSI: 3301459 Users: 32 FULL USE	1	1530.98	1530.98	GST

GST Registration No: R104008685
QST Registration No: 1003633493

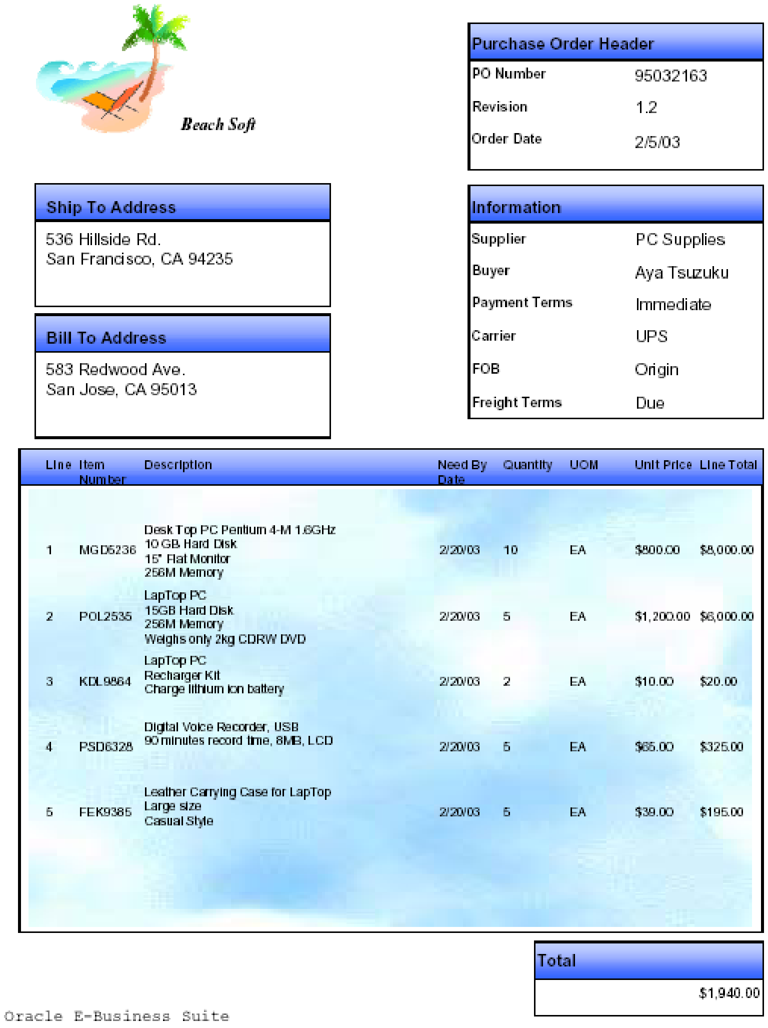
CUSTOMER COPY/COPIE DU CLIENT

Invoice Total	$304,121.323
Tax Total	$21,288.45

TERMS: Net Due in 30 Days

PLEASE PAY THIS AMOUNT $325,409.68

Purchase Orders



Beach Soft

Purchase Order Header

PO Number	95032163
Revision	1.2
Order Date	2/5/03

Ship To Address

536 Hillside Rd.
San Francisco, CA 94235

Bill To Address

583 Redwood Ave.
San Jose, CA 95013

Information

Supplier	PC Supplies
Buyer	Aya Tsuzuku
Payment Terms	Immediate
Carrier	UPS
FOB	Origin
Freight Terms	Due

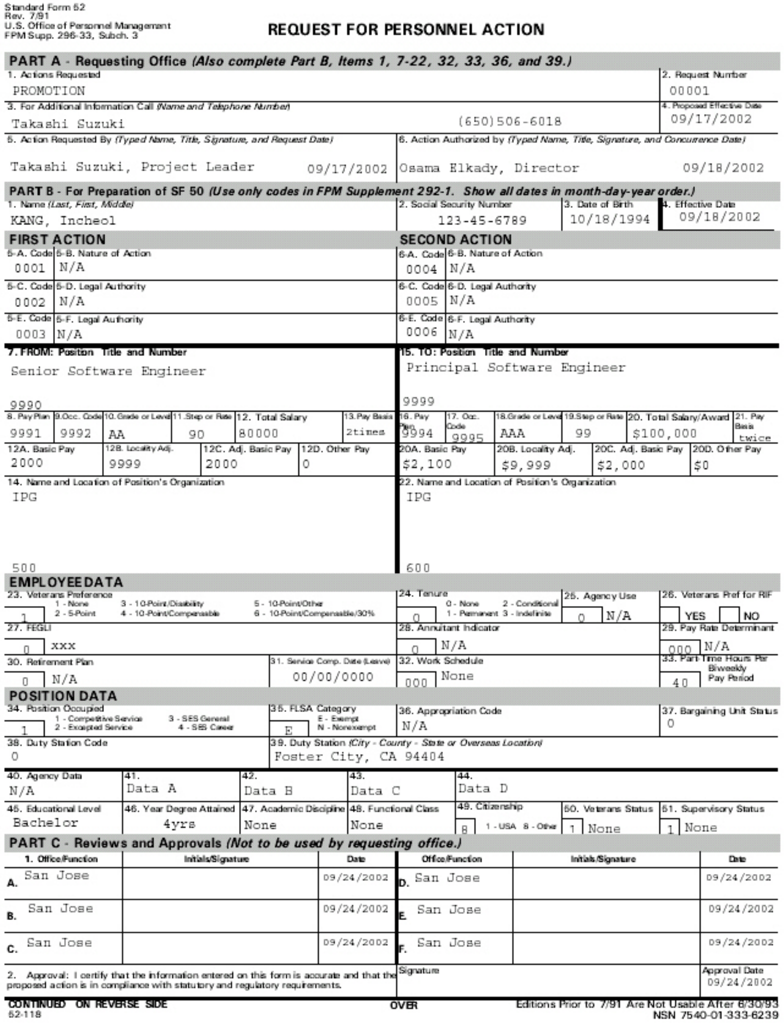
Line	Item Number	Description	Need By Date	Quantity	UOM	Unit Price	Line Total
1	MGD5236	Desk Top PC Pentium 4-M 1.6GHz 10 GB Hard Disk 15" Flat Monitor 256M Memory	2/20/03	10	EA	$800.00	$8,000.00
2	POL2535	LapTop PC 15GB Hard Disk 256M Memory Weighs only 2kg CDRW DVD	2/20/03	5	EA	$1,200.00	$6,000.00
3	KDL9864	LapTop PC Recharger Kit Charge lithium ion battery	2/20/03	2	EA	$10.00	$20.00
4	PSD6328	Digital Voice Recorder, USB 90 minutes record time, 8MB, LCD	2/20/03	5	EA	$65.00	$325.00
5	FEK9385	Leather Carrying Case for LapTop Large size Casual Style	2/20/03	5	EA	$39.00	$195.00

