Integrating Campus Solutions with Human Capital Management

Understanding CS-to-HCM Integration

You can integrate PeopleSoft Campus Solutions (CS) and PeopleSoft Human Capital Management (HCM), enabling the two systems to share a person model. Although the two databases remain separate, your institution maintains the ability to search for people and maintain a single EmplID across CS and HCM.

Your institution's business processes determine the proper way to integrate the separate instances. These topics describe several possible integration approaches.

Note: These topics describe integration processes between CS release 9.2 and HCM 9.1/9.2.

Integrating Person Data

This section discusses how to:

- Understand person data integration.
- Review integrated person data.
- Understand the business process.
- Understand external Search/ Match integration.
- Use external Search/Match to integrate with external systems.
- Configure the Last Employee ID Assigned number.
- Publish and subscribe to person data.
- Configure web services for person data.
- Understand Person Data FullSync and Sync Service Operations and Handlers.

Note: These topics describe integration processes between CS release 9.2 and HCM 9.1/9.2.

Note: Documentation relevant to Campus Solutions and Human Capital Management integration is available on My Oracle Support (ID 2091799.2).

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Understanding Person Data Integration

Oracle provides the tools that allow you to directly integrate person data between CS and HCM systems. The suite of person attributes is transferred primarily by the PERSON_BASIC_SYNC message. The data that comprises the message includes the core person data historically contained in PERSON_BASIC_SYNC, plus CS extension data (such as FERPA) contained in the PERSON_SA message and global subrecords. Ethnicity and diversity information are also part of the integrated person data set. Subscription handlers enable inbound person additions and updates in both CS and HCM. PERSON_BASIC_SYNC can also subscribe to incoming person data from an external source.

Direct integration between CS and HCM requires only the use of Integration Broker to enable and orchestrate the integration. No additional integration mechanism is required.

CS also subscribes to the WORKFORCE_SYNC message to bring job data (mastered in HCM) into CS for those CS processes that require it (such as assigning an instructor to a class).

Reviewing Integrated Person Data

In general, the following key person bio-demo and other data are synchronized between the systems. The delivered integrations include data fields for country localizations and other personal attributes which may or may not be used in your implementation.

- Names
- Addresses
- Phones
- Emergency Contacts
- Email Addresses
- National IDs
- Gender
- Birth date
- Date of Death
- Marital Status
- FERPA Flag
- Disability
- Ethnicity/Diversity
- Citizenship
- Passport
- Visa/Permits
- Job

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- HR Operator Defaults
- User Profiles

In the distinct ownership model, the following person bio-demo data is fetched from one system to the other as part of the External Search/Match process:

- EmplID
- Names
- Addresses
- Phones
- Email Addresses
- National IDs
- FERPA Flag
- VA Benefit

Understanding the Business Process

In a CS-to-HCM integrated environment, the person record is physically separated, but institutions have the choice to synchronize all person data with HCM, or none of it. Some institutions may want to separate not just their data but their business processes to more closely reflect policies of data ownership between student and human resources administration on campus.

CS supports three models of person data integration between CS and HCM: Owner/Subscriber, Subscriber-Only and Distinct Ownership. Institutions can use the tools described in this documentation to configure the integration to reflect their business needs.

Owner-Subscriber

In an owner-subscriber integration model, one system is defined as the system of record and the other system subscribes to its person data messages. All EmplIDs exist and are in sync in both databases. For example, if CS is defined as the owner for adding and updating person data, the HCM system subscribes to the person messages; integration setup feeds person data additions and updates to HCM. The end-user

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experience can be managed via a portal or related content to navigate a combination of CS and HCM menus and pages.

Image: Example of Adding an Admissions Applicant in CS

This workflow depicts the process of adding an Admissions applicant in CS.

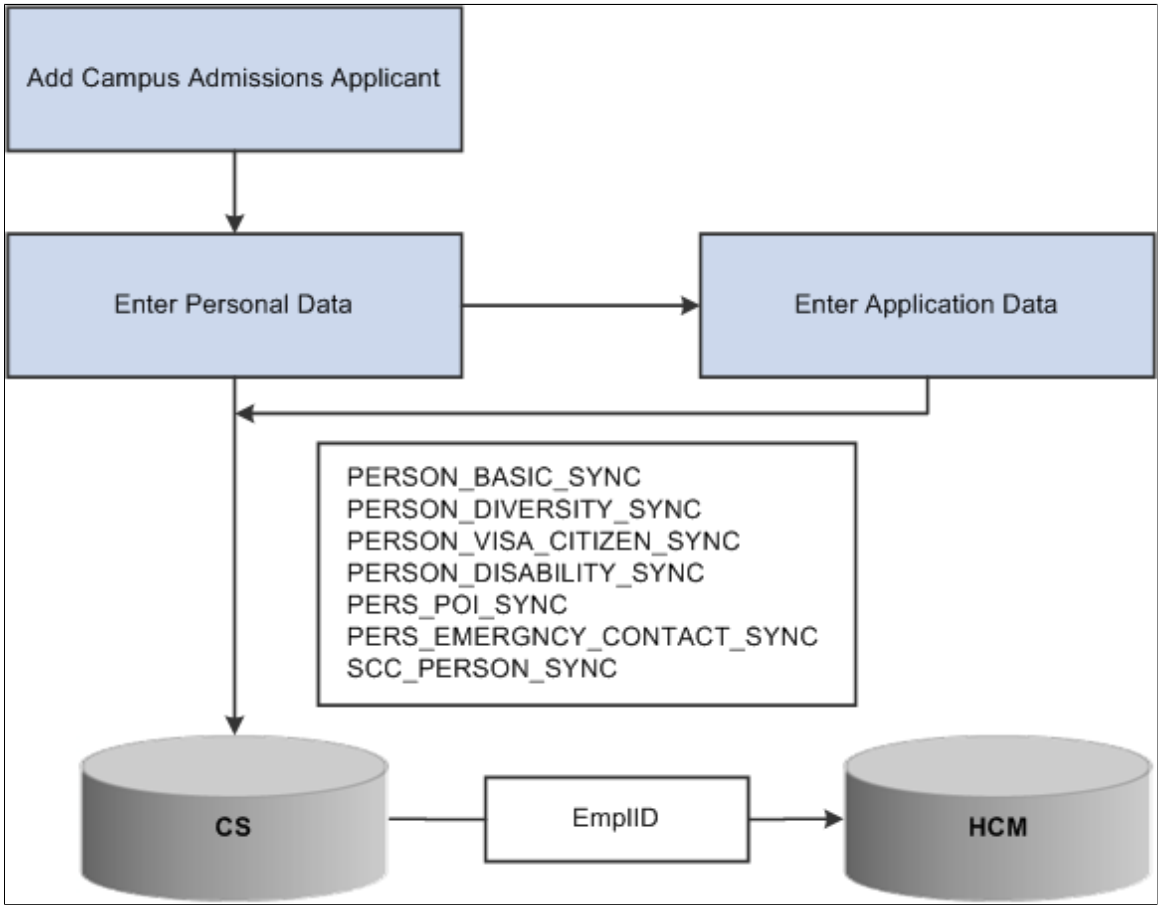

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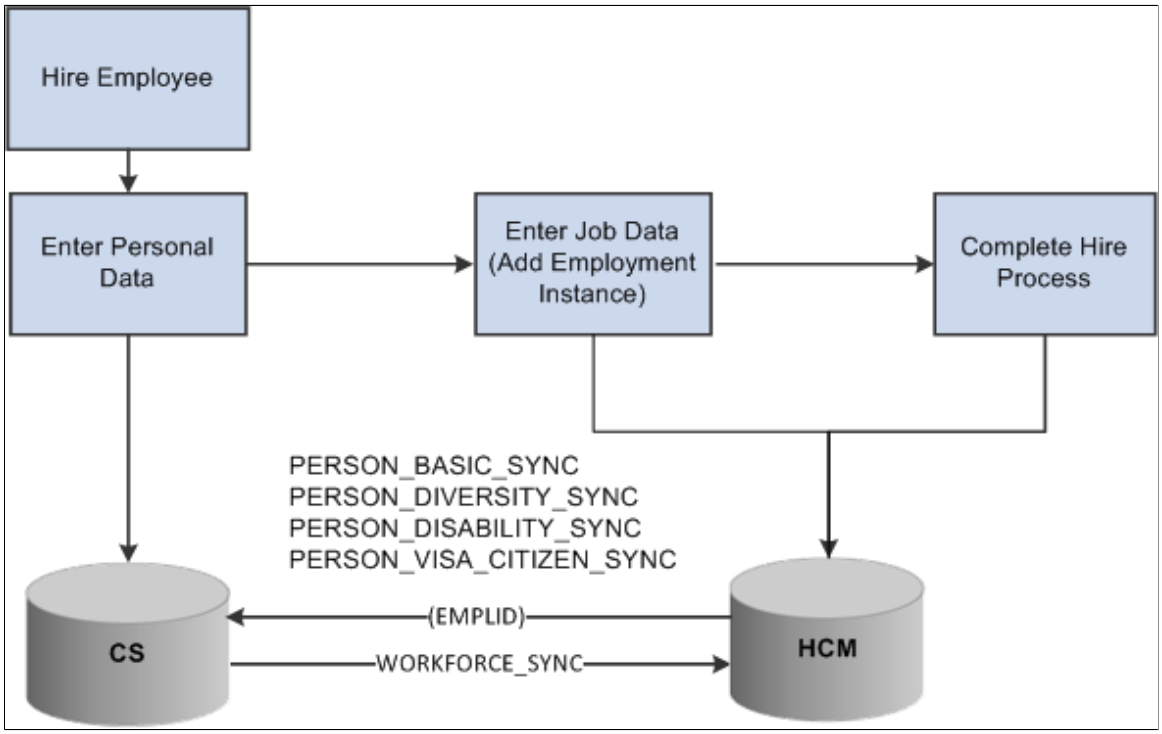
Image: Example of hiring an employee in HCM

This workflow depicts the process of hiring an employee in HCM.



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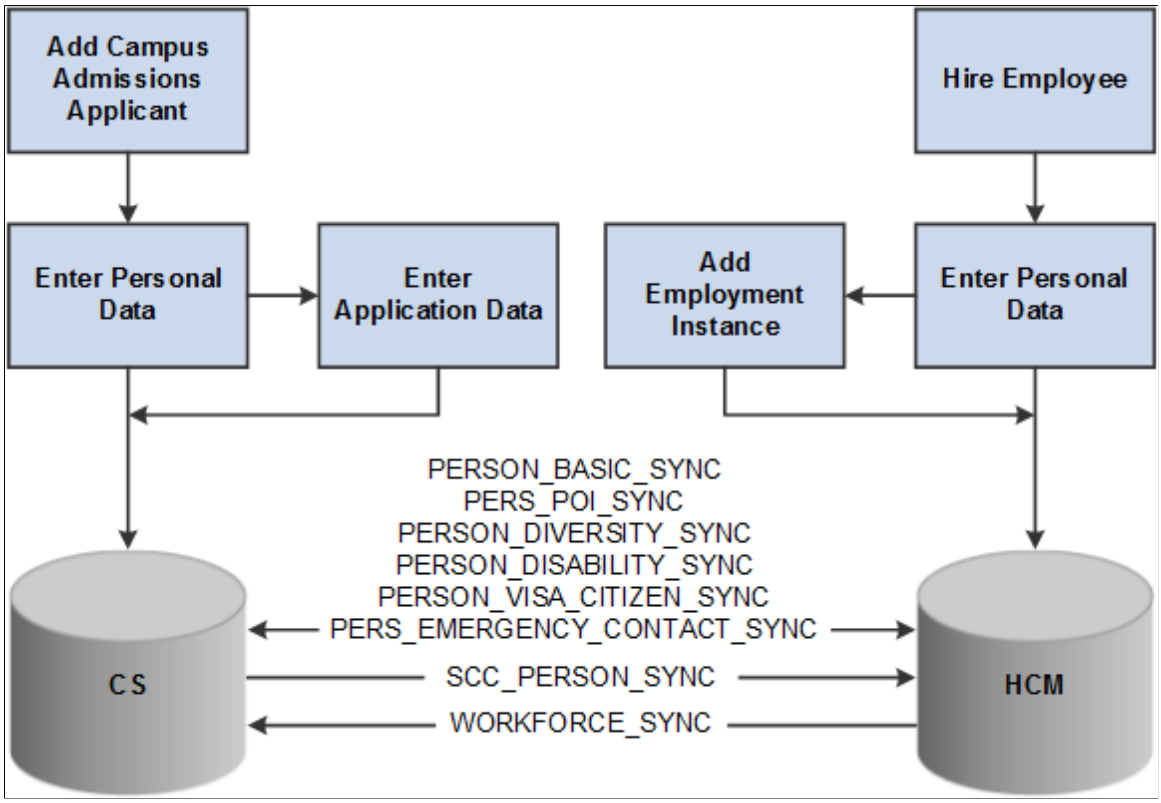
Subscriber Only

In a subscriber-only integration model, both systems are defined as system of record and integrations are configured to allow both systems to publish and subscribe to person data messages. All EmplIDs are populated to both systems and are kept in sync.

Image: Example of adding an admissions applicant or employee

This workflow depicts the process of adding an Admissions applicant or employee in the Subscriber-only model.



Distinct Ownership

In a distinct ownership integration model, person data is added and updated in the appropriate CS or HCM system (as determined by the business processes of your institution; for example, employees are added and maintained in HCM). External Search/Match then becomes the method used in each system to ensure that users do not create duplicate records on campus. For example, as an employee is added to HCM, External Search/Match determines whether that new employee is already a student in CS with an EmplID and other bio-demo data housed in the CS system. If so, a "fetch" process can pull that EmplID

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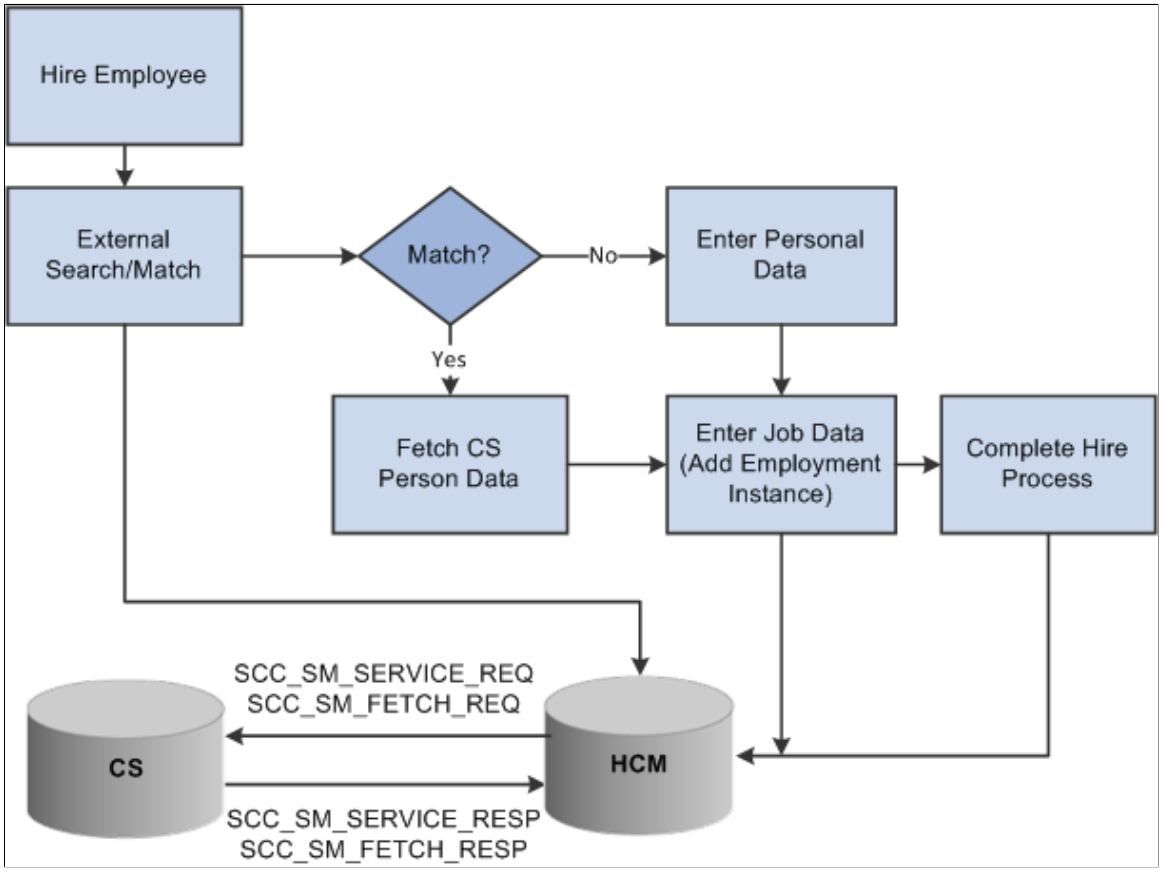
and person data to HCM, ensuring that the individual retains a single unique ID on campus. Thereafter, each system must be manually updated, with no further integration between them.

Image: Example of hiring an employee in HCM using External Search/Match to CS

This workflow depicts the process of adding an employee in HCM using External Search/Match to CS.



Understanding External Search/Match Integration

In an integrated, separate-instance environment using the distinct ownership model, users who want to maintain a single EmplID must use External Search/Match in each system to ensure the creation of unique person records. Initially, users use positive External Search/Match results to locate and add person data from the external system (such as a CS user searching against HCM); subsequently, person updates must be done manually in both instances to avoid becoming out of sync.

In the distinct ownership integration model, External Search/Match is the tool used to ensure that only unique EmplIDs are added to any system. With distinct ownership, people are added in either the CS or HCM system (as appropriate); both systems use External Search/Match to search for possible duplicate records so only unique IDs are shared between the databases. However, both databases must be running in order for External Search/Match to work.

Using External Search/Match to Integrate with External Systems

External Search/Match can search against HCM to identify potential duplicate person records as well as carry EmplIDs throughout a business process.

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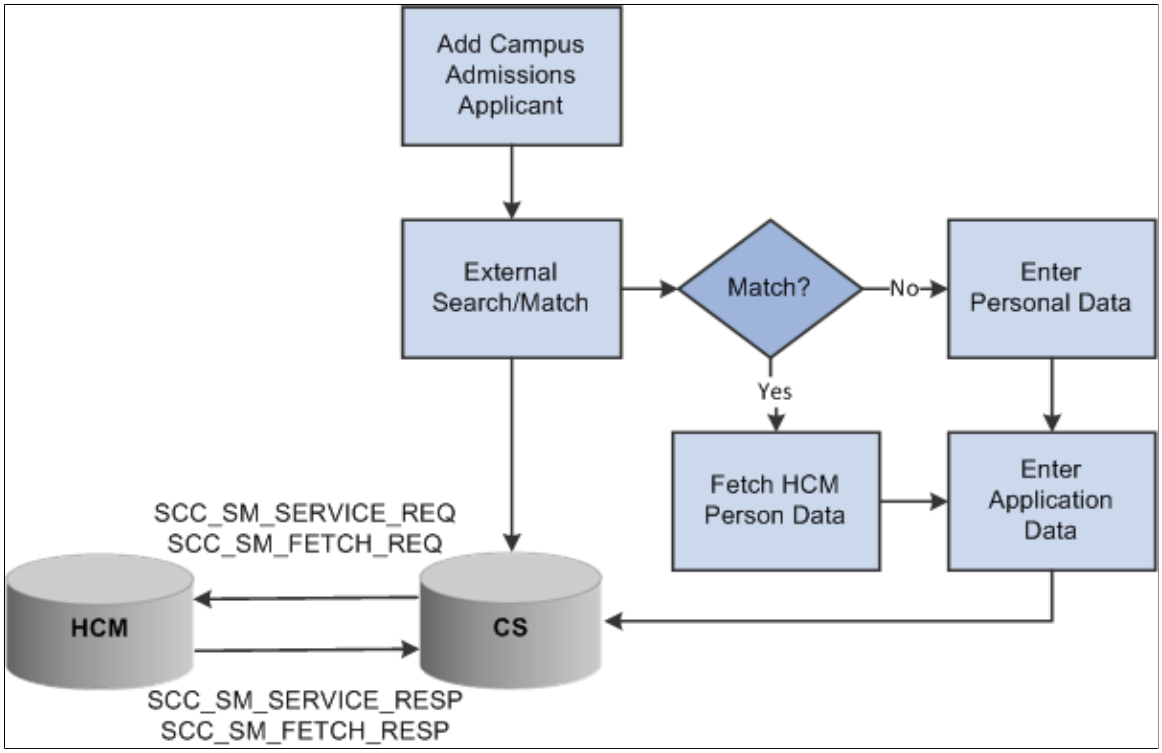
See also:

"Setting Up External Search/Match Functionality" (PeopleSoft Campus Solutions 9.2: Campus Community)

"Using Search/Match" (PeopleSoft Campus Solutions 9.2: Campus Community)

Image: Example of adding an admissions applicant in CS using External Search/Match to HCM

This workflow depicts the process of adding an admissions applicant in CS using External Search/Match.



Configuring the Last Employee ID Assigned Number

You need to review and update the Last Employee ID Assigned numbers on your systems to ensure EMPLID values are assigned in proper ranges and to prevent data integrity problems with conflicting EMPLID values being assigned.

- In an owner/subscriber configuration, the database instance that is the system of record for personal information is responsible for assigning the next EMPLID value.
- In a subscriber-only configuration, both databases assign EMPLID values. Determine the range of EMPLID values that can provide the maximum number of new persons expected to be added to each system over its lifetime. For example, you may anticipate more new persons to be added first to your CS system, therefore set the Last Employee ID Assigned value in the CS instance to a value that will allow for the most growth over time.

This step should be done with careful evaluation of the EMPLID number strategy you have implemented. Consider the following:

- Do you have custom EMPLID assignment routines that are used to set the next ID number?

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- Do your users have established business practices that reserve certain number ranges?
- Which system is expected to typically create the most new persons?

To update the Last ID Assigned, navigate to Set Up Common Objects, Install, Installation Table. This navigation is the same for both CS and HCM.

On the Last ID Assigned page, update the Last Employee ID Assigned field to the number desired.

See:

- Integrating Setup Data
- Selecting General Installation Options

Publishing and Subscribing to Person Data

In an owner-subscriber integration approach, the following messages move data asynchronously from the owner to the subscriber:

- PERSON_BASIC_SYNC
- PERSON_DIVERSITY_SYNC
- PERSON_VISA_CITIZEN_SYNC
- PERSON_DISABILITY_SYNC
- PERS_POI_SYNC
- PERS_EMERGNCY_CONTACT_SYNC
- SCC_PERSON_SYNC

The WORKFORCE_SYNC message integrates job data between the two systems; where necessary, from HCM to CS.

Minimum setup information must be available and loaded from your HCM system to your CS system for implementation. This should be completed before any transactional data syncs are performed. The values defined in these setup tables are key to person bio-demo data integrity. Oracle recommends that your setup tables be mastered in the HCM instance.

Incremental Synchronization

Data in the supporting tables in your system of record may change over time after the initial loading of setup, transactional data, and security data. Use incremental sync (Sync) services to send this information from your system of record to your subscribing target system to maintain data integrity.

An incremental sync captures data that was created, added, changed, or deleted in the system of record since the last synchronization. It uses the captured data to overwrite the same data in the subscribing system, thereby refreshing the subscribing system so that both systems have the same data.

After the initial fullsync data loads have completed in your subscribing target system, you may inactivate the associated fullsync services, and then activate the appropriate incremental Sync services to keep your systems updated.

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Manual Entry Data Load

You can, if necessary, enter data manually into your CS and HCM systems. However, it would be tedious, time consuming, and possibly introduce typographical errors. Oracle does not recommend this method for most data elements unless required to load a small amount of data.

Transactional Data Loading Sequence

For all owner/subscriber configurations, person transactional information must be available and loaded from your system of record to your subscribing system for implementation. Oracle recommends that CS be the system of record for Person data. Your HCM system should remain the system of record for all HCM Workforce and other HR related transactional data.

Note: Carefully plan your requirements for the initial load of transaction data for your specific implementation. If you are doing a new install of HCM, you need to load this transaction data as part of your implementation. Customers upgrading to HCM 9.1 or HCM 9.2 from a combined HCM and CS 9.0 database will already have the proper transaction data in place in both systems.

The following table lists the required integration, indicates the type of service recommended, and the order in which you must load transactional table data into your HCM system.

Person Transaction Data Campus Solutions to HCM

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Integration Name	***HCM Table***
PERSON_BASIC_FULLSYNC.VERSION_4	PERSON PERS_DATA_EFFDT PERS_DATA_USF* PERS_NID NAMES ADDRESSES EMAIL_ADDRESSES PERSONAL_PHONE PERS_SMOKER* PERSON_BRA* PERS_DATA_BRA* PERS_DATA_CAN PERS_DATA_CHE* PLACE_ORIG_CHE* PERS_HUKOU_CHN* PERS_DATA_DEU* NATIONALITY_GER* PERS_DATA_ESP* PERSON_FRA* PERS_DATA_FRA* PERS_DATA_IND* PERS_DATA_ITA* PERS_DATA_JPN* PERS_DATA_MEX* PERS_DATA_USA PERS_DATA_FPS* PERSON_SA
PERS_EMERGNCY_CONTACT_FULLSYNC	EMERGENCY_CNTCT EMERGENCY_PHONE

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Integration Name	*HCM Table*
PERS_POI_FULLSYNC.VERSION_1	PER_POI_TYPE PER_POI_SCRTY PER_POI_SCR_DT PER_POI_TRANS
PERSON_DISABILITY_FULLSYNC.VERSION_2	DISABILITY ACCOM_REQUEST DISABILITY_FRA* DISABILITY_GER* DISABILITY_CHE* DISABILITY_ESP* DISABILITY_BRA* DISABILITY_NLD* DISABILITY_NZL*
PERSON_DIVERSITY_FULLSYNC.VERSION_2	DIVERSITY DIVERS_ETHNIC DIVERS_RELIGION*
PERSON_VISA_CITIZEN_FULLSYNC1.VERSION_1	CITIZENSHIP CITIZEN_PSSPRT
PERSON_VISA_CITIZEN_FULLSYNC2.VERSION_1	VISA_PMT_DATA VISA_PMT_SUPPRT

*Existing CS functionality does not populate these tables. Depending on your use of HCM functionality, the records marked with an asterisk may not have data present at the time the fullsync is published.

