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# Using Integration Network to Build, Test and Debug Your Integrations

Dan Cenido  
Integration Broker Developer

Hardware and Software  
Engineered to Work Together

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# Program Agenda

- Integration Broker Overview
- Integration Broker Architecture
- The Integration Network
- Other Resources

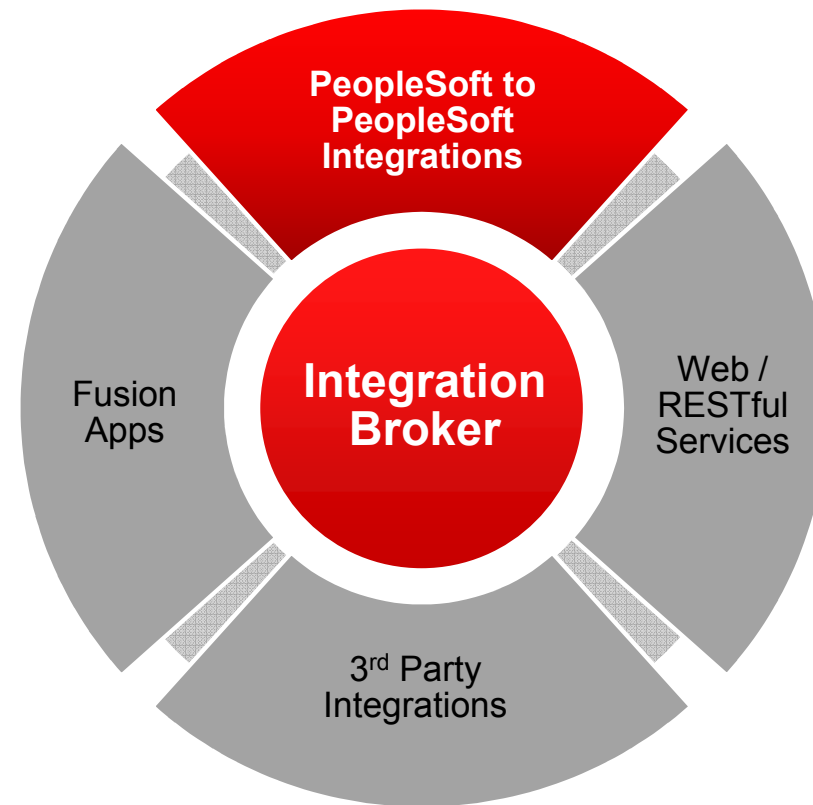
# Integration Broker Overview



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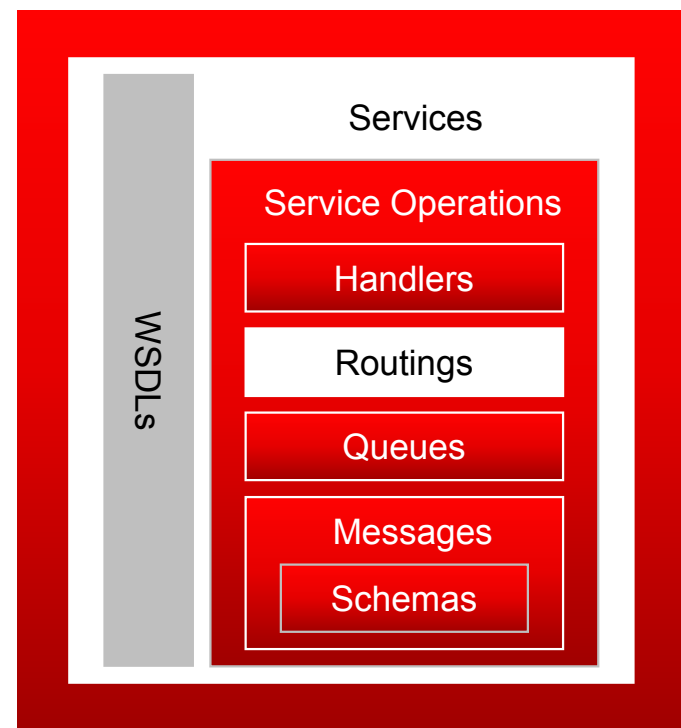
# Integration Broker Overview

- Integration Broker is the framework used to:
    - Define
    - Deploy
    - Test
    - Monitor
- Integrations



