

# PeopleSoft Integration Technologies



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# PeopleSoft Integration Technologies

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## Agenda

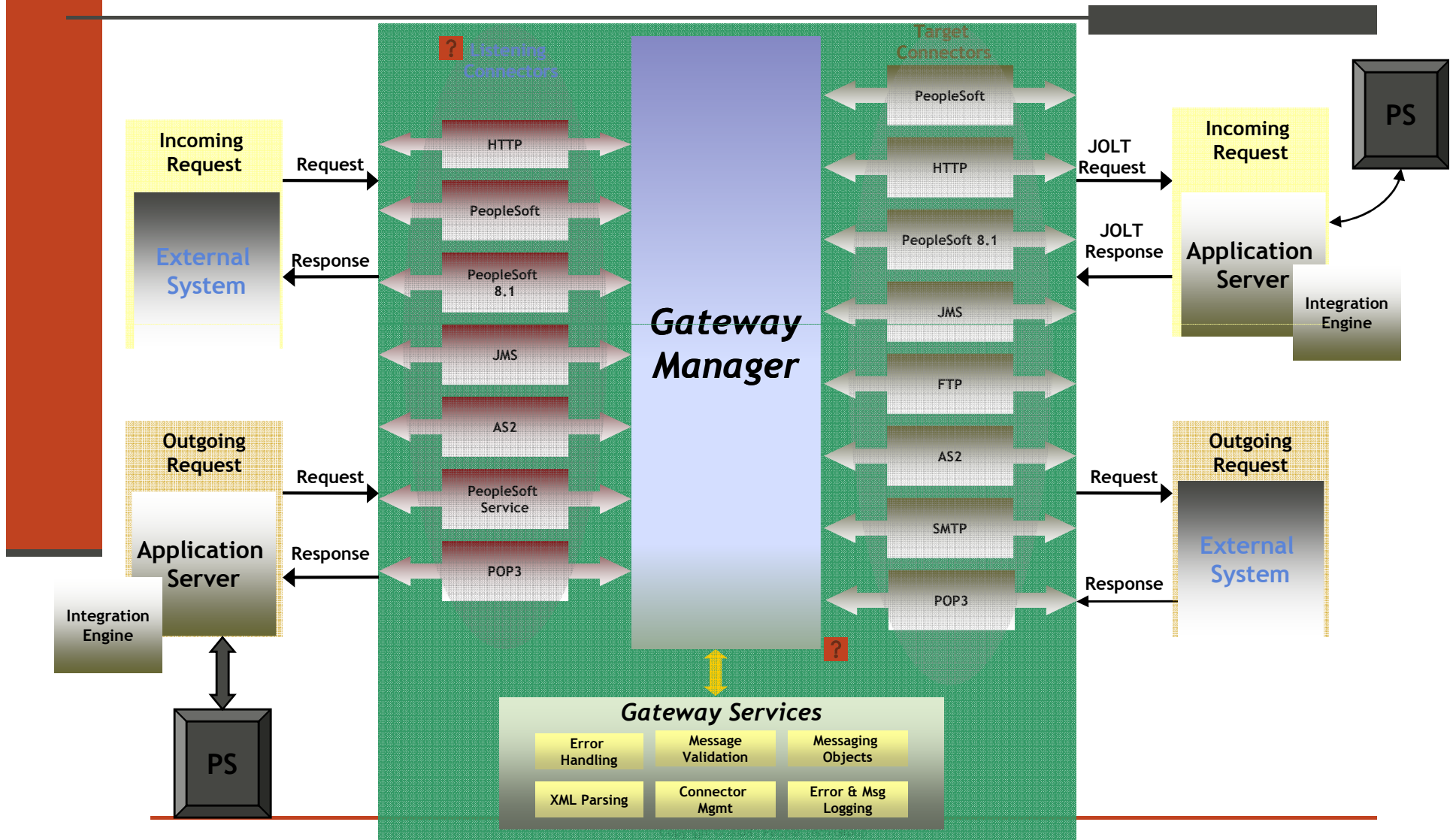
- Introduction
  - Integration Gateway
  - Integration Engine
- Messaging
- Setup
- EIP (Enterprise Integration Points)
  - Delivered EIPs
- WSDL (Web Services Description Language)
- Custom Interfaces
- Component Interfaces
- PeopleTools 8.46 Vs 8.48
- Case Studies
  - Payroll -> GL Integration using delivered EIP
  - T&L Integration using TCD EIP

# Introduction

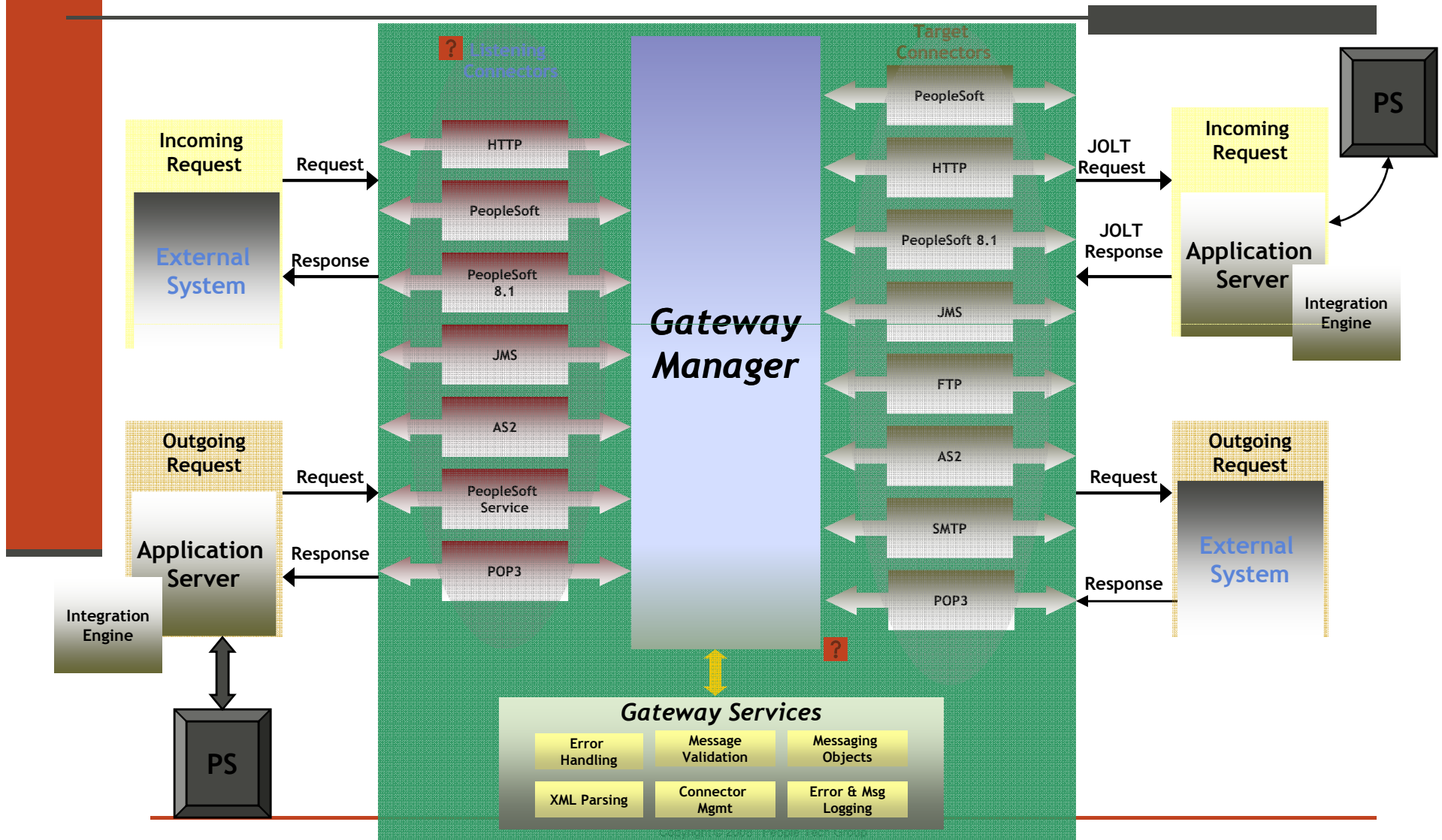
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- Middleware technology that facilitates synchronous and asynchronous messaging among internal systems and trading partners, while managing message structure, message format, and transport disparities.
- Elements developed (nodes, messages, message channels, transactions) can be re-used.
- The *integration gateway* (web server) is a platform that manages the receipt and delivery of messages passed among systems through PeopleSoft Integration Broker.
- The *integration engine* is an application server process that routes messages to and from PeopleSoft applications as well as transforms the structure of messages and translates data according to specifications that you define.

# Introduction - Architecture



# Introduction - Architecture



# Connectors

Listening connectors and target connectors transport messages between integration participants and the integration gateway. These connectors support asynchronous and synchronous message handling. Many connectors are configurable at the integration gateway and system levels.

## Listening connectors

- receive incoming data streams and perform services based on the content of the stream.
- invoked externally by other PeopleSoft systems and third-party systems.

## Target connectors

- initiate communication with other PeopleSoft systems or third-party systems.
- might not receive a response from the target system during each operation, but every transmission requires a low-level acknowledgment.