Configuring Web Services for Person Data

This section provides a summary of Person Data FullSync and Sync Service Operations and Handlers, and discusses how to:

- Configure Integration Broker Gateway and Nodes.
- Configure PERSON_BASIC_SYNC Service.

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Note: These instructions describe the setup of CS 9.2 and HCM 9.1/9.2 databases.

Configuring the Integration Broker Gateway and Nodes

To configure the Integration Broker Gateways and Nodes in your CS and HCM databases:

1. Set the Service Configuration in the HCM database.
2. Configure the Gateway in the HCM database.
3. Configure the default local node in the HCM database.
4. Configure the HCM Gateway in the CS database.
5. Configure the CS node in the HCM database.
6. Configure the default LOCAL node in the CS database.
7. Configure the HCM node in the CS database.
8. Update the HCM Gateway nodes in the HCM database.
9. Update the HCM Gateway nodes in the CS database.
10. Update the Single Sign-on nodes.
11. Test Nodes.

1. Setting the Service Configuration in the HCM database.

   Navigate toPeopleTools, Integration Broker, Configuration , Service Configuration,and set up the following:

Service Namespace	http://xmlns.oracle.com/Enterprise/HCM/services
Schema Namespace	http://xmlns.oracle.com/Enterprise/Tools/schemas
Target Location	http://machinename:port/PSIGW/PeopleSoftServiceListeningConnector
Service System Status	Production

2. Configuring the Gateway in the HCM database.

   a. Navigate: PeopleTools, Integration Broker, Configuration , Gateways.

   b. Select Integration Gateway ID = LOCAL.

   c. Set URL = http://machinename:port/PSIGW/PeopleSoftServiceListeningConnector/databasename.

   d. Click the Load Gateway Connectors button. Save after it loads 9 connectors

   e. Click the Ping Gateway button. If successful, it displays an *Active* status.

3. Configuring the default local node in the HCM database.

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a. Navigate toPeopleTools, Integration Broker, Integration Setup, Nodes.

b. Select the default local node and set up the following:

Set Descr	HCM Instance
Authentication Option	Password
Node Password	PS
Default User ID	PS

c. Click the Connectors tab and set the following:

Gateway ID	LOCAL
Connector ID	PSFTTARGET

d. Click the Portal tab and set up the following:

Tools Release	8.54.xx
Set Application Release	HCM
Content URI Text	http://machinename:port/psc/databasename
Portal URI Text	http://machinename:port/psp/databasename

Note: Use <CTRL>+J keys to see the tools release string.

e. Click the WS Security tab and set the following:

Authentication Token Type	None
Encrypted	Disable the check box.

f. Save.

4. Configuring the HCM Gateway in the CS database.

a. Navigate to PeopleTools, Integration Broker, Configuration, Gateways, and select .Add a New Value.

b. Set the following:

Integration Gateway ID	<Gateway Name for HCM>
URL	http://machinename:port/PSIGW/PeopleSoftListeningConnector/databasename

c. Click the Load Gateway Connectors button. It should load 9 connectors. Save.

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d. Click the Ping Gateway button.

If successful, it displays an *Active* status.

5. Configuring the CS node in the HCM database.

a. Navigate toPeopleTools, Integration Broker, Integration Setup, Nodes, and set up the following:

Add Node	Name of CS Node
Set Descr	CS Instance
Set Authentication Option	Password
Node Password	PS
Default User ID	PS

b. Click the Connectors tab and set up the following:

Gateway ID	LOCAL
Connector ID	PSFTTARGET

c. Click the Portal tab and set up the following:

Tools Release	8.54.xx
Set Application Release	CS release version
Content URI Text	http://machinename:port/psc/databasename
Portal URI Text	http://machinename:port/psp/databasename

d. Click the WS Security tab and set the following:

Authentication Token Type	None
Encrypted	Disable the check box.

e. Click Save.

6. Configuring the default LOCAL node in the CS database.

Note: The gateway used by this node is the HCM gateway. Node passwords must be consistent between the CS and the HCM databases.

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a. Navigate: PeopleTools, Integration Broker, Integration Setup, Nodes.

b. Select the default local node and set up the following:

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Description	Set Descr = CS Instance
Authentication Option	Password
Node Password	PS
Default User ID	PS

c. Click the Connectors tab and set up the following:

Gateway ID	Gateway Name for HCM instance **Note:** This is not the local gateway.
Set Connector Id	PSFTTARGET

d. Click the Portal tab and set up the following:

Tools Release	8.54.xx
Set Application Release	CS release version
Content URI Text	http://machinename:port/psc/databasename
Portal URI Text	http://machinename:port/psp/databasename

e. Click the WS Security tab and set the following:

Authentication Token Type	None
Encrypted	Disable the check box.

f. Click Save.

7. Configuring the HCM node in the CS database.

Note: Each node is defined twice – once in each database. They should each use the same gateway.

a. Navigate to PeopleTools, Integration Broker, Integration Setup, Nodes, and set up the following:

Add Node	Name of HCM Node
Set Descr	HCM Instance
Set Authentication Option	Password
Node Password	PS
Default User ID	PS

b. Click the Connectors tab and set up the following:

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Gateway ID	Gateway Name for HCM instance **Note:** This is not the local gateway.
Set Connector Id	PSFTTARGET

c. Click the Portal tab and set the following:

Tools Release	8.54.xx
Set Application Release	HCM release version
Content URI Text	http://machinename:port/psc/databasename
Portal URI Text	http://machinename:port/psp/databasename

d. Click the WS Security tab and set the following:

Authentication Token Type	None
Encrypted	Disable the check box.

e. Click Save. A Node Saved message box appears. Click OK.

8. Updating the HCM Gateway nodes in the HCM database.

   Both CS and HCM database nodes should point to the same Gateway. The specific Gateway should also have both nodes listed in the Gateway Advanced Properties.

   a. Navigate: PeopleTools, Integration Broker, Configuration , Gateways.

   b. Select gateway LOCAL.

   c. Click the Gateway Setup Properties link and set the following:

User ID	administrator
Password	Enter a password.

   Click OK.

   d. In the Gateway Default App. Server frame, set the App Server URL to *'//machinename:port.*

   Note: Your port must match the one specified in your HCM application server.

   e. Enter the appropriate User ID and password.

   f. Set the tools release to 8.54.xx.

   g. Make sure both the HCM and CS nodes are in the PeopleSoft Nodes tab. Ping the HCM node. It should be successful.

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h. Click Return.

9. Updating HCM Gateway nodes in the CS database.

   Follow the process outlined in Step 8 to update the HCM Gateway node in the CS database.

10. Updating the Single Sign-on nodes in both CS and HCM databases.

    Single Sign-on is used in this recommended configuration.

    a. Navigate: PeopleTools, Security, Security Objects, Single Signon.

    b. Ensure that both the default local node and the other node you are using are listed.

11. Testing Nodes.

    Both nodes must be 'pingable' from each database. On each database,

    a. Navigate: PeopleTools, Integration Broker, Service Operations Monitor, Administration, Node Status.

    b. Enter the node name and click the Ping Node button. It should respond successfully.

Configuring the PERSON_BASIC_SYNC Service

The PERSON_BASIC_SYNC service is the primary integration point for syncing core personal data between your CS and HCM systems. The following tasks detail how to configure the PERSON_BASIC_SYNC service to publish from your CS system and subscribe in the target HCM system.

- Owner/Subscriber: If you implement the owner/subscriber model, you can configure your PERSON_BASIC_SYNC service to publish from your master CS system to your target HCM system.
- Subscriber Only: If you implement the subscriber–only model, you can configure the PERSON_BASIC_SYNC service in both your CS and HCM systems to publish and subscribe.

Note: The source and target database configuration tasks described are for CS 9.2 (source) and HCM 9.1/9.2 (target) databases on PeopleTools 8.54.xx.

Configuring Campus Solutions as the Source Database

1. Update security by adding the Service Operation(s) to your primary permission list.

   a. Navigate to PeopleTools, Security, Permissions & Roles, Permission Lists.

   b. Select the relevant permission list from the search dialog box.

   c. Select the Web Services tab.

   d. Enter the corresponding Service(s) for the Service Operation(s) you want to use.

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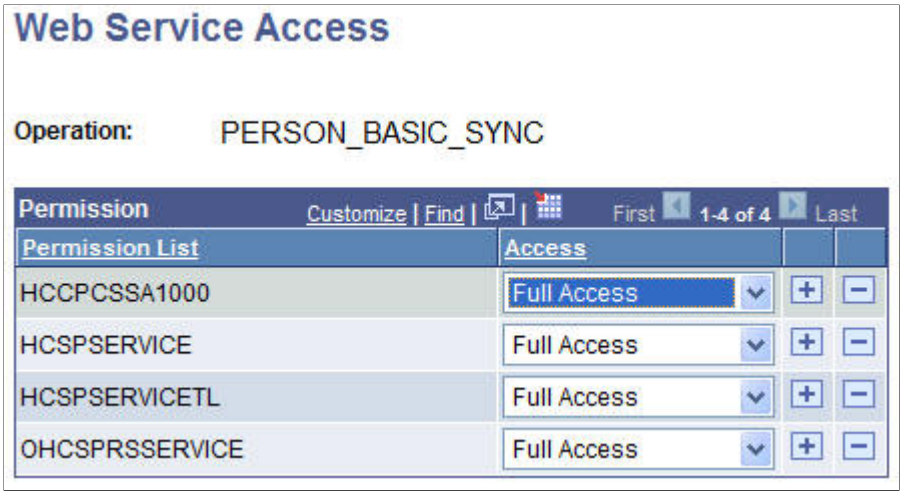
e. Click the Edit link and select Full Access to provide access to the relevant Service Operation(s) listed on the Web Service Permissions secondary page.

Image: Web Service Access page

This graphic provides an example of the Web Service Access page for the PERSON_BASIC_SYNC operation.



2. Activate Service Operations and Create Routings in CS.

   a. Navigate to PeopleTools, Integration Broker, Integration Setup, Service Operations.

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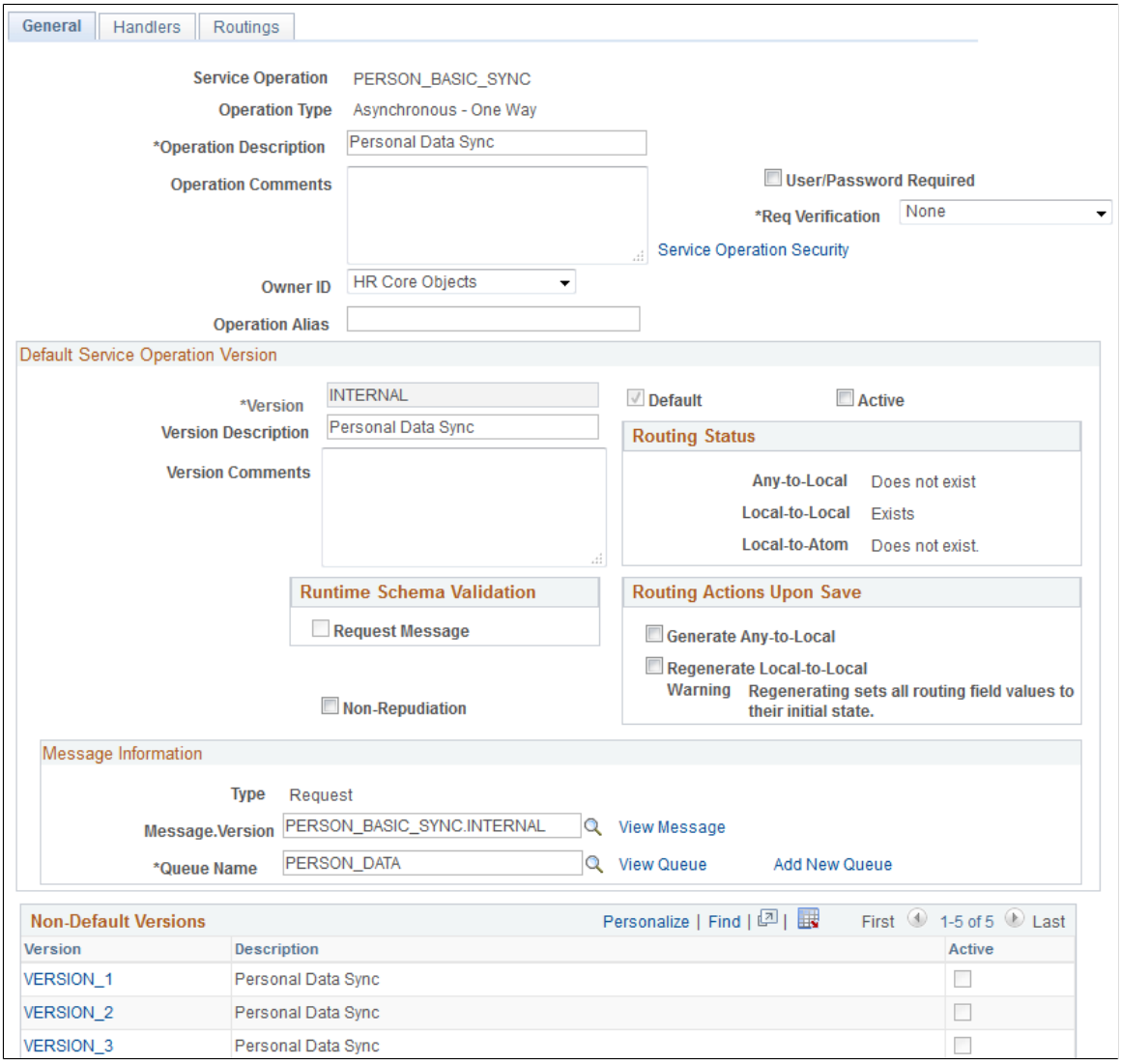
b. Select PERSON_BASIC_SYNC from the search dialog box.

Image: PERSON_BASIC_SYNC service operation page

This example illustrates the fields and controls on the PERSON_BASIC_SYNC service operation page. You can find definitions for the fields and controls later on this page.



c. Check the Active check box on the General tab.

d. Make note of the Queue Name field, as you need to verify that the PERSON_DATA Queue is in *Running* status later.

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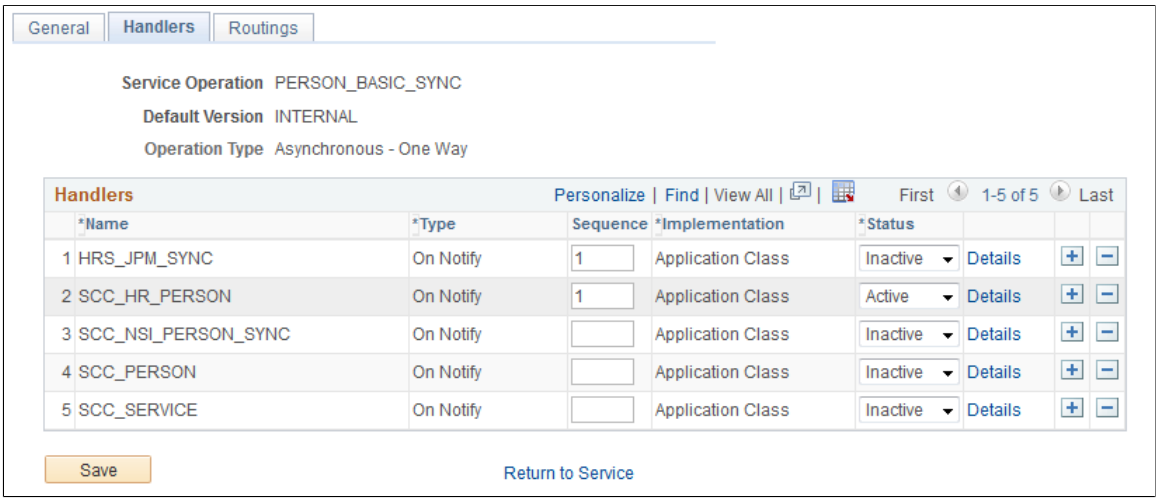
e. Click the Handlers tab. Set the SCC_HR_PERSON handler to *Active.*

Image: PERSON_BASIC_SYNC Handlers page

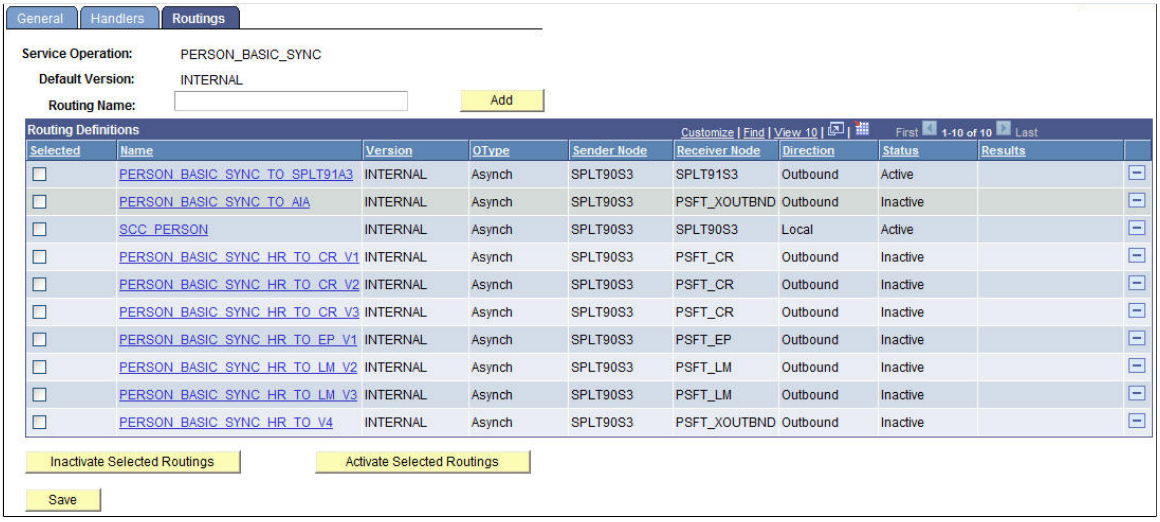
This example illustrates the fields and controls on the PERSON_BASIC_SYNC Handlers page.



f. Click the Routings tab and add a new routing for the Service Operation by entering a value in the Routing Name field and clicking the Add button.

Image: Routings page for PERSON_BASIC_SYNC

This example illustrates the fields and controls on the Routings page for PERSON_BASIC_SYNC.



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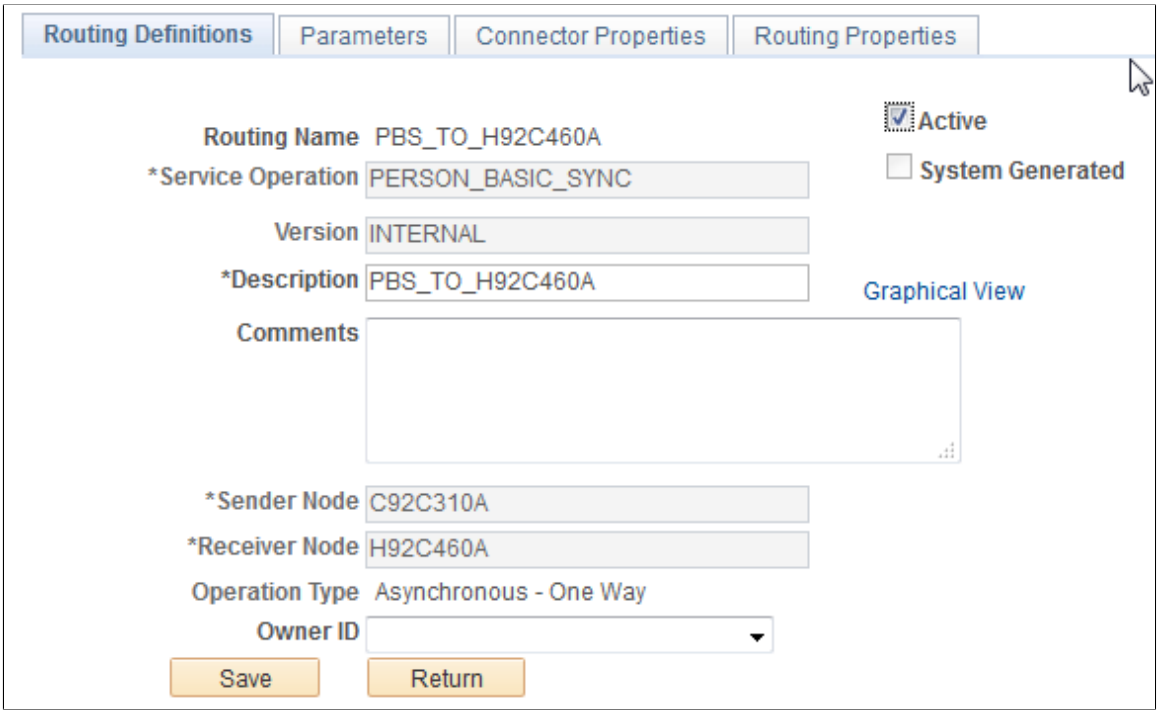
g. Define a Sender Node and a Receiver Node on the Routings Definition page of the Routings component.

Image: PERSON_BASIC_SYNC routing definition page

This example illustrates the fields and controls on the PERSON_BASIC_SYNC routing definition page. You can find definitions for the fields and controls later on this page.



h. Verify that the Active check box is checked.

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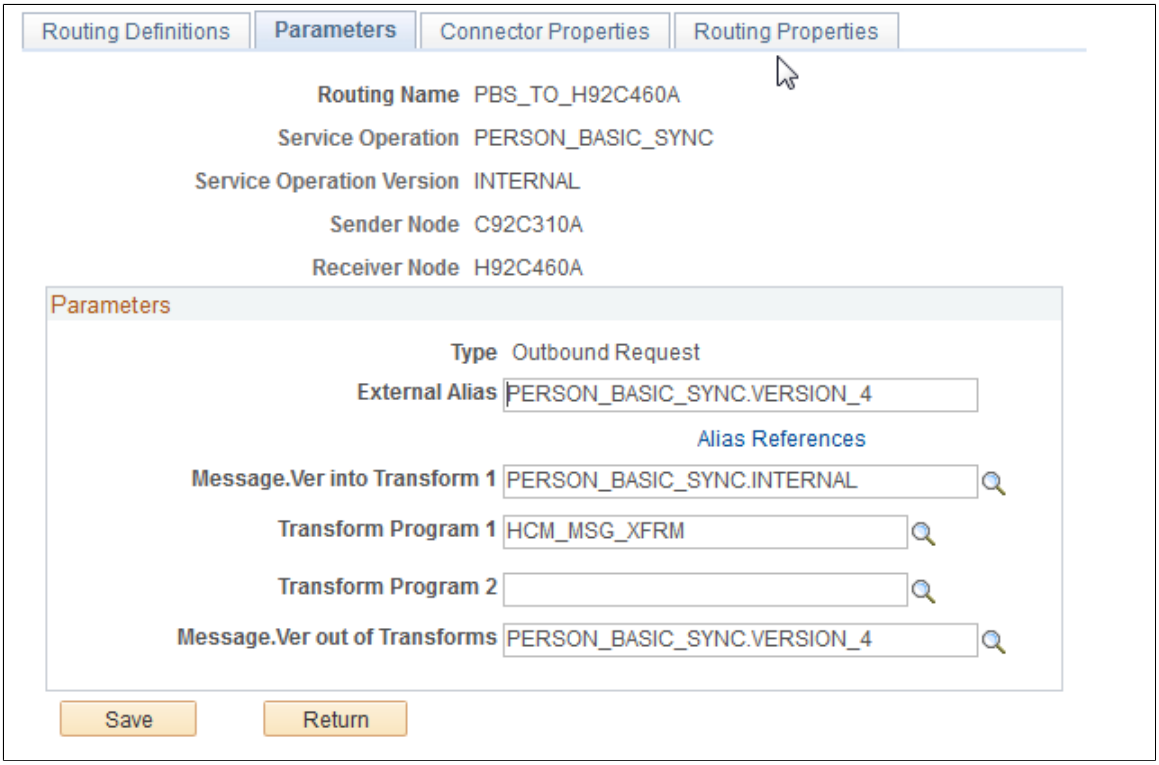
i. Click the Parameters tab and set up the following:

Image: PERSON_BASIC_SYNC Routing Parameters page

This example illustrates the fields and controls on the PERSON_BASIC_SYNC Routing Parameters page. You can find definitions for the fields and controls later on this page.