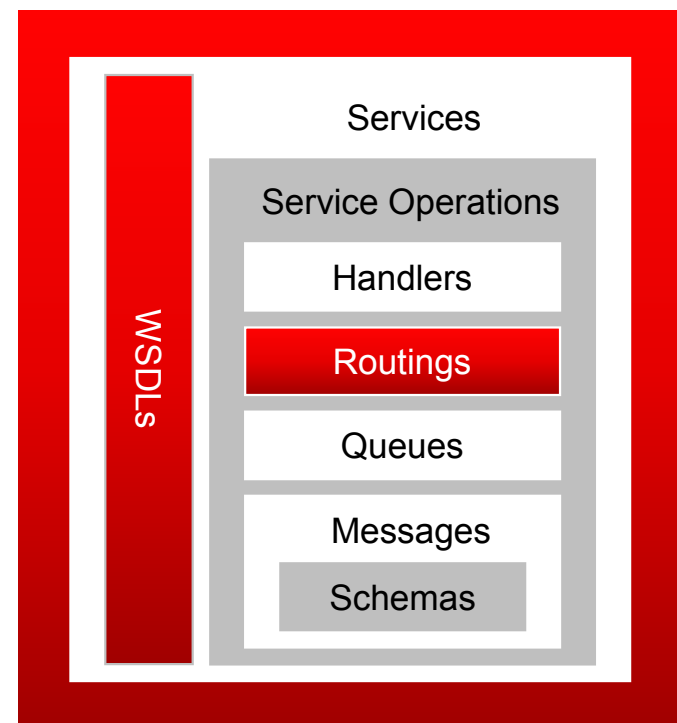
# Integration Broker Overview

- Define
  - Build Service Operations
  - Setup Service Operation Handlers
  - Input and Output Message definitions



# Integration Broker Overview

- Deploy
  - Create Routings
  - Build WSDLs/WADLs
  - Activate the components





# Integration Broker Overview

- Test
  - Schema Tester
  - Handler Tester
  - Service Operation Tester
- Monitor
  - Asynchronous Monitor
  - Synchronous Monitor

The screenshot displays two overlapping Oracle Integration Broker web interfaces. The background window is the 'Service Operation Tester' for 'COMPANY\_SYNC', showing details like 'Operation Type: Asynchronous - One Way' and 'Message Version: VERSION\_1'. The foreground window is the 'Service Operations Monitor' for 'Asynchronous Services', featuring a 'Monitor Overview' tab and a data table. The table shows the status of three service operations: 'PTSF\_SFS\_SCHEDULED\_FEED', 'ROLE\_MAINT', and 'TREE\_CHANGE'. The 'PTSF\_SFS\_SCHEDULED\_FEED' operation has 20 'Done' entries, while 'TREE\_CHANGE' has 1 'Done' entry. The 'Error' and 'New' columns are all zero for all operations.

Service Operation	Error	New	Started	Working	Done	Retry	Timeout	Edited	Cancelled	Hold	Submit	Done/Work
PTSF_SFS_SCHEDULED_FEED	0	0	0	0	20	0	0	0	0	0	0	0
ROLE_MAINT	0	0	0	0	1	0	0	0	0	0	0	0
TREE_CHANGE	0	0	0	0	1	0	0	0	0	0	0	0

# Integration Broker Architecture



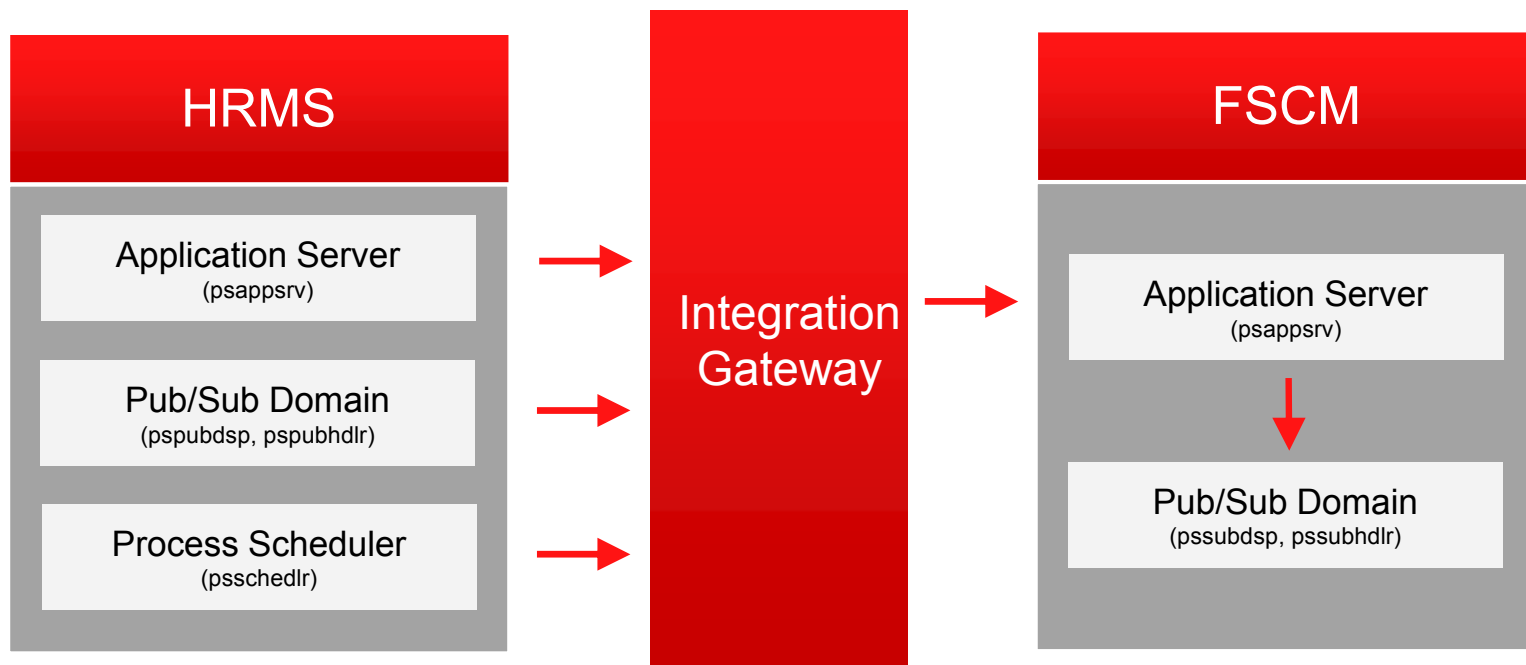
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# Integration Broker Architecture