## Integration Broker software development kit (SDK)

- IG provides a fully extensible model for developing new connectors built to the interface specification of the PeopleSoft Integration Broker software development kit (SDK) by PeopleSoft customers, consultants, and application developers.
- PeopleSoft connectors
- HTTP connectors
- PeopleSoft 8.1 connectors
- Java Messaging Service (JMS) connectors
- Simple file target connector
- File Transfer Protocol (FTP) target connector
- Applicability Statement 2 (AS2) connectors
- Simple Mail Transfer Protocol (SMTP) target connector
- Post Office Protocol 3 (POP3) target connector

# Gateway Manager

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- Manages message flow
- Uses Gateway services to manage the message flow
  - Error Handling
    - Error Logging - Incoming and outgoing messages
  - Message Objects
    - IB Request, IB Response
  - XML Handling
    - parse and traverse the IB Request and IB Response which are in XML format
  - Message Validation
    - make sure all the message components are present
  - Connector Management
    - call the appropriate connector based on IB Request IBInfo
  - Error and Message Logging
    - API to log all the errors and message for IBRequest, IBResponse and IBInfo



# Messaging - Transmission Types

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## Outbound asynchronous

- The application generates and sends a request message.
- One or more target system receives and processes the request message.

## Outbound synchronous

- The application generates and sends a request message.
- The application suspends activity and waits for a response message.
- A single target system receives and processes the request message, then generates and sends a response message.
- The application resumes its activity and receives and processes the response message.

## Inbound asynchronous

- A source system generates and sends a request message.
- The application receives and processes the request message.

## Inbound synchronous

- A source system generates and sends a request message.
- The source system suspends activity and waits for a response message.
- The application receives and processes the request message, then generates and sends a response message.
- The source system resumes its activity and receives and processes the response message.

# Messaging - Components

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## Node

- Represents an organization, system or an application
- Defines a location to/from which the messages can be routed
- Integration Engine delivers a default LOCAL node.



## Message

- Holds the actual message data
- For synchronous, there should be a response message defined



## Message Channel

- logical groupings of messages
- Each message must belong to exactly one message channel



## Channel Partitioning

- Generally messages are processed in sequence
- Can partition message on some fields to process in parallel to increase throughput
- Create message sub channels at run time
- Applies only for asynchronous messages

# Messaging

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## Transaction

- Assembles the integration meta-data and data together to form an integration.
- Associated with a message, message type, version, direction (in/out)



# Messaging Servers

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- Used for asynchronous messaging
- default \_dflt: 6 dispatcher and handler
- **Servers**
  - Publication Broker
    - Acts as a mediator between the subscription contractor and publication contractor
  - Publication Contractor
    - Used to send message to the external system
  - Subscription Contractor
    - Used to receive messages from the external system
- **Dedicated Messaging Servers (psadmin)**
  - Add/Delete/Modify servers
  - Assign message channels with high volumes
  - Don't specify a given message channel for more than one messaging server of each type in the current domain.

# Messaging Server Admin

```
-----
PeopleSoft Domain Administration
-----
Domain Name: QEDMODW

1) Boot this domain
2) Domain shutdown menu
3) Domain status menu
4) Configure this domain
5) TUXEDO command line (tmadmin)
6) Edit configuration/log files menu
7) Messaging Server Administration menu
q) Quit

Command to execute <1-7, q> :
```

```
-----
Messaging Server Administration menu
-----
Domain Name : QEDMODW

In addition to the default messaging servers, the following
dedicated messaging servers are in the domain configuration:

    << No dedicated messaging servers are defined >>

Commands:
1) Create a new messaging server
2) Edit the channel list for a messaging server
3) Delete an existing messaging server
q) Quit

Command to execute <1-3, q> : 1
1) Publication broker
2) Publication contractor
3) Subscription contractor

Enter the number of the type you want to create ('q' to cancel):
```

```
Commands:
1) Create a new messaging server
2) Edit the channel list for a messaging server
3) Delete an existing messaging server
q) Quit

Command to execute <1-3, q> : 2

SERUER NAME      TYPE  CHANNELS
-----
1) PT8MSG        BRK   HRMS_01
2) PCNT01        PUB   HRMS_01
3) SCNT01        SUB   HRMS_01

Enter the number of the server to be edited: 2
Changing channel list for server 'PCNT01'...

FORMAT: Alphanumeric, max 30-char channel names separated by commas (no tabs or
spaces)
Current channels: [HRMS_01]
Enter new channels:HRMS_01,HRMS_02,HRMS_03
```

# Messaging

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## Sending and Receiving PeopleCode

- SyncRequest, SyncRequestXMLDoc - used for synchronous message sending
- Publish, PublishXMLDoc - used for asynchronous message sending
- GetMessage, GetMessageXMLDoc - used for receiving the message

## Routing events

- OnRouteSend
  - used for outbound synchronous and asynchronous messages to specify to what node PeopleSoft Integration Broker routes a message
  - Validate the target list of nodes
- OnRouteReceive
  - Used for inbound synchronous and asynchronous messages to apply PeopleCode that determines whether the default local node accepts the inbound message.
- ReturntoServer Function - used to validate and accept/reject the messages.

# Messaging

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## Messaging events

- OnRequest
  - Used on inbound synchronous messages when a response is required
- OnAckReceive
  - Used on inbound asynchronous messages to access the body of the message acknowledgement to check for SOAP faults.
- OnSend
  - Used on outbound sync and async messages to override connector properties before sending a message to the integration gateway.
- Subscription
  - Used on outbound asynchronous messages for subscription processing, message validation and loading message data.

## Messaging PeopleCode

- Message Class
- XMLDoc Class
- SOAPDoc Class

# Messaging Setup

- Setup BEA Jolt Connection Properties (to communicate with app.server) using the node configuration page. 
- All the properties are stored in integrationGateway.properties file
  - ig.version=version\_number
  - ig.installdir=directory\_path where directory\_path\*\* is the location of the gateway Java classes in the web server directory structure.
  - ig.connector.prefix, ig.connector.defaultremoteconnector, ig.connector.ibtargetconnector
  - Set Log properties ig.log.level, ig.log.backgroundimage
- This file can be accessed from Gateway setup properties link after entering the userid and password

\*\*This is typically <PS\_HOME>\webserv\<DOMAIN>\applications\peoplesoft\PSIGW\WEB-INF\classes.

# Messaging - Format

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- Format Type - MIME (Multipurpose Internet Mail Extension standard)
- Format - Header, IB(Request/Response)Info, Content
- All PeopleSoft Integration Broker errors use message set 158
- Rowset Based Format (PSCAMA) Peoplesoft Application messaging attribute
- XML Based format
- SOAPDoc Based format
- Non XML Files
  - `<data PsNonXml="Yes">` Need to include this in the xml header

# Messaging - Run time

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## ■ Override Target connectors at run time

- IInfo object - member of Message object
- ConnectorInfo object - member of IInfo Object (LoadConnectorPropFromNode, LoadConnectorProp, AddConnectorProperties )
- OnSend Event - enables you to write the override code

## ■ Validating Message Data

- XMLDoc - DTD ?
- SOAPDoc - ValidateSoapDoc
- Message Class - Execute Edits

## ■ Message Segments

- Can divide the rowset-based and nonrowset-based messages into multiple data containers, or segments, for sending.
- Process whole message or by a segment
- Increases the system efficiency by buffering.
- Add/delete/get functions available

# Setup

## Quick Configuration

### Integration Broker Quick Configuration

#### Local Gateway

The integration gateway manages message transport through several communication protocols.

**Gateway URL:**

[Ping Gateway](#)

[Advanced Gateway Setup](#)

Use to access additional integration gateway features.

#### Integration Broker Domains

To process asynchronous messages, one application server domain must be active. If inactive, use the Domain Status drop-down list to activate the appropriate domain.

##### Domains

[Customize](#) | [Find](#) | 

First  1 of 1  Last

Machine Name	Application Server Path	Domain Status
JHERNAND040703	C:\PT844\APPSERVQ8461101	Inactive 

[Message Monitor Domain Status](#)

Use to access additional domain features.

#### Other Quick Links

[Integration Point Viewer](#)

Use to view and troubleshoot integrations.

[Channel Security](#)

Use to ensure qualified users can view integrations in the IB monitor.

[ERP Connectors Admin](#)

Use to configure iWay SOAPswitch, if installed.

# Setup

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## *machinename:port*

- the machine name and port, host name, or IP address of the web server hosting the gateway

## *Ping Gateway*

- test the status. Opens a new window with tools version and status

## *Advanced Gateway Setup*

- Gateway properties file and connectors definition

## *IB Domain status*

- atleast one app server domain status shoule be active.

## *Message Monitor Domain Status*

- transfers to the Domain status tab of the Message monitor page.

## *Integration Point Viewer*

- View all the integration components (sender, receiver nodes, message, version) at a single place for debugging purposes.

## *Channel Security*

- Transfers to the permission list page to setup Message channel security. Only authorized users can monitor/view the message status.