External Alias	Enter the external alias; for example, PERSON_BASIC_SYNC.VERSION_4.
Message.Ver into Transform 1	For example, PERSON_BASIC_SYNC.INTERNAL.
Transform Program	Bundle 41. Change in the transformation program. For example, HCM_MSG_XFRM.
Message.Ver out of Transforms	For example, PERSON_BASIC_SYNC.VERSION_4.

j. Click Save at the bottom of the Parameters page to save the routing.

k. Click Return at the bottom of the Parameters page to return to the Service Operation setup page.

l. Click Save at the bottom of any page in the Service Operations component to save the Service Operation.

3. Activate Message Queue.

a. Navigate to PeopleTools, Integration Broker, Service Operations Monitor,, Administration, Queue Status.

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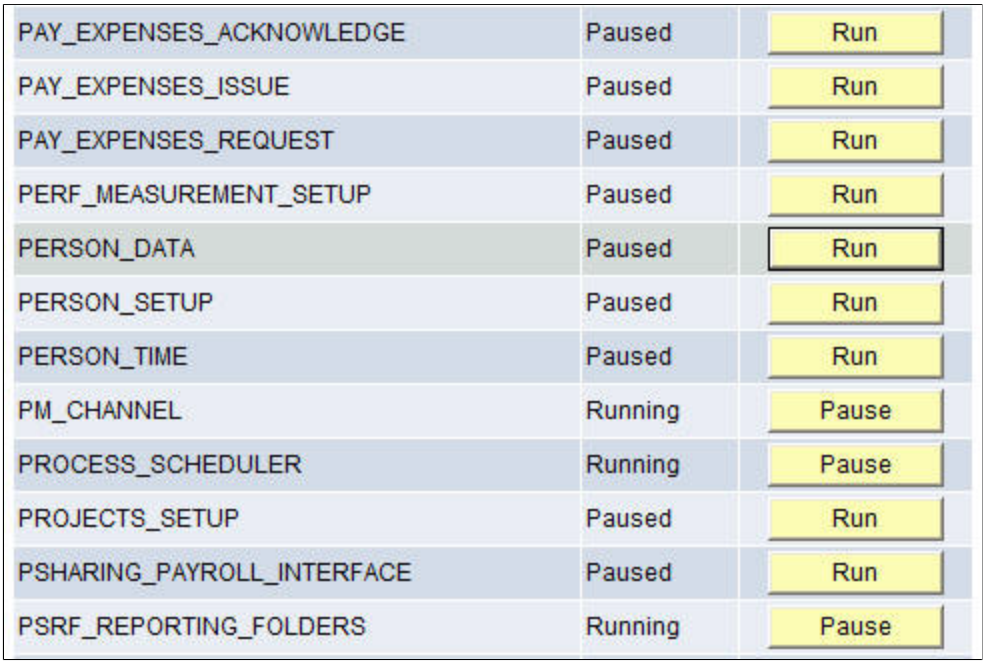
b. Scroll down the page until you find the relevant PERSON_DATA Queue Name.

c. Review the queue Status and activate the queue by clicking Run, if needed. The queue status should be set to *Running* before leaving this page.

Image: Example of PERSON_DATA Queue Status

This example illustrates queue status for PERSON_DATA.



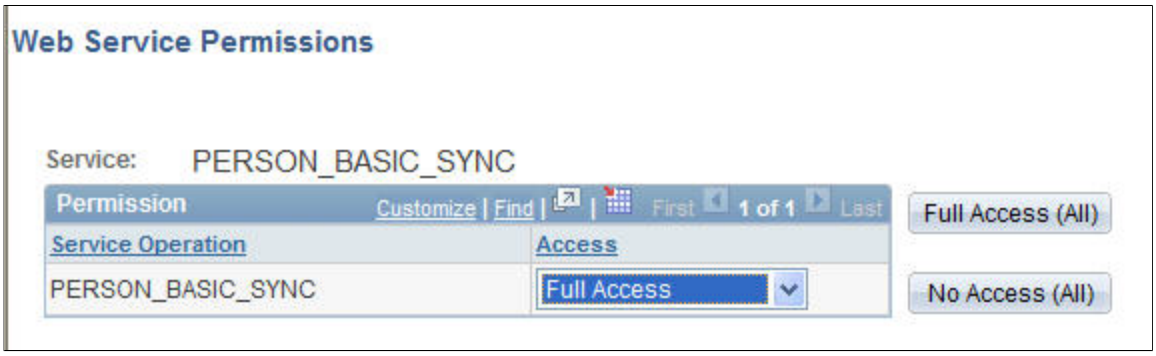
PAY_EXPENSES_ACKNOWLEDGE	Paused	Run
PAY_EXPENSES_ISSUE	Paused	Run
PAY_EXPENSES_REQUEST	Paused	Run
PERF_MEASUREMENT_SETUP	Paused	Run
PERSON_DATA	Paused	Run
PERSON_SETUP	Paused	Run
PERSON_TIME	Paused	Run
PM_CHANNEL	Running	Pause
PROCESS_SCHEDULER	Running	Pause
PROJECTS_SETUP	Paused	Run
PSHARING_PAYROLL_INTERFACE	Paused	Run
PSRF_REPORTING_FOLDERS	Running	Pause

Configuring HCM as the Target Database

1. Update security by adding the service operation to the required user's permission list.

Image: Web Service Permissions page

This example illustrates the fields and controls on the Web Service Permissions page for the PERSON_BASIC_SYNC service.



a. Navigate to PeopleTools, Security, Permissions & Roles, Permission Lists.

b. Select the relevant permission list from the search dialog box (primary permission list for the user).

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c. Click the Web Services tab.

d. Enter the corresponding Service(s) for the Service Operation(s) you want to leverage.

e. Click the Edit link and add access to the relevant Service Operation(s) listed on the Web Service Permissions secondary page.

f. Click OK to return to the Web Services page.

g. Click Save to save the updated Permission List.

2. Activate Service Operation(s) and Create Routing(s) and Subscription Handler in HCM:

   a. Navigate to PeopleTools, Integration Broker, Integration Setup, Service Operations.

   b. Select PERSON_BASIC_SYNC from the search dialog box.

   c. Check the Active check box on the General tab.

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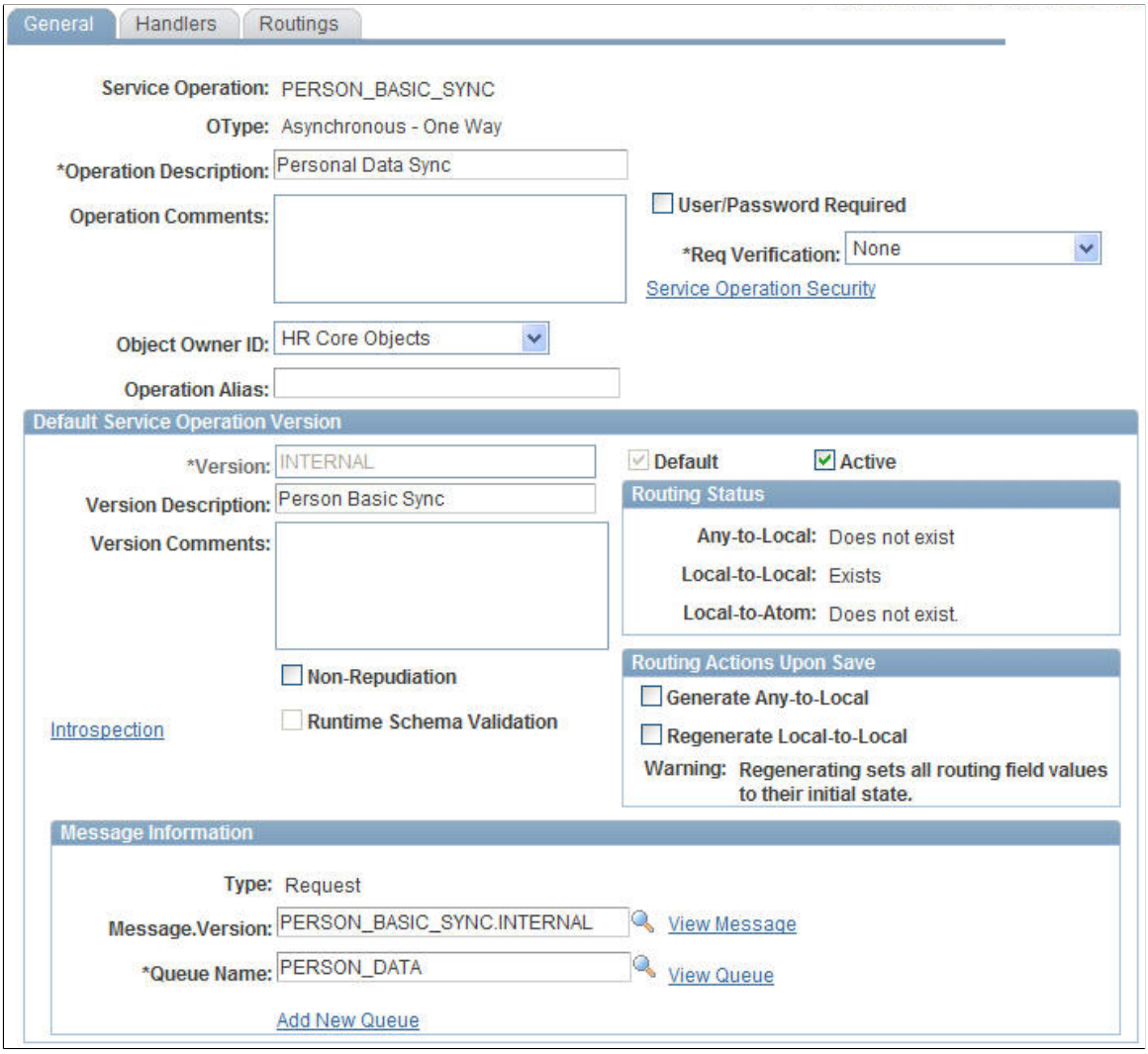
d. Make note of the Queue Name field, as you need to verify that the PERSON_DATA Queue is in *Running* status later.

Image: General page for PERSON_BASIC_SYNC service operation

This example illustrates the fields and controls on the General page for the PERSON_BASIC_SYNC service operation in HCM.



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e. Click the Handlers tab. Set the SCC_HR_PERSON handler to *Active*.

Image: Handlers page for PERSON_BASIC_SYNC

This example illustrates the fields and controls on the Handlers page for the PERSON_BASIC_SYNC service operation in HCM.

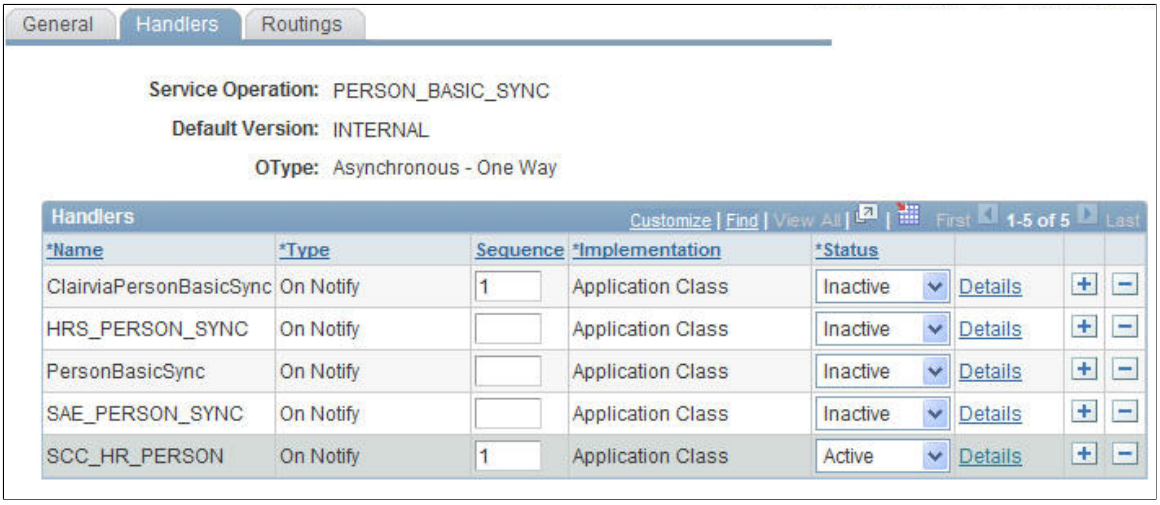
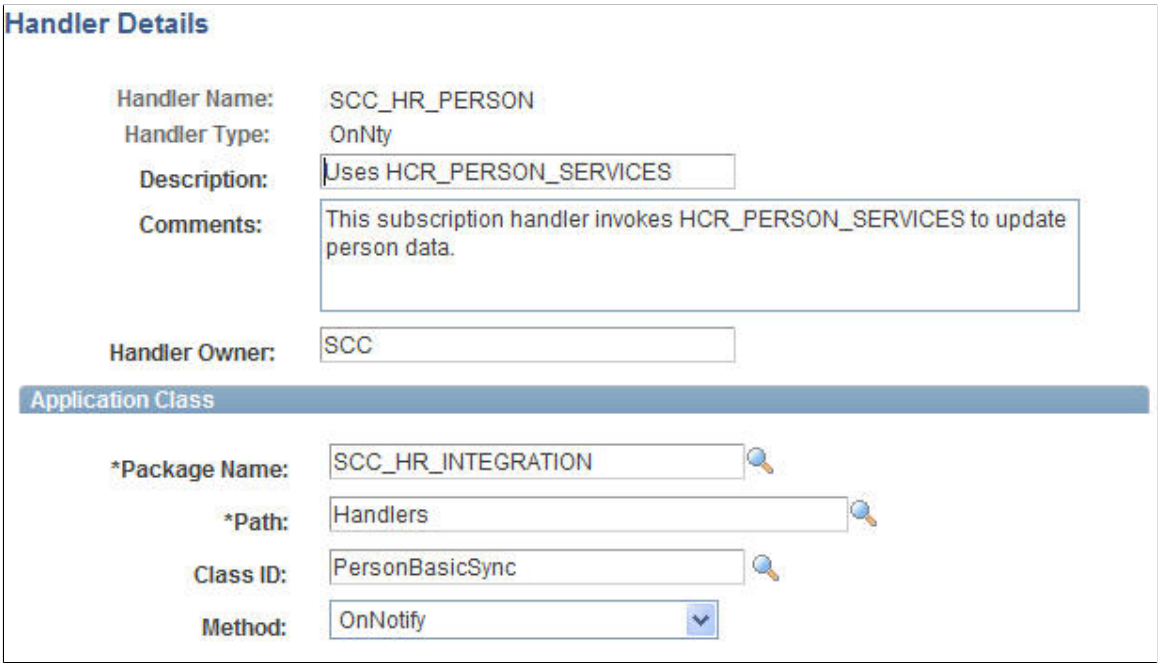


Image: Handler Details page for SCC_HR_PERSON

This example illustrates the fields and controls on the Handler Details page for the SCC_HR_PERSON handler in HCM.



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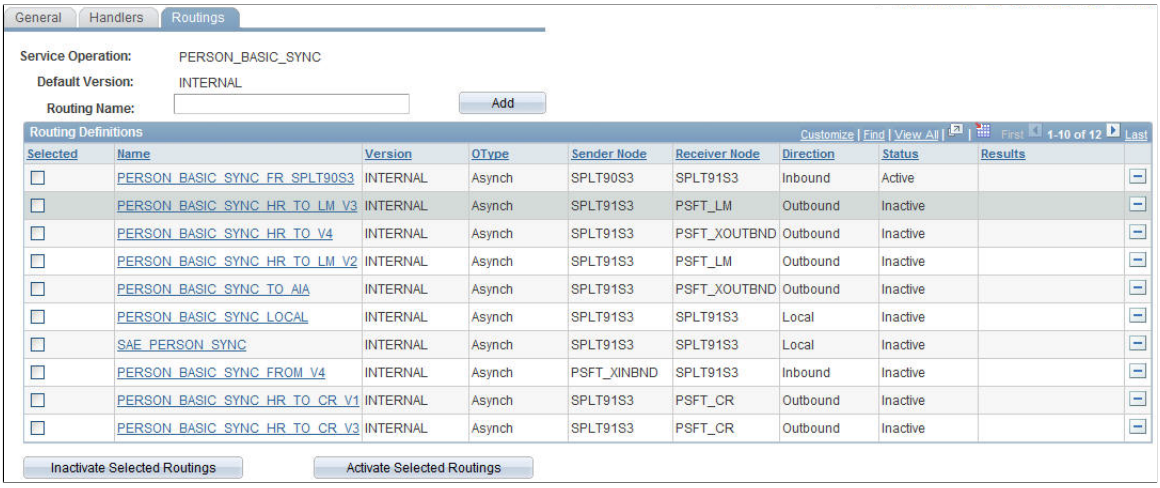
f. Select the Routings tab and add a new routing for the Service Operation by entering a value in the Routing Name field and clicking the Add button.

Image: Routings page for PERSON_BASIC_SYNC service operation

This example illustrates the fields and controls on the Routings page for the PERSON_BASIC_SYNC service operation in HCM.



Selected	Name	Version	OType	Sender Node	Receiver Node	Direction	Status	Results
☐	PERSON_BASIC_SYNC_FR_SPLT90S3	INTERNAL	Asynch	SPLT90S3	SPLT91S3	Inbound	Active	
☐	PERSON_BASIC_SYNC_HR_TO_LM_V3	INTERNAL	Asynch	SPLT91S3	PSFT_LM	Outbound	Inactive	
☐	PERSON_BASIC_SYNC_HR_TO_V4	INTERNAL	Asynch	SPLT91S3	PSFT_XOUTBND	Outbound	Inactive	
☐	PERSON_BASIC_SYNC_HR_TO_LM_V2	INTERNAL	Asynch	SPLT91S3	PSFT_LM	Outbound	Inactive	
☐	PERSON_BASIC_SYNC_TO_AIA	INTERNAL	Asynch	SPLT91S3	PSFT_XOUTBND	Outbound	Inactive	
☐	PERSON_BASIC_SYNC_LOCAL	INTERNAL	Asynch	SPLT91S3	SPLT91S3	Local	Inactive	
☐	SAE_PERSON_SYNC	INTERNAL	Asynch	SPLT91S3	SPLT91S3	Local	Inactive	
☐	PERSON_BASIC_SYNC_FROM_V4	INTERNAL	Asynch	PSFT_XINBND	SPLT91S3	Inbound	Inactive	
☐	PERSON_BASIC_SYNC_HR_TO_CR_V1	INTERNAL	Asynch	SPLT91S3	PSFT_CR	Outbound	Inactive	
☐	PERSON_BASIC_SYNC_HR_TO_CR_V3	INTERNAL	Asynch	SPLT91S3	PSFT_CR	Outbound	Inactive	

g. Enter the CS Sender Node and an HCM Receiver Node on the Routings Definition page of the Routings component.

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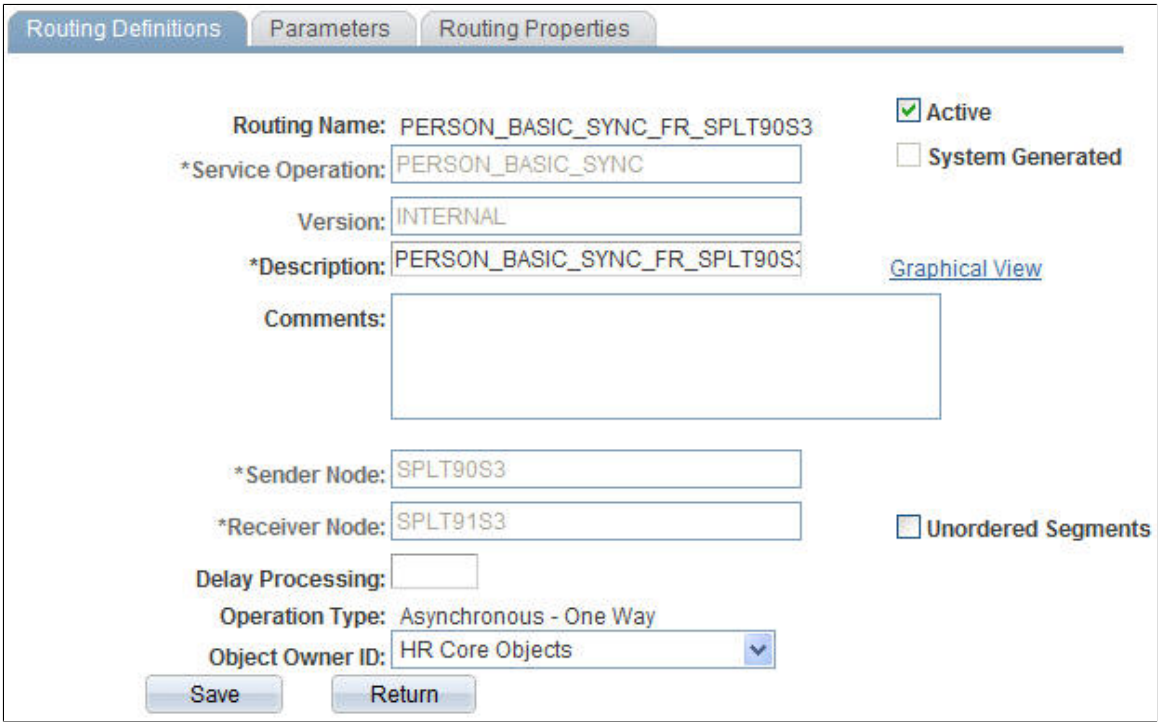
h. Verify that the Active check box is checked.

Image: Routing Definitions page for PERSON_BASIC_SYNC

This example illustrates the fields and controls on the Routing Definitions page for the PERSON_BASIC_SYNC service operation in HCM.



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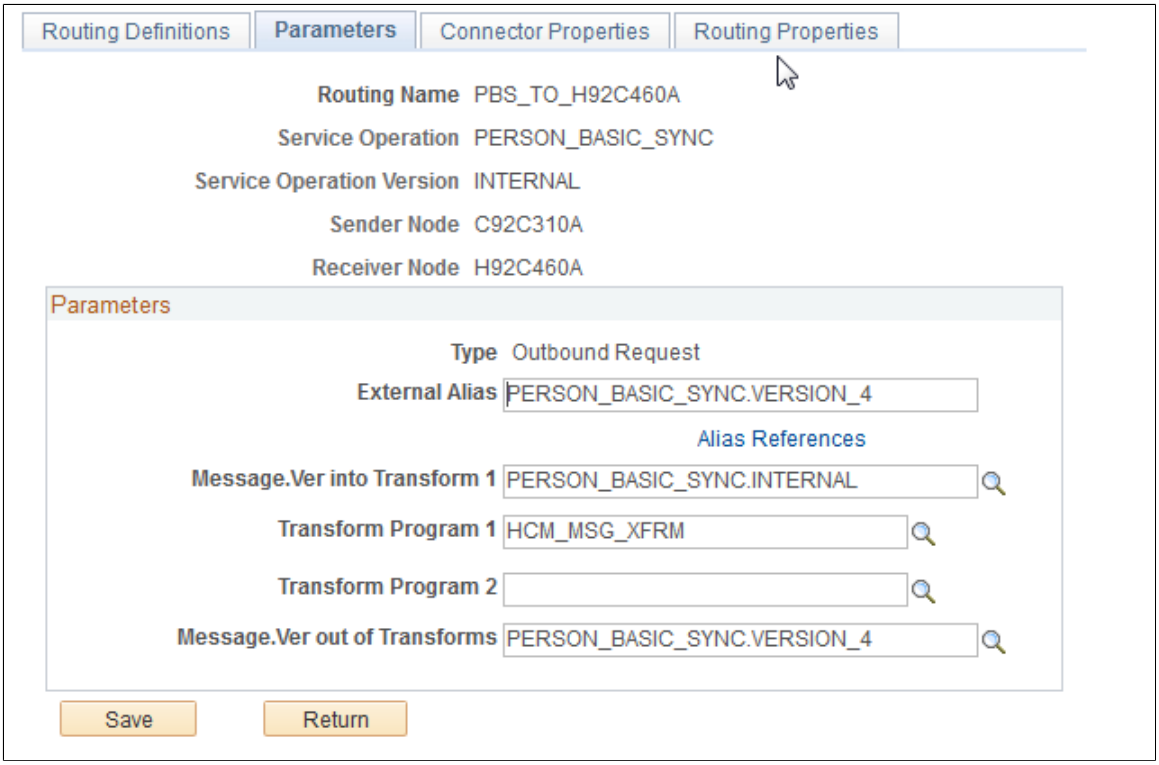
i. Select the Parameters tab and set the following:

Image: Parameters page for PERSON_BASIC_SYNC

This example illustrates the fields and controls on the routing Parameters page for the PERSON_BASIC_SYNC service operation in HCM.



External Alias	Enter the external alias; for example, PERSON_BASIC_SYNC.VERSION_4.
Message.Ver into Transform 1	For example, PERSON_BASIC_SYNC.INTERNAL.
Transform Program	Bundle 41. Change in the transformation program. For example, HCM_MSG_XFRM.
Message.Ver out of Transforms	For example, PERSON_BASIC_SYNC.VERSION_4.

j. Click Save at the bottom of the Parameters page to save the routing.

k. Click Return at the bottom of the Parameters page to return to the Service Operation setup page.