- Integration Broker is a message bus that facilitates integration between two PeopleSoft pillars
- Multiple pillars PeopleTools release levels point to the same Integration Gateway
- Pillars do not have to be at a common PeopleTools release level – Integration gateway must be from the most current PT release
- Unlike a standard commercial message bus, service definitions (appmessages) are defined at endpoints

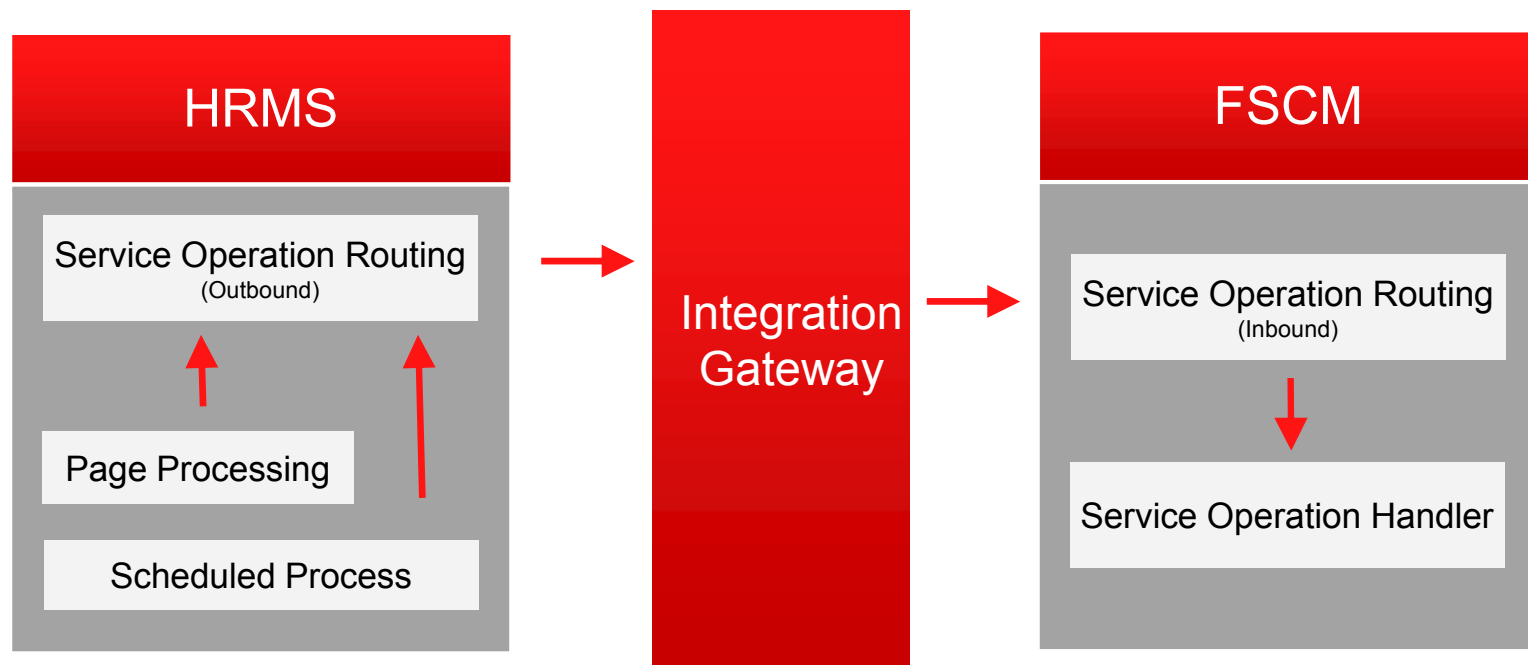
# Integration Broker Architecture

## Request Flow Between PeopleTools Processes



# Integration Broker Architecture

## Request Flow Between IB Components



# The Integration Network



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# The Integration Network

- Problem
  - Setting up Integration Broker can be difficult
  - There are a lot of administration difficulties with Integration Broker
    - Bringing a new environment online
    - Applying a patch in one system may impact another system
  - Monitoring and debugging messages requires a lot of bouncing back and forth between systems

# The Integration Network

- Solution
  - The Integration Network

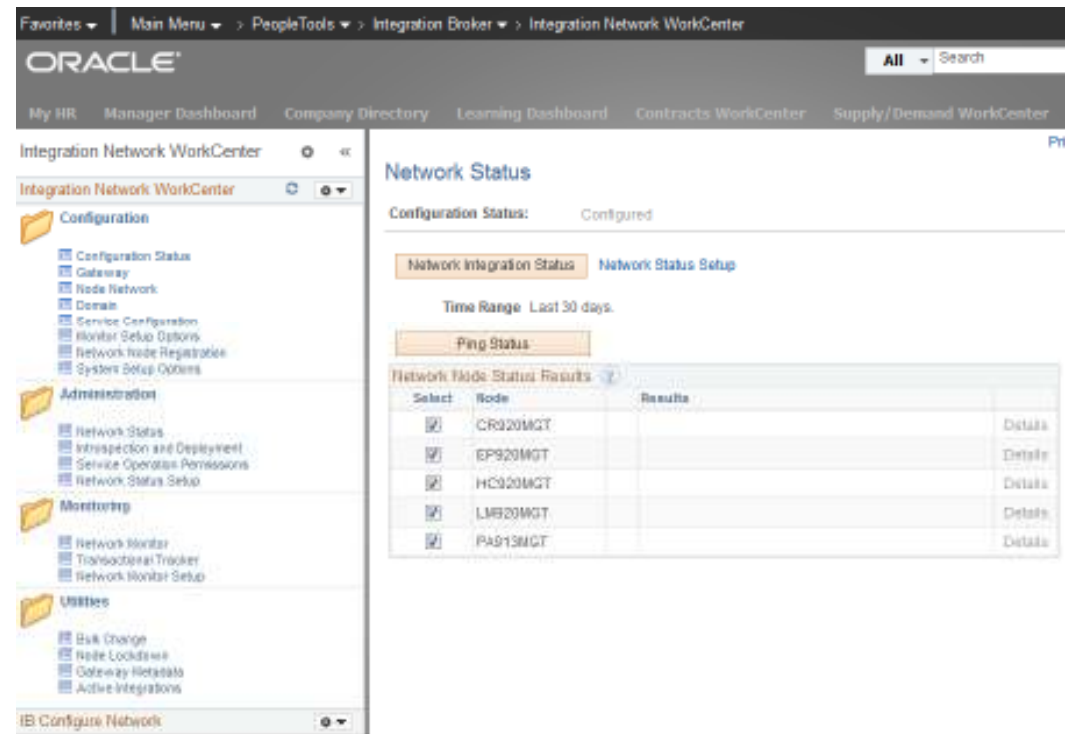
The screenshot displays the Oracle Integration Network WorkCenter interface. The breadcrumb navigation at the top reads: Favorites > Main Menu > PeopleTools > Integration Broker > Integration Network WorkCenter > Configuration Status. The page title is "ORACLE" and "Integration Network WorkCenter". The left sidebar contains a tree view with categories: Configuration (including Configuration Status, Gateway, Node Network, Domain, Service Configuration, Monitor Setup Options, Network Node Registration, and System Setup Options), Administration (including Network Status, Inspection and Deployment, Service Operation Permissions, and Network Status Setup), Monitoring (including Network Monitor, Transactional Tracker, and Network Monitor Setup), and Utilities (including Bulk Change, Node Lockdown, Gateway Method, and Active Integrations). The main content area, titled "Configuration Status", shows three status indicators: "Gateway Configured" (with a green checkmark and a download icon), "Node Network Configured" (with a green checkmark and a download icon), and "Domain Active" (with a green checkmark and a download icon). Below these are links for "Update Gateway Location", "Update Configuration Settings", and "Register Target Connectors". The "Additional Links" section includes: "Service Configuration" (Configure Server, Schema Namespaces and Target Locations), "Monitor Setup" (Enable gateway logging and Data View size limit), "System Setup" (Set maximum recursion level and enable IB Profiling), and "Node Network Password" (Update Integration Node Network Password).