Total

$1,940.00

Oracle E-Business Suite

Government Forms



Standard Form 52
Rev. 7/91
U.S. Office of Personnel Management
FPM Supp. 296-33, Subch. 3

REQUEST FOR PERSONNEL ACTION

PART A - Requesting Office *(Also complete Part B, Items 1, 7-22, 32, 33, 36, and 39.)*

1. Actions Requested
PROMOTION

2. Request Number
00001

3. For Additional Information Call *(Name and Telephone Number)*
Takashi Suzuki (650)506-6018

4. Proposed Effective Date
09/17/2002

5. Action Requested By *(Typed Name, Title, Signature, and Request Date)*
Takashi Suzuki, Project Leader 09/17/2002

6. Action Authorized by *(Typed Name, Title, Signature, and Concurrence Date)*
Osama Elkady, Director 09/18/2002

PART B - For Preparation of SF 50 *(Use only codes in FPM Supplement 292-1. Show all dates in month-day-year order.)*

1. Name *(Last, First, Middle)*
KANG, Incheol

2. Social Security Number
123-45-6789

3. Date of Birth
10/18/1994

4. Effective Date
09/18/2002

FIRST ACTION		SECOND ACTION	
5-A. Code 0001	5-B. Nature of Action N/A	6-A. Code 0004	6-B. Nature of Action N/A
5-C. Code 0002	5-D. Legal Authority N/A	6-C. Code 0005	6-D. Legal Authority N/A
5-E. Code 0003	5-F. Legal Authority N/A	6-E. Code 0006	6-F. Legal Authority N/A

7. FROM: Position Title and Number
Senior Software Engineer
9990

8. Pay Plan	9. Occ. Code	10. Grade or Level	11. Step or Rate	12. Total Salary	13. Pay Basis
9991	9992	AA	90	80000	2times

12A. Basic Pay	12B. Locality Adj.	12C. Adj. Basic Pay	12D. Other Pay
2000	9999	2000	0

14. Name and Location of Position's Organization
IPG
500

15. TO: Position Title and Number
Principal Software Engineer
9999

16. Pay Plan	17. Occ. Code	18. Grade or Level	19. Step or Rate	20. Total Salary/Award	21. Pay Basis
9994	9995	AAA	99	$100,000	twice

20A. Basic Pay	20B. Locality Adj.	20C. Adj. Basic Pay	20D. Other Pay
$2,100	$9,999	$2,000	$0

22. Name and Location of Position's Organization
IPG
600

EMPLOYEE DATA

23. Veterans Preference
1 - None 2 - 5-Point 3 - 10-Point/Disability 4 - 10-Point/Compensable 5 - 10-Point/Other 6 - 10-Point/Compensable/30%
1

24. Tenure
0 - None 1 - Permanent 2 - Conditional 3 - Indefinite
0

25. Agency Use
0 N/A

26. Veterans Pref for RIF
☐ YES ☐ NO

27. FEGLI
0 xxx

28. Annuitant Indicator
0 N/A

29. Pay Rate Determinant
000 N/A

30. Retirement Plan
0 N/A

31. Service Comp. Date (Leave)
00/00/0000

32. Work Schedule
000 None

33. Part-Time Hours Per Biweekly Pay Period
40

POSITION DATA

34. Position Occupied
1 - Competitive Service 2 - Excepted Service 3 - SES General 4 - SES Career
1

35. FLSA Category
E - Exempt N - Nonexempt
E

36. Appropriation Code
N/A

37. Bargaining Unit Status
0

38. Duty Station Code
0

39. Duty Station *(City - County - State or Overseas Location)*
Foster City, CA 94404

40. Agency Data N/A	41. Data A	42. Data B	43. Data C	44. Data D

45. Educational Level
Bachelor

46. Year Degree Attained
4yrs

47. Academic Discipline
None

48. Functional Class
None

49. Citizenship
1 - USA 8 - Other
8

50. Veterans Status
1 None

51. Supervisory Status
1 None

PART C - Reviews and Approvals *(Not to be used by requesting office.)*

	1. Office/Function	Initials/Signature	Date		Office/Function	Initials/Signature	Date
A.	San Jose		09/24/2002	D.	San Jose		09/24/2002
B.	San Jose		09/24/2002	E.	San Jose		09/24/2002
C.	San Jose		09/24/2002	F.	San Jose		09/24/2002

2. Approval: I certify that the information entered on this form is accurate and that the proposed action is in compliance with statutory and regulatory requirements.