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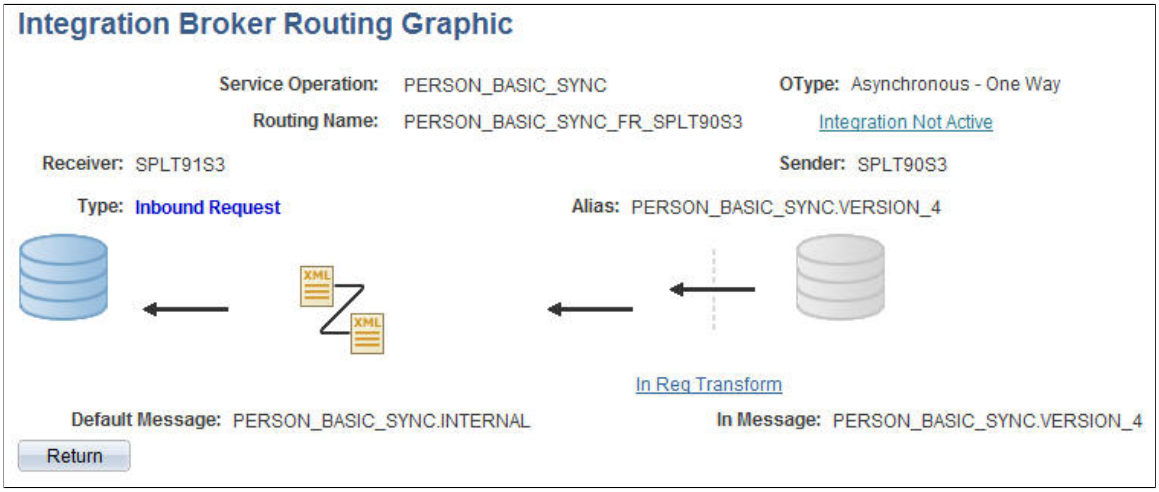
l. Click Save at the bottom of any page in the Service Operations component to save the Service Operation.

Image: Integration Broker Routing

This example illustrates Integration Broker inbound request routing for PERSON_BASIC_SYNC.



Understanding Person Data FullSync and Sync Service Operations and Handlers

The following table summarizes the FullSync and Sync Service Operations, and the Subscription Handler that you should use to configure your CS-HCM person bio-demo data integrations.

Service Name	*Queue*	*Subscription Handler App Package*
PERS_POI_FULLSYNC.VERSION_1	PERSON_DATA	PersPoiFullSync PERSPOIFULLSYNC/PersPoiFullSync/OnNotify
PERS_POI_SYNC.VERSION_1	PERSON_DATA	PersPoiSync PERSPOISYNC/PersPoiSync/OnNotify
PERSON_BASIC_FULLSYNC.VERSION_4	PERSON_DATA	PersonBasicFullsync PERSON_BASIC_FULLSYNC/PersonBasicFullSync/OnNotify
PERSON_BASIC_SYNC.VERSION_4	PERSON_DATA	SCC_HR_PERSON SCC_HR_PERSON/PersonBasicSync/OnNotify
PERSON_DISABILITY_FULLSYNC.VERSION_2	PERSON_DATA	ONNOTIFY PERSON_DISABILITY_FULLSYNC/PersonDisabilityFullsync/OnNotify

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Service Name	*Queue*	*Subscription Handler App Package*
PERSON_DISABILITY_SYNC. VERSION_2	PERSON_DATA	ONNOTIFY PERSON_DISABILITY_SYNC/ PersonDisabilitySync/OnNotify
PERSON_DIVERSITY_FULLSYNC. VER SION_2	PERSON_DATA	PersonDiversityFullSync PERSON_DIVERSITY_FULLSYNC/ PersonDiversityFullsync/On Notify
PERSON_DIVERSITY_SYNC. VERSION_2	PERSON_DATA	PersonDiversitySync PERSON_DIVERSITY_SYNC/ PersonDiversitySync/OnNotify
PERSON_VISA_CITIZEN_ FULLSYNC1.VERSION_1	PERSON_DATA	ONNOTIFY PERSON_VISA_ CITIZEN_FULLSYNC1/ PersonVisaCitizenFullSync1/OnNotify
PERSON_VISA_CITIZEN_ FULLSYNC2.VERSION_1	PERSON_DATA	ONNOTIFY PERSON_VISA_ CITIZEN_FULLSYNC2/ PersonVisaCitizenFullSync2/OnNotify
PERSON_VISA_CITIZEN_SYNC. VERSION_2	PERSON_DATA	ONNOTIFY PERSON_VISA_CITIZEN_SYNC/ PersonVisaCitizenSync/OnNotify
WORKFORCE_FULLSYNC.VERSION _3	PERSON_DATA	WorkforceFullSync WORKFORCE_FULLSYNC/ WorkforceFullSync/OnNotify
WORKFORCE_SYNC.VERSION_3	PERSON_DATA	WorkforceSync WORKFORCE_SYNC/WorkforceSync/ OnNotify

Integrating Setup Data

This topic discusses how to:

- Understand setup data integration.
- Configure web services for setup data.
- Understand the setup data loading sequence.

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- Use delivered EIPs.

Note: Documentation relevant to Campus Solutions and Human Capital Management integration is available on My Oracle Support (ID 2091799.2).

Understanding Setup Data Integration

In all integration configurations, some setup data underlies all person transactions. This setup data needs to be synchronized between the HCM instance and CS. The following list is of the data integrated in one direction, from HCM to CS:

- Address Types
- National ID Types
- Ethnic Groups
- HCM Business Units
- Currency Codes
- Company Codes
- Major Subject Codes
- Country Codes
- State Codes
- Departments
- Holiday Date Schedules
- Job Codes
- Locations
- Name Titles
- Name Types
- Name Prefixes
- Name Royal Prefixes
- Name Royal Suffixes
- Name Suffixes
- Name Formats
- POI Types
- Regulatory Regions
- SetIDs

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- TableSet Controls
- U.S. Standard Occupational Codes
- Visa Permit Types
- Visa Permit Documents

Configuring Web Services for Setup Data

Oracle delivers several EIPs to automate the process of synchronizing setup data between CS and HCM; this ensures that the setup data underlying the transactional data remains in sync. Other delivered EIPs enable your institution to integrate data in support of External Search/Match and core business processes.

Note that person data EIPs are designated sync or fullsync. Fullsync EIPs republish all the data in their source records at once. Incremental sync EIPs send real-time sync messages; as soon as you make a change in the database of record, the system triggers the sync and sends only the changed information to the other database. This section discusses how to configure FullSync Service Operations.

See Configuring Web Services for Person Data

Configuring Full Sync Service Operations

The following steps for setting up and activating each FullSync service operation in Integration Broker must be performed on the source and target databases.

Source Database Configuration Tasks

Note: These source database configuration instructions are for an HCM 9.1/9.2 database on PeopleTools 8.54.

---

1. Update security by adding the Service Operation(s) to your primary permission list:
   a. Navigate to PeopleTools , Security , Permissions & Roles , Permission Lists.
   b. Select the relevant permission list from the search dialog box.
   c. Select the Web Services tab.
   d. Enter the corresponding Service(s) for the Service Operation(s) you wish to use.

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e. Click the Edit link. On the Web Service Permissions secondary page, add access to the relevant Service Operation(s) listed by selecting the Full Access option for the Access column.

Image: Web Services page-Permission List

This example illustrates the fields and controls on the Web Services page-Permission List.

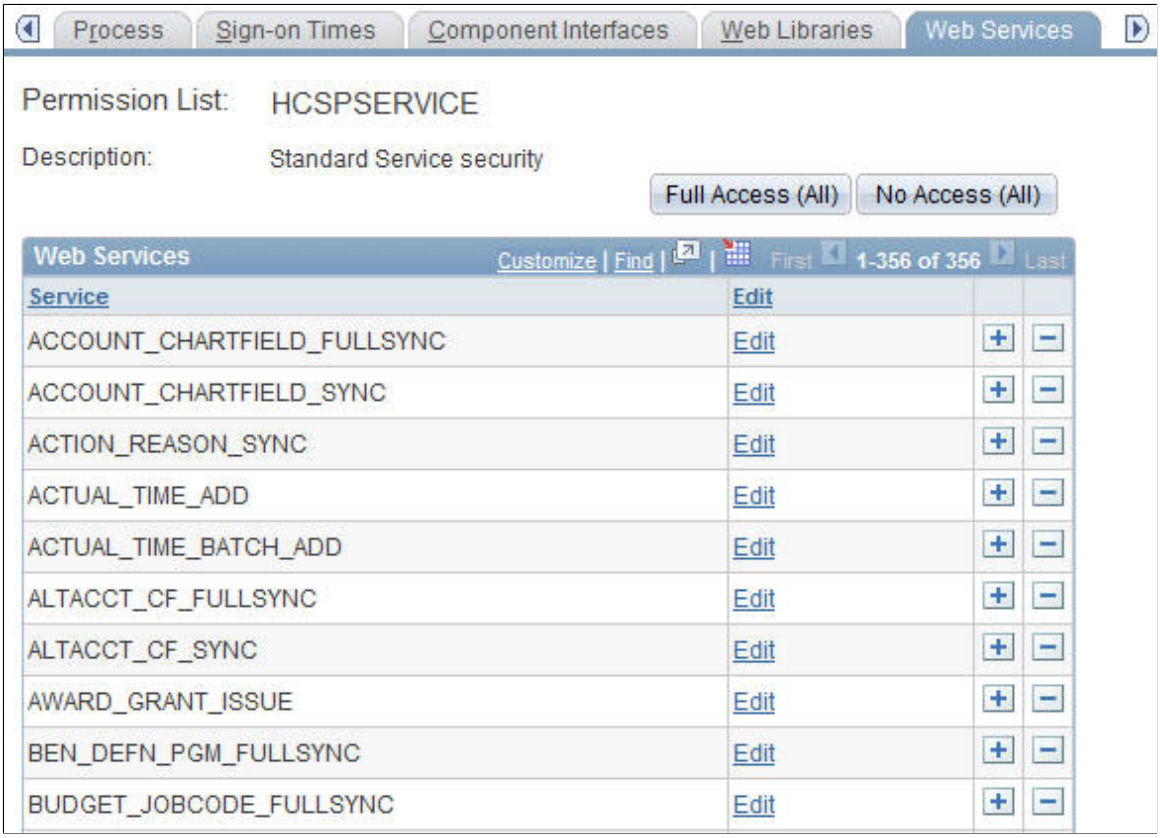
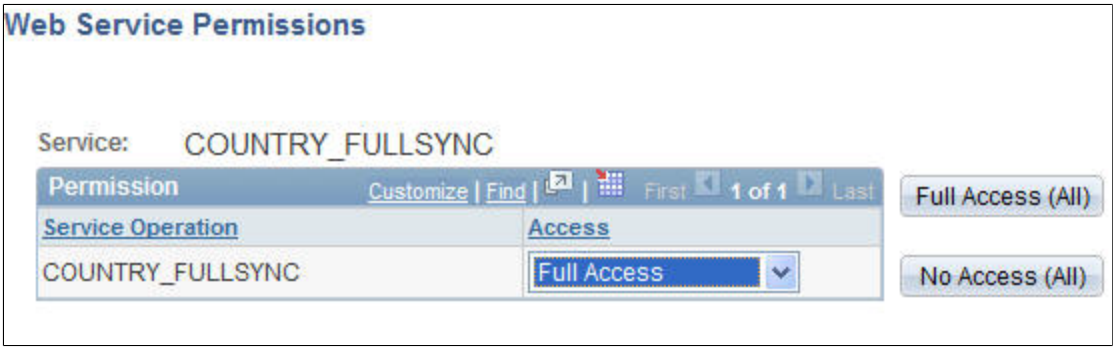


Image: Web Services Permissions page

This example illustrates the fields and controls on the Web Services Permissions page for HCM.



2. Activate Service Operations and create Routings.

   a. Navigate to PeopleTools, Integration Broker, Integration Setup, Service Operations.

   b. Select the relevant Service Operation(s) from the search dialog box.

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c. Check the Active check box on the General tab.

d. Make note of the Queue Name field, as you need to verify later that the Queue status is *Running*.

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e. Select the Routings tab and add a new routing for the Service Operation by entering a value in the Routing Name field and clicking the Add button.

Image: General page

This example illustrates the fields and controls on the General page for the COUNTRY_FULLSYNC service operation.

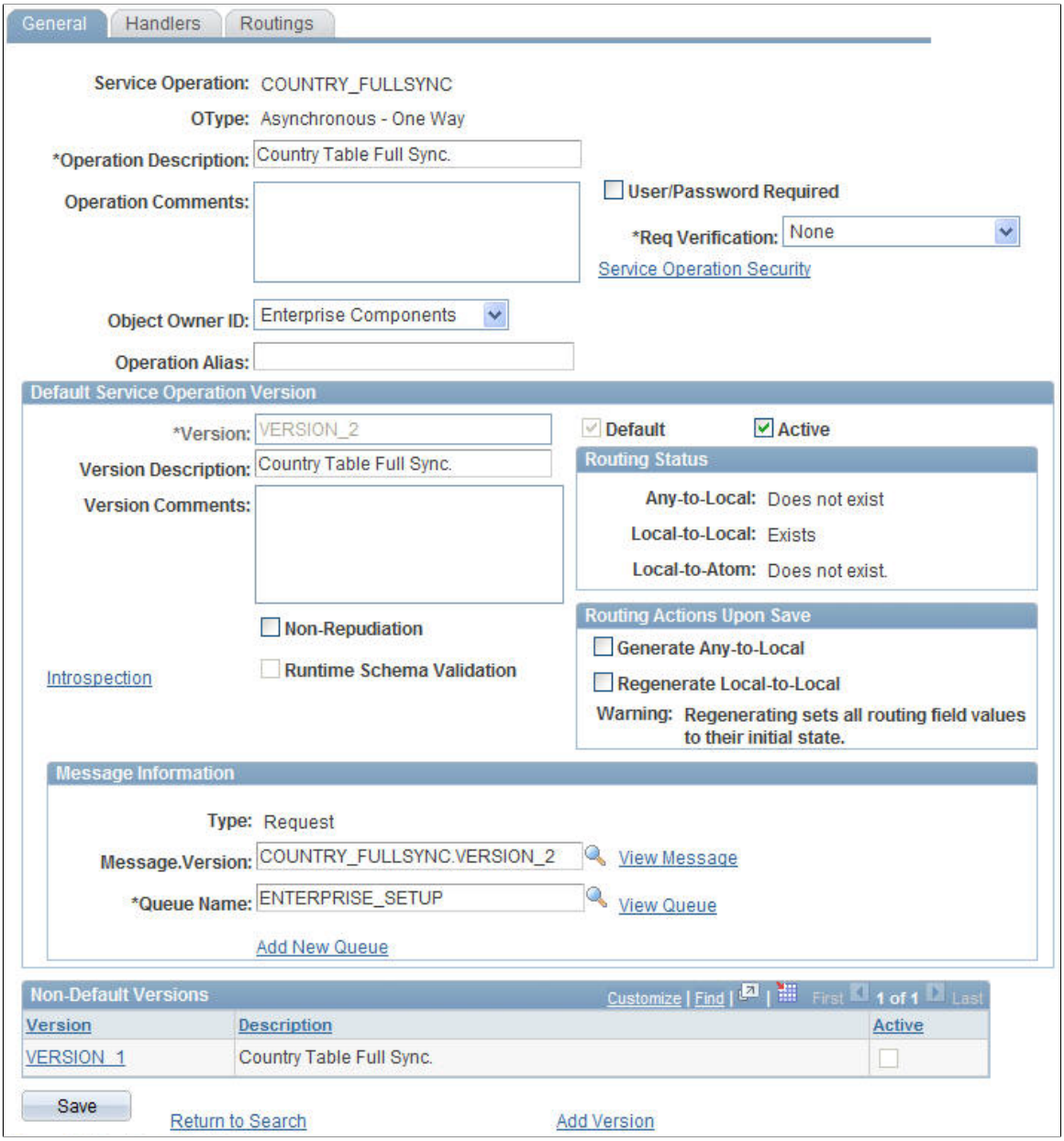

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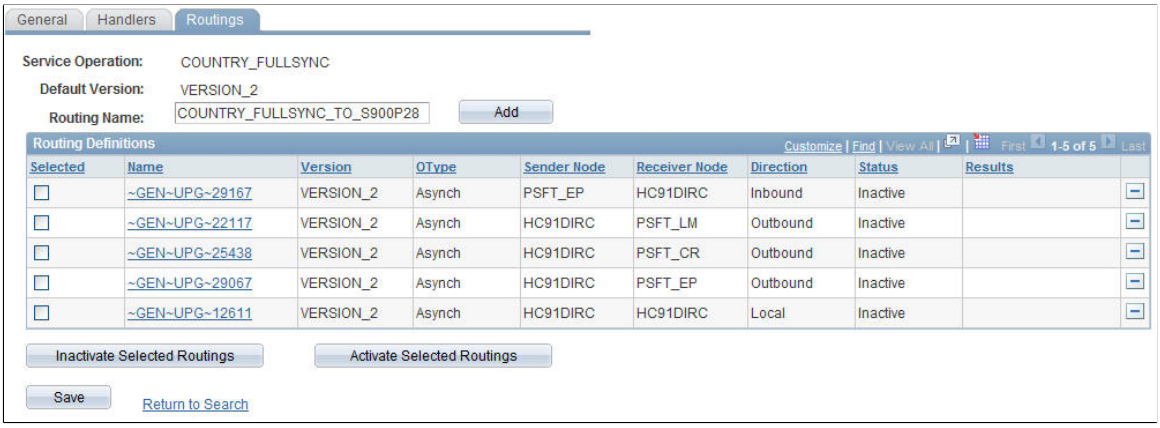
Image: Routings page

This example illustrates the fields and controls on the Routings page for the COUNTRY_FULLSYNC service operation.



f. Enter a Sender Node and a Receiver Node on the Routings Definition page of the Routings component.

g. Verify that the Active check box is checked.

h. Save the routing.

i. Click the Return button at the bottom of the Routings Definition page to return to the Service Operation setup component.

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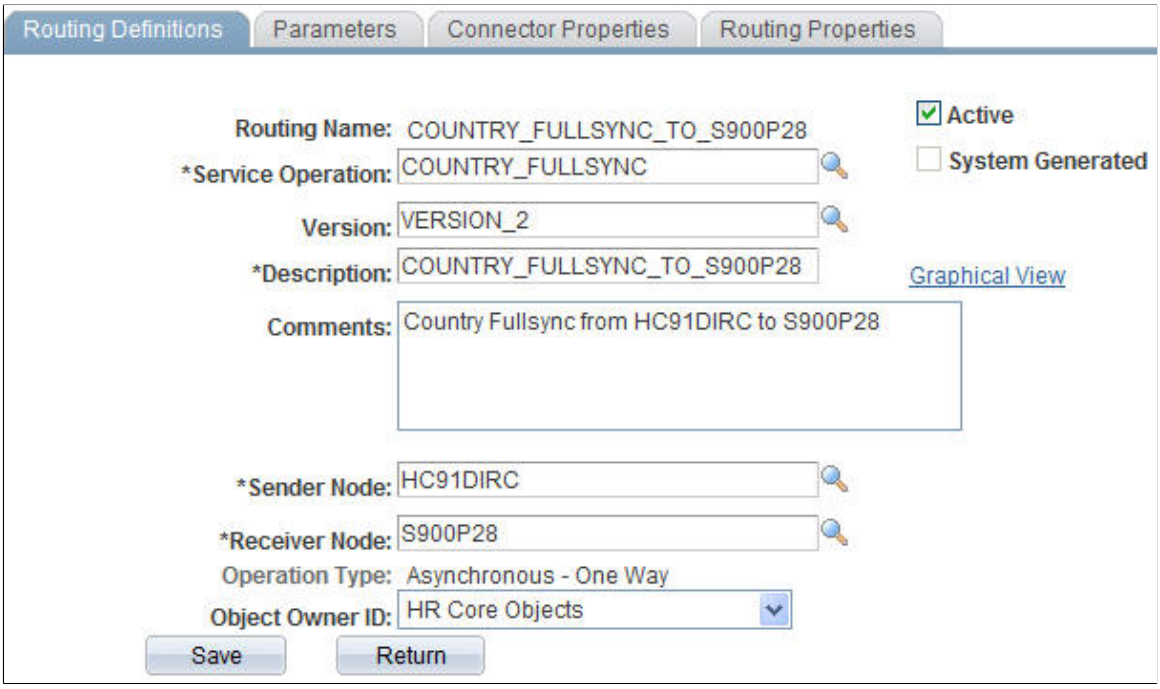
j. Click Save at the bottom of any page in the Service Operations component to save the Service Operation.

Image: Routing Definitions page

This example illustrates the fields and controls on the Routing Definitions page for the COUNTRY_FULLSYNC service operation.



3. Activate Message Queue.

   a. Navigate to PeopleTools, Integration Broker , Service Operations Monitor, Administration, Queue Status

   b. Scroll down the page to find the relevant Queue Name (from the Service Operation setup page noted earlier).

   c. Review the queue Status and activate the queue by clicking the Run button if needed. Before leaving this page, ensure that queue status is set to *Running*.

Target Database Configuration Tasks

Note: These target database configuration instructions are for a CS 9.2 database on PeopleTools 8.54.

---

1. Update security by adding the service operation to the required user's permission list.

   a. Navigate to PeopleTools, Security, Permissions & Roles, Permission Lists.

   b. Select the relevant permission list from the search dialog box (primary permission list for the user).

   c. Select the Web Services tab.

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d. Enter the corresponding Service(s) for the Service Operation(s) you wish to leverage.

e. Click the Edit link and add access to the relevant Service Operation(s) listed on the Web Service Permissions secondary page.

f. Click OK to return to the Web Services page.

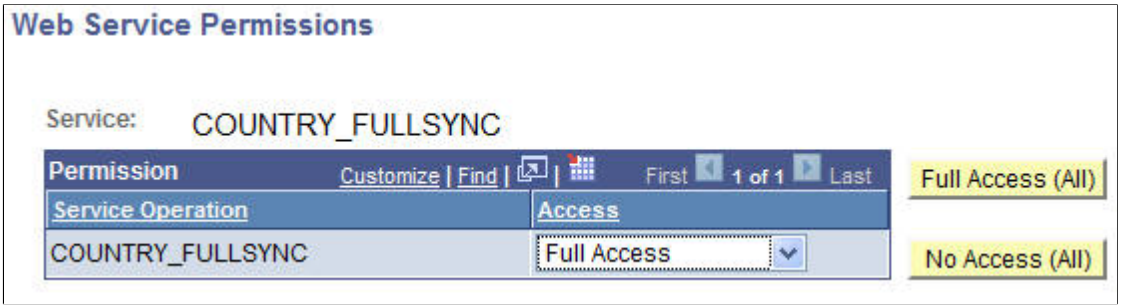
g. Click Save to save the updated Permission List.

Image: Web Services page

This example illustrates the fields and security controls on the Web Services page.

Image: Web Service Permissions page

This example illustrates the fields and security controls on the Web Service Permissions page in Campus Solutions.



2. Activate Service Operation and Create Routing.

a. Navigate to PeopleTools, Integration Broker, Integration Setup, Service Operations.

b. Select the relevant Service Operation(s) from the search dialog box.

c. Select the Active check box on the General tab.

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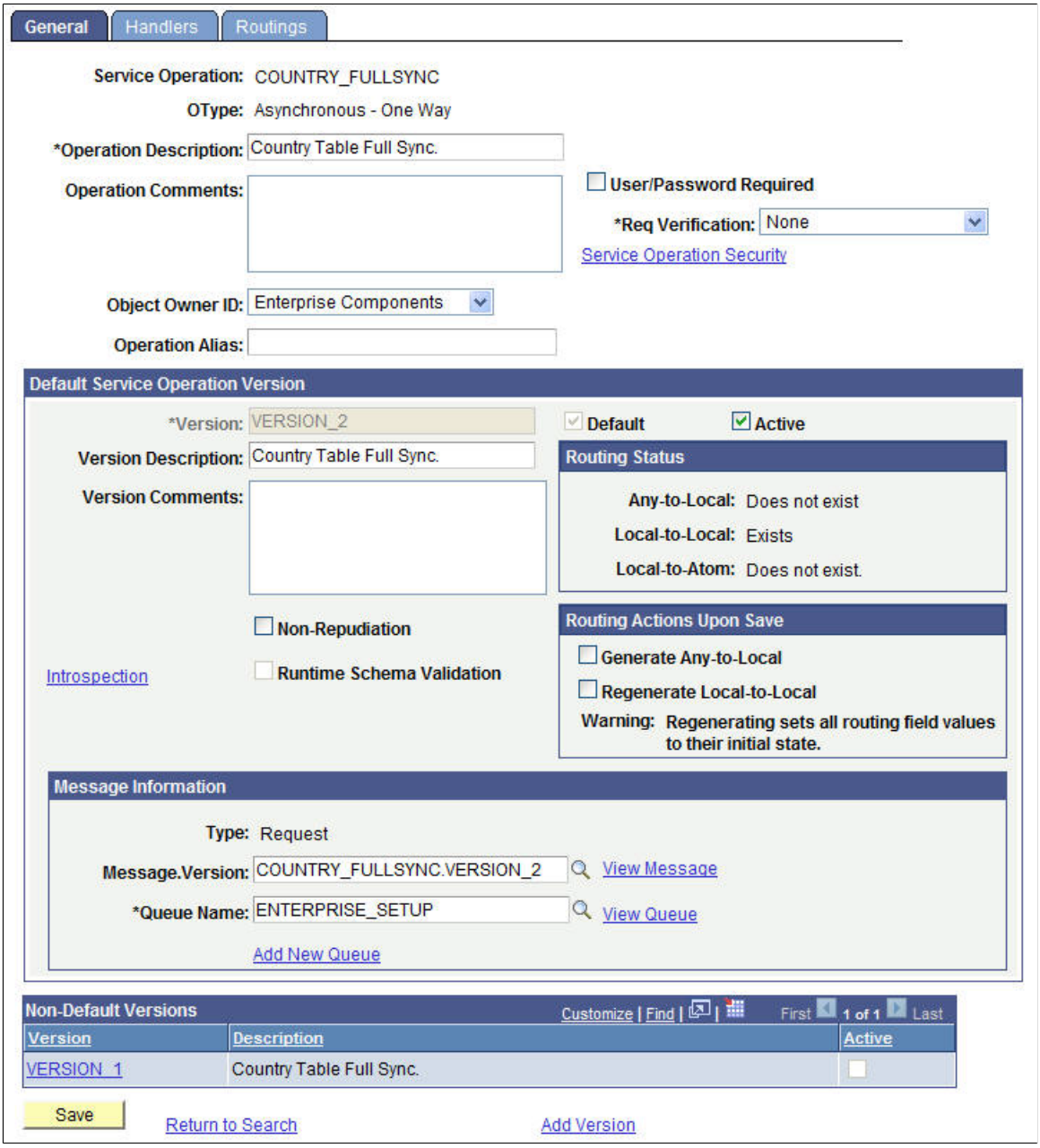
d. Make note of the Queue Name field, as you need to verify later that the Queue status is *Running*.