# The Integration Network

## WorkCenter

- Single landing page for Integration developer or administrator
- Quick access to Integration options
- Visibility over entire Integration Network



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Integration Network WorkCenter

Configuration

- Configuration Status
- Gateway
- Node Network
- Domain
- Service Configuration
- Monitor Setup Options
- Network Node Registrable
- System Setup Options

Administration

- Network Status
- Inspection and Deployment
- Service Operation Permissions
- Network Status Setup

Monitoring

- Network Monitor
- Transactional Tracker
- Network Monitor Setup

Utilities

- Bank Change
- Node Lockdown
- Gateway Metadata
- Active Integrations

IB Configure Network

Network Status

Configuration Status: Configured

Network Integration Status Network Status Setup

Time Range: Last 30 days

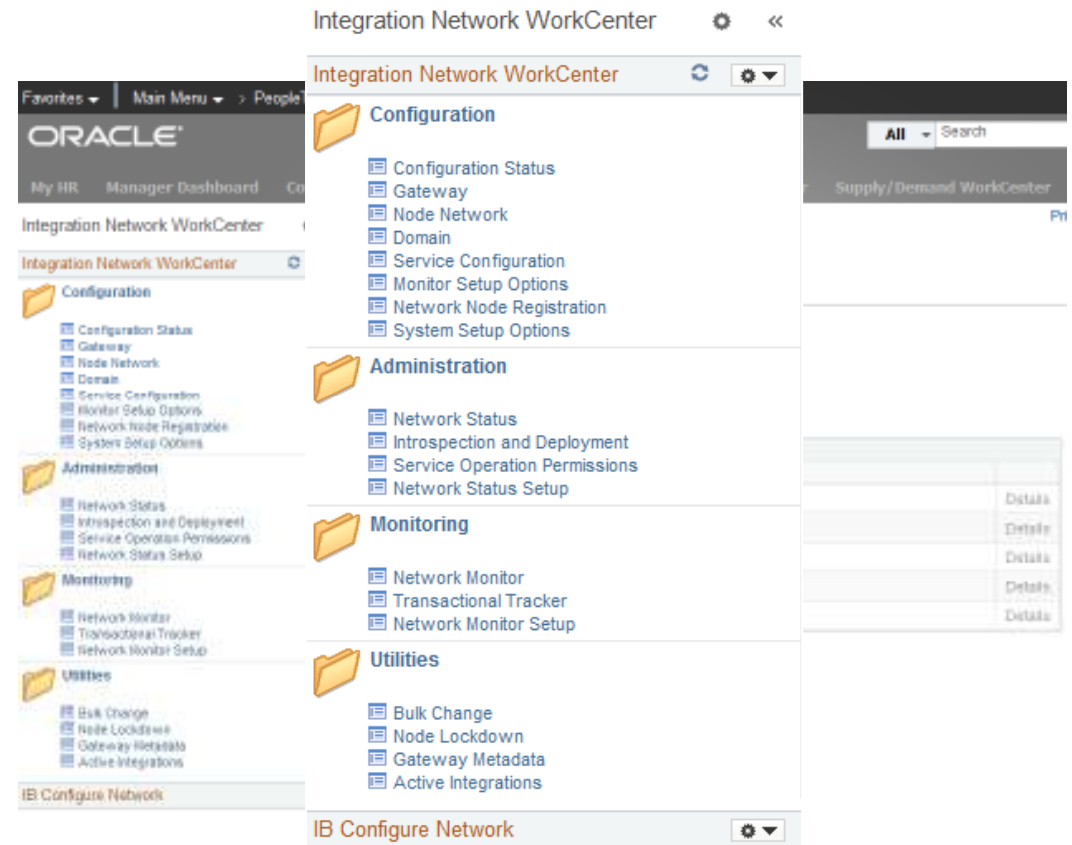
Ping Status

Select	Node	Results	
<input checked="" type="checkbox"/>	CR020MGT		Details
<input checked="" type="checkbox"/>	EP920MGT		Details
<input checked="" type="checkbox"/>	HC020MGT		Details
<input checked="" type="checkbox"/>	LMB20MGT		Details
<input checked="" type="checkbox"/>	PAS15MGT		Details

# The Integration Network

## WorkCenter

- Integration Network Workcenter Main Menu Items:
  - Configuration – Framework Setup
  - Administration – Define Integrations
  - Monitoring – Status check participating nodes
  - Utilities – Useful accessory tools
  - Network Config Activity Guide



# The Integration Network

## Configuration

- Configuration Status
  - At a glance IB status display
    - Gateway
      - Nodes
      - Pub/Sub Domains
  - Contains links other configuration pages needed for IB setup

The screenshot shows the 'Configuration Status' page. At the top right is a 'Help' link. Below the title are three status indicators, each with a green checkmark and a question mark icon:

- Gateway Configured**: Includes links for 'Update Gateway Location', 'Update Configuration Settings', and 'Register Target Connectors'.
- Node Network Configured**: Includes a link for 'Select and Configure Nodes for the Network'.
- Domain Active**: Includes a link for 'Activate Domain'.