## *ERP Connectors Admin*

- Transfers to the page to setup authentication (URL, userid, password) for connectors setup

# Setup

## Gateway Advanced Setup Properties

### Gateways

Gateway ID: LOCAL

Local Gateway  Load Balancer

URL:

[Gateway Setup Properties](#)

Connectors			
*Connector ID	Description	*Connector Class Name	
1	SMTPTARGET	SMTPTargetConnector	<a href="#">Properties</a> + -
2	FILEOUTPUT	SimpleFileTargetConnector	<a href="#">Properties</a> + -
3	POP3TARGET	POP3TargetConnector	<a href="#">Properties</a> + -
4	PSFTTARGET	PeopleSoftTargetConnector	<a href="#">Properties</a> + -
5	LDAPTARGET	LDAPTargetConnector	<a href="#">Properties</a> + -
6	JMSTARGET	JMSTargetConnector	<a href="#">Properties</a> + -
7	HTTPTARGET	HttpTargetConnector	<a href="#">Properties</a> + -
8	GETMAILTARGET	GetMailTargetConnector	<a href="#">Properties</a> + -
9	FTPTARGET	FTPTargetConnector	<a href="#">Properties</a> + -
10	AS2TARGET	AS2TargetConnector	<a href="#">Properties</a> + -
11	PSFT81TARGET	ApplicationMess agingTargetConnector	<a href="#">Properties</a> + -

Load Gateway Connectors will load the peoplesoft delivered connectors.  
Click on Properties to set/edit/delete the connector properties.

# Setup

## Gateways

### Connector Properties

Gateway ID LOCAL

Connector SMTPTARGET

Property ID	Property Name	Required	Value	Default
1   HEADER	Content-Type	<input type="checkbox"/>	text/plain	<input type="checkbox"/>
2   HEADER	Content-Type	<input type="checkbox"/>	text/html	<input type="checkbox"/>
3   HEADER	sendUncompressed	<input checked="" type="checkbox"/>	Y	<input checked="" type="checkbox"/>
4   HEADER	sendUncompressed	<input checked="" type="checkbox"/>	N	<input type="checkbox"/>

## Gateway Setup Properties

### Gateways

#### Gateway Properties

Sign on to access integrationGateway.properties file.

The default user ID is 'administrator' and the default password is 'password'.

User ID	<input type="text"/>
Password	<input type="text"/>
<input type="checkbox"/>	Change Password

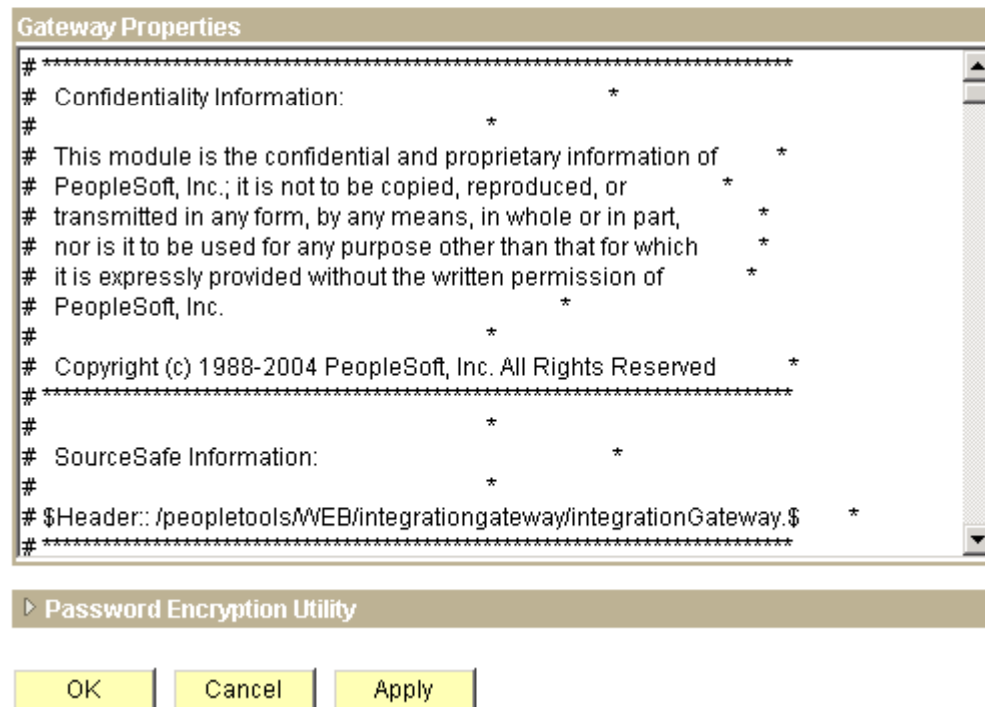
# Setup

## Gateway Properties File

### Gateways

### Gateway Properties

URL http://localhost/PSIGW/PeopleSoftListeningConnector



The screenshot shows a dialog box titled "Gateway Properties". It contains a text area with the following content:

```
# *****
# Confidentiality Information: *
#
# This module is the confidential and proprietary information of *
# PeopleSoft, Inc.; it is not to be copied, reproduced, or *
# transmitted in any form, by any means, in whole or in part, *
# nor is it to be used for any purpose other than that for which *
# it is expressly provided without the written permission of *
# PeopleSoft, Inc. *
#
# Copyright (c) 1988-2004 PeopleSoft, Inc. All Rights Reserved *
# *****
#
# SourceSafe Information: *
#
# $Header: /peopletools/WEB/integrationgateway/integrationGateway.$ *
# *****
```

Below the text area is a section titled "Password Encryption Utility". At the bottom of the dialog are three buttons: "OK", "Cancel", and "Apply".

# Setup

## Node Configuration

### PeopleSoft Node Configuration

URL: <http://localhost/PSIGW/PeopleSoftListeningConnector>

#### Gateway Default App. Server

Web Server URL	User ID	Password	Tools Release
//<machine name>:<jolt port>	<database user>		<peopletools r

#### PeopleSoft Nodes

[Customize](#) | [Find](#) | [View All](#) | [First](#) 1 of 1 [Last](#)

Message Node Name	Web Server URL	User ID	Password	Tools Release	
\$NODENAME	//<machine name>:<jolt port>	<database user>		<peopletools r	Ping Node <a href="#">+</a> <a href="#">-</a>

[Advanced Properties Page](#)

# Node - Dev Components

Node Definitions | **Contacts** | Properties | Connectors | Transactions | ▶

Node Name PSFT\_HR

**Details**

\*Description PS HRMS - Local Node

Default Local Node Yes

Local Node Yes

Active Node Yes

Non-Repudiation

Segment Aware

Node Type PIA

\*Routing Type Implicit

\*Authentication Option Password

Password .....

Hub Node

Master Node

Company ID

Image Name

Code Set Group Name

Copy Node | Rename Node

Save | Return to Search

Node Definitions | **Contacts** | Properties | Connectors | Transactions | ▶

Node Name PSFT\_HR

**Details**

Contact Manager

Contact Email

Contact Phone Number

Contact URL

Description

Save | Return to Search

[Node Definitions](#) | [Contacts](#) | [Properties](#) | [Connectors](#) | [Transactions](#) | [Portal](#) | [WS Security](#)

Node Definitions | **Contacts** | **Properties** | Connectors | Transactions | ▶

Node Name PSFT\_HR

**Properties** Customize | Find | First 1 of 1 Last

*Name	Type	*Property Name	Value	Comment
1	Category	<input type="text"/>	<input type="text"/>	<input type="text"/>

Save | Return to Search

[Node Definitions](#) | [Contacts](#) | [Properties](#) | [Connectors](#) | [Transactions](#) | [Portal](#) | [WS Security](#)

# Node - Dev Components

Node Name PSFT\_HR

Transaction Type	Request Message	Request Message Version	Effective Date	Status
1 <a href="#">Edit</a>	OutAsync	VERSION_1	09/29/2005	Active
2 <a href="#">Edit</a>	OutAsync	COUNTRY_FULLSYNC	09/30/2002	Inactive
3 <a href="#">Edit</a>	InAsync	PSRF_FOLDER_CREATE	01/01/1901	Active
4 <a href="#">Edit</a>	InAsync	PSRF_REPORT_CREATE	01/01/1901	Active
5 <a href="#">Edit</a>	InAsync	PSRF_REPORT_DATE_CHANGE	01/01/1901	Active
6 <a href="#">Edit</a>	InAsync	PSRF_REPORT_DELETE	01/01/1901	Active
138 <a href="#">Edit</a>	OutAsync	VAR_COMP_PAYMENT_ACKNOWLEDGE	01/01/1900	Inactive
139 <a href="#">Edit</a>	OutAsync	VAR_COMP_PAYMENT_REQUEST	01/01/1900	Inactive
140 <a href="#">Edit</a>	OutAsync	VAR_COMP_PAYMENT_REQUEST_GP	01/01/1900	Inactive
141 <a href="#">Edit</a>	OutAsync	WORKFORCE_FULLSYNC	01/01/1900	Inactive
142 <a href="#">Edit</a>	OutAsync	WORKFORCE_SYNC	01/01/1900	Active

[Add Transaction](#) [Copy All Transactions](#)

Transactions | **Messages**

Node Name PSFT\_HR

**Transaction Detail**

Effective Date 09/30/2002  
 Transaction Type OutAsync  
 Request Message COUNTRY\_FULLSYNC  
 Request Message Version VERSION\_2  
 \*Status   
 Routing Type   
 Override Connector

Comment

[Return to Transaction List](#)

[Save](#)

[Transactions | Messages](#)