Image: General page

This example illustrates the fields and controls on the General page for the COUNTRY_FULLSYNC service operation.



e. Select the Routings tab and add a new routing for the Service Operation.

f. Enter a Sender Node and a Receiver Node on the Routings Definition page of the Routings component.

g. Verify that the Active check box is checked.

h. Click Save at the bottom of the Routings Definition page to save the routing.

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i. Click the Return at the bottom of the Routings Definition page to return to the Service Operation setup component.

j. Click Save at the bottom of any page in the Service Operations component to save the Service Operation.

Image: Routings page

This example illustrates the fields and controls on the Routings page for the COUNTRY_FULLSYNC service operation.

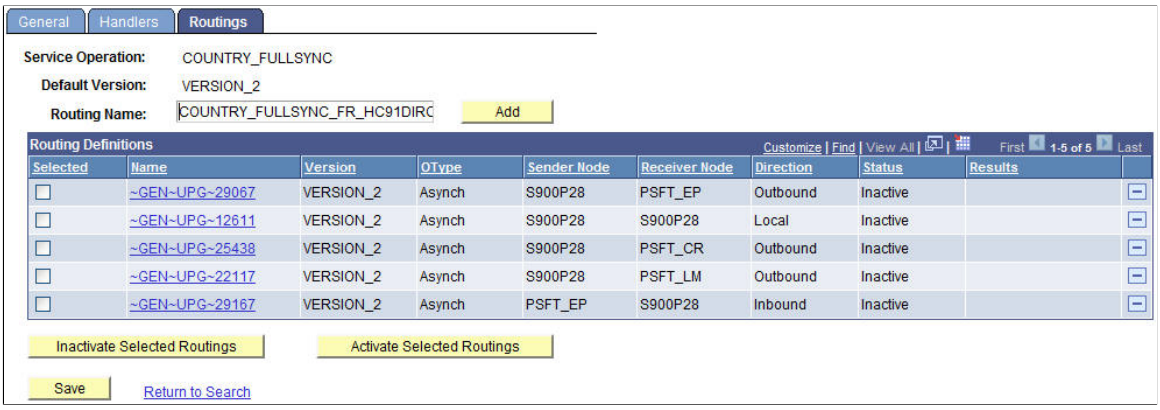
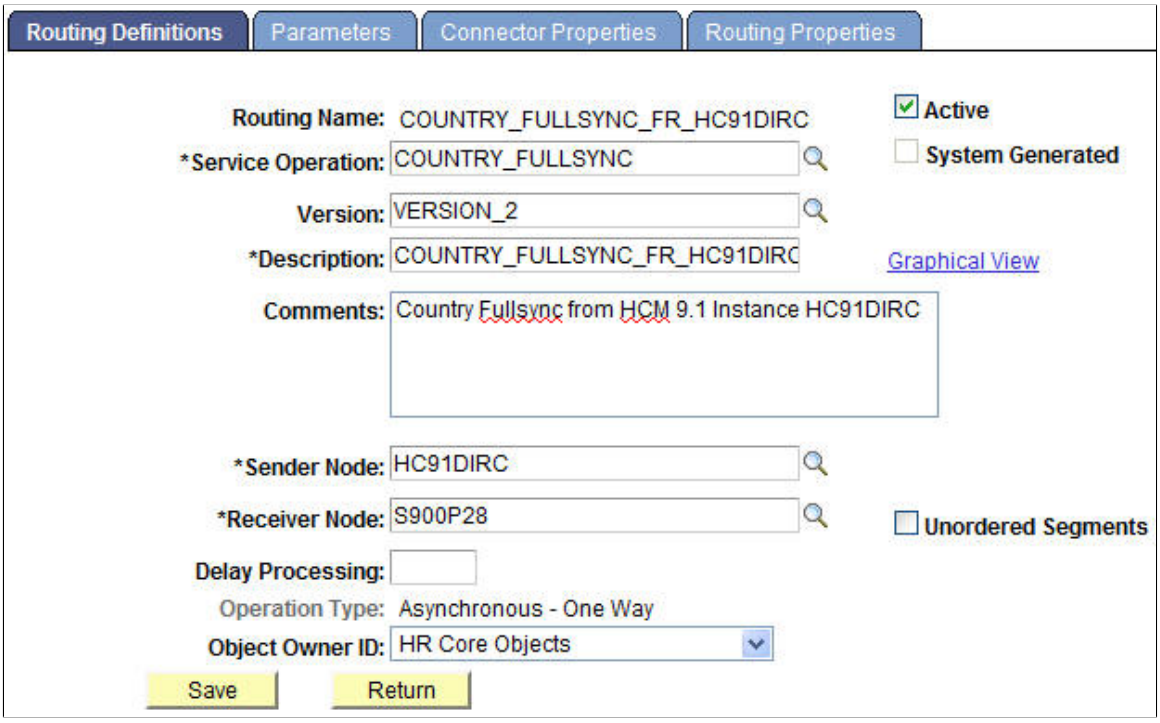


Image: Routing Definitions page

This example illustrates the fields and controls on the Routing Definitions page for the COUNTRY_FULLSYNC service operation.



3. Activate or create the required Service Operations OnNotify handler.

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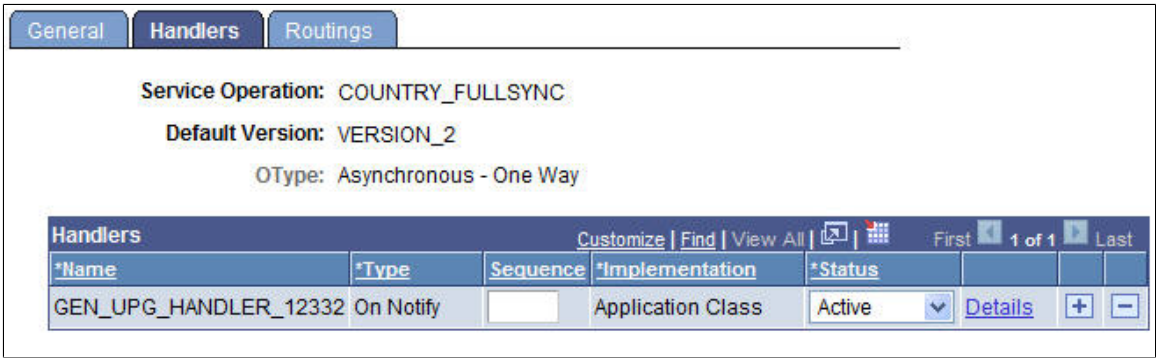
a. Click the Handlers tab of the Service Operations component and set up the following:

Image: Handlers page

This example illustrates the fields and controls on the Handlers page for the COUNTRY_FULLSYNC service operation.



Name	Enter a Handler Name if one does not exist. For example, *BusUnitHRFullSync*. See the *Full Sync Service Operations* table (Application Package Name/ Class/ Method column) for the required value for this field.
Type	OnNotify
Implementation	Application Class
Status	Active

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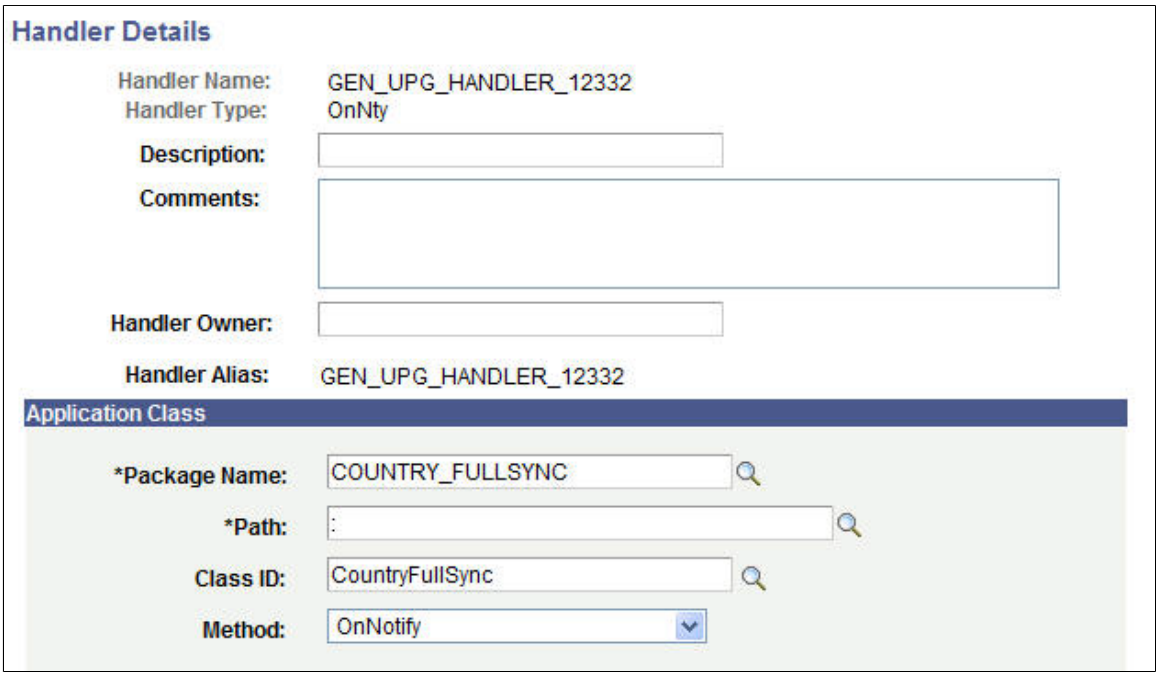
b. Click the Details link and set up the following:

Image: Handler Details page

This example illustrates the fields and controls on the Handler Details page.



Package Name	For example, *GEN_UPG_HANDLER_12332*. See the FullSync Service Operations table (Application Package Name/ Class/ Method column) for the required value for this field.
Path	*:*
Class ID	For example, *CountryFullSync*. See the FullSync Service Operations table (Application Package Name/ Class/ Method column) for the required value for this field.
Method	OnNotify

c. Click OK to return to the Handlers setup page.

d. Click Save at the bottom of the Handlers page to save your changes.

4. Activate Message Queue.

a. Navigate to PeopleTools , Integration Broker, Service Operations Monitor, Administration, Queue Status.

b. Scroll down the page to find the relevant Queue Name (from the Service Operation setup page noted earlier).

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c. Review the queue Status and activate the queue by clicking Run if needed.

Executing the Full Data Publish Utility

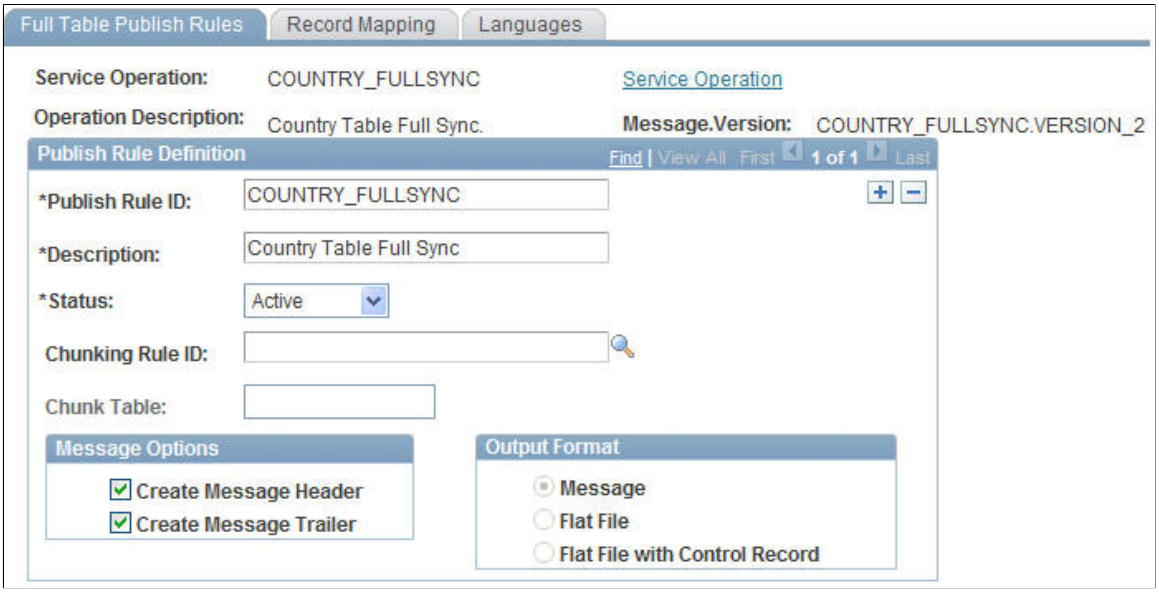
Run the Full Data Publish process to synchronize data between your HCM and CS systems.

1. Define Full Data Publish Rules.

   a. Navigate toEnterprise Components , Integration Definitions , Full Data Publish Rules,and set up the following:

   Image: Full Table Publish Rules page

   This example illustrates the fields and controls on the Full Table Publish Rules page for the COUNTRY_FULLSYNC service operation.



Message Name	Name of the Service Operation.
Publish Rule ID	Enter a publish rule ID.
Description	Enter a description of the Publish Rule.
Status	Set to *Active.*

   b. Check the Create Message Header and Create Message Trailer check boxes.

   c. Save the page.

2. Execute the Full Data Publish Process.

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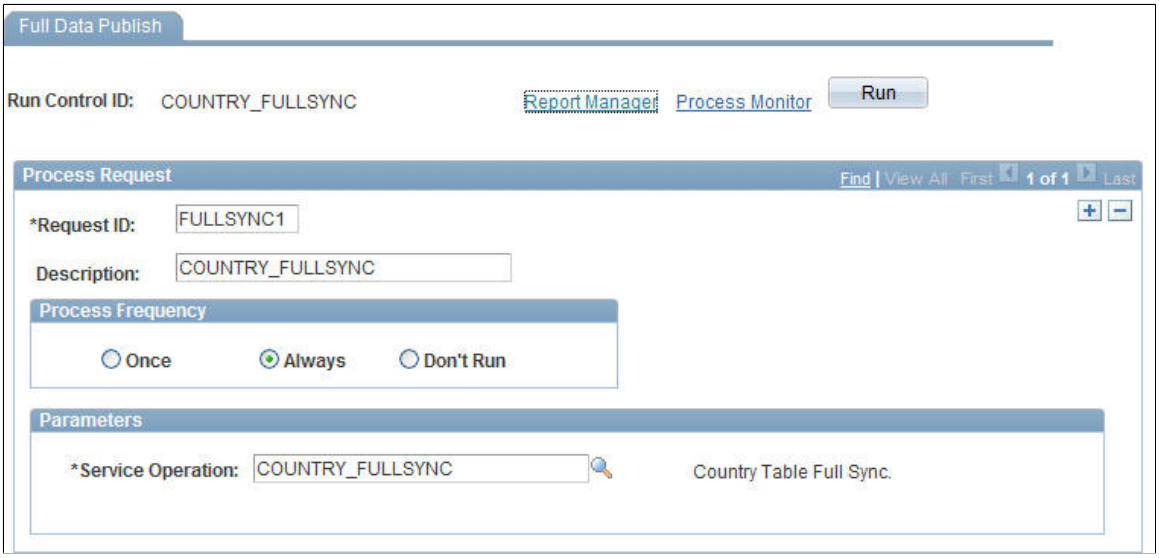
a. Navigate to Enterprise Components, Integration Definitions, Initiate Processes, and set up the following:

Image: Full Data Publish page

This example illustrates the fields and controls on the Full Data Publish page.



Run Control ID	Create a new Run Control ID.
Request ID	Enter a Request ID.
Process Frequency	Select Always.
Parameters	Select the existing Service Operation, for example, COUNTRY_FULLSYNC.

b. Save the page and click Run.

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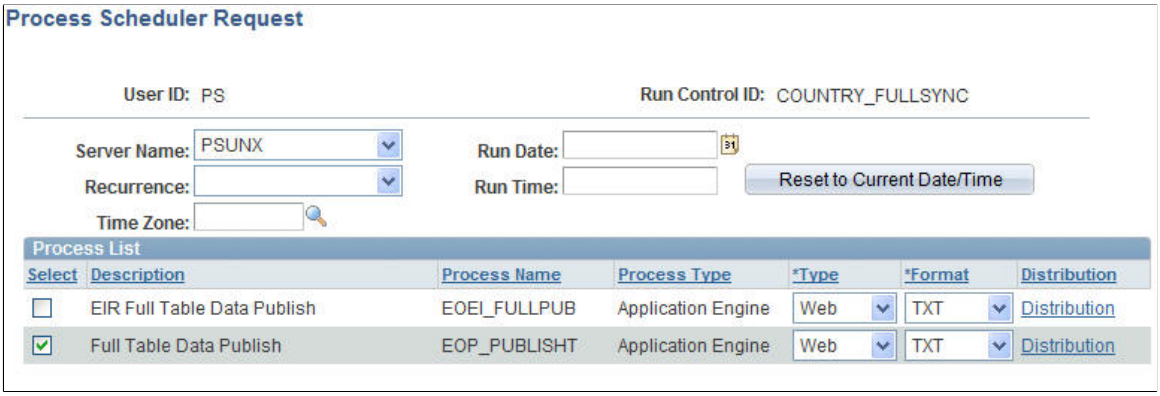
c. Select the Full Table Data Publish process from the Process Scheduler Request page and verify that the process runs successfully.

Image: Process Scheduler Request

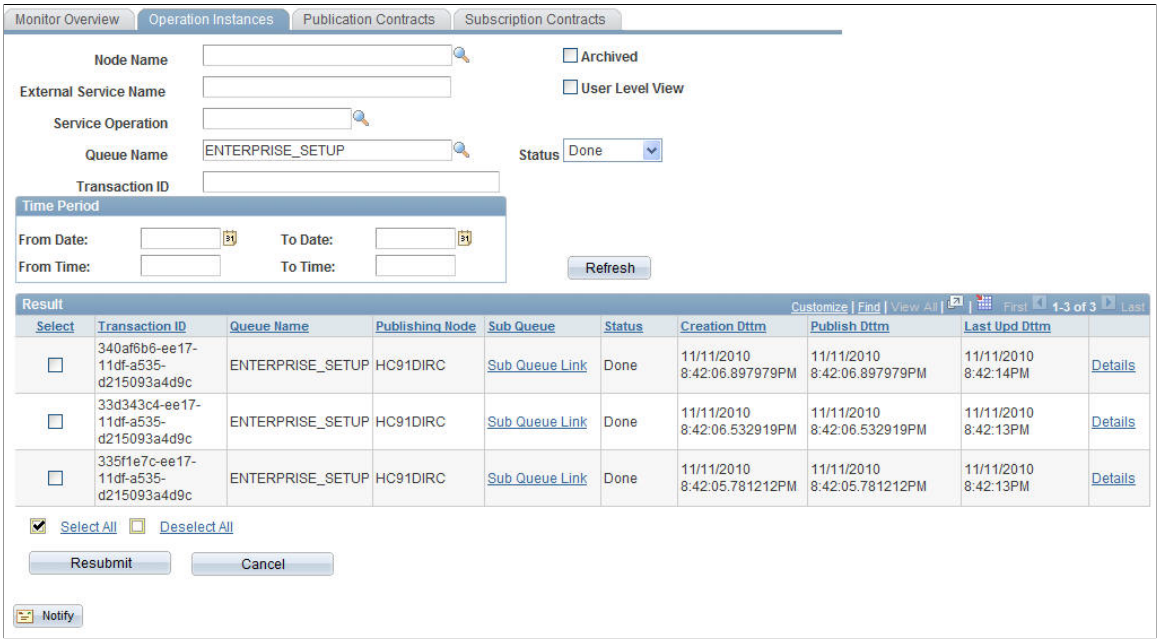
This example illustrates the fields and controls on the Process Scheduler Request page where the Full Table Data Publish process is selected.



3. Navigate to PeopleTools, Integration Broker, Service Operations Monitor, Monitoring , Asynchronous Services to review the status of the Full Sync messages created by the Full Data Publish process.

Image: Operation Instances page

This example illustrates the fields and controls on the Operation Instances page to monitor asynchronous service operations.



Understanding the Setup Data Loading Sequence

Minimum setup information must be available and loaded from your HCM system to your CS system for implementation. This should be completed before performing any transactional data syncs. The values

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defined in these setup tables are key to person bio-demo data integrity. Oracle recommends that your HCM instance be the system of record for your setup table data.

The table below lists the available service operations and applicable tables. These should load in the order specified.

Integration Description	***Integration Name***	***Table (s)***
Country Codes	COUNTRY_FULLSYNC	COUNTRY_TBL
Currency Codes	CURRENCY_FULLSYNC	CURRENCY_CD_TBL
State/Province Codes	STATE_FULLSYNC	STATE_TBL
SetIDs	SETID_INITIALIZE	SETID_TBL
Tableset Controls	TBLSET_CONTROL_INITIALIZE	SET_CNTRL_TBL SET_CNTRL_GROUP SET_CNTRL_REC
Regulatory Regions	REGULATORY_REGION_FULLSYNC	REG_REGION_TBL HR
Business Units	BUS_UNIT_HR_FULLSYNC	BUS_UNIT_TBL_HR
Company Codes	COMPANY_FULLSYNC	COMPANY_TBL
Location Codes	LOCATION_FULLSYNC	LOCATION_TBL
Department Codes	DEPT_FULLSYNC	DEPT_TBL
Job Codes	JOBCODE_FULLSYNC	JOBCODE_TBL
Holiday Date Schedules	HOLIDAY_DATE_FULLSYNC	HOLIDAY_TBL HOLIDAY_DATE
National ID Types	NID_TYPE_FULLSYNC	NID_TYPE_TBL
Name Types	NAME_TYPE_FULLSYNC	NAME_TYPE_TBL
Name Prefixes	NAME_PREFIX_SUFFIX_ FULLSYNC1	NAME_PREFIX_TBL
Name Suffixes	NAME_PREFIX_SUFFIX_ FULLSYNC2	NAME_SUFFIX_TBL
Name Royal Prefixes	NAME_PREFIX_SUFFIX_ FULLSYNC3	NM_ROYPREF_TBL
Name Royal Suffixes	NAME_PREFIX_SUFFIX_ FULLSYNC4	NM_ROYSUFF_TBL
Name Titles	TITLE_FULLSYNC	TITLE_TBL
Address Types	ADDRESS_TYPE_FULLSYNC	ADDRESS_TYP_TBL

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Integration Description	*Integration Name*	*Table (s)*
Person of Interest Types	POI_TYPE_TBL_FULLSYNC	POI_TYPE_TBL
Ethnic Group Codes	ETHNIC_GRP_FULLSYNC	ETHNIC_GROUP_TBL
US Standard Occupational Codes (USA)	US_SOC_FULLSYNC	US_SOC_TBL
Supporting Documents (Visa/Permits)	SUPPORT_DOC_FULLSYNC	SUPPORT_DOC_TBL
Visa Permit Types	VISA_PERMIT_FULLSYNC	VISA_PERMIT_TBL
VISA_PERMIT_SUP	Major Codes COMPETENCY_ FULLSYNC3	MAJOR_TBL

Service Operations and Handlers

The following table identifies the FullSync and Sync Service Operations, and subscription handlers that you should use to configure your CS–HCM setup data integrations. Activate and configure all integrations that you have identified according to your business requirements and implementation plans.