Below these indicators is an 'Additional Links' section with the following items:

- Service Configuration** - Configure Server, Schema Namespaces and Target Locations
- Monitor Setup** - Enable gateway logging and Data View size limit
- System Setup** - Set maximum recursion level and enable IB Profiling
- Node Network Password** - Update Integration Node Network Password

# The Integration Network

## Configuration

- Node Network
  - Define participating nodes in the Integration Network
    - Nodes need to be set on the gateway and on the database
    - Also checks for the keystore password

### Node Network

Secure Keystore Value Defined

Network Nodes ?

Default Local Node	Node	In Network	Configured in Gateway	Active Node	Remote Gateway Node
<input type="checkbox"/>	CAMP	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	GOVT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	BP	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	HC920MGT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	ELM	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	EP920MGT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	PT_LOCAL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Note** The Node Network is considered properly configured only if all of the following are true:

- 1) The local default node is configured and part of the network.
- 2) The integration gateway secure keystore has been set.
- 3) Any configured node not known to the gateway is pointing at a non-local gateway.

Note that the In Network check box is auto-populated for the local default node if configured correctly. Click the Save button to ensure the network status is saved.

Save

# The Integration Network

## Configuration

- Service Configuration
  - Set the services and schema namespaces
  - Define the target locations for the SOAP-based and RESTful web services

Service Configuration | UDDI Configuration | Restricted Services | Exclude PSFT Auth Token

\*Service Namespace:

\*Schema Namespace:

Target Locations

\*Se

Web Services Target Locations

\*Target Location

Example

Alternate Example

Secure Target Location

Example

Alternate Example

REST Target Locations

Target Location

Example

Alternate Example

Secure Target Location

Example

Alternate Example

Save

Service Configuration | U

OK Cancel

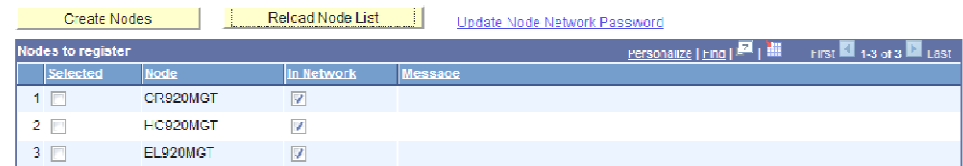
2012 11:46:09PM

# The Integration Network

## Configuration

- Network Node Registration
  - Add new nodes to the Integration Network
  - Define the default local nodes for participating nodes on all of the integration endpoints
  - Default node password set on the IB\_NETWORK node

### Network Node Registration



The screenshot shows a web interface for "Network Node Registration". At the top, there are three buttons: "Create Nodes" (highlighted in yellow), "Reload Node List" (with a refresh icon), and "Update Node Network Password". Below the buttons is a table titled "Nodes to register". The table has four columns: "Selected", "Node", "In Network", and "Message". There are three rows of data, each with a checkbox in the "Selected" column and a checkmark in the "In Network" column. The "Message" column is empty for all rows.

Selected	Node	In Network	Message
<input type="checkbox"/>	CR920MGT	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	HC920MGT	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	EL920MGT	<input checked="" type="checkbox"/>	

# The Integration Network

## Administration

- Network Status
  - Does node ping for all the participating – JOLT Access check
  - Integration network status checks for domain status and additional diagnostics

### Network Status

Configuration Status: Configured

[Network Integration Status](#) [Network Status Setup](#)

Time Range Last 30 days.

Ping Status

Network Node Status Results ?			
Select	Node	Results	
<input checked="" type="checkbox"/>	CR920MGT		<a href="#">Details</a>
<input checked="" type="checkbox"/>	EP920MGT		<a href="#">Details</a>
<input checked="" type="checkbox"/>	HC920MGT		<a href="#">Details</a>
<input checked="" type="checkbox"/>	LM920MGT		<a href="#">Details</a>
<input checked="" type="checkbox"/>	PA913MGT		<a href="#">Details</a>

# The Integration Network

## Administration

- Integration Group Definition
  - Allows for logical grouping of services
  - Can have 2 layers of grouping using subgroups
  - Allows for configuring multiple services at once