Transactions | **Messages**

Node Name PSFT\_HR

**Transaction Messages** Find | View All First 1 of 1 Last

Effective Date 09/30/2002  
 Status Inactive  
 Transaction Type OutAsync

**Request Message**

Message Name COUNTRY\_FULLSYNC  
 Message Version VERSION\_2  
 External Name

[Return to Transaction List](#)

[Save](#)

[Transactions | Messages](#)

# Node - Dev Components

Contacts Properties Connectors Transactions Portal **WS Security**

Node Name PSFT\_HR

**Details**

Description PS HRMS - Local Node Local Node Yes

Default Portal EMPLOYEE

Tools Release 8.45

Application Release HRMS 8.8

Content URI Text  
Example: http://someserver/pscp/home/

Portal URI Text  
Example: http://someserver/pspp/home/

Save Return to Search

[Node Definitions](#) | [Contacts](#) | [Properties](#) | [Connectors](#) | [Transactions](#) | [Portal](#) | [WS Security](#)

Contacts Properties Connectors Transactions Portal **WS Security**

Node Name PSFT\_HR

**Authentication Token**

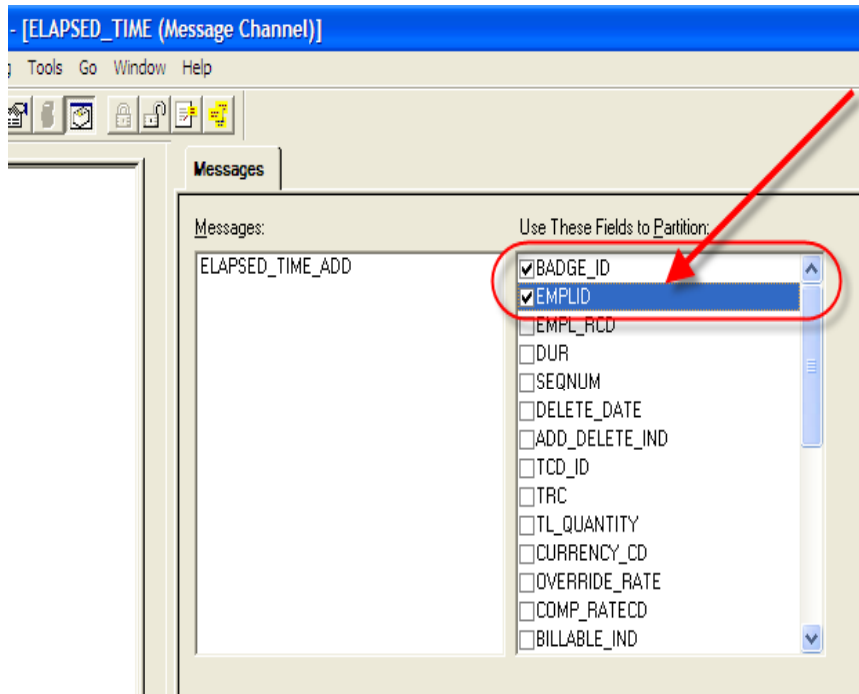
\*Authentication Token Type None

Encrypted

Digitally Signed



# Message Channel - Dev Components



# Message - Dev Components

The screenshot shows the [ELAPSED\_TIME\_ADD (Message)] application window. On the left, a tree view displays the message structure: VERSION\_1, TL\_ELP\_INTFC, TL\_ELPTSK\_INTFC, Message Subscriptions, and ElapsedTimeAdd. The main area contains a table with the following columns: Field Name, Alias, and Include. The table lists 25 fields, all of which have the 'Include' checkbox checked.

	Field Name	Alias	Include
1	BADGE_ID		<input checked="" type="checkbox"/>
2	EMPLID		<input checked="" type="checkbox"/>
3	EMPL_RCD		<input checked="" type="checkbox"/>
4	DUR		<input checked="" type="checkbox"/>
5	SEQNUM		<input checked="" type="checkbox"/>
6	DELETE_DATE		<input checked="" type="checkbox"/>
7	ADD_DELETE_IND		<input checked="" type="checkbox"/>
8	TCD_ID		<input checked="" type="checkbox"/>
9	TRC		<input checked="" type="checkbox"/>
10	TL_QUANTITY		<input checked="" type="checkbox"/>
11	CURRENCY_CD		<input checked="" type="checkbox"/>
12	OVERRIDE_RATE		<input checked="" type="checkbox"/>
13	COMP_RATECD		<input checked="" type="checkbox"/>
14	BILLABLE_IND		<input checked="" type="checkbox"/>
15	TCD_SUPERVISR_		<input checked="" type="checkbox"/>
16	OPRID		<input checked="" type="checkbox"/>
17	OVERRIDE_RSN_		<input checked="" type="checkbox"/>
18	ACTION_DTTM		<input checked="" type="checkbox"/>
19	TASK_PROFILE_ID		<input checked="" type="checkbox"/>
20	TASK_PRFL_TMPL		<input checked="" type="checkbox"/>
21	COUNTRY		<input checked="" type="checkbox"/>
22	STATE		<input checked="" type="checkbox"/>
23	LOCALITY		<input checked="" type="checkbox"/>
24	TL_COMMENTS		<input checked="" type="checkbox"/>
25	AUDIT_ACTN		<input checked="" type="checkbox"/>

The Message Properties dialog box is shown with the 'General' tab selected. It contains the following settings:

- Status:  Active
- Non-Repudiation:  NR
- Validate Structure:  PeopleCode,  Schema
- Message Channel: ELAPSED\_TIME
- Default Version: VERSION\_1
- Message Viewing / Correction:  Use Message Monitor Dialog,  Use Page
- Page settings: Menu Name, Bar Name, Item Name, Page Name, and Action (set to %Add).

Specify Alias if the XML tag is different from the field name.  
Check the include to include the field in generating XML

# Message Schema Builder

PeopleTools > Integration Broker > Integration Setup > Message Schema Builder.

## Schema Builder

### Message Criteria

Message Name:

Owner ID:

Schema	Structure	Validation
<input type="radio"/> Schema Exists	<input type="radio"/> Structured	<input type="radio"/> Enabled
<input type="radio"/> No Schema	<input type="radio"/> Unstructured	<input type="radio"/> Disabled
<input checked="" type="radio"/> Both	<input checked="" type="radio"/> Both	<input checked="" type="radio"/> Both

Message	Version	Structured	Exists	Updated on	Build Results	Validate
<input type="checkbox"/> <a href="#">ASYNC_MDN_RESPONSE</a>	VERSION_1	No	No		Unstructured Message. Not built.	No <input type="button" value="Enable Validation"/>
<input type="checkbox"/> <a href="#">DELETE_ROLE</a>	VERSION_1	Yes	No			No <input type="button" value="Enable Validation"/>
<input type="checkbox"/> <a href="#">DELETE_USER_PROFILE</a>	VERSION_1	Yes	Yes	01/13/2005 7:38:35PM	Successful schema insert	Yes <input type="button" value="Disable Validation"/>
<input type="checkbox"/> <a href="#">DIRGROUPS</a>	VERSION_1	Yes	No			No <input type="button" value="Enable Validation"/>
<input type="checkbox"/> <a href="#">EMAIL_MSG</a>	VERSION_1	Yes	Yes	01/13/2005 7:38:36PM	Successful schema insert	No <input type="button" value="Enable Validation"/>
<input type="checkbox"/> <a href="#">EMAIL_REQ_DELMSG</a>	VERSION_1	Yes	No			No <input type="button" value="Enable Validation"/>
<input type="checkbox"/> <a href="#">EMAIL_REQ_MSGCOUNT</a>	VERSION_1	Yes	No			No <input type="button" value="Enable Validation"/>

Can only create schema for rowset based/structured messages.  
Click on Enable/Disable validation to validate messages.

# Integration Point Wizard

- Provides step-by-step (5 step) guide to define an integration.
- Specify nodes and transaction types.
- Specify sender message information.
- Specify transformation information. (if any translation is required)
- Specify receiver message information.
- Specify asynchronous reply message and transformation information.
- View and save integration points.