Service Operation	*Description*	*Queue*	*Subscription Handler App Package*
ADDRESS_TYPE_ FULLSYNC	Address Type Table	PERSON_SETUP	AddressTypeFullSync (ADDRESS_TYPE _FULLSYNC/ AddressTypeFullSync/ OnNotify)
ADDRESS_TYPE_SYNC	Address Type Table	PERSON_SETUP	AddressTypeSync (ADDRESS_TYPE_SYNC/ AddressTypeSync/OnNotify)
BUS_UNIT_HR_ FULLSYNC	HR Business Unit Table	HR_SETUP	BusUnitHRFullSync (BUS _UNIT_HR_FULLSYNC/ BusUnitHRFullSync/ OnNotify)
BUS_UNIT_HR_SYNC	Business Unit Table	HR_SETUP	BusUnitHRSync (BUS _UNIT_HR_SYNC/ BusUnitHRSync/OnNotify)
COMPANY_FULLSYNC	Company Codes	PERSON_SETUP	CompanyFullSync (COMPANY_FULLSYNC/ CompanyFullSync/OnNotify)
COMPANY_SYNC	Company Codes	PERSON_SETUP	CompanySync (COMPANY _SYNC/CompanySync/ OnNotify)

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Service Operation	*Description*	*Queue*	*Subscription Handler App Package*
COMPETENCY_ FULLSYNC3	College Major Subject Codes	COMPETENCY	CompetencyFullSync3 (COMPETENCY _FULLSYNC3/ CompetencyFullSync3/ OnNotify)
COMPETENCY_SYNC3	College Major Subject Codes	COMPETENCY	CompetencySync3 (COMPETENCY_SYNC3/ CompetencySync3/OnNotify)
COUNTRY_FULLSYNC	Countries	ENTERPRISE_SETUP	GEN_UPG_HANDLER _12332 (COUNTRY _FULLSYNC/ CountryFullSync/OnNotify)
COUNTRY_SYNC	Countries	ENTERPRISE_SETUP	GEN_UPG_HANDLER_18170 (COUNTRY_SYNC/ CountrySync/OnNotify)
CURRENCY_FULLSYNC	Currency Codes	ENTERPRISE_SETUP	CurrencyFullSync CURRENCY_FULLSYNC/ CurrencyFullSync/OnNotify
CURRENCY_SYNC	Currency Codes	ENTERPRISE_SETUP	CurrencySync CURRENCY _SYNC/CurrencySync/ OnNotify
DEPT_FULLSYNC	Departments	ENTERPRISE_SETUP	DeptFullSync (DEPT_FULLSYNC/ DeptFullSyncNoCI/OnNotify)
DEPT_SYNC	Departments	ENTERPRISE_SETUP	DeptSync (DEPT_ FULLSYNC/DeptSyncNoCI/ OnNotify)
ETHNIC_GRP_FULLSYNC	Ethnic Group Table	TAM_INTEGRATION	EthnicGrpFullSync ETHNIC _GRP_FULLSYNC/ EthnicGrpFullSync/OnNotify
ETHNIC_GRP_SYNC	Ethnic Group Table	TAM_INTEGRATION	EthnicGrpSync ETHNIC_ GRP_SYNC/EthnicGrpSync/ OnNotify
HOLIDAY_DATE_ FULLSYNC	Holiday Date Schedules	PERSON_SETUP	HolidayDateFullSync HOLIDAY_DATE _FULLSYNC/ HolidayDateFullSync/ OnNotify

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Service Operation	*Description*	*Queue*	*Subscription Handler App Package*
HOLIDAY_DATE_SYNC	Holiday Date Schedules	PERSON_SETUP	HolidayDateSync HOLIDAY_DATE_SYNC/ HolidayDateSync/OnNotify
JOBCODE_FULLSYNC	Job Codes	PERSON_SETUP	JobcodeFullSyncJOBCODE _FULLSYNC/ JobcodeFullSyncNoCI/ OnNotify
JOBCODE_SYNC	Job Codes	PERSON_SETUP	JobcodeSync JOBCODE_ SYNC/JobcodeSyncNoCI/ OnNotify
LOCATION_FULLSYNC	Company Site Locations	ENTERPRISE_SETUP	LocationFullSync (LOCATION_FULLSYNC/ LocationFullSyncNoCI/ OnNotify)
LOCATION_SYNC	Company Site Locations	ENTERPRISE_SETUP	LocationSync (LOCATION _SYNC/LocationSyncNoCI/ OnNotify)
NAME_PREFIX_SUFFIX_ FULLSYNC1	Name	Prefixes	NAME_PREFIX_ SUFFIX_TABLES NamePrefixSuffixFullSync1 NAME_PREFIX_ SUFFIX_FULLSYNC1/ NamePrefixSuffixFullSync1/ OnNotify
NAME_PREFIX_SUFFIX_ FULLSYNC2	Name	SuffixTable	NAME_PREFIX_ SUFFIX_TABLES NamePrefixSuffixFullSync2 NAME_PREFIX_ SUFFIX_FULLSYNC2/ NamePrefixSuffixFullSync2/ OnNotify
NAME_PREFIX_SUFFIX_ FULLSYNC3	Name Royal Pref Table	NAME_PREFIX_SUFFIX_ TABLES	NamePrefixSuffixFullSync3 NAME_PREFIX_ SUFFIX_FULLSYNC3/ NamePrefixSuffixFullSync3/ OnNotify

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Service Operation	*Description*	*Queue*	*Subscription Handler App Package*
NAME_PREFIX_SUFFIX_ FULLSYNC4	Name Royal Suff Table	NAME_PREFIX_SUFFIX_ TABLES	NamePrefixSuffixFullSync4 NAME_PREFIX_ SUFFIX_FULLSYNC4/ NamePrefixSuffixFullSync4/ OnNotify
NAME_PREFIX_SUFFIX_ SYNC1	Name Prefixes	NAME_PREFIX_SUFFIX_ TABLES	NamePrefixSuffixSync1 NAME_PREFIX_ SUFFIX_SYNC1/ NamePrefixSuffixSync1/ OnNotify
NAME_PREFIX_SUFFIX_ SYNC2	Name SuffixTable	NAME_PREFIX_SUFFIX_ TABLES	NamePrefixSuffixSync2 NAME_PREFIX_ SUFFIX_SYNC2/ NamePrefixSuffixSync2/ OnNotify
NAME_PREFIX_SUFFIX_ SYNC3	Name Royal Pref Table	NAME_PREFIX_SUFFIX_ TABLES	NamePrefixSuffixSync3 NAME_PREFIX_ SUFFIX_SYNC3/ NamePrefixSuffixSync3/ OnNotify
NAME_PREFIX_SUFFIX_ SYNC4	Name Royal Suff Table	NAME_PREFIX_SUFFIX_ TABLES	NamePrefixSuffixSync4 NAME_PREFIX_ SUFFIX_SYNC4/ NamePrefixSuffixSync4/ OnNotify
NAME_TYPE_FULLSYNC	Name Type Table	PERSON_SETUP	NameTypeFullSync NAME _TYPE_FULLSYNC/ NameTypeFullSync/OnNotify
NAME_TYPE_SYNC	Name Type Table	PERSON_SETUP	NameTypeSync NAME _TYPE_SYNC/ NameTypeSync/OnNotify
NID_TYPE_FULLSYNC	National ID Type table	PERSON_SETUP	NidTypeFullSync NID _TYPE_FULLSYNC/ NidTypeFullSync/OnNotify
NID_TYPE_SYNC	National ID Type table	PERSON_SETUP	NidTypeSync NID_TYPE _SYNC/NidTypeSync/ OnNotify

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Service Operation	*Description*	*Queue*	*Subscription Handler App Package*
OPR_DEF_FULLSYNC	Operator Defaults Table - HR	TAM_INTEGRATION	OprDefFullSync OPR _DEF_FULLSYNC/ OprDefFullSync/OnNotify
OPR_DEF_SYNC	Operator Defaults Table - HR	TAM_INTEGRATION	OprDefSync OPR_DEF_ SYNC/OprDefSync/OnNotify
POI_TYPE_TBL_ FULLSYNC POI	Type Table	PERSON_SETUP	POITypeTBLFullSync POI _TYPE_TBL_FULLSYNC/ POITypeTblFullSync/ OnNotify
POI_TYPE_TBL_SYNC POI	Type Table	PERSON_SETUP	POITypeTBLSync POI _TYPE_TBL_SYNC/ POITypeTblSync/OnNotify
REGULATORY_REGION_ FULLSYNC	Regulatory Region	PERSON_SETUP	RegRegionFullSync REG _REGION_FULLSYNC/ RegRegionFullSync/OnNotify
REGULATORY_REGION_ SYNC	Regulatory Region	PERSON_SETUP	RegRegionSync REG _REGION_SYNC/ RegRegionSync/OnNotify
SETID_INITIALIZE	SetIDs	TBLSET_CONTROL	SetidInitialize (SETID_ INITIALIZE/SetidInitialize/ OnNotify)
STATE_FULLSYNC	State Codes	ENTERPRISE_SETUP	StateFullSync STATE_ FULLSYNC/StateFullSync/ OnNotify
STATE_SYNC	State Codes	ENTERPRISE_SETUP	StateSync STATE_SYNC/ StateSync/OnNotify
SUPPORT_DOC_ FULLSYNC	Visa Supporting Documents	TAM_INTEGRATION	SupportDocFullSync SUPPORT_DOC _FULLSYNC/ SupportDocFullSync/ OnNotify
SUPPORT_DOC_SYNC	Visa Supporting Documents	TAM_INTEGRATION	SupportDocSync SUPPORT_DOC_SYNC/ SupportDocSync/OnNotify

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Service Operation	*Description*	*Queue*	*Subscription Handler App Package*
TBLSET_CONTROL_ INITIALIZE	TableSet Control Records	TBLSET_CONTROL	TblsetControlInitialize TBLSET_CONTROL _INITIALIZE/ TblsetControlInitiatlize/ OnNotify
TITLE_FULLSYNC	Title Table	PERSON_SETUP	TitleFullSync TITLE_ FULLSYNC/TitleFullSync/ OnNotify
TITLE_SYNC	Title Table	PERSON_SETUP	TitleSync TITLE_SYNC/ TitleSync/OnNotify
US_SOC_FULLSYNC	US Standard Occupational Codes	PERSON_SETUP	USSocFullSync US_SOC_ FULLSYNC/USSocFullSync/ OnNotify
US_SOC_SYNC US	Standard Occupational Codes	PERSON_SETUP	USSocSync US_SOC_SYNC/ USSocSync/OnNotify
VISA_PERMIT_FULLSYNC	Visa Permit Types	VISA_PERMIT	VisaPermitFullSync VISA _PERMIT_FULLSYNC/ VisaPermitFullSync/OnNotify
VISA_PERMIT_SYNC	Visa Permit Types	VISA_PERMIT	VisaPermitSync VISA _PERMIT_SYNC/ VisaPermitSync/OnNotify

See also:

PeopleTools: Integration Broker Testing Utilities and Tools

Using Delivered EIPs

The following table lists delivered EIPs that support CS-to-HCM integration.

EIP Name	*Description*
ADDRESS_TYPE_FULLSYNC	Address Type Table
ADDRESS_TYPE_SYNC	Address Type Table
BUS_UNIT_HR_FULLSYNC	HR Business Unit Table
BUS_UNIT_HR_SYNC	HR Business Unit Table
COMPANY_FULLSYNC	Company Codes

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EIP Name	***Description***
COMPANY_SYNC	Company Codes
COMPETENCY_FULLSYNC3	College Major Subject Codes
COMPETENCY_SYNC3	College Major Subject Codes
COUNTRY_FULLSYNC	Countries
COUNTRY_SYNC	Countries
CURRENCY_FULLSYNC	Currency Codes
CURRENCY_SYNC	Currency Codes
DEPT_FULLSYNC	Departments
DEPT_SYNC	Departments
ETHNIC_GRP_FULLSYNC	Ethnic Group Table
ETHNIC_GRP_SYNC	Ethnic Group Table
HOLIDAY_DATE_FULLSYNC	Holiday Date Schedules
HOLIDAY_DATE_SYNC	Holiday Date Schedules
JOBCODE_FULLSYNC	Job Codes
JOBCODE_SYNC	Job Codes
LOCATION_FULLSYNC	Company Site Locations
LOCATION_SYNC	Company Site Locations
NAME_PREFIX_SUFFIX_FULLSYNC1	Name Prefixes
NAME_PREFIX_SUFFIX_FULLSYNC2	Name Suffix Table
NAME_PREFIX_SUFFIX_FULLSYNC3	Name Royal Pref Table
NAME_PREFIX_SUFFIX_FULLSYNC4	Name Royal Suff Table
NAME_PREFIX_SUFFIX_SYNC1	Name Prefixes
NAME_PREFIX_SUFFIX_SYNC2	Name Suffix Table
NAME_PREFIX_SUFFIX_SYNC3	Name Royal Pref Table
NAME_PREFIX_SUFFIX_SYNC4	Name Royal Suff Table
NAME_TYPE_FULLSYNC	Name Type Table
NAME_TYPE_SYNC	Name Type Table

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EIP Name	*Description*
NID_TYPE_FULLSYNC	National ID Type Table
NID_TYPE_SYNC	National ID Type Table
OPR_DEF_FULLSYNC	Operator Defaults Table - HR
OPR_DEF_SYNC	Operator Defaults Table - HR
PERS_POI_FULLSYNC	Dflt Transaction Tbl for POIs
PERS_POI_SYNC	Dflt Transaction Tbl for POIs
PERSON_BASIC_FULLSYNC	Person
PERSON_BASIC_SYNC	Person
PERSON_DISABILITY_FULLSYNC	Disability
PERSON_DISABILITY_SYNC	Disability
PERSON_DIVERSITY_FULLSYNC	Diversity Data
PERSON_DIVERSITY_SYNC	Diversity Data
PERS_EMERGNCY_CONTACT_SYNC	Emergency Contacts
PERS_EMERGNCY_CONTACT_FULLSYNC	Emergency Contacts
PERSON_VISA_CITIZEN_FULLSYNC1	EE/Dependent Citizenship
PERSON_VISA_CITIZEN_FULLSYNC2	EE/Depndnt Visa Support Docs
PERSON_VISA_CITIZEN_SYNC	EE/Dependent Citizenship
POI_TYPE_TBL_FULLSYNC	POI Type Table
POI_TYPE_TBL_SYNC	POI Type Table
REGULATORY_REGION_FULLSYNC	Regulatory Region
REGULATORY_REGION_SYNC	Regulatory Region
SETID_INITIALIZE	SetIDs
STATE_FULLSYNC	State Codes/Names w/in Country
STATE_SYNC	State Codes/Names w/in Country
SUPPORT_DOC_FULLSYNC	Visa Supporting Documents
SUPPORT_DOC_SYNC	Visa Supporting Documents
TBLSET_CONTROL_INITIALIZE	TableSet Control Records

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EIP Name	*Description*
TITLE_FULLSYNC	Title Table
TITLE_SYNC	Title Table
US_SOC_FULLSYNC	U.S. Standard Occupational Codes
US_SOC_SYNC	U.S. Standard Occupational Codes
USER_PROFILE	User Profiles
VISA_PERMIT_FULLSYNC	Visa Supporting Docs Needed
VISA_PERMIT_SYNC	Visa Supporting Docs Needed
WORKFORCE_FULLSYNC	Job and Person Org Assignments
WORKFORCE_SYNC	Job and Person Org Assignments

Monitoring Integrations Using the Integrity Utility

This section provides an overview of the Integration Integrity Utility and discusses how to:

- Get started with the Utility.
- Configure the Utility.

Note: Documentation relevant to Campus Solutions and Human Capital Management integration is available on My Oracle Support (ID 2091799.2).

Understanding the Integration Integrity Utility

The Integration Integrity Utility (the Utility) provides configurable end-user tools to help monitor and maintain high-quality data in separate PeopleSoft CS and PeopleSoft HCM databases. As with most integration, unplanned scenarios can sometimes leave data out-of-sync. The Utility provides methods to detect, report, and resynchronize data where necessary.

Data Integration Assumptions and Practices

Using the Integration Integrity Utility to regularly monitor data provides assurance that your data is being synchronized properly between separate PeopleSoft CS and PeopleSoft HCM databases.

A valuable feature of the Utility is the ability to resync data if discrepancies are found; however, it is important to remember some general assumptions and guidelines when using this Utility:

- Oracle integration design models for separate CS and HCM databases (Owner/Subscriber, Subscriber Only) assume that shared data is replicated exactly between both databases.

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- The Utility is not designed to replace standard Application Messaging. Errors that may occur in Integration Broker Queue processing should be properly investigated and the message transaction resubmitted for proper handling.
- If data discrepancies appear regularly on comparison reports, there may be a systemic problem that should be investigated, and corrected.
- Data discrepancies may be the result of a variety of root causes. Investigation into the issue is critical.
- Data comparisons should be run during periods of low activity, and when transaction changes are not expected to occur frequently.

Pages Used With the Utility

Page Name	*Definition Name*	*Navigation*	*Usage*
Comparison Methods	SCC_DISCREP_METHOD	Set Up SACR, System Administration, Utilities, HCM Integration, Comparison Methods	Maintain the list of available methods for comparing table data between two different databases.
Resolution Methods	SCC_DISCREP_APPMTH	Set Up SACR, System Administration, Utilities, HCM Integration, Resolution Methods	Maintain the list of methods used to apply winners to resolve data discrepancies.
Data Sources	SCC_DISCREPDSRC	Set Up SACR, System Administration, Utilities, HCM Integration, Data Sources	Provide connection information for an external data source.
Database Link Maps	SCC_DISCREP_LNK	Set Up SACR, System Administration, Utilities, HCM Integration, Database Link Maps	Define mappings from a record name to a database link record name.
Record Maps	SCC_DISCREP_MAP	Set Up SACR, System Administration, Utilities, HCM Integration, Record Maps	Define a view used to compare data for the same table on two different databases. Views may be used instead of the base table when only certain columns or rows are desired for comparison.
Winner Rules	SCC_DISCREP_RULE	Set Up SACR, System Administration, Utilities, HCM Integration, Winner Rules	Maintain rule definitions for determining how to resolve data discrepancies between the same table on two different databases.
CS Permission Maps	SCC_PERMISN_MAP	Set Up SACR, System Administration, Utilities, HCM Integration, CS Permission Maps	Set comparison and discrepancy resolution security by mapping record names to permission lists in CS.

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Page Name	*Definition Name*	*Navigation*	*Usage*
HCM Permission Maps	HCI_PERMISN_MAP	Set Up Common Objects, Common Definitions, CS Integration, HCM Permission Maps	Set comparison and discrepancy resolution security by mapping record names to permission lists in HCM.
Run Discrepancy Comparison	SCC_DISCREPRCTL	Set Up SACR, System Administration, Utilities, HCM Integration, Run Discrepancy Comparison	Run the comparison process to determine data discrepancies in the specified tables between two databases.
Integration Discrepancies	SCC_INTGR_DSCRPNCY	Set Up SACR, System Administration, Utilities, HCM Integration, Integration Discrepancies	Display data discrepancies found between the same table on two different databases and specify the winner for resolution.
Discrepancy Details	SCC_INTGR_DSCRFLDS	Click the Show Fields link for any row on the Integration Discrepancies page.	Show data discrepancy details for a selected row.
Resolve Discrepancies	SCC_DISCREP_RUNRUL	Set Up SACR, System Administration, Utilities, HCM Integration, Resolve Discrepancies	Run the process to apply the winner rule to all discrepancy rows in the specified table or resolve discrepancies.
Resolution Log	SCC_RESOLVE_LOG	Set Up SACR, System Administration, Utilities, HCM Integration, Resolution Log	View a log of transactions that have resolved data discrepancies.
Purge Resolution Log	SCC_RSLVLOGPRUNCTL	Set Up SACR, System Administration, Utilities, HCM Integration, Purge Resolution Log	Run the process to delete data discrepancy resolved transaction logs.

Getting Started With the Utility

Before setting up and running the Utility, you can analyze the data that is kept in sync between your PeopleSoft CS and PeopleSoft HCM databases. This information is needed for configuring the Utility.

Here are some points to consider regarding this analysis:

- Oracle integration design models (Owner/Subscriber, Subscriber Only) assume that shared data is replicated exactly between both databases.

  Note: Some data fields, such as audit date/time fields, may have slightly different values in each database due to the nature of Application Messaging.

- Is there any custom data filtering as part of your integration design? For tables where the data is not fully synchronized, a view is needed to achieve accurate comparison results. A view allows the Utility to compare a subset of fields between the databases, or supports the use of custom logic defined in the view SQL.

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- The list of tables that are synchronized differ at every institution, and may include customizations. Your resulting list becomes the scope of tables to be compared between the databases.
- There are several delivered methods for performing data comparison and resolution. You can choose a method depending on your data and database environments. You may also develop and add other comparison or resolution methods.
- Related Language tables must be separately compared and resolved.
- Audit tables and fields should not be compared.
- The compare process reports data discrepancies by table, and it does not enforce the parent/child relationship. Please note the following guidance when using the Resolution process to resync data:
  - Add missing parent record rows before adding any children data rows.
  - Delete child data rows before deleting a parent data row.

Identify Synchronized Tables

Identify the list of tables where data is synchronized between your PeopleSoft CS and PeopleSoft HCM databases; be sure to include setup tables and all tables where manual data entry occurs in both databases.

The following list of synchronized tables is supported by delivered integrations. Not all tables may be populated in your CS database, or have data that your institution keeps in sync. These tables form part of the message structure definition and therefore are included in this list.

Delivered Base Tables

This list is also populated as setup data on the CS Permission Maps page.

Name	***Description***
ACCOM_DIAGNOSIS	EE Accommodation Diagnosis
ACCOM_JOB_TASK	EE Accommodation Job Tasks
ACCOM_OPTION	EE Accommodation Options
ACCOM_OP_LNG	EE Accommodation Options
ACCOM_REQUEST	EE Accommodation Requests
ADDRESSES	Address Type
ADDRESS_TYP_LNG	Address Type Table (rel. lang)
ADDRESS_TYP_TBL	Address Type Table
BEN_PROG_PARTIC	EE Benefit Programs
BUS_UNIT_HR_LNG	Rellang HR Business Unit

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Name	***Description***
BUS_UNIT_TBL_HR	HR Business Unit Table
CAN_JOBCODE_CU	Canadian WCB Jobcode to CU
CITIZENSHIP	EE/Dependent Citizenship
CITIZEN_PSSPRT	EE/Dependent Passport Data
CITIZEN_STS_LNG	Citizen Status Language Table
CITIZEN_STS_TBL	Citizen Status Table
CIT_PSSPRT_LANG	EE/Dependent Passport Data
COMPANY_TBL	Company Codes
COMPANY_TBL_ITA	Company Table - ITA
COMPENSATION	EE Compensation Data
COMPNY_TBL_LANG	Related Lang-Company Tbl
COMP_PHONE_TBL	Company Phone Table
COUNTRYTBL_LANG	Country Related Language
COUNTRY_TBL	Countries
CURRCD_TBL_LANG	Currency Related Language
CURRENCY_CD_TBL	Currency Codes
DEPT_TBL	Departments
DEPT_TBL_LANG	Related Lang-Department Tbl
DISABILITY	Disability
DISABILITY_BRA	Disability Brazil
DISABILITY_CHE	Disability Table - CHE
DISABILITY_ESP	Disability Table - ESP
DISABILITY_FRA	Disability
DISABILITY_GER	GER Disabled EE info

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Name	***Description***
DISABILITY_NLD	Disability Netherlands
DISABILITY_NZL	NZL Employee Disability Data
DIVERSITY	Diversity Data
DIVERS_ETHNIC	Ethnic Diversity
DIVERS_RELIGION	Religion Diversity - Asia Pac
EMAIL_ADDRESSES	Email Addresses
EMERGENCY_CNTCT	EE Emergency Contacts
EMERGENCY_PHONE	EE Emergency Cntct-Phone Nbr
EO_ADDRFMT_LANG	Address fields
EO_ADDR_FMT_TBL	Address fields
ETHNIC_GRP_LANG	Ethnic Group -Lang
ETHNIC_GRP_TBL	Ethnic Group Table
HOLIDAY_DATE	Holiday Dates
HOLIDAY_DTE_LNG	Holiday Dates RelLang
HOLIDAY_LANG	Holiday Table ID RelLang
HOLIDAY_TBL	Holiday Table ID
HP_EMPLT_TEACH	
HR_EE_SNR_DATES	Job Labor Seniority Dates
JOB	EE Job History
JOBCD_COMP_RATE	Job Code Comp Rate Table
JOBCD_TRN_PROG	Job Codes
JOBCODE_LANG	Related Lang-Job Code Tbl
JOBCODE_TBL	Job Codes
JOB_AUS	Job Extension for AU

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Name	***Description***
JOB_EARNS_DIST	EE Job Earnings Distribution
JOB_IND	Job table for India
JOB_JR	Job Junior
JOB_MIL	Military Related Job Fields
JOB_USF	Job Extension for USF
LOCATION_LANG	Related Lang-Location Tbl
LOCATION_TBL	Company Site Locations
MAJOR_TBL	College Major Subject Codes
MAJOR_TBL_LANG	Related Lang-Major Tbl
NAMES	Person Names
NAME_PREFIX_LNG	Related Lang - Name Prefix Tbl
NAME_PREFIX_TBL	Name Prefixes
NAME_SUFFIX_LNG	Related Lang - Name Suffix Tbl
NAME_SUFFIX_TBL	Name Suffix Table
NAME_TYPE_VW	Employee Name Types
NATIONALITY_GER	GER - Nationality record
NID_TYPE_LANG	Related Lng Tbl - NID_TYPE_TBL
NID_TYPE_TBL	National ID Type table
NM_ROYPREF_LNG	Related Lang for Roy Pref
NM_ROYPREF_TBL	Name Royal Pref Table
NM_ROYSUFF_LNG	Related Lang for Royal Suff
NM_ROYSUFF_TBL	Name Royal Suff Table
OPR_DEF_TBL_HR	Operator Defaults Table - HR
PERSON	PERSON record