### Integration Group Definitions

Integration Group Name: HRMS\_GROUP  
Description: HRMS FullSync  
Object Owner ID: HR United States

**Services** Personalize | Find | [?] | [ ] First 1-6 of 6 Last

*Service	View
1 COMPANY_FULLSYNC	View
2 COMPANY_SYNC	View
3 COUNTRY_FULLSYNC	View
4 COUNTRY_SYNC	View
5 CURRENCY_FULLSYNC	View
6 CURRENCY_SYNC	View

[Add Services](#)

**Subgroups** Find First 1 of 1 Last

Integration Subgroup Name: HRMS\_SUBGROUP  
Description: HRMS FullSync Subgroup

**Subgroup Services** Personalize | Find | [?] | [ ] First 1-6 of 6 Last

*Service	View
1 EODLAPT	View



# The Integration Network

## Administration

- Introspection and Deployment
  - Wizard based
  - Checks service operation definitions on both sides of the integration
    - Routings
    - Handlers
    - Services Operations
  - Supports integration groups

### Search for Items - Introspection/Deployment

Level

Integration Group    Integration Group Name

Show All Subgroups

Filter by Subgroup   

No Subgroups

Show Services tied to Group

Service    Service

Operation    Operation

Search

Select Items to Process    Personalize | Find | View 100 |    First 21-30 of 122 Last

Select	Service
<input type="checkbox"/>	EOEN_NOTIFY_MSG
<input type="checkbox"/>	EPPCM_MIG_RESP
<input checked="" type="checkbox"/>	JOBCODE_FULLSYNC

# The Integration Network



## Administration

- Introspection and Deployment
  - Allows for local and remote integration introspection
  - Can pick from the list of participating remote nodes

### Target

Target

Local Node  Remote Nodes

Select Nodes to Process Personalize | Find | View All |   First 1-4 of 4 Last

Select	Node
<input checked="" type="checkbox"/>	CR920MGT
<input checked="" type="checkbox"/>	LM920MGT
<input checked="" type="checkbox"/>	HC920MGT
<input checked="" type="checkbox"/>	EP920MGT

Select All  Deselect All

Continue Previous Step

# The Integration Network

## Administration

- Introspection and Deployment
  - Builds local and remote service operations definitions
    - Routings
    - Handlers
    - Services operations

### Introspection Results

Node List					Find	First	1-4 of 4	Last	
Node CR920MGT									
Operation List					Personalize	Find	First	1-7 of 7	Last
Select	Operation	Version	Information	Deployment Action					
<input type="checkbox"/>	JOBCODE_FULLSYNC	VERSION_1	Local Operation/Version is inactive.	Activate local Operation/Version.					
<input type="checkbox"/>	JOBCODE_FULLSYNC	VERSION_1	Missing inbound routing for alias - JOBCODE_FULLSYNC.VERSION_1 on Operation - JOBCODE_FULLSYNC Version - VERSION_1.	Create remote routing.					
<input type="checkbox"/>	JOBCODE_FULLSYNC	VERSION_1	Remote handler of type - NOTF is inactive. Operation - JOBCODE_FULLSYNC Name - GEN_UPG_HANDLER_12755.	Activate remote handler.					
<input type="checkbox"/>	JOBCODE_FULLSYNC	VERSION_1	Local outbound routing is missing.	Create local routing.					
<input type="checkbox"/>	JOBCODE_FULLSYNC	VERSION_1	Missing outbound routing on remote node for alias - JOBCODE_FULLSYNC.VERSION_1 on operation - JOBCODE_FULLSYNC version - VERSION_1.	Create remote routing.					
<input type="checkbox"/>	JOBCODE_FULLSYNC	VERSION_1	Local handler EPXMessageHandler of type NOTF is inactive.	Activate local handler.					
<input type="checkbox"/>	JOBCODE_FULLSYNC	VERSION_1	Local inbound routing is inactive - ~GENERATED~78581193.	Activate local routing.					

# The Integration Network

## Administration

- Service Operation Permissions
  - Setup security permissions for multiple service operations
  - Supports integration groups

### Service Operation Permissions

Service System Status: Production

Level

Integration Group      Group Name:

Show All Subgroups

Filter by Subgroup     

No Subgroups

Show Services tied to Group

Service      Service:

Operation      Operation:

No Permissions Exist

Select	Service	Service Operation	Permissions Set
<input type="checkbox"/>	ADMINSERVICE	CREATE	<input type="checkbox"/> Set Security
<input type="checkbox"/>	ADMINSERVICE	CREATEALL	<input type="checkbox"/> Set Security
<input type="checkbox"/>	ADMINSERVICE	DELETE	<input type="checkbox"/> Set Security
<input type="checkbox"/>	ADMINSERVICE	DELETEALL	<input type="checkbox"/> Set Security
<input type="checkbox"/>	ADMINSERVICE	EXPORT	<input type="checkbox"/> Set Security
<input type="checkbox"/>	ADMINSERVICE	EXPORTALL	<input type="checkbox"/> Set Security
<input type="checkbox"/>	ADMINSERVICE	GETVERSION	<input type="checkbox"/> Set Security