## Integration Point Wizard



< Previous Next > Finish Cancel

### Specify Nodes and Transaction Type

\*Sender Node:

\*Receiver Node:

#### Transaction Type

- Asynchronous  
 Synchronous  
 Async To Sync

< Previous Next > Finish Cancel

## Integration Point Wizard



< Previous Next > Finish Cancel

### Specify Sender Message Information

Sender Node	
Request Message	
*Name:	<input type="text"/>
*Version:	<input type="text"/>
External Name:	<input type="text"/>

< Previous Next > Finish Cancel

# Integration Point Wizard

## Integration Point Wizard



< Previous   Next >   Finish   Cancel

### Specify Transformation Information

Request Transformation

Name:

< Previous   Next >   Finish   Cancel

### Optional Information

## Integration Point Wizard



< Previous   Next >   Finish   Cancel

### Specify Receiver Message Information

Receiver Node

Request Message

\*Name:

\*Version:

External Name:

< Previous   Next >   Finish   Cancel

## Integration Point Wizard



< Previous   Next >   Finish   Cancel

### Summary

Transaction Type: Asynchronous

#### Sender Node

Name: PSFT\_HR

#### Receiver Node

Name: PSFT\_HR

#### 1. Request Message

Name: ELAPSED\_TIME\_ADD

Version: VERSION\_1

External Name: Test

< Previous   Next   Finish   Cancel

# WSDL

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- A WSDL document is an XML file that contains information about the interface, semantics and other details of a call to a web service.
- Create a WSDL file for a component Interface or a Message
- Can be used by any of the third party systems as a service
- SOAPtoCI transaction should be added to the node used for generating WSDL
- Funclib should be added to the permission list of the user creating WSDL
- Contains Get, Set, Create functions similar to Component Interface but in a more generic (service) format
- Can also import a WSDL into PeopleSoft which creates the appropriate message using iWaySOAPswitch

# WSDL - Dev Components

## Published EIPs

### Component Interface

Component Interface

Web Service:

Node Name:

Description:

### Message

Message

Node Name:

Message Name:

## Import WSDL

WSDL Name:

Load WSDL from

URL

File

WSDL Content:

```
<?xml version="1.0" ?>
- <wsdl:definitions name="CI_JOB_DATA" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/"
  targetNamespace="http://peoplesoft.com/CI_JOB_DATA" xmlns:psftHeader="http://schemas.xmlsoap.org/ws/2002/xx/secext"
  xmlns:wSDL_target="http://peoplesoft.com/CI_JOB_DATA">
  <wsdl:documentation>Component Interface used for loading data into the JOB_DATA component. This CI will use the EMPLMT_SRCH_ALL view which will not enforce
  Dept Security. The calling process is assumed to have handled the proper security access since not all processes that will call this CI will be using Department
  Security.</wsdl:documentation>
- <wsdl:types>
- <xsd:schema xmlns="http://schemas.xmlsoap.org/ws/2002/xx/secext" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://schemas.xmlsoap.org/ws/2002/xx/secext" elementFormDefault="qualified">
  <xsd:element name="Security" type="SecurityTypeShape" />
- <xsd:complexType name="SecurityTypeShape">
- <xsd:sequence>
  <xsd:element name="UsernameToken" type="UsernameTokenTypeShape" />
  </xsd:sequence>
  </xsd:complexType>
- <xsd:complexType name="UsernameTokenTypeShape">
- <xsd:sequence>
  <xsd:element name="Username" type="UsernameTypeShape" />
  <xsd:element name="Password" type="PasswordTypeShape" />
  </xsd:sequence>
  </xsd:complexType>
- <xsd:complexType name="UsernameTypeShape">
- <xsd:simpleContent>
  <xsd:extension base="UsernameTypeDef" />
  </xsd:simpleContent>
```

# iWay SOAP Switch

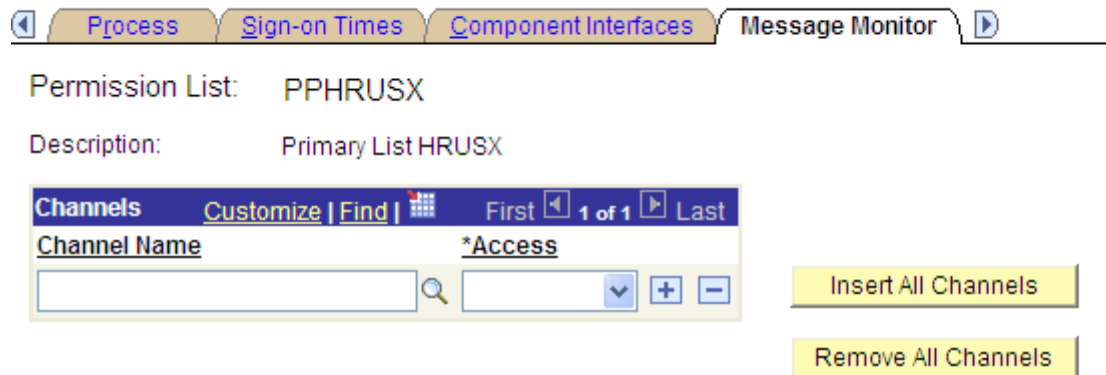
---

- iWay SOAPswitch is a wizard-driven product that enables you to expose software functionality via web services, enabling you to make web services available to major development environments, such as SAP, Oracle and Siebel.
- Need to install along with PeopleTools
- SOAPswitch generates WSDL for web services, allowing for simplified client development. SOAPswitch accepts SOAP requests for web services, translates them into calls to the back-end system, and formulates SOAP replies based on back-end system responses.

# Tips

Access should be given to message channel to view and access in the Message monitor

Root > PeopleTools > Security > Permission & Roles > Permission List



The screenshot displays the Message Monitor interface in PeopleTools. At the top, there are navigation tabs: Process, Sign-on Times, Component Interfaces, and Message Monitor. Below the tabs, the Permission List is shown for PPHRUSX, with a description of Primary List HRUSX. A table titled 'Channels' is visible, with columns for Channel Name and \*Access. The table currently shows one entry with an empty Channel Name field and a dropdown menu for \*Access. To the right of the table are two buttons: 'Insert All Channels' and 'Remove All Channels'.

# Tips

Domain Status should be active

## Integration Broker Quick Configuration

### Local Gateway

The integration gateway manages message transport through several communication protocols.

Gateway URL:

[Ping Gateway](#)

[Advanced Gateway Setup](#)

Use to access additional integration gateway features.

### Integration Broker Domains

To process asynchronous messages, one application server domain must be active. If inactive, use the Domain Status drop-down list to activate the appropriate domain.

#### Domains

[Customize](#) | [Find](#) | [First](#) | 1 of 1 | [Last](#)

Machine Name	Application Server Path	Domain Status
JHERNAND040703	C:\PT844\APPSERVQ8461101	Inactive

[Message Monitor Domain Status](#)

Use to access additional domain features.

### Other Quick Links

[Integration Point Viewer](#)

Use to view and troubleshoot integrations.

[Channel Security](#)

Use to ensure qualified users can view integrations in the IB monitor.

[ERP Connectors Admin](#)

Use to configure iWay SOAPswitch, if installed.

# Difference between Tools version 8.48 and above (vs.) below 8.48

- Unlike prior People Tools releases, messages do not contain any processing logic. All processing logic is defined in service operations, using service operation handlers.
- Here some of the major difference between the old versions and 8.48 version

Above 8.48	Below 8.48
Message	Message
Queue	Message Channel
Service/Service Operation	Not Available
Routing	Transaction
Service operation Security	Not Available
All processing logic is defined in service operations, using service operation handlers	Messages contain processing logic.
Service operation Handlers - Subscription People code in Application Package specified in handlers	Subscription People code in Message definition
Three types of Messages <ul style="list-style-type: none"> <li>• RowSet based</li> <li>• Non RowSet based</li> <li>• Container</li> </ul>	Three types of Messages (PeopleSoft Documentation has not available) <ul style="list-style-type: none"> <li>• RowSet based</li> <li>• Non RowSet based</li> </ul>
Part Message	Not Available

# References

---

- Enterprise PeopleTools 8.46 PeopleBook: Integration Broker
- Oracle Customer Connection



# Case Studies

# Case Studies: Integration Technologies

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- Case Study 1 : PeopleSoft Payroll to Financials Integration
- Case Study 2 : SAP and PS T&L Integration.
- Case Study 3 : PeopleSoft HCM -> CRM Integration.
- Q&A

# Case Study 1 : PeopleSoft Payroll to Financials Integration

---

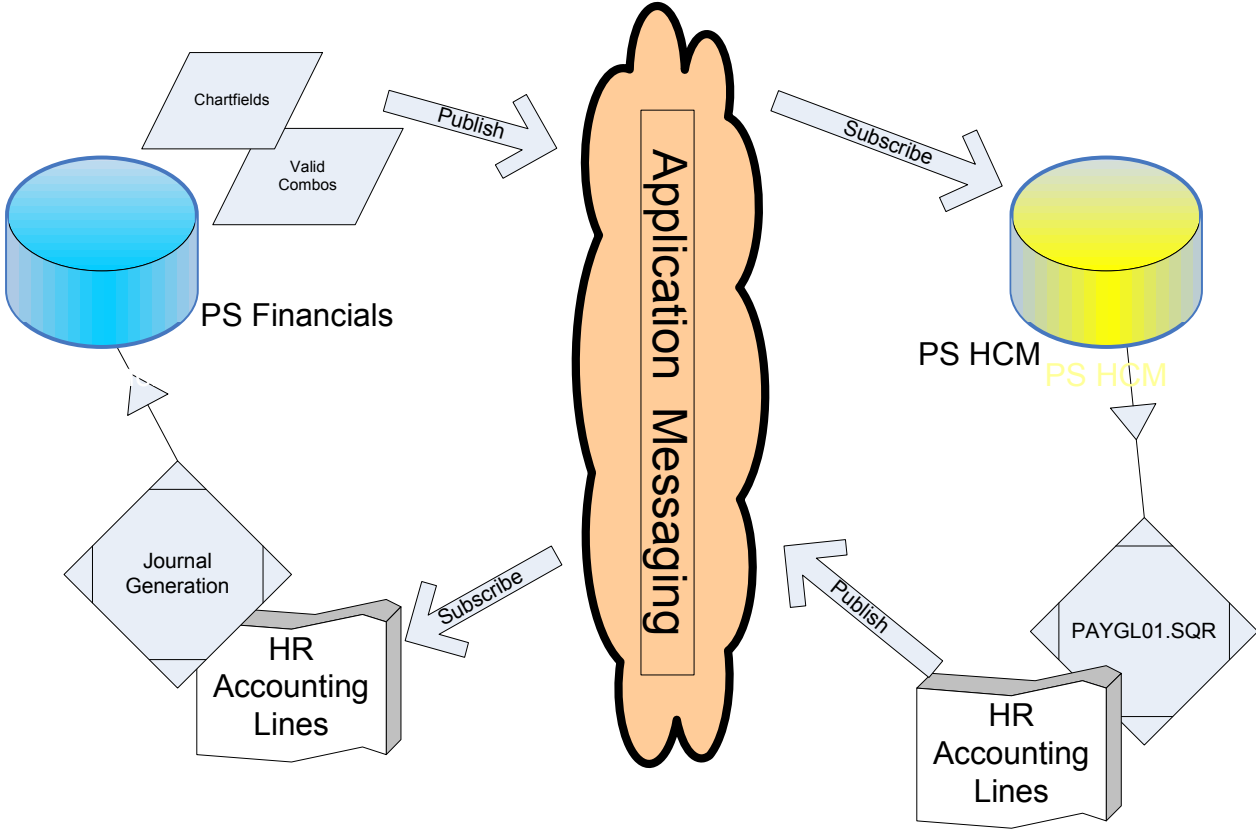
## Background:

A leading travel booking site has implemented both PeopleSoft Financials and HCM. Considering the benefits they have decided to integrate both the modules

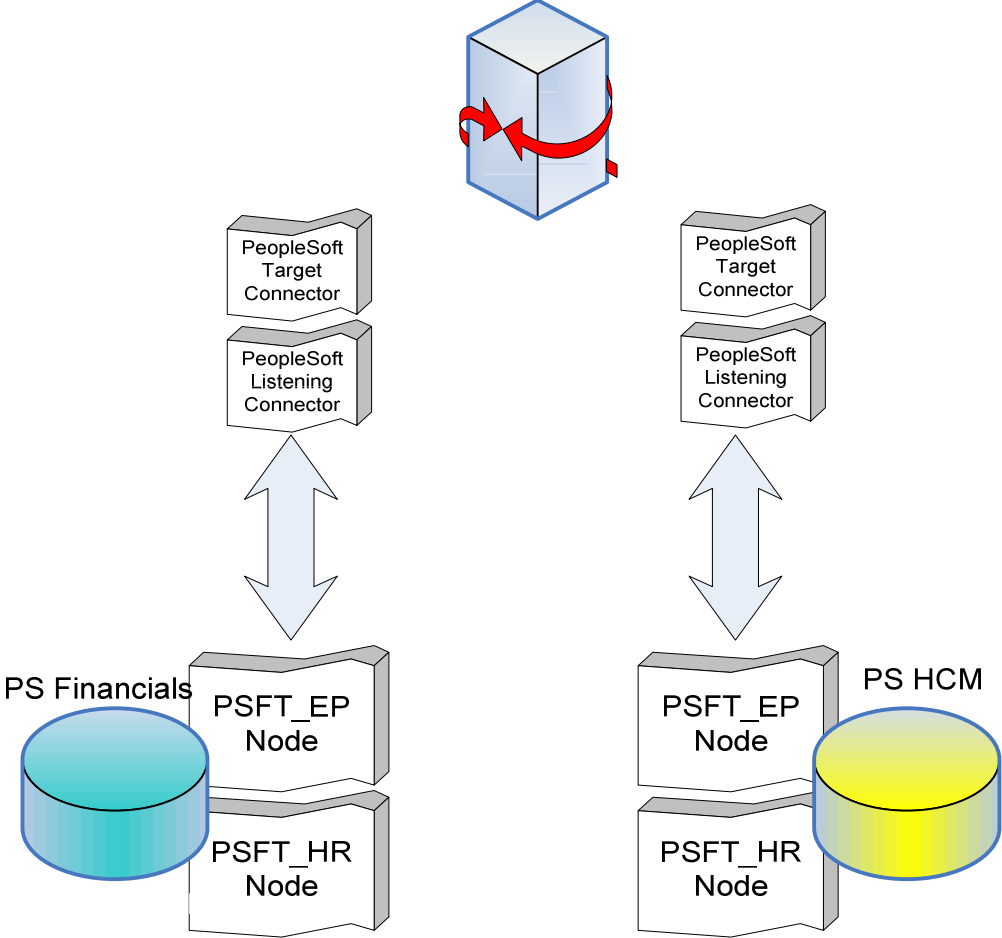
## Requirements:

- Integrate PS Payroll with PS Financials (GL)
- Leverage vanilla functionality where possible
- Identify and customize gaps from vanilla to meet business requirements

# Solution Architecture



# PeopleSoft-to-PeopleSoft Integration Broker Architecture



# Integration Broker Setup

---

## Finance Gateway

- PeopleTools, Integration Broker, Configuration, Gateways
  - Configure the Local Gateway
  - Configuration is done in the environment with the highest PeopleTools version
- PeopleTools, Integration Broker, Integration Setup, Nodes
  - Setup both Local (PSFT\_EP) and Remote (PSFT\_HR) nodes

## HR Gateway

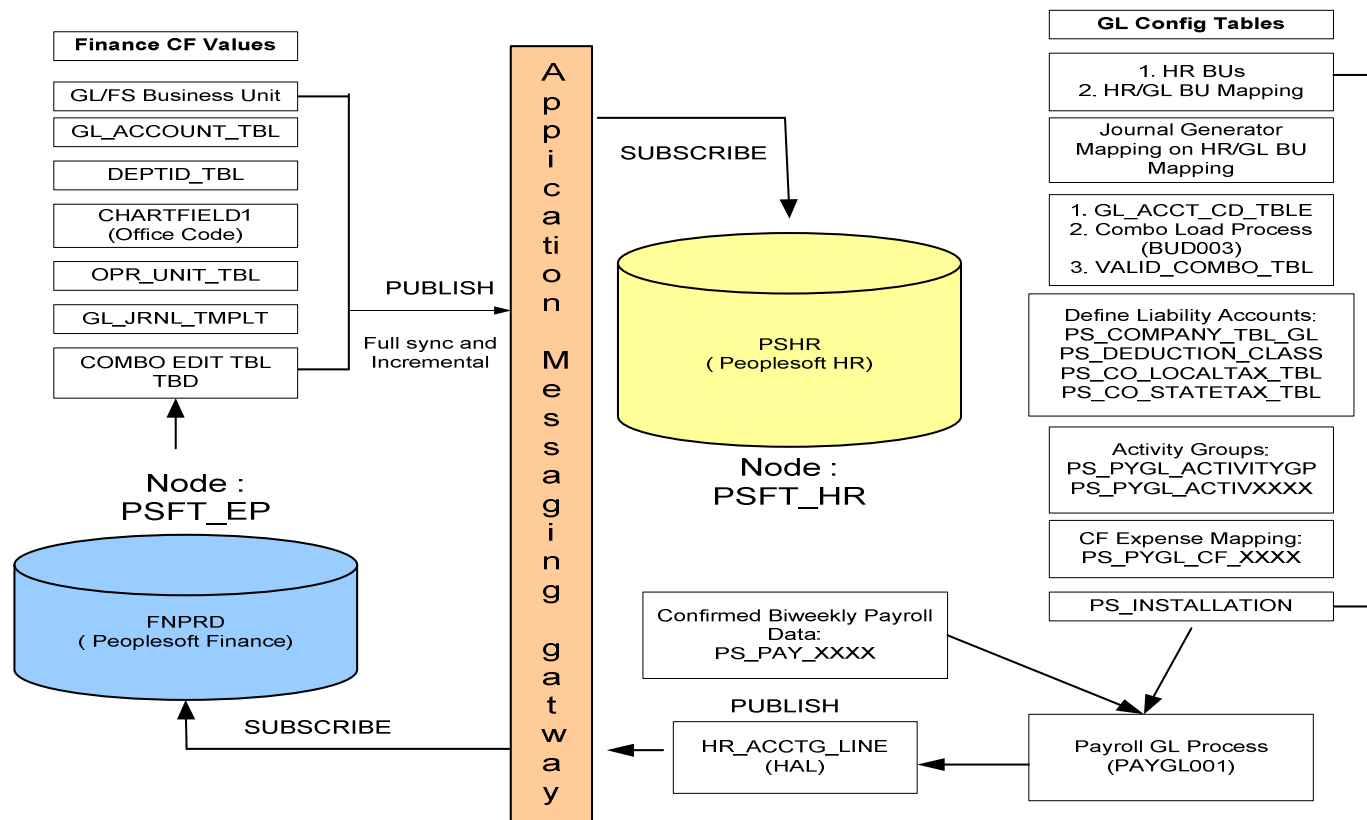
- PeopleTools, Integration Broker, Configuration, Gateways
  - Disable the delivered LOCAL Gateway
  - Create a new Gateway pointing to the other environment's web server
- PeopleTools, Integration Broker, Integration Setup, Nodes
  - Setup both Local (PSFT\_HR) and Remote (PSFT\_EP) nodes
  - Point both nodes to use the new Gateway