Signature

Approval Date
09/24/2002

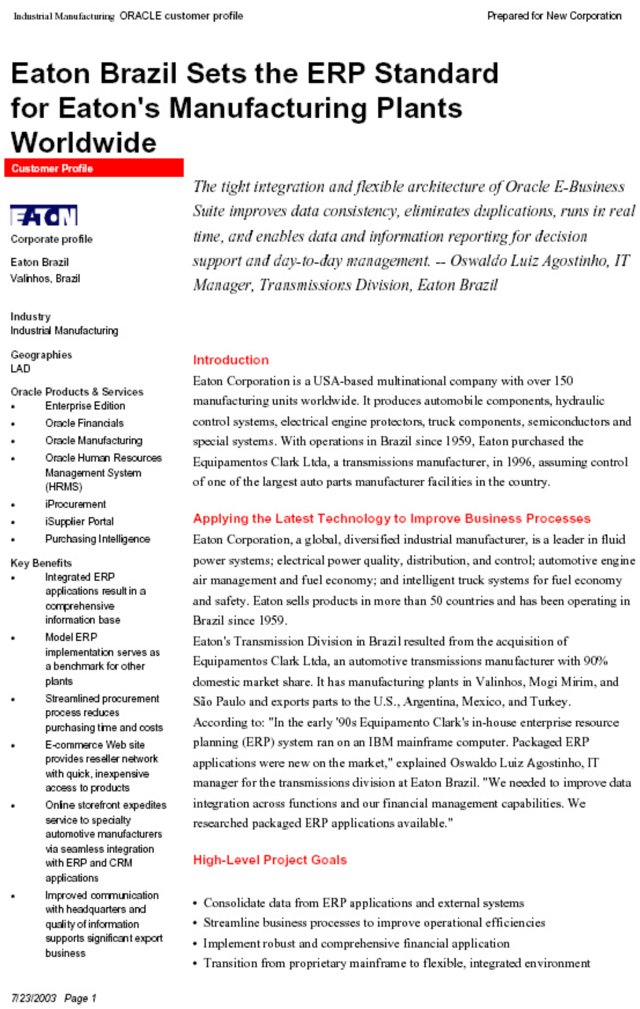
CONTINUED ON REVERSE SIDE
52-118

OVER

Editions Prior to 7/91 Are Not Usable After 6/30/93
NSN 7540-01-333-6239

ORACLE

Marketing Materials



Industrial Manufacturing ORACLE customer profile

Prepared for New Corporation

Eaton Brazil Sets the ERP Standard for Eaton's Manufacturing Plants Worldwide

Customer Profile

Corporate profile

Eaton Brazil
Valinhos, Brazil

Industry
Industrial Manufacturing

Geographies
LAD

Oracle Products & Services
- Enterprise Edition
- Oracle Financials
- Oracle Manufacturing
- Oracle Human Resources Management System (HRMS)
- iProcurement
- iSupplier Portal
- Purchasing Intelligence

Key Benefits
- Integrated ERP applications result in a comprehensive information base
- Model ERP implementation serves as a benchmark for other plants
- Streamlined procurement process reduces purchasing time and costs
- E-commerce Web site provides reseller network with quick, inexpensive access to products
- Online storefront expedites service to specialty automotive manufacturers via seamless integration with ERP and CRM applications
- Improved communication with headquarters and quality of information supports significant export business

The tight integration and flexible architecture of Oracle E-Business Suite improves data consistency, eliminates duplications, runs in real time, and enables data and information reporting for decision support and day-to-day management. -- Oswaldo Luiz Agostinho, IT Manager, Transmissions Division, Eaton Brazil

Introduction

Eaton Corporation is a USA-based multinational company with over 150 manufacturing units worldwide. It produces automobile components, hydraulic control systems, electrical engine protectors, truck components, semiconductors and special systems. With operations in Brazil since 1959, Eaton purchased the Equipamentos Clark Ltda, a transmissions manufacturer, in 1996, assuming control of one of the largest auto parts manufacturer facilities in the country.

Applying the Latest Technology to Improve Business Processes

Eaton Corporation, a global, diversified industrial manufacturer, is a leader in fluid power systems; electrical power quality, distribution, and control; automotive engine air management and fuel economy; and intelligent truck systems for fuel economy and safety. Eaton sells products in more than 50 countries and has been operating in Brazil since 1959.

Eaton's Transmission Division in Brazil resulted from the acquisition of Equipamentos Clark Ltda, an automotive transmissions manufacturer with 90% domestic market share. It has manufacturing plants in Valinhos, Mogi Mirim, and São Paulo and exports parts to the U.S., Argentina, Mexico, and Turkey.

According to: "In the early '90s Equipamento Clark's in-house enterprise resource planning (ERP) system ran on an IBM mainframe computer. Packaged ERP applications were new on the market," explained Oswaldo Luiz Agostinho, IT manager for the transmissions division at Eaton Brazil. "We needed to improve data integration across functions and our financial management capabilities. We researched packaged ERP applications available."

High-Level Project Goals

- Consolidate data from ERP applications and external systems
- Streamline business processes to improve operational efficiencies
- Implement robust and comprehensive financial application
- Transition from proprietary mainframe to flexible, integrated environment