# The Integration Network

## Monitoring

- Network Monitor
  - Displays operation instances, pub/sub contracts for each of the participating nodes
  - Also shows sync and domain status information for all the nodes
  - Similar look and feel on the single db monitor pages

Queue Name	Error	New	Started	Working	Done	Retry	Timeout	Edited	Canceled	Hold	Submit	Done/NoAck
EOEN_MSG_CHNL	0	0	0	0	9	0	0	0	0	0	0	0
PTSF_SES_FEEDS	0	0	0	0	29	0	0	0	0	0	0	0
ROLE_MAINT	0	0	0	0	2	0	0	0	0	0	0	0
TREE_MAINT	0	0	0	0	2	0	0	0	0	0	0	0
USER_PROFILE	0	0	0	0	1	0	0	0	0	0	0	0

# The Integration Network

## Monitoring

- Transactional Tracker
  - Displays transaction states from publication to subscription
  - No need to login to other systems to check for the state of remote handlers

The screenshot displays the Transactional Tracker interface. On the left, a 'Network Node List' shows nodes: CRS20MGT, LMS20MGT, HCS20MGT (highlighted), and EPR20MGT. Below this is a 'Re-Sync Monitor Data' button and 'Last Sync: 09/20/2012 11:01:43AM'. The main area features filters for '\*Group By' (Service Operation) and '\*Direction' (Inbound). A 'Time Panel' includes 'From Date' (01/20/2012), 'To Date' (09/20/2012), 'From Time' (12:00:00AM), and 'To Time' (11:59:59PM). A 'Filter' button is on the right. Below the filters, 'Sender Node: HCS20MGT' and 'Receiver Node: PAS13MGT' are shown. The 'Result' table has columns: Service Operation, Sender Instance Count, Sender Publication Count, and Sender Subscription Count. The table shows three rows with counts of 0.

Service Operation	Sender Instance Count	Sender Publication Count	Sender Subscription Count
	0	0	0
	0	0	0
	0	0	0

# The Integration Network

## Utilities

- Gateway Metadata
  - Saves the `integrationgateway.properties` setup information in the appserver
  - Preserves these setup information for deployment on other gateway instances

### Gateway Metadata

Gateway ID LOCAL

Gateway URL <http://slc00eyq/PSIGW/PeopleSoftListeningConnector>

[\[Gateway Setup Properties\]](#)

**Saved Gateway Properties**

Gateway URL	<a href="http://slc00eyq/PSIGW/PeopleSoftListeningConnector">http://slc00eyq/PSIGW/PeopleSoftListeningConnector</a>
Publisher	QED/MO
Last Update Date/Time	09/20/2012 11:45:52AM

[Show Saved Gateway Properties](#)

[Backup Gateway Properties](#) [Restore Gateway Properties](#)

# The Integration Network

## Utilities

- Node Lockdown
  - Sets certain node properties as read-only
  - Properties cannot be overwritten via copy project
  - Addresses upgrade issues

Node Lockdown

Node Name: HC010MOB Search

Save

Node List Personalize | Find | First 1 of 1 Last

Primary Lockdown Fields		Secondary Lockdown Fields						
Select	Node	Lockdown User ID	Lockdown Node Type	Lockdown Authentication	Lockdown Connectors	Lockdown WS Security	Lockdown Active Flag	Lockdown Node Properties
1	HC010MOB							



# The Integration Network

## Activity Guide

- IB Configure Network
  - Guides administrators through the different IB configuration pages
  - Pagelet on the WorkCenter
  - Shows configuration progress

The screenshot displays the Oracle Integration Network WorkCenter interface. The main heading is 'IB Configure Network'. Below the heading is a 'Task Progress' indicator showing 0 out of 7 tasks completed. A list of tasks is provided, with 'Set up gateway' selected. The tasks are:

- Set up gateway
- Add target Location(s)
- Register Nodes with Network
- Activate Domain
- Check network connections
- Create/update binds for Integrations
- Update Security on Service Operations

The interface also includes a search bar, navigation links like 'Previous' and 'New WorkCenter', and a table of gateway configurations with 'Properties' links.

# Other Resources



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# Other Resources

- Instructor Lead Training
- PeopleTools 8.50 Integration Tools
- Self Service CDs
- Online PeopleBooks
  - <http://www.oracle.com/pls/psft/homepage>
- Demo Grounds
  - Integration Technologies





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