# Implementation Details

---

- PeopleTools, Integration Broker, Integration Setup, Service Operations
  - In both databases
  - Activate
  - Assign Security
  - Activate Handler (in receiving database)
  - Create (or activate existing) Routing
  - Identify the Queue associated with your Service Operation
- PeopleTools, Integration Broker, Integration Setup, Queues
  - Set the Queue Status to Run

# Peoplesoft Finance and HR table Sync & Payroll GL Process Flow



# Delivered Messages between FIN and HCM

Incremental Sync	Full Sync	Updates Table
ACCOUNT_CHARTFIELD_SYNC	ACCOUNT_CHARTFIELD_FULLSYNC	GL_ACCOUNT_TBL
BUS_UNIT_FS_SYNC	BUS_UNIT_FS_FULLSYNC	BUS_UNIT_TBL_FS
BUS_UNIT_GL_SYNC	BUS_UNIT_GL_FULLSYNC	BUS_UNIT_TBL_GL
CHARTFIELD1_SYNC	CHARTFIELD1_FULLSYNC	CHARTFIELD1_TBL
DEPT_SYNC	DEPT_FULLSYNC	DEPT_TBL
JOURNAL_GENERATOR_APPL_ID_SYNC	JOURNAL_GEN_APPL_ID_FULLSYNC	JRNLGEN_APPL_ID
OPER_UNIT_CF_SYNC	OPER_UNIT_CF_FULLSYNC	OPER_UNIT_TBL

# Interesting Customizations - Email Notifications

---

- Business Requirements
  1. A full sync happens, we need to know!
  2. A new value comes over in an incremental sync, we may need to know!
  3. When we publish our Payroll data, how do we know that Financials received it all?

# Full Sync Email Notification

- Full Sync Messages send Header, Body, then Trailer

```
Evaluate &RS(1).PSCAMA.MSG_SEQ_FLG.Value
When "H"
Delete_Existing_Data(&MSG);
Break;
When "T"
Break;
When-Other
If &MSG.IsActive Then
    &MSG.ExecuteEdits(%Edit_Required);
    If &MSG.IsEditError Then
        Exit (1);
    Else
        Subscribe_FullReplication(&MSG);
    End-If;
End-If;
Break;
End-Evaluate;
```

# Full Sync Email Notification

- Leverage the “Trailer” code to send an email

## When "T"

```
GetEmailParameters("OPER_UNIT_CF_FULLSYNC", &EmailFrom, &EmailTo,  
                  &EmailCC, &EmailBCC, &EmailSubject, &EmailBody);  
  
If &EmailTo <> "" Then  
    &ret = SendMail(0, &EmailTo, &EmailCC, &EmailBCC, &EmailSubject,  
                  &EmailBody, "", "", &EmailFrom);  
  
End-If;  
  
Break;
```

# Incremental Sync Email Notification

- Incremental Sync similar, but passes in values to the email. Email template is table-driven.

From: Workflow  
To: Expedia HR PeopleSoft  
Cc:  
Subject: TABLE SYNC MESSAGE: New Department Created - Deptid: 73508

Sent: Fri 5/2/2008 3:41 PM

A department has been corrected in HR.

Please update the Dept Table as appropriate

Setid: SHARE  
Deptid: 73508  
Effdt: 1900-01-01  
Desc: TripAdvisor - Japan - G&A

# Manual Publishing to Financials

---

1. Run PAYGL01.SQR to create HR Accounting Lines in HCM.
2. Then run the “Batch Publish” to publish the data to Finance.
3. Then Payroll calls Finance to let them know they sent the data.
4. Payroll user emails Finance user with the totals to expect.
5. Then Finance user waits some unspecified amount of time for the data to transfer.
6. When it’s done, Finance user can journal generate.
7. Then Finance user runs queries to check totals, compares with what Payroll should have sent.

# Auto-Publishing to Financials

1. Create App Engine wrapper that schedules PAYGL01.SQR and then publishes the data.

```
&rqst = CreateProcessRequest();
&rqst.ProcessType = "SQR Report";
&rqst.ProcessName = "PAYGL01";
&rqst.RunLocation = "PSNT";
&rqst.OutDestFormat = "PDF";
&rqst.OutDestType = "Web";

&rqst.RunControlID = &run_cntl_id;
&rqst.Schedule();
&prcs_instance = &rqst.ProcessInstance;

/* Wait 30 seconds before checking status, it will take at least this long to run */
GetJavaClass("java.lang.Thread").sleep(30000);

/* Get the run status - the object property wouldn't work for some reason so getting it off the table */
SQLExec("SELECT RUNSTATUS FROM PSPRCRQST WHERE PRCSINSTANCE = :1", &prcs_instance,
&run_status);
```

# Auto-Publishing to Financials

## 2. Monitor the status, waiting until completion.

```
/* Sleep until this process is finished */
While &run_status = "1" Or /* Cancel (goes to Cancelled when actually done) */
    &run_status = "5" Or /* Queued */
    &run_status = "6" Or /* Initiated */
    &run_status = "7"; /* Processing */

/* Sleep for 5 seconds - using a java function as built-in PeopleCode would only do a busy wait */
&Logfile.WriteLine("Current process instance " | &rqst.ProcessInstance | " and current status = " |
&run_status);
GetJavaClass("java.lang.Thread").sleep(5000);
/* Get the updated run status */
SQLExec("SELECT RUNSTATUS FROM PSPRCRQST WHERE PRCSINSTANCE = :1", &prcs_instance,
&run_status);

End-While;
```

# Auto-Publishing to Financials

3. Publish the data by kicking off that batch process the same way.

```
&rqst2 = CreateProcessRequest();  
&rqst2.ProcessType = "Application Engine";  
&rqst2.ProcessName = "EOP_PUBLISHM";  
&rqst2.RunLocation = "PSNT";  
&rqst2.OutDestFormat = "WEB";  
&rqst2.OutDestType = "Web";
```

```
&rqst2.RunControlID = &RunControlID;  
&rqst2.Schedule();  
&prcs_instance = &rqst2.ProcessInstance;
```

< same sleep logic to wait for completion >

# Auto-Publishing to Financials

## 4. Email totals

```
/* Get Total Debits */
SQLExec("SELECT SUM(MONETARY_AMOUNT) FROM PS_HR_ACCTG_LINE WHERE PROCESS_INSTANCE = :1 ....

/* Create an HTML table of all of the information about this run */
&Table = &Table | "<TR> <TD>" | &CallInfo | "</TD> <TD>" | &prcs_instance | "</TD> <TD>" | &co | "</TD>
<TD>" | &pay_end_dt_display | "</TD> ...

&Table = "<TABLE BORDER=1>" | &Table | "</TABLE>";

< Collect any other information they want to see >

&RET_CODE = SendMail(&MAIL_FLAGS, &MAIL_TO, &MAIL_CC, &MAIL_BCC, &MAIL_SUBJECT,
```

# Auto-Publishing to Financials

## 4. Email totals

All PAYGL01 processes have completed. The following data was inserted and should go to Finance.

Run ID's Processed: 7

- 7 processes ended in SUCCESS Status

Pay Run ID	Process Instance	Company	Pay End Date	Num Acctg Lines	Total Debits	Total Credits
K08001	263836	001	05/18/08	29543		
K08003	263837	003	05/18/08	7405		
K08005	263838	005	05/18/08	6818		
K08007	263839	007	05/18/08	16903		
K08008	263840	008	05/18/08	11245		
K08009	263842	009	05/18/08	5670		
K08014	263843	014	05/18/08	6184		

Total accounting lines inserted (all Run ID's): 83768

# Case Study 2 : External ERP and PS T&L Integration

---

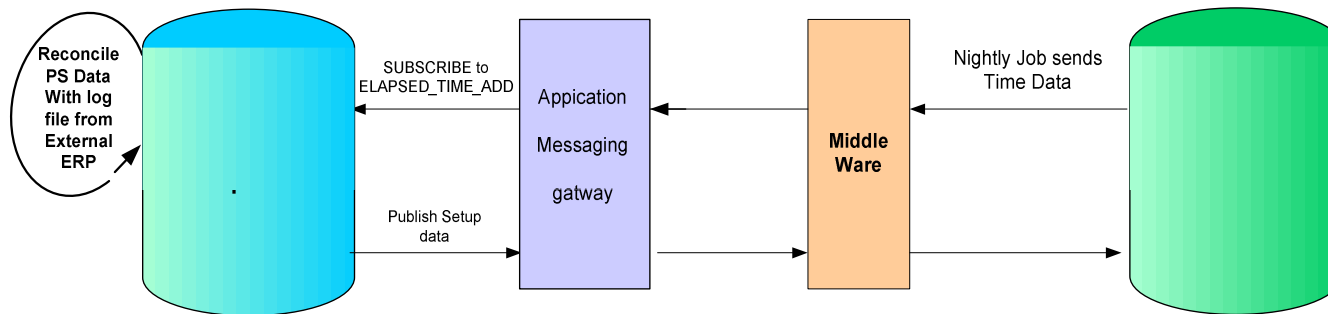
## Background:

External ERP system is used as the time entry application for employees who report time against work orders. This time is needed by PeopleSoft Time and Labor in order to calculate pay data. Without an interface, maintenance employees will need to enter time in two systems – External ERP for time against work orders and internal orders, and PS T&L for time to be paid.

## Requirements:

External ERP and PS T&L need to be integrated for transmitting reported time data. This will eliminate any dual entry by the employees.