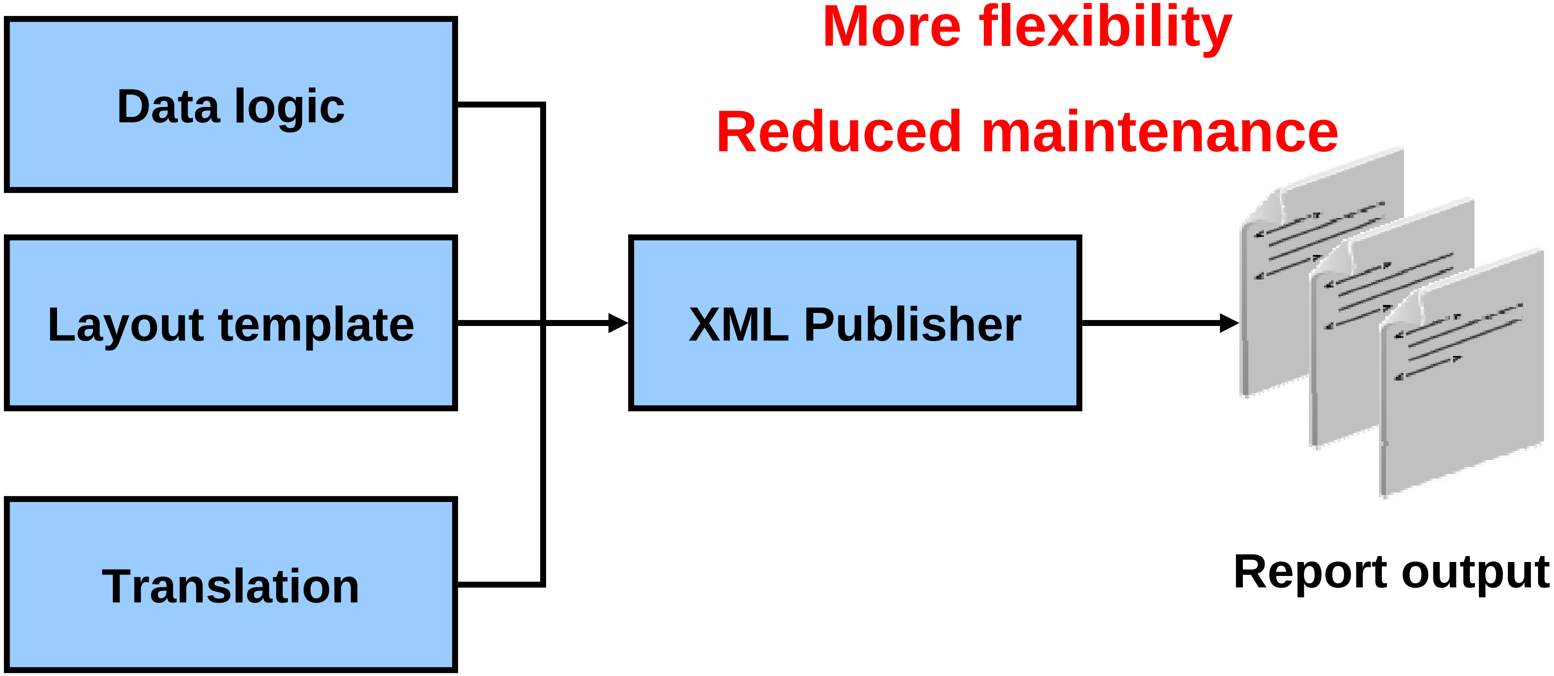
7/23/2003 Page 1

XML Publisher: Overview

Separates data, layout, and translation

More flexibility

Reduced maintenance



Data logic

Layout template

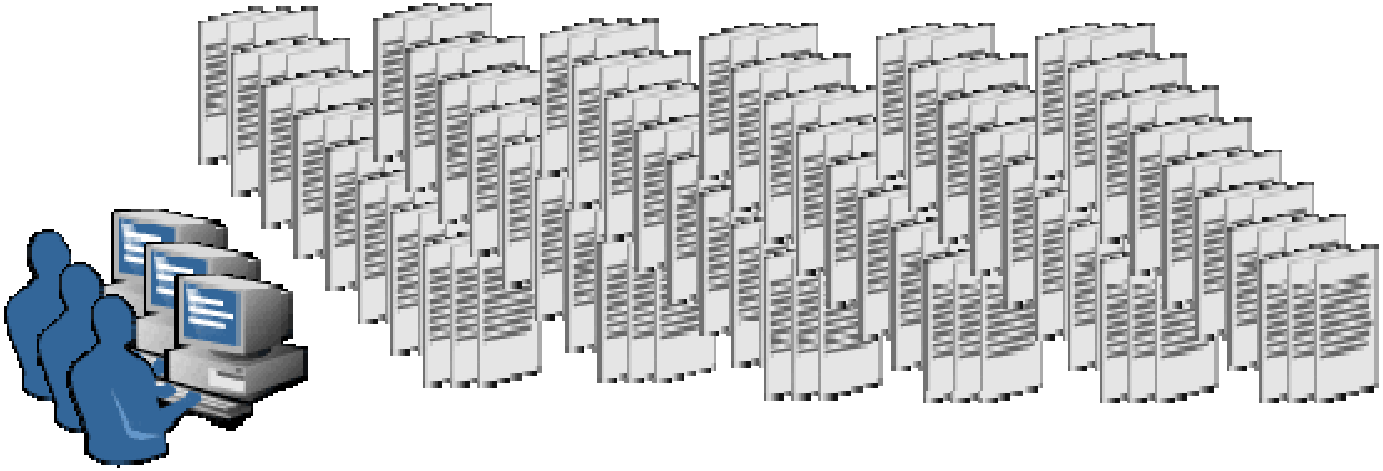
Translation

XML Publisher

Report output

Traditional Report Customization

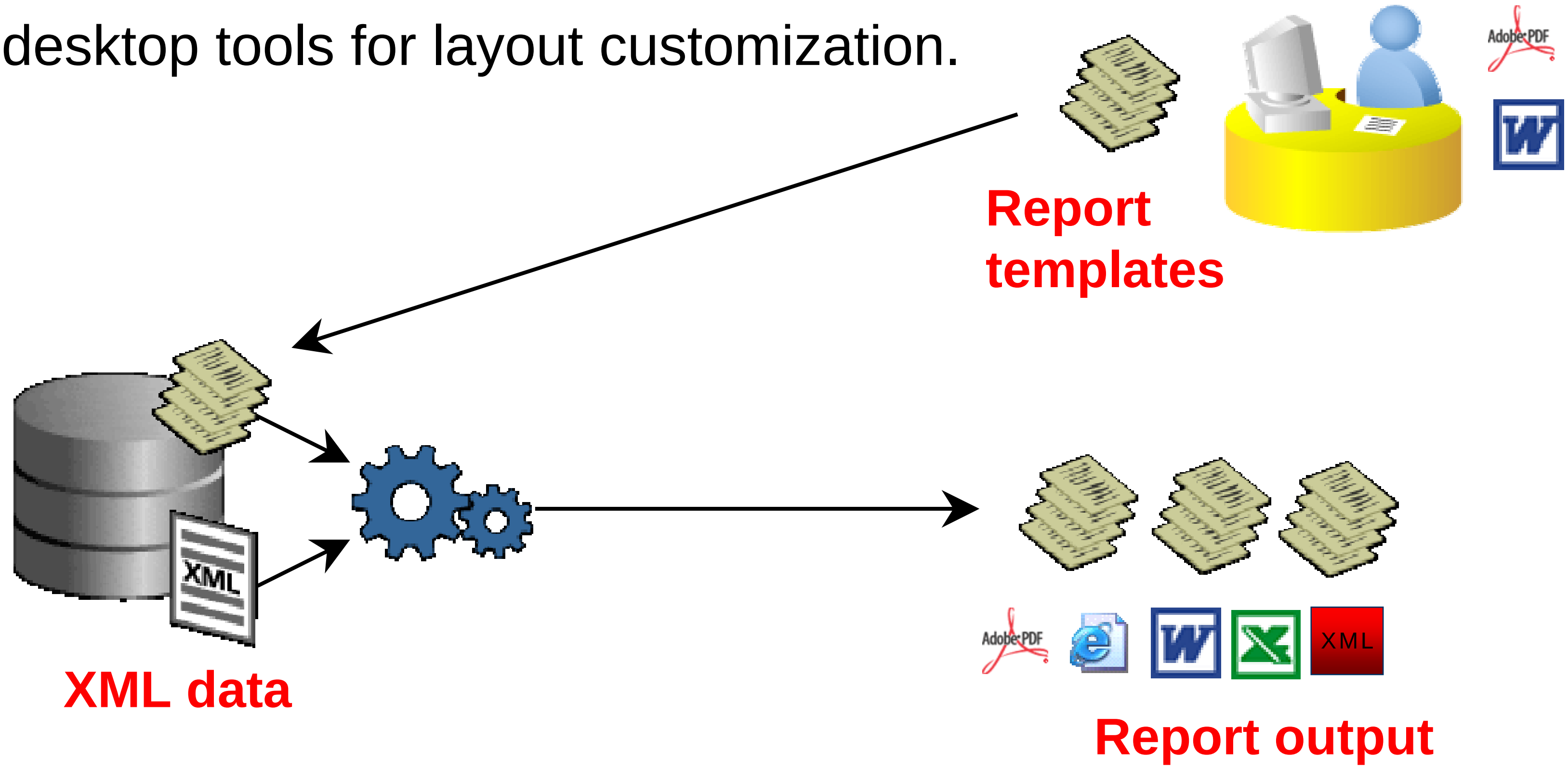
- 1 data set : 10 layouts : 30 languages >> 300 reports
- Requires highly skilled engineers for customization



- High maintenance cost
- High customization cost
- Difficult upgrade

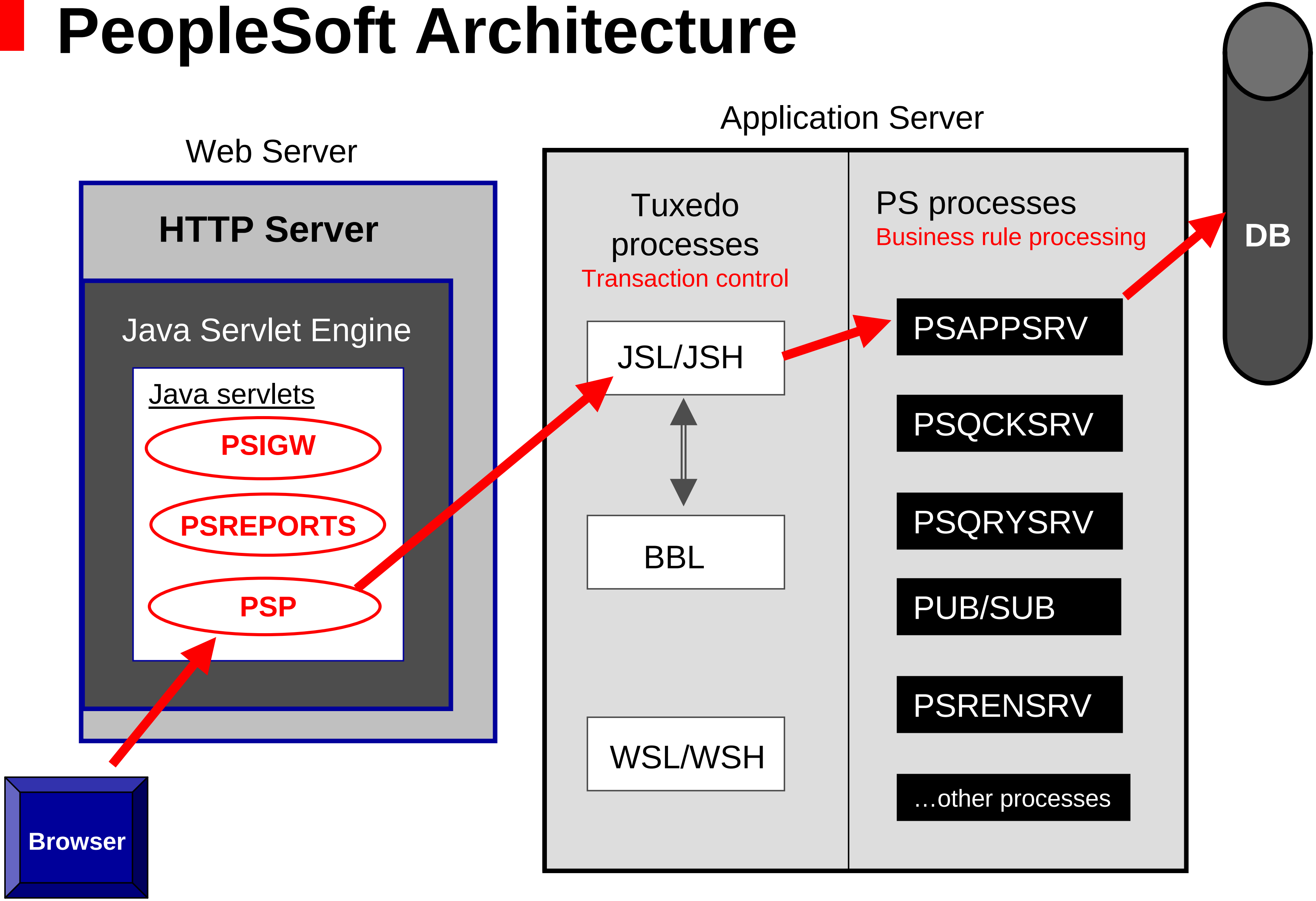
XML Publisher Customization

- 1 data set : 10 layout templates : 30 translation files
- Business consultants use familiar desktop tools for layout customization.