# External ERP and PS T&L Integration



# Node Definition Setup (Outbound)

Note the SAP node is in active status and the of type External

**Node Definitions** [Contacts](#) [Properties](#) [Connectors](#) [Transactions](#) [Portal](#)

**Node Name** SAP

**Details**

**Description** SAP External Node

**Default Local Node** No

**Local Node**

**Active Node**

**Non-Repudiation**

**Segment Aware**

**Node Type** External

**Routing Type** Implicit

**Authentication Option** None

**Hub Node**

**Master Node**

**Company ID**

**Image Name**

**Code Set Group Name**

# Node Connectors Setup (Outbound)

The FTP target connector enables the gateway to use FTP to send messages to and receive messages from FTP servers. It uses the PUT command to place messages or files from the integration gateway onto remote FTP servers.

For the FTP target connector to function properly the FTPProtocol.jar JAR files from IBM must reside in the CLASSPATH of the web server running the integration gateway:

The screenshot displays the SAP NetWeaver Connector Administration console. The 'Connectors' tab is selected, showing the configuration for the 'FTPTARGET' connector. The 'Node Name' is 'SAP' and the 'Gateway ID' is 'LOCAL'. The 'Connector ID' is 'FTPTARGET'. Below this, a table lists the properties for the connector.

Property ID	Property Name	Required	Value
1 FTPTARGET	DIRECTORY	<input type="checkbox"/>	/opt/psoft/hpssp/data/wia/wia_out/
2 FTPTARGET	FILENAME	<input type="checkbox"/>	HR.weytlsap04.CMIM200
3 FTPTARGET	FTPS	<input type="checkbox"/>	N
4 FTPTARGET	HOSTNAME	<input type="checkbox"/>	hrprd1.weyer.com
5 FTPTARGET	METHOD	<input type="checkbox"/>	PUT
6 FTPTARGET	PASSWORD	<input type="checkbox"/>	r7+scoCLIUKqHeC0rDRzcg==
7 FTPTARGET	TIMEOUT	<input type="checkbox"/>	50000
8 FTPTARGET	TYPE	<input type="checkbox"/>	ASCII
9 FTPTARGET	USERNAME	<input type="checkbox"/>	psigw
10 HEADER	sendUncompressed	<input type="checkbox"/>	Y

Below the table, there is a link for 'Password Encryption Utility'.

# Node Transactions Setup

The Outbound Asynchronous Message needs to be in active status.

The screenshot displays the SAP Node Transactions Setup interface. At the top, there are navigation tabs: Node Definitions, Contacts, Properties, Connectors, Transactions, and Portal. The 'Transactions' tab is selected, and the 'Node Name' is set to 'SAP'. Below this, a table lists the transactions:

Transaction Type	Request Message	Request Message Version	Effective Date	Status
1 <a href="#">Edit</a> OutAsync	TL_SAP04	VERSION_1	06/20/2005	Active


Below the table are two buttons: 'Add Transaction' and 'Copy All Transactions'. Below the buttons are two tabs: 'Transactions' and 'Messages'. The 'Messages' tab is selected, and the 'Node Name' is set to 'SAP'. Below this, a 'Transaction Detail' form is shown with the following fields:

- Effective Date: 06/20/2005
- Transaction Type: OutAsync
- Request Message: TL\_SAP04
- Request Message Version: VERSION\_1
- \*Status: Active (dropdown menu)
- Routing Type: Implicit (dropdown menu)
- Override Connector
- Comment: (text area)

At the bottom right of the form, there is a link: [Return to Transaction List](#).

# Node Definition Setup (Inbound)

The TCD\_INBOUND node is in active status and the of type External

**Node Definitions** | [Contacts](#) | [Properties](#) | [Connectors](#) | [Transactions](#) | 

**Node Name** TCD\_INBOUND

**Details**

**\*Description**


**Default Local Node** No


Local Node


Active Node


Non-Repudiation


Segment Aware

**\*Node Type** External 


**\*Routing Type** Explicit 


**\*Authentication Option** None 

**Hub Node**  


**Master Node**  

**Company ID**

**Image Name**  

**Code Set Group Name**  

# Node Connectors Setup (Inbound)




[Node Definitions](#) [Contacts](#) [Properties](#) **Connectors** [Transactions](#) [Portal](#) 










**Node Name** TCD\_INBOUND [Ping Node](#)

**Details**

**Gateway ID** LOCAL

**Connector ID** HTTPTARGET

**Properties** [Customize](#) | [Find](#) |  First  1-3 of 3  Last

*Property ID		*Property Name		Required	Value		
1	HEADER	sendUncompressed	<input type="checkbox"/>	N			
2	HTTPPROPERTY	Method	<input type="checkbox"/>	POST			
3	PRIMARYURL	URL	<input type="checkbox"/>	http://psmessaging. [REDACTED] .com/PSIC			

[Password Encryption Utility](#)

# Node Transactions Setup

The Inbound Asynchronous Message needs to be in active status.

Node Definitions | Contacts | Properties | Connectors | **Transactions**

Node Name TCD\_INBOUND

Transaction Type	Request Message	Request Message Version	Effective Date	Status
1 <a href="#">Edit</a> InAsync	ELAPSED_TIME_ADD	VERSION_1	01/01/1901	Active
2 <a href="#">Edit</a> OutAsync	ELAPSED_TIME_ADD	VERSION_1	01/01/1901	Active

[Add Transaction](#) [Copy All Transactions](#)

Transactions | **Messages**

Node Name TCD\_INBOUND

**Transaction Detail**

Effective Date 01/01/1901

Transaction Type InAsync

Request Message ELAPSED\_TIME\_ADD

Request Message Version VERSION\_1

\*Status

**Override Connector**

Comment



[Return to Transaction List](#)


# Review the Processed TCD Message Summary




This page shows all the summary of the messages that were processed through ELAPSED\_TIME\_ADD

## View Processed TCD Messages Summary Data in PS

**Search Criteria**

Date From:   Date-To:  

Source System    "All Blanks" Search criteria will fetch all the data

PeopleSoft Data							Customize   Find   View All   	First 	1-4 of 4 	Last
Publication Id	Source System	Message Number	Total Quantity	Date/Time Stamp	Message Status					
1 66774	SAP	0000000039900498	602.300000	06/21/2007 9:52:44AM	Success					
2 66773	SAP	0000000039900499	1,238.250000	06/19/2007 10:01:31PM	Success					
3 66772	SAP	0000000039900499	1,238.250000	06/19/2007 5:17:45PM	Processing					
4 66771	SAP	0000000039900494	356.500000	06/19/2007 5:17:02PM	Processing					

# Reconcile PS with External ERP Data

On this page the file from External ERP is uploaded and compared with PeopleSoft Data.

## Reconciliation Process

Parameters

Source System:

File Name: CATS\_log\_in\_SAP\_1.csv [Reconcile](#) Click this button to upload Reconciliation file and Validate data in PeopleSoft

[File Format - CSV](#)

[File Fields - Client, Timestamp, Msg Num, PA, UM, Quantity](#)

Reconciliation Header Information

Reconciliation ID: 0000000051      User ID: gandhas

Date/Time Stamp: 06/21/2007 3:34:18PM

Reconciliation Status								Customize   Find	First	1-5 of 5	Last
Client Number	Message Number	SAP Datetime	SAP Quantity	Reconciliation Status	PS Date Time	PS Quantity	Message Status (PS)				
1 100	0000000017478214	12/21/05 5:00:00.000000PM	1,993.350000	Not Found in PeopleSoft							
2 100	0000000017478215	12/21/05 5:00:00.000000PM	331.300000	Not Found in PeopleSoft							
3 100	0000000017478217	12/21/05 5:00:00.000000PM	582.750000	Not Found in PeopleSoft							
4 100	0000000039900498	12/21/06 5:00:00.000000PM	602.750000	Not equal to PS	06/21/07 9:52:44.000000AM	602.300000	Success				
5 100	0000000039900499	12/21/05 5:00:00.000000PM	1,238.250000	Match Found & Equal in PS	06/19/07 5:17:45.000000PM	1,238.250000	Processing				

# Review TCD Errors

The TCD error details page allows the user to view and correct any data errors in the message. If the “Resubmit to Reported Time” box is checked, the message will be reprocessed.

Since time coming in from External ERP is pre-approved, approval is not needed in PeopleSoft. As such, all individuals entering time into External ERP will be enrolled into a special workgroup in Time and Labor. In addition to having the required rule and TRC programs, the workgroup will be set to not need approval.

TCD Elapsed Time Errors **Elapsed Time Attributes**

Subscription Date Time: 07/13/2000 2:11PM  Resubmit to Reported Time

**Elapsed Transaction** Find | View All First 1 of 3 Last

\*EmplID:  \*Add/Del Ind.: A  + -  
Empl Rcd Nbr: 0  Delete Date:    
Badge ID:  Sequence number: 0   
Date Under Report: 02/07/2000  TRC: REG   
Quantity: 8.000000

**Transaction Errors** First 1 of 1 Last

Field Name: EMPLID  
Message Text: Field is required. (15,8)

**Transaction Task Elements** First 1 of 1 Last

\*Task Element Code:  + -  
Task Element Value:

OK Cancel Apply



# Case Study 3 : PeopleSoft HCM -> CRM Integration

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Q & A