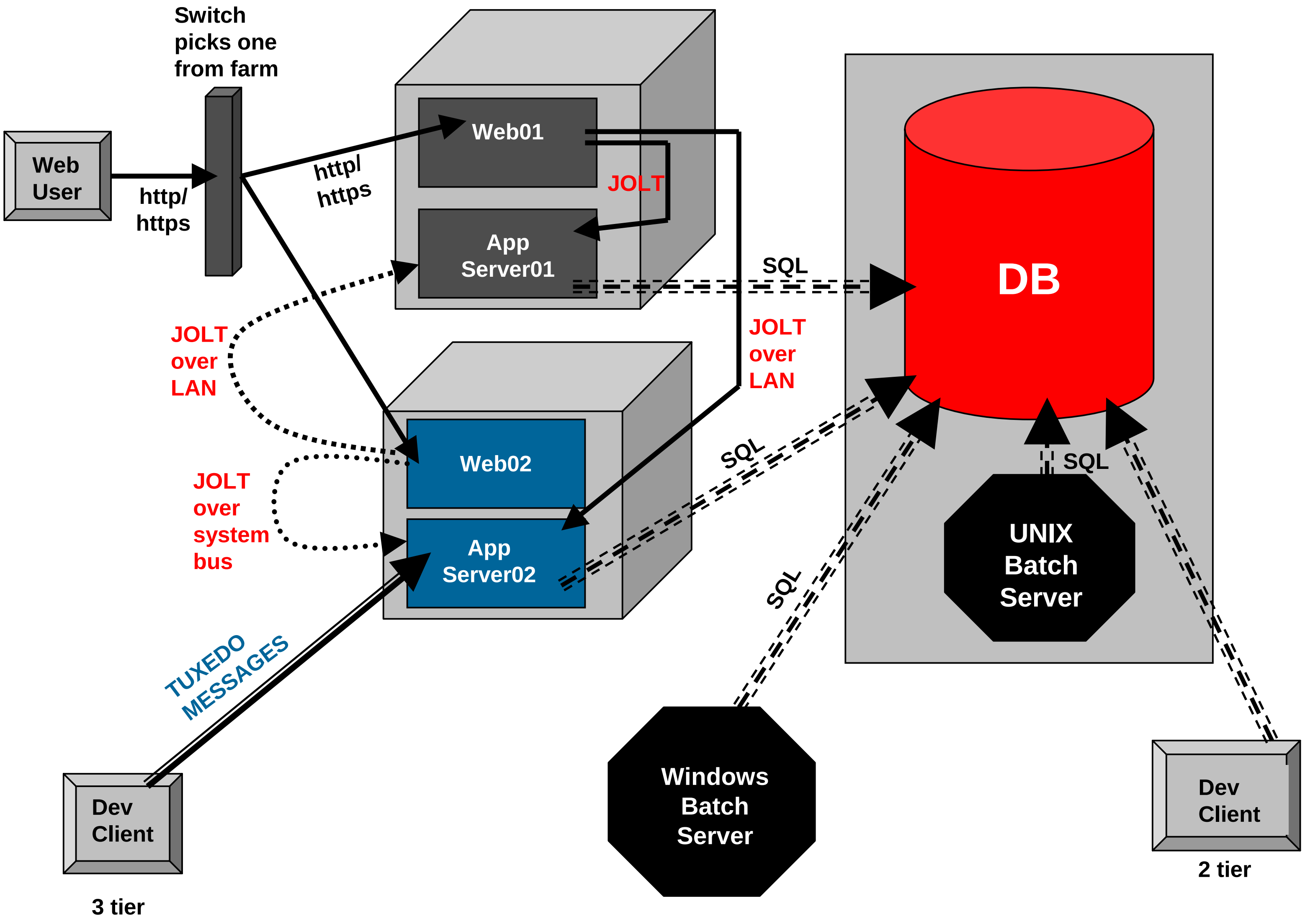

Adobe PDF
W
Report templates
XML
XML data
Adobe PDF
e
W
X
XML
Report output

Oracle Application Server

PeopleSoft Architecture

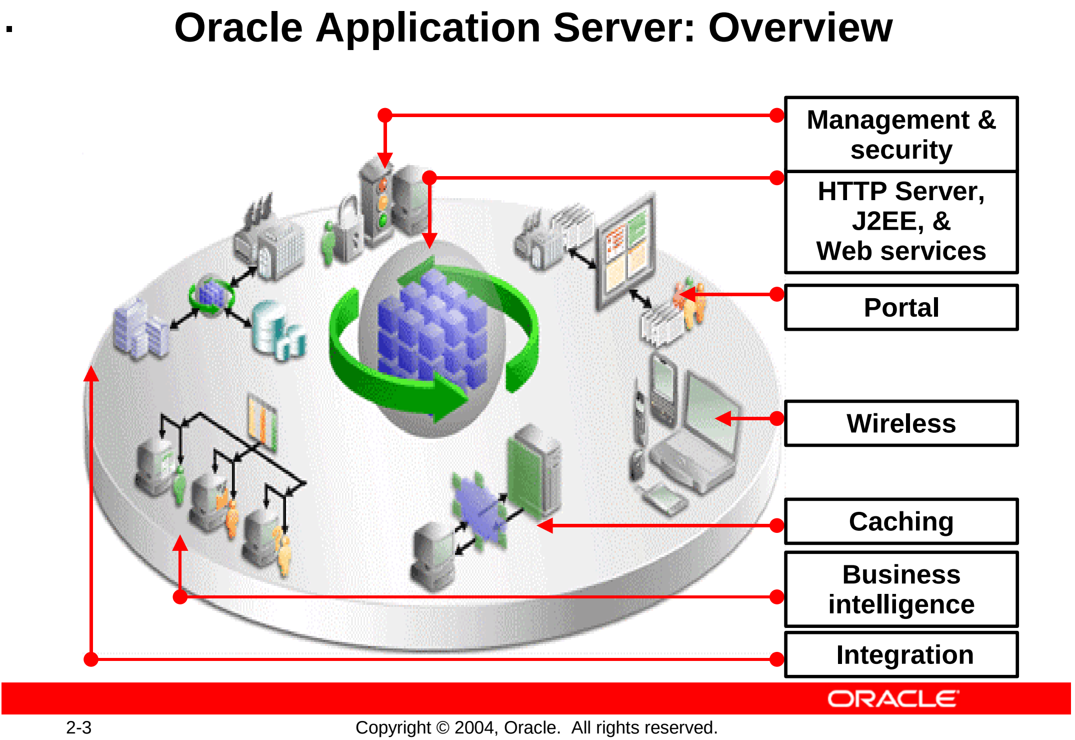

Application Server
Web Server
HTTP Server
Java Servlet Engine
Java servlets
PSIGW
PSREPORTS
PSP
Tuxedo processes
Transaction control
JSL/JSH
BBL
WSL/WSH
PS processes
Business rule processing
PSAPPSRV
PSQCKSRV
PSQRYSRV
PUB/SUB
PSRENSRV
…other processes
DB
Browser

PeopleSoft Architecture: Example


Switch picks one from farm
Web User
http/ https
http/ https
Web01
JOLT
App Server01
SQL
DB
JOLT over LAN
JOLT over LAN
Web02
JOLT over system bus
App Server02
SQL
SQL
SQL
UNIX Batch Server
TUXEDO MESSAGES
Dev Client
3 tier
Windows Batch Server
Dev Client
2 tier

Oracle Application Server: Overview

- Oracle Application Server is a complete, integrated platform for developing, deploying, and administering Internet-based applications.
- Oracle Application Server addresses many solution areas, but the key areas related to PeopleSoft are HTTP Server, J2EE, and Web services.



Oracle Application Server: Overview

Management & security
HTTP Server, J2EE, & Web services
Portal
Wireless
Caching
Business intelligence
Integration

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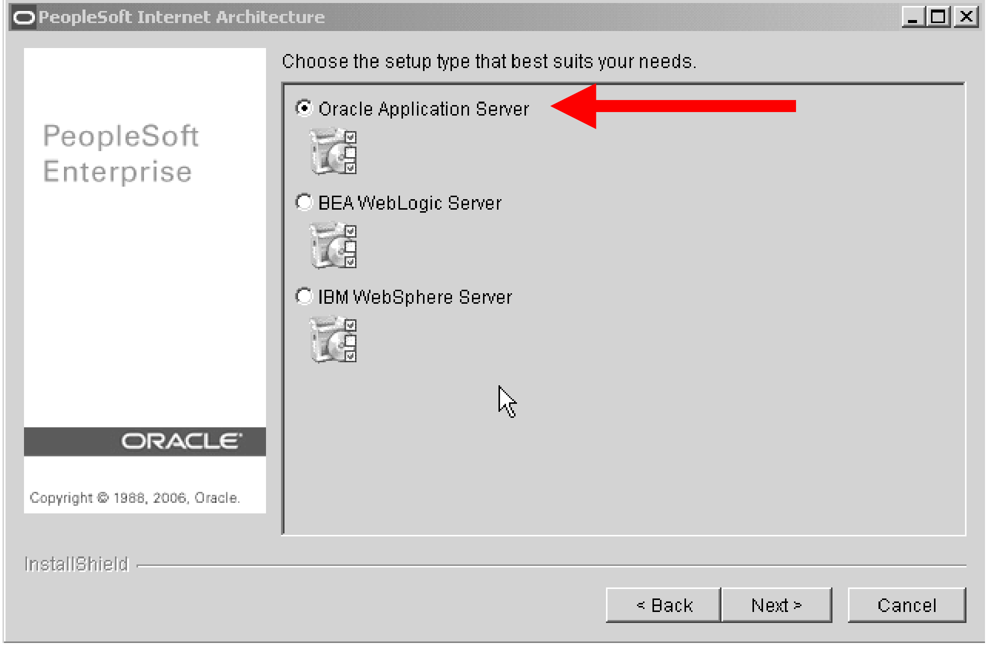
Where Does OAS Fit In?

- Customers have three choices for the Web server:
  - Oracle App Server
  - BEA WebLogic
  - IBM WebSphere
- Customer are still required to use BEA Tuxedo as their PeopleSoft Application Server.



PeopleSoft Internet Architecture

PeopleSoft Enterprise

Choose the setup type that best suits your needs.

● Oracle Application Server

○ BEA WebLogic Server

○ IBM WebSphere Server

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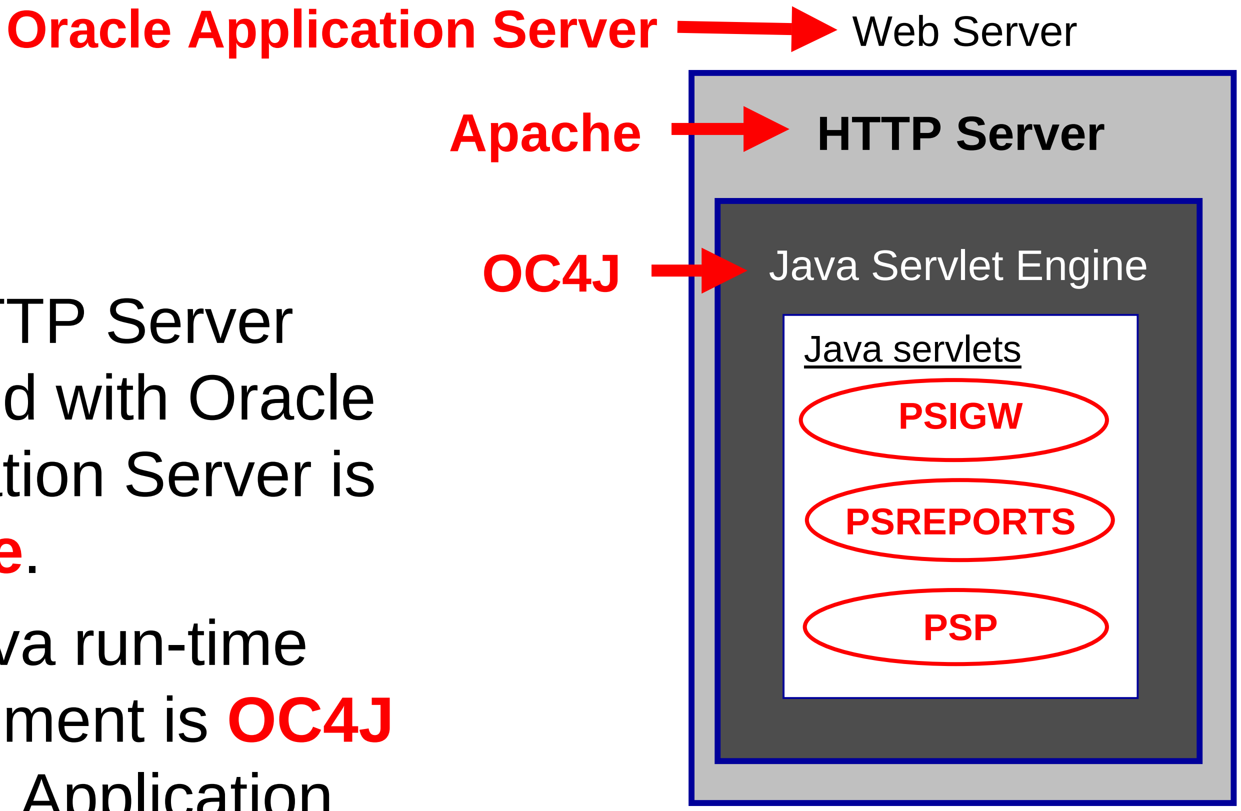
Where Does OAS Fit In?

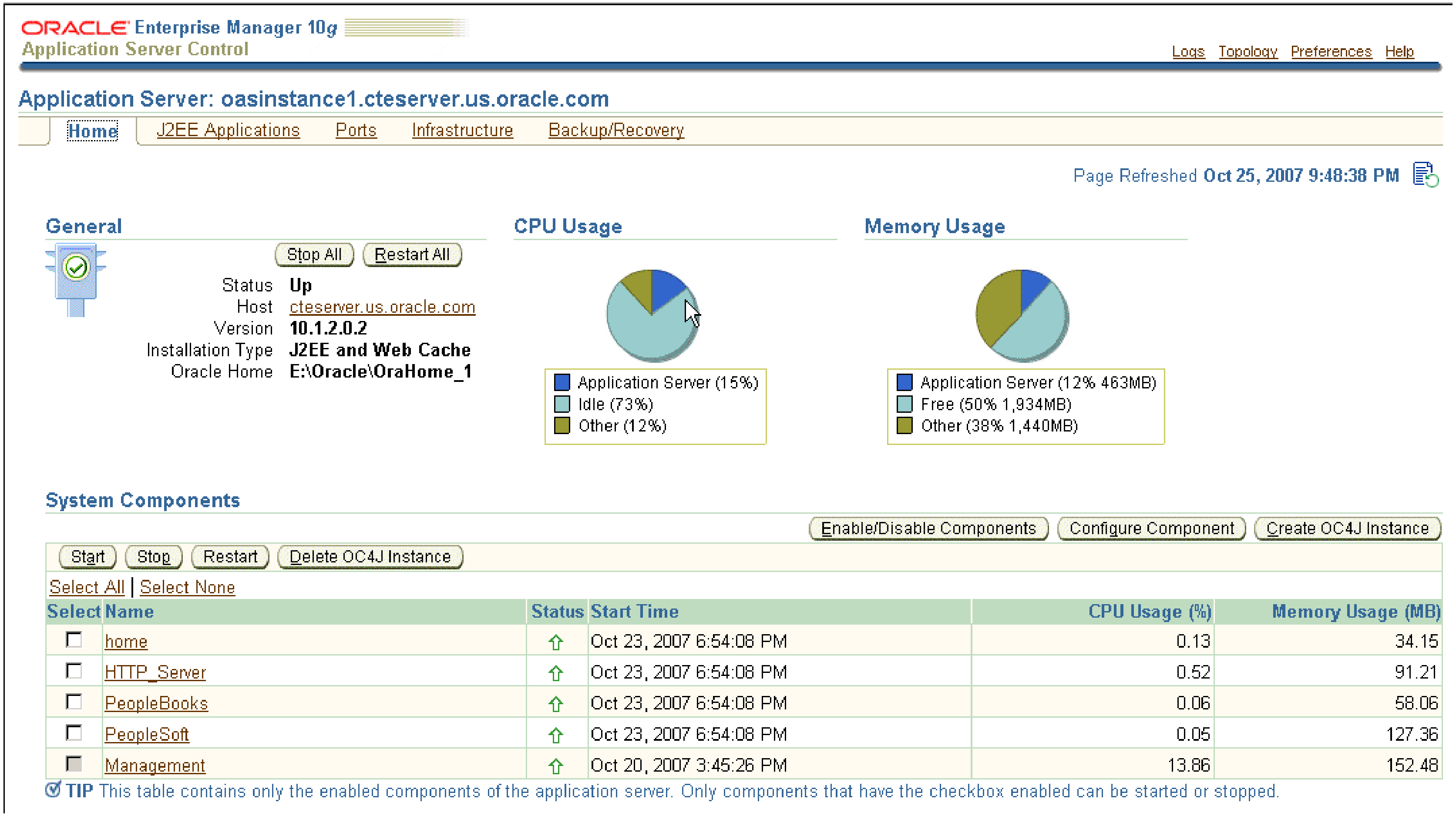


Oracle Application Server
Web Server
Apache
HTTP Server
OC4J
Java Servlet Engine
Java servlets
PSIGW
PSREPORTS
PSP

- The HTTP Server provided with Oracle Application Server is **Apache**.
- The Java run-time environment is **OC4J** (Oracle Application Server Containers for J2EE).

Oracle Application Server

Enterprise Manager


ORACLE Enterprise Manager 10g
Application Server Control
Logs Topology Preferences Help
Home
J2EE Applications
Ports
Infrastructure
Backup/Recovery
Stop All
Restart All
Enable/Disable Components
Configure Component
Create OC4J Instance
Start
Stop
Restart
Delete OC4J Instance
Select All | Select None

Application Server: oasinstance1.cteserver.us.oracle.com

Page Refreshed **Oct 25, 2007 9:48:38 PM**

General

Status **Up**
Host cteserver.us.oracle.com
Version **10.1.2.0.2**
Installation Type **J2EE and Web Cache**
Oracle Home **E:\Oracle\OraHome_1**

CPU Usage

- 🟦 Application Server (15%)
- ▨ Idle (73%)
- ▨ Other (12%)

Memory Usage

- 🟦 Application Server (12% 463MB)
- ▨ Free (50% 1,934MB)
- ▨ Other (38% 1,440MB)

System Components

Select	Name	Status	Start Time	CPU Usage (%)	Memory Usage (MB)
☐	home	⇧	Oct 23, 2007 6:54:08 PM	0.13	34.15
☐	HTTP_Server	⇧	Oct 23, 2007 6:54:08 PM	0.52	91.21
☐	PeopleBooks	⇧	Oct 23, 2007 6:54:08 PM	0.06	58.06
☐	PeopleSoft	⇧	Oct 23, 2007 6:54:08 PM	0.05	127.36
☐	Management	⇧	Oct 20, 2007 3:45:26 PM	13.86	152.48

✓ **TIP** This table contains only the enabled components of the application server. Only components that have the checkbox enabled can be started or stopped.

Q & A

For More Information

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