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Name	Description
PERSONAL_PHONE	Personal Data - Phone Numbers
PERSON_BRA	PERSON BRAZIL
PERSON_FRA	Person Subrecord - FRA
PERSON_SA	Higher Education Person Extension Record
PERS_DATA_BRA	Personal Data Effdt
PERS_DATA_CAN	Extension of PERSON for CAN
PERS_DATA_CHE	Extension of PERSON for CHE
PERS_DATA_DEU	Effdt Ext of PERSON for DEU
PERS_DATA_EFFDT	Effective Dated Personal Data
PERS_DATA_ESP	Extension of PERSON for ESP
PERS_DATA_FPS	Extension of PERSON for FPS
PERS_DATA_FRA	Extension of PERSON for FRA
PERS_DATA_IND	Personal Data - India
PERS_DATA_ITA	Extension of PERSON for ITA
PERS_DATA_JPN	Extension of PERSON for JPN
PERS_DATA_MEX	Personal Data Effdt Mexico
PERS_DATA_USA	Extension of PERSON for USA
PERS_DATA_USF	Ext of PERS_DATA_EFFDT for USF
PERS_HUKOU_CHN	PERSON CHINA
PERS_NID	PERS_NID Record
PERS_REGIST_BEL	Empl Registration Number - BEL
PERS_SMOKER	PERSON Smoker History
PERS_WRKLIF_CHN	PERSON WORK LIFE INFO CHINA
PERS_WRKLV_CHN	Working & Living Permit

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Name	***Description***
PER_ORG_ASGN	Person Org Assignments
PER_ORG_ASG_BEL	PER_ORG_ASG - Exts for Belgium
PER_ORG_ASG_BRA	PER_ORG_ASG Ext for Brazil
PER_ORG_ASG_FA	PER_ORG_ASG_FA
PER_ORG_ASG_HP	Per Org Asgn for E&G
PER_ORG_ASG_JPN	PER_ORG_ASGN Ext for JPN
PER_ORG_ASG_LNG	Rel Lng for PER_ORG_ASGN
PER_ORG_ASG_MIL	Person Assignment - Military
PER_ORG_ASG_NLD	PER_ORG- Exts for Netherlands
PER_ORG_INST	Person Org Instance
PER_POI_SCRTY	Per Poi Security
PER_POI_SCR_DT	Per Poi Security
PER_POI_TRANS	Dflt Transaction Tbl for POIs
PER_POI_TRN_LNG	Lng Tbl for PER_POI_TRANS
PER_POI_TYPE	Person POI Types
PLACE_ORIG_CHE	Employee Place of Origin
POI_TYPE_LNG	POI Type Language
POI_TYPE_TBL	POI Type Table
REG_REGION_LANG	Regulatory Region
REG_REGION_TBL	Regulatory Region
SETID_LANG	TableSet IDs
SETID_TBL	TableSet IDs
SET_CNTRL_GROUP	TableSet Record Groups
SET_CNTRL_REC	TableSet Record Detail

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Name	*Description*
SET_CNTRL_TBL	TableSet Controls
STATE_TBL	State Codes/Names w/in Country
STATE_TBL_LANG	State Names Related Language
SUPPORT_DOC_TBL	Visa Supporting Documents
SUPPRT_DOC_LANG	Related Lang-Visa Support Docs
TITLE_TBL	Title Table
TITLE_TBL_LNG	Rellang Title Table
US_SOC_TBL	US Standard Occupational Codes
US_SOC_TBL_LNG	US Standard Occupational Codes
VISA_PERMIT_SUP	Visa Supporting Docs Needed
VISA_PERMIT_TBL	Visa Requirements by Country
VISA_PERMT_LANG	Related Lang-Visa Requirements
VISA_PMT_DATA	EE/Dependent Visa Data
VISA_PMT_DA_LNG	EE/Dependent Visa Data
VISA_PMT_SUPPRT	EE/Depndnt Visa Support Docs

Determine Views Needed for Record Maps

The Utility generally performs data comparison using base tables. In some cases, using views instead of base tables, provides the ability to filter the data compared between the two databases. This is useful in cases where:

- The Last Updated Date/Time field values may differ and should be excluded from the compare;
- Record definitions are different between the databases;
- Record definitions include long varchar or image fields (as these are not supported by all comparison methods);
- Data rows may not be identical – by design – between the databases, such as for filtered populations.

The following views are delivered and can be used for setting Record Maps. These views have certain fields excluded to increase accurate data comparison – such as drop out hits on LASTUPDDTTM values.

- Some of these views are existing HCR interface views, and are used elsewhere in Campus Solutions.

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- New views created for this purpose are named HCI_%.

The following list of base tables and views are referenced in delivered message definitions used with CS-to-HCM integrations.

Bundle 41. These views have been modified:

- HCI_JOBCODE_VW: EFFDT and EFF_STATUS fields added; DESCRLONG field removed.
- HCI_JOBCODE_VWL: EFFDT field added; DESCRLONG field removed.

Bundle 41. New mapping views are added for tables.

Base Table Name	***View Name***
ACCOM_OPTION	HCI_ACCOMOPT_VW
ACCOM_OP_LNG	HCI_ACCOMOPL_VW
ACCOM_REQUEST	HCI_ACCOMREQ_VW
ADDRESSES	HCR_PER_ADDR_I
CITIZEN_PSSPRT	HCI_CIT_PASS_VW
CIT_PSSPRT_LANG	HCI_CITPSPTL_VW
CURRENCY_CD_TBL	HCI_CRNCY_CD_VW
CURRCD_TBL_LANG	HCI_CRNCY_CD_VL
DEPT_TBL	HCI_DEPT_VW
DEPT_TBL_LANG	HCI_DEPT_VWLANG
DISABILITY	HCI_DISABIL_VW
DISABILITY_FRA	HCI_DISAB_FR_VW
DISABILITY_NZL	HCI_DISAB_NZ_VW
JOB	HCI_JOB_VW HCI_JOB_V2
JOB_IND	HCI_JOB_IND_VW
JOBCODE_TBL	HCI_JOBCODE_VW HCI_JOBCODE_V2

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Base Table Name	*View Name*
JOBCODE_LANG	HCI_JOBCODE_VWL HCI_JOBCODE_VL2
JOB_JR	HCI_JOB_JR_VW
JOB_MIL	HCI_JOB_MIL_VW
LOCATION_TBL	HCI_LOCATION_VW
NAMES	HCR_PER_NAME_I
PERSON	HCR_PERSON_I
PERS_DATA_BRA	HCI_PDATA_BRAVW
PERS_DATA_EFFDT	HCR_PER_PDE_I
PERS_NID	HCR_PER_NID_I
PER_ORG_ASGN	HCI_PERORGASGNV
PER_ORG_ASG_LNG	HCI_PERORGASGNL
PER_ORG_INST	HCI_PERORGINSVW
PER_POI_SCRTY	HCI_PERPOISECVW
PER_POI_TYPE	HCI_PERPOITYPVW
POI_TYPE_LNG	HCI_POITYPLN_VW
POI_TYPE_TBL	HCI_POI_TYP_VW
SETID_LANG	HCI_SETID_LN_VW
SETID_TBL	HCI_SETID_VW
US_SOC_TBL	HCI_US_SOC_VW
US_SOC_TBL_LNG	HCI_US_SOCLN_VW
VISA_PERMIT_TBL	HCI_VISAPRMT_VW
VISA_PERMT_LANG	HCI_VISAPRMTLVW

Note: The HCI_JOBCODE_VW and HCI_JOBCODE_VWL views pick up the currently effective row while the HCI_JOB_V2, HCI_JOBCODE_V2, and HCI_JOBCODE_VL2 views pick up all rows.

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Configuring the Utility

To configure the Utility for data comparison and resolution:

1. Configure the system.
   - Set the *Add to CLASSPATH* Variable (optional, only if using Java JDBC methods).
   - Create a Database Link on the database server (optional, only if using Database Link method).
2. Determine Comparison methods (required).
3. Determine Resolution methods (required).
4. Define Data Source (optional, only if using Java JDBC methods).
5. Define Database Link Map (optional, only if using Database Link methods).
6. Set Record Maps (optional, depends on tables).
7. Define Winner Rules (optional).
8. Determine Permission Maps (required).
9. Configure the HCI_RECORD service operations (optional, only if using Synchronous Message resolution method).

System Configuration: Set the *Add to CLASSPATH* Variable

This procedure is required only if using Java JDBC methods.

This procedure is performed only on the CS environment; it does not need to be performed on the HCM environment.

This procedure should be done on both the Application Server and Process Server domains.

The Add to CLASSPATH environment variable parameter enables the Java Virtual Machine (JVM) and other Java applications to find the Java class libraries, including any user-defined class libraries. Because PeopleTools automatically generates CLASSPATH entries for core, delivered class libraries, setting this variable specifies additional class libraries that the PeopleSoft software needs to access.

To use this parameter, you need to uncomment it in the configuration files for Application Server and Process Server.

1. Use PSADMIN to access the configuration file in the Application Server and Process Server.
2. Uncomment the *Add to CLASSPATH* variable.
3. Add the appropriate database platform JAR files to the *Add to CLASSPATH* variable as follows

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Database Platform	*JAR Files*
DB2	db2jcc_license_cisuz.jar db2jcc4.jar sqlj4.zip
Microsoft SQL Server	sqljdbc4.jar
Oracle	ojdbc6.jar or latest version

Note: For DB2 platforms it is also necessary to modify the *Add to PATH* variable and append <db2sqllib>\bin;<db2sqllib>\function. Consult your database platform documentation for further details.

System Configuration: Create Database Link

This procedure is required only if using the Database Link comparison method.

Create the database link on the CS instance database server. It does not need to be created on the HCM instance.

Database links are platform-dependent and must be created on the database server. Consult your specific database platform documentation and database administrator for more information and the proper syntax for creating database links on your environments.

Oracle

The following is a sample command for creating a database link on the Oracle database:

```
CREATE DATABASE LINK HRDBLINK CONNECT TO <sqluid> IDENTIFIED
BY <sqlpass> USING '<dbname>';
```

Microsoft SQL Server

The following is a set of sample commands for creating a SYNONYM on the SQL Server database. Run the following commands first; substituting your specific values for those in the example:

Example:

```
sp_addlinkedserver myhost;
```

Example:

```
sp_addlinkedsrvlogin myhost, false, 'localaccessid', ‘remoteaccessid’, ‘remoteacces⇒
spw’;
```

The syntax is:

```
sp_addlinkedserver [ @server= ] ‘server’ [ , [ @srvproduct= ] ‘product_name’ ]
[ , [ @provider= ] ‘provider_name’ ]
[ , [ @datasrc= ] ‘data_source’ ]
[ , [ @location= ] ‘location’ ]
[ , [ @provstr= ] ‘provider_string’ ]
[ , [ @catalog= ] ‘catalog’ ]
```

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```
sp_addlinkedsrvlogin [ @rmtsrvname = ] 'rmtsrvname'
[ , [ @useself = ] 'TRUE' | 'FALSE' | NULL ]
[ , [ @locallogin = ] 'locallogin' ]
[ , [ @rmtuser = ] 'rmtuser' ]
[ , [ @rmtpassword = ] 'rmtpassword' ]
```

Then run the following command; substituting your specific values for those in the example:

Example:

```
CREATE SYNONYM HR_PS_VISA_PMT_DATA FOR myhost.mydb.dbo.PS_VISA_PMT_DATA;
```

The syntax is:

```
CREATE SYNONYM [ schema_name_1. ] synonym_name FOR <object><object> :: ={ [ server_⇒
name.[ database_name ] . [ schema_name_2 ].| database_name . [ schema_name_2 ].| sc⇒
hema_name_2. ] object_name}
```

Test by running the following command:

Example:

```
SELECT COUNT(*) FROM HR_PS_VISA_PMT_DATA;
```

See *PeopleTools: System and Server Administration*, "Setting Application Server Domain Parameters"

Configuring Comparison Methods

There are three delivered methods for performing data comparison:

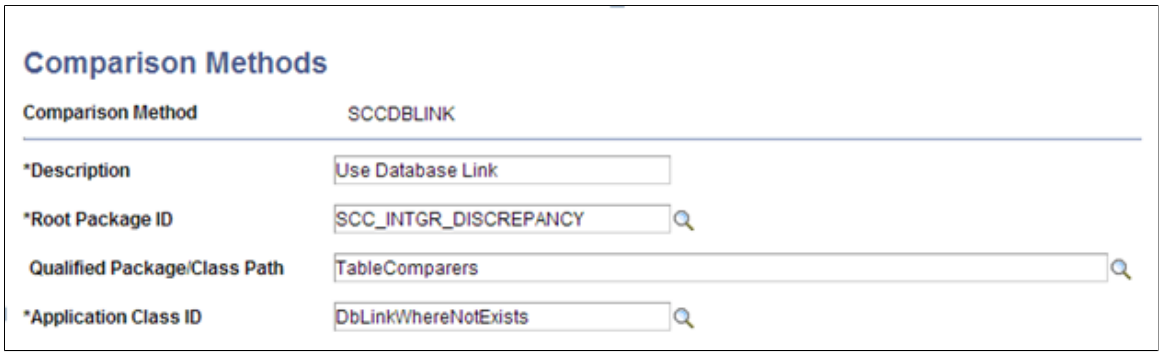
- SCCDBLINK—Use Database Link.
- SCCJDBC—Use Java JDBC.
- Full Sync Method—Full Data Publish asynchronous message process

Note: There is no Comparison Methods setup data for the Full Sync method as it leverages the Full Data Publish message subscription process.

Access the Comparison Methods page (Set Up SACR, System Administration, Utilities, HCM Integration, Comparison Methods).

Image: Comparison Methods page

This example illustrates the fields and controls on the Comparison Methods page. You can find definitions for the fields and controls later on this page.



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Description The description for the comparison method.

Root Package ID The application package used for the comparison method.

Qualified Package\Class Path The class path being used.

Application Class ID The application class ID being used.

The following table details the required configuration components for each comparison method.

Comparison Method	*Data Source*	*Database Link on Server*	*Database Link Map*	*Record Maps*	*Permission Maps*	*Service Operation*
SCCDBLINK - Database Link		X	X	X	X	
SCCJDBC - Java JDBC	X			X	X	
Full Sync				X	X	X

Java JDBC

The Java JDBC method uses a Java class to read from the HCM database, and the data is then compared inside the SCC_DISCREP2 batch process with data discrepancies logged to the Integration Discrepancies table. The Java objects required for using this method are delivered with Campus Solutions

This method generally performs slower than the database link method, but does not require the kind of maintenance as for a database link. Consider using this method if a database link is not suitable for your environment.

To use the delivered Java JDBC method:

1. Complete the *Add to CLASSPATH* system configuration detailed in the preceding step.
2. Define a Data Source definition for the foreign HCM database.
3. Define appropriate Record Maps and Permission Maps for the tables to be compared.

Database Link

The Database Link method uses a database link to link the HCM table to its sibling CS table, with the data comparison done on the database server. Results are returned to the SCC_DISCREP2 batch process with data discrepancies logged to the Integration Discrepancies table.

This method generally performs the fastest, but does not run on all platforms.

To use the delivered Database Link method:

1. Create a database link to the HCM database on the database server for the CS instance.
2. Define a Database Link Map for every table to be compared.
3. Define appropriate Record Maps and Permission Maps for the tables to be compared.

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Full Sync

The Full Sync method leverages the delivered Full Data Publish messages which are published from the HCM instance and a special subscription handler in the CS instance is used to read and perform the data compare.

The Full Sync method is better suited for smaller volume tables as it generally runs slower than the other methods, but it runs on any platform. Use this method if you cannot use the others.

Important! Do NOT activate the standard Full Sync subscription handlers when using this method, as this can impact data in the production tables. The SCC_INTGR_DISCREPENCY handler code delivered for performing this comparison does not update data in the base tables.

Configuring and Running the FULLSYNC Compare Method

This section discusses how to:

- Configure FULLSYNC service operations.
- Define the Full Data Publish Rule.
- Run the Full Data Publish process.
- Review integration discrepancy results.

Configuring the FULLSYNC Service Operations

To set up service operations on the HCM instance:

1. Access PeopleTools, Integration Broker, Integration Setup, Service Operations.
2. Activate the selected FULLSYNC service operation on the tables to be compared.
3. Grant appropriate service operation security. No Handlers are required.
4. Configure the routing to the Campus Solutions database, using proper transformations if required for the message being used.

To set up service operations on the CS instance:

1. Access PeopleTools, Integration Broker, Integration Setup, Service Operations.
2. Activate the selected FULLSYNC service operation on the tables to be compared.
3. Grant appropriate service operation security.
4. On the Handlers tab, configure the Full Sync Compare subscription handler.

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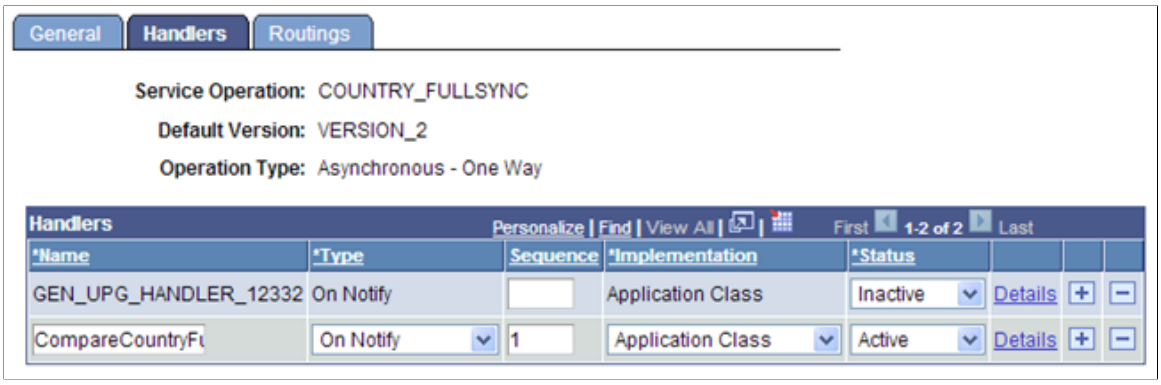
Important! Inactivate the FULLSYNC data handler for this procedure as this can impact production data. After the Full Sync data compare is completed, reset your handler settings as needed.

Image: Handlers page

This example illustrates potential Handlers page field values.



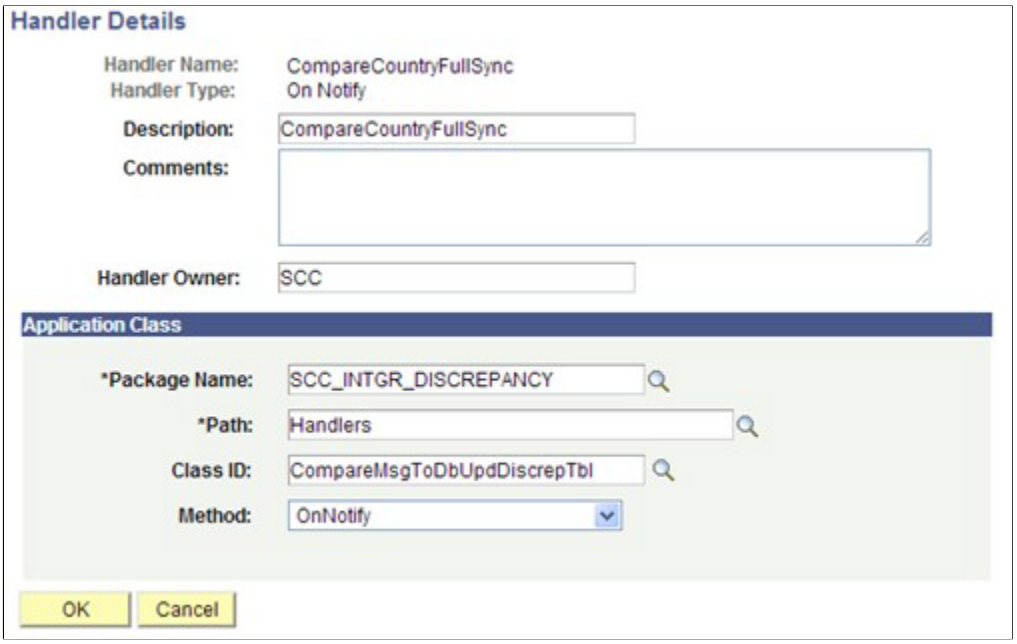
a. Under the Service Operation Handler tab, insert a row in the Handlers grid.

Name	Define a Name for the handler.
Type	OnNotify
Implementation	Application Class
Status	Set to Active.

b. Click the Details link and set up the following:

Image: Handler Details page

This example illustrates potential Handler Details page field values.



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Description, Comments	Optional fields
Handler Owner	Define a Handler Owner.
Application Class- Package Name, Path, Class, Method	In the Application Class section, select the Package, Path, Class and the Method to be invoked

5. Configure the inbound routing in the CS database, using transformations if required for the selected FULLSYNC service operation.
6. Save the Service Operation changes.

Defining the Full Data Publish Rule

To define the full data publish rule:

1. Access Enterprise Components, Integration Definitions, Full Data Publish Rule.
2. Configure the Full Data Publish Rule for the selected FULLSYNC service operation.

Running the Full Data Publish Process

To run on the HCM instance:

1. Access Enterprise Components, Integration Definitions, Initiate Processes, Full Data Publish.
2. On the run control, set the process request parameters and select the desired Service Operation.
3. Run the process.

Reviewing Integration Discrepancy Results

To run on the CS instance:

1. Confirm successful FULLSYNC message transaction subscription in the Integration Broker Monitor.
2. Review the results on the Integration Discrepancies pages.

Configuring Resolution Methods

The Utility resolves data discrepancies between databases using either of two delivered resolution methods. Both methods are invoked by the Resolve Discrepancies process (Application Engine SCC_DISCREP3). Either resolution method may be used independent of the method used for data compare.

Method	***Description***
SCCJAVA1	Apply winner via Java jdbc.
SCCSYNCMSG1	Apply winner via Synchronous Message.

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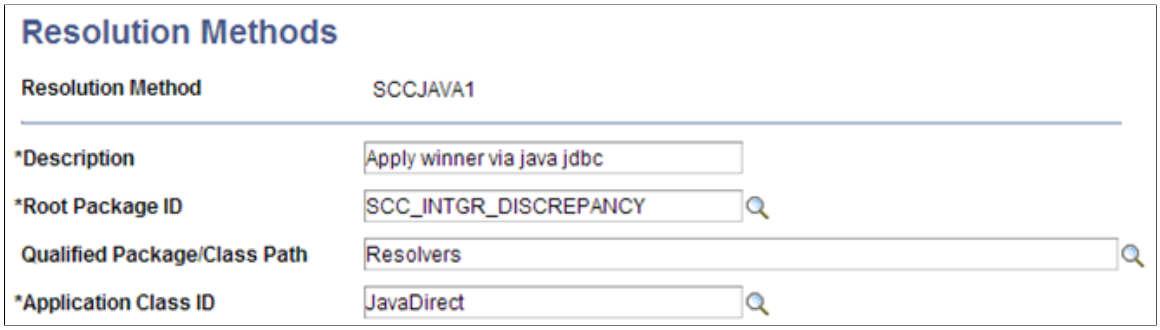
Access the Resolution Methods page (Set Up SACR, System Administration, Utilities, HCM Integration, Resolution Methods).

Image: Resolution Methods page

This example illustrates the fields and controls on the Resolution Methods page. You can find definitions for the fields and controls later on this page.



Description The description for the resolution method.

Root Package ID The application package used for the resolution method.

Qualified Package\Class Path The class path being used.

Application Class ID The application class ID being used.

The following table details the required configurations for each delivered resolution method. The procedures for each are detailed subsequently.

Resolution Method	*Data Source*	*Record Maps*	*Permission Maps*	*Winner Rules*	*Service Operation*
SCCJAVA1 Java JDBC	X	X	X	X	
SCCSYNCMSG1 Synchronous Message		X	X	X	X

Defining Data Sources

In order to use the Java JDBC method, you must define a data source for the HCM database. You need not define a data source for the CS database instance.

Important! Define the data source name to match the Node name of the HCM database.

The sample connect string is platform-specific. Select the appropriate Platform Type from the drop-down list to see examples of the connect string relevant to the database platform.

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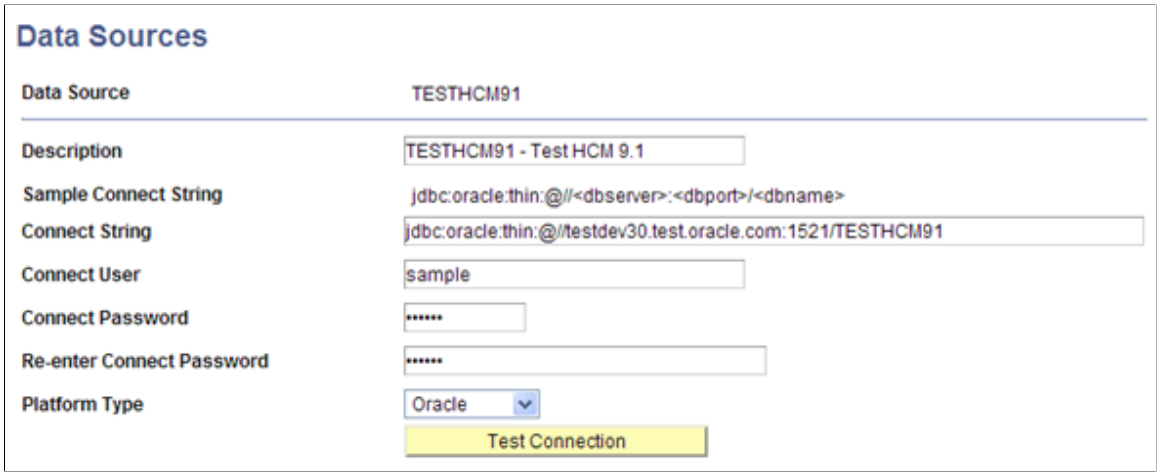
Access the Data Sources page (Set Up SACR, System Administration, Utilities, HCM Integration, Data Sources)).

Image: Data Sources page

This example illustrates the fields and controls on the Data Sources page. You can find definitions for the fields and controls later on this page.



Description	Enter the description for the data source.
Sample Connect String	The displayed text changes based on the selected Platform Type.
Connect String	Enter the connect string, following the correct platform parameters.
Connect User	Enter the connect user ID.
Connect Password	Enter the password for the connect user ID.
Re-enter Connect Password	Re-enter the password for the connect user ID.
Platform Type	Supported platform types.
Test Connection	Click this button to test the connection. A successful connection triggers a “success” message; an unsuccessful connection throws up a Java error message.

Defining Database Link Maps

To use the Database Link comparison method (SCCDBLINK), a database link for the HCM database must exist on the CS database server, and a database link map must be defined for every table that is being compared. For SQL Server database link maps, use the synonym name instead of the table name.

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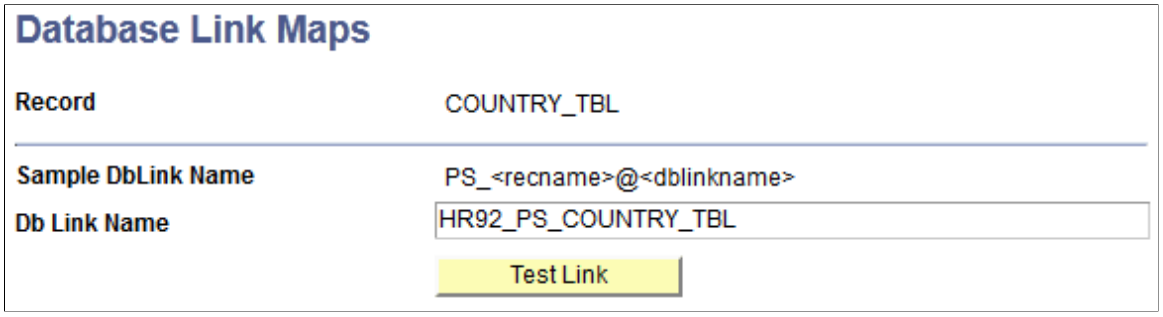
Access the Database Link Maps page (Set Up SACR, System Administration, Utilities, HCM Integration, Database Link Maps).

Image: Database Link Maps page for an Oracle database

This example illustrates the fields and controls on the Database Link Maps page for an Oracle database. You can find definitions for the fields and controls later on this page.

Image: Database Link Maps page for SQL Server

This example illustrates the fields and controls on the Database Link Maps page for SQL Server. You can find definitions for the fields and controls later on this page.



Record	The table name that is being defined.
Sample Db Link Name	All database link maps should follow this example.
Db Link Name	Enter the Db Link using the proper syntax.

Defining Record Maps

When the Comparison process runs, the program evaluates the Record Maps definitions and selects data using any defined Mapping View Name instead of selecting the columns from the base table definition.

Record Maps are not required. Data comparisons can be done directly between the tables; however Record Maps are necessary when you want to omit columns or rows, or reformat columns for comparison. This allows for configuration and extensibility in several ways:

- Exclude audit fields such as LASTUPDDTTM.
- Exclude other data fields.
- Compare records between databases where record definitions are different.

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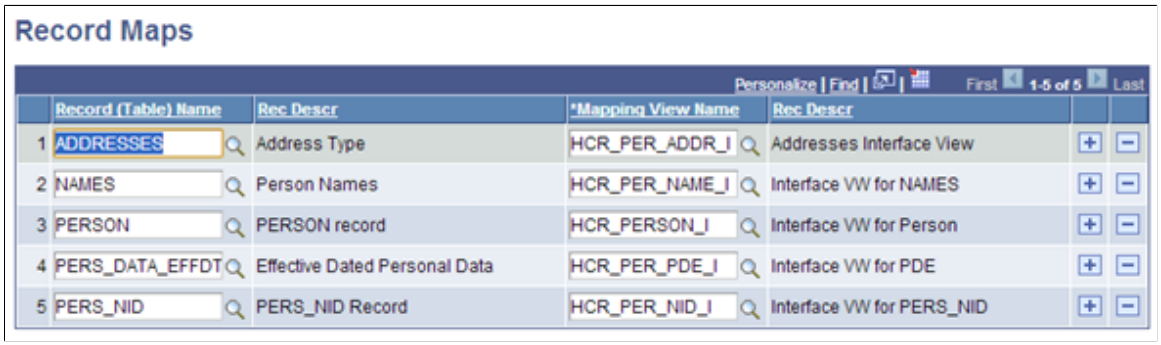
- Include custom logic, such as custom selection criteria in SQL View text.

Access the Record Maps page ((Set Up SACR, System Administration, Utilities, HCM Integration, Record Maps).

Image: Record Maps page

This example illustrates the fields and controls on the Record Maps page. You can find definitions for the fields and controls later on this page.



Record (Table) Name Enter the base SQL Table name.

Rec Descr The Record Definition description for the base SQL Table.

Mapping View Name Enter the SQL View name to be used. This must be a valid SQL View in Application Designer.

Rec Descr The Record Definition description for the SQL View.

Defining Winner Rules

Usually most data discrepancies are due to specific reasons and should be investigated and resolved individually. For example, a broken integration transaction might be suspended in the Queue. To resolve this, the transaction should be fixed and resubmitted through the Queue.

There may be circumstances when data discrepancies can be resolved in the same way. Using a winner rule can simplify the task of setting the winners on the Integration Discrepancies page. For example, you may set some data discrepancy winners manually, but then use a winner rule to update the rest.

For the delivered winner rules, only those rows on the Integration Discrepancies page that are marked Undecided are updated according to the selected rule.

Winner Rules are used on the Resolve Discrepancies process run control page.

There are two delivered Winner Rule ID definitions:

Method	*Description*
SCCFRGNWINSALL	Foreign Wins All (the designated foreign “target” database values are used to update the local database).
SCCLOCALWINSALL	Local Wins All (the designated local “source” database values are used to update the foreign database).

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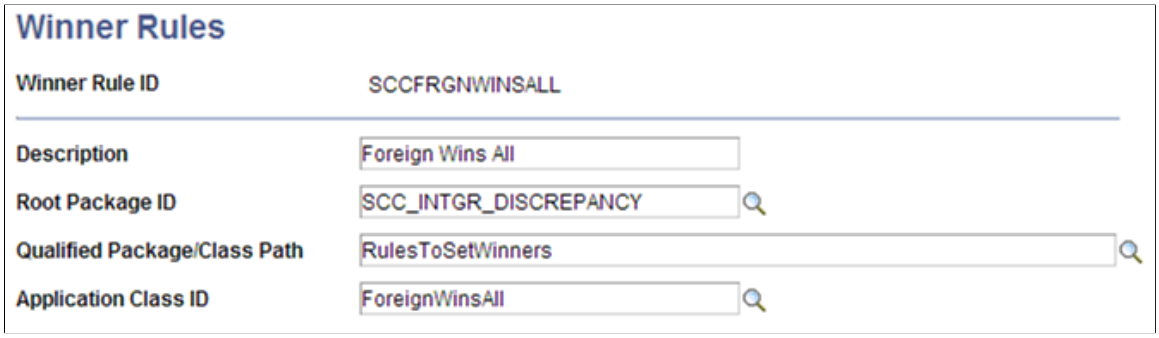
Access the Winner Rules page (Set Up SACR, System Administration, Utilities, HCM Integration, Winner Rules).

Image: Winner Rules page

This example illustrates the fields and controls on the Winner Rules page. You can find definitions for the fields and controls later on this page.



Description	The description for the winner rule.
Root Package ID	The application package used for the winner rule.
Qualified Package\Class Path	The class path being used.
Application Class ID	The application class ID being used.

Defining Permission Maps

Permission Maps define security settings for read/write access to tables used by the Comparison and Resolution processes. Both CS and HCM environments must be configured with appropriate Permission Maps settings. Read/Write security authorization is assigned by Record name associated with a Permission List.

The SCC_DISCREP2 compare process uses the mapped view for comparison. The SCC_DISCREP3 resolution process uses the base table.

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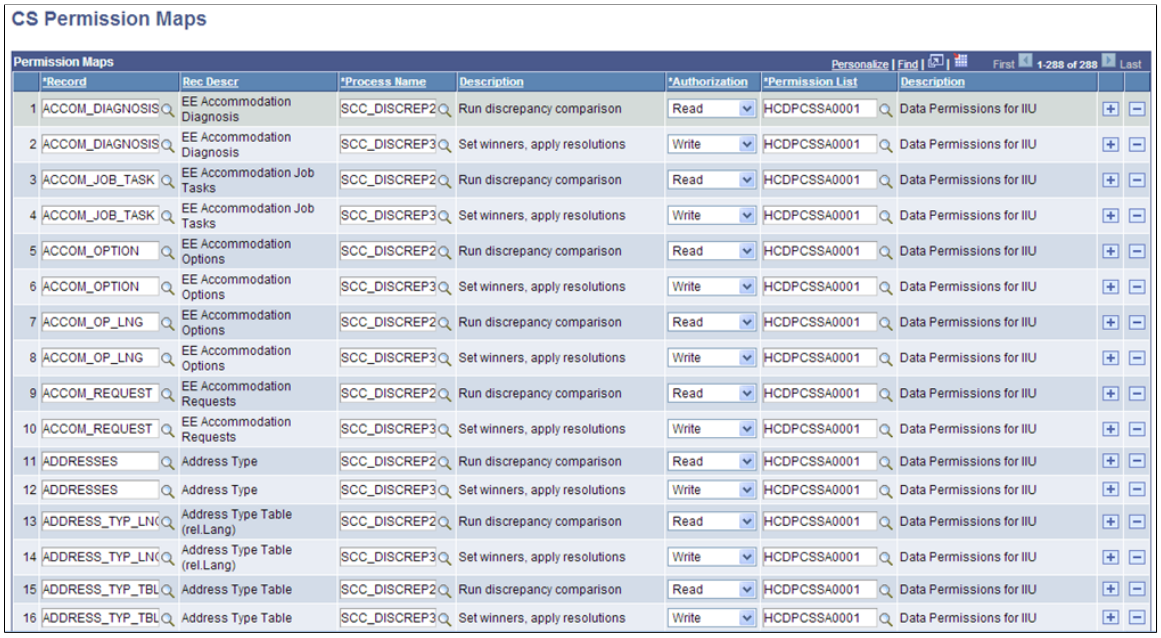
In the CS instance, access the CS Permission Maps page (Set Up SACR, System Administration, Utilities, HCM Integration, CS Permission Maps).

Image: CS Permission Maps page

This example illustrates the fields and controls on the CS Permission Maps page. You can find definitions for the fields and controls later on this page.



CS Permission Maps

Permission Maps — Personalize | Find | First 1-288 of 288 Last

	*Record	Rec Descr	*Process Name	Description	*Authorization	*Permission List	Description
1	ACCOM_DIAGNOSIS	EE Accommodation Diagnosis	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
2	ACCOM_DIAGNOSIS	EE Accommodation Diagnosis	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU
3	ACCOM_JOB_TASK	EE Accommodation Job Tasks	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
4	ACCOM_JOB_TASK	EE Accommodation Job Tasks	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU
5	ACCOM_OPTION	EE Accommodation Options	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
6	ACCOM_OPTION	EE Accommodation Options	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU
7	ACCOM_OP_LNG	EE Accommodation Options	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
8	ACCOM_OP_LNG	EE Accommodation Options	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU
9	ACCOM_REQUEST	EE Accommodation Requests	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
10	ACCOM_REQUEST	EE Accommodation Requests	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU
11	ADDRESSES	Address Type	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
12	ADDRESSES	Address Type	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU
13	ADDRESS_TYP_LN(	Address Type Table (rel.Lang)	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
14	ADDRESS_TYP_LN(	Address Type Table (rel.Lang)	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU
15	ADDRESS_TYP_TBL	Address Type Table	SCC_DISCREP2	Run discrepancy comparison	Read	HCDPCSSA0001	Data Permissions for IIU
16	ADDRESS_TYP_TBL	Address Type Table	SCC_DISCREP3	Set winners, apply resolutions	Write	HCDPCSSA0001	Data Permissions for IIU

Record — Enter the base table name.

Rec Descr — The Record Definition description of the base table.

Process Name and **Description** — The delivered SCC_DISCREP2 or SCC_DISCREP3 App Engine processes.

Authorization — Read or Write access to the specified record.

Permission List — Data Permission List that must be attached to Role to the User.

Description — The permission list description.

Note: The Process Name provides an additional security attribute for the Synchronous Message method HCI_RECORD service operations to ensure the service request is made from an authorized program or component.

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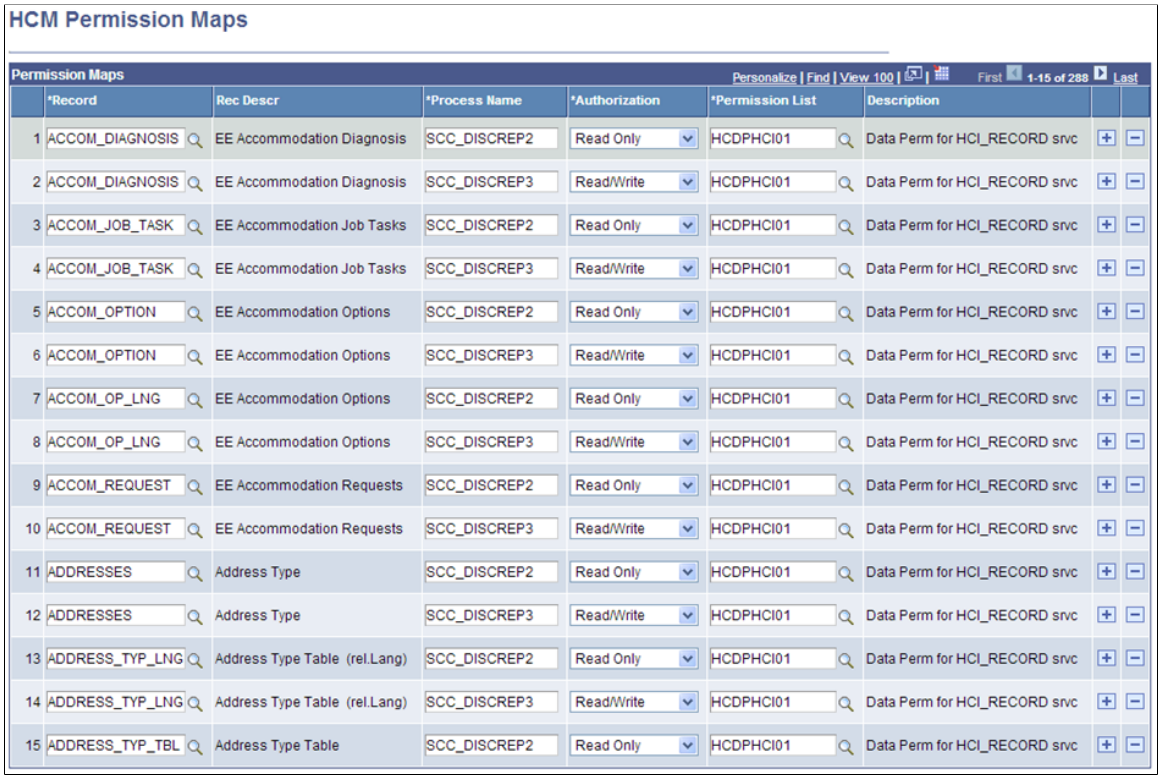
In the HCM instance, access the HCM Permission Maps page (Set Up Common Objects, Common Definitions, CS Integration, HCM Permission Maps).

Image: HCM Permission Maps page

This example illustrates the fields and controls on the HCM Permission Maps page. You can find definitions for the fields and controls later on this page.



HCM Permission Maps

Permission Maps — Personalize | Find | View 100 | First 1-15 of 288 Last

	*Record	Rec Descr	*Process Name	*Authorization	*Permission List	Description
1	ACCOM_DIAGNOSIS	EE Accommodation Diagnosis	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc
2	ACCOM_DIAGNOSIS	EE Accommodation Diagnosis	SCC_DISCREP3	Read/Write	HCDPHCI01	Data Perm for HCI_RECORD srvc
3	ACCOM_JOB_TASK	EE Accommodation Job Tasks	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc
4	ACCOM_JOB_TASK	EE Accommodation Job Tasks	SCC_DISCREP3	Read/Write	HCDPHCI01	Data Perm for HCI_RECORD srvc
5	ACCOM_OPTION	EE Accommodation Options	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc
6	ACCOM_OPTION	EE Accommodation Options	SCC_DISCREP3	Read/Write	HCDPHCI01	Data Perm for HCI_RECORD srvc
7	ACCOM_OP_LNG	EE Accommodation Options	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc
8	ACCOM_OP_LNG	EE Accommodation Options	SCC_DISCREP3	Read/Write	HCDPHCI01	Data Perm for HCI_RECORD srvc
9	ACCOM_REQUEST	EE Accommodation Requests	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc
10	ACCOM_REQUEST	EE Accommodation Requests	SCC_DISCREP3	Read/Write	HCDPHCI01	Data Perm for HCI_RECORD srvc
11	ADDRESSES	Address Type	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc
12	ADDRESSES	Address Type	SCC_DISCREP3	Read/Write	HCDPHCI01	Data Perm for HCI_RECORD srvc
13	ADDRESS_TYP_LNG	Address Type Table (rel.Lang)	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc
14	ADDRESS_TYP_LNG	Address Type Table (rel.Lang)	SCC_DISCREP3	Read/Write	HCDPHCI01	Data Perm for HCI_RECORD srvc
15	ADDRESS_TYP_TBL	Address Type Table	SCC_DISCREP2	Read Only	HCDPHCI01	Data Perm for HCI_RECORD srvc

Record Enter the base table name.

Rec Descr The Record Definition description of the base table.

Process Name The delivered SCC_DISCREP2 or SCC_DISCREP3 App Engine processes.

Authorization Read or Write access to the specified record.

Permission List Data Permission List that must be attached to Role to the User.

Description The permission list description.

Configuring the HCI_RECORD Service Operations

The HCI_RECORD service is a synchronous request/response message which is invoked by the Synchronous Message resolution process to perform Add, Update, and Delete actions on data.

There are three service operations used by the Synchronous Message (SCCMSGSYNC1) resolution method:

- HCI_RECORD_DELETE

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- HCI_RECORD_GET
- HCI_RECORD_PUT

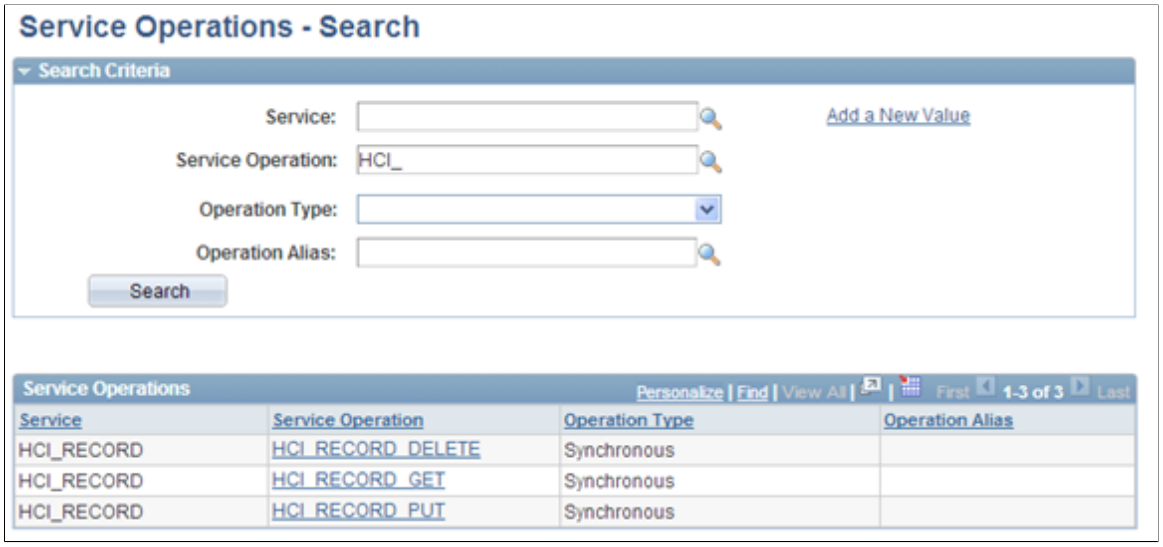
The HCI_RECORD service operations are used with the Synchronous Message resolution method. The following steps describe the HCI_RECORD service operations configuration.

Note: These instructions are common to all HCM releases.

Configure HCI_RECORD Service Operations in HCM

Image: Example of Service Operations search page (HCM)

This example illustrates the fields and controls on an example of the Service Operations search page (HCM).



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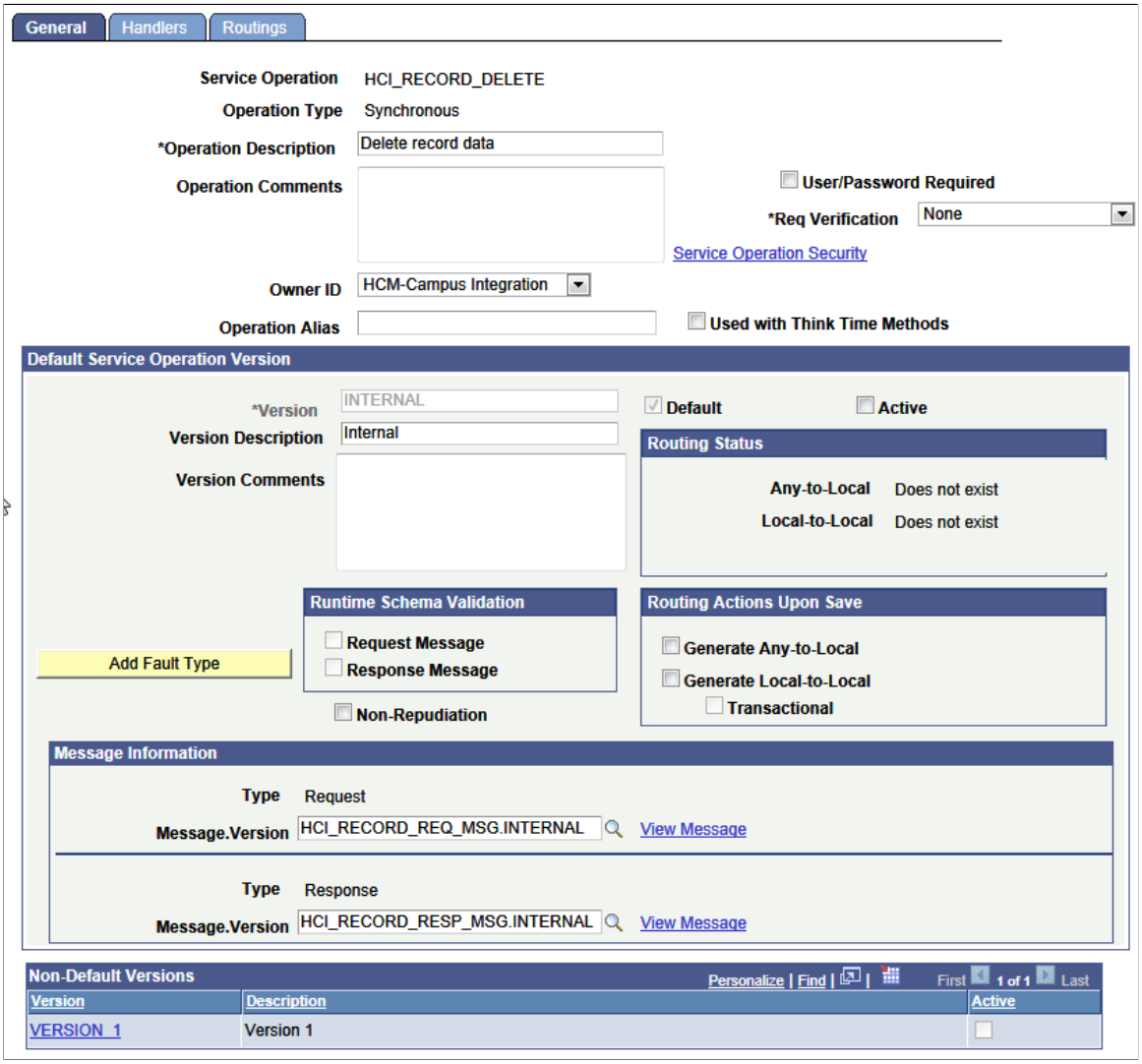
1. Open Service Operation *HCI_RECORD_DELETE.*

Image: Service Operations – General page (HCM)

This example illustrates the fields and controls on an example of the Service Operations – General page (HCM).



2. In the Default Service Operation Version group box, select the Active check box and click Save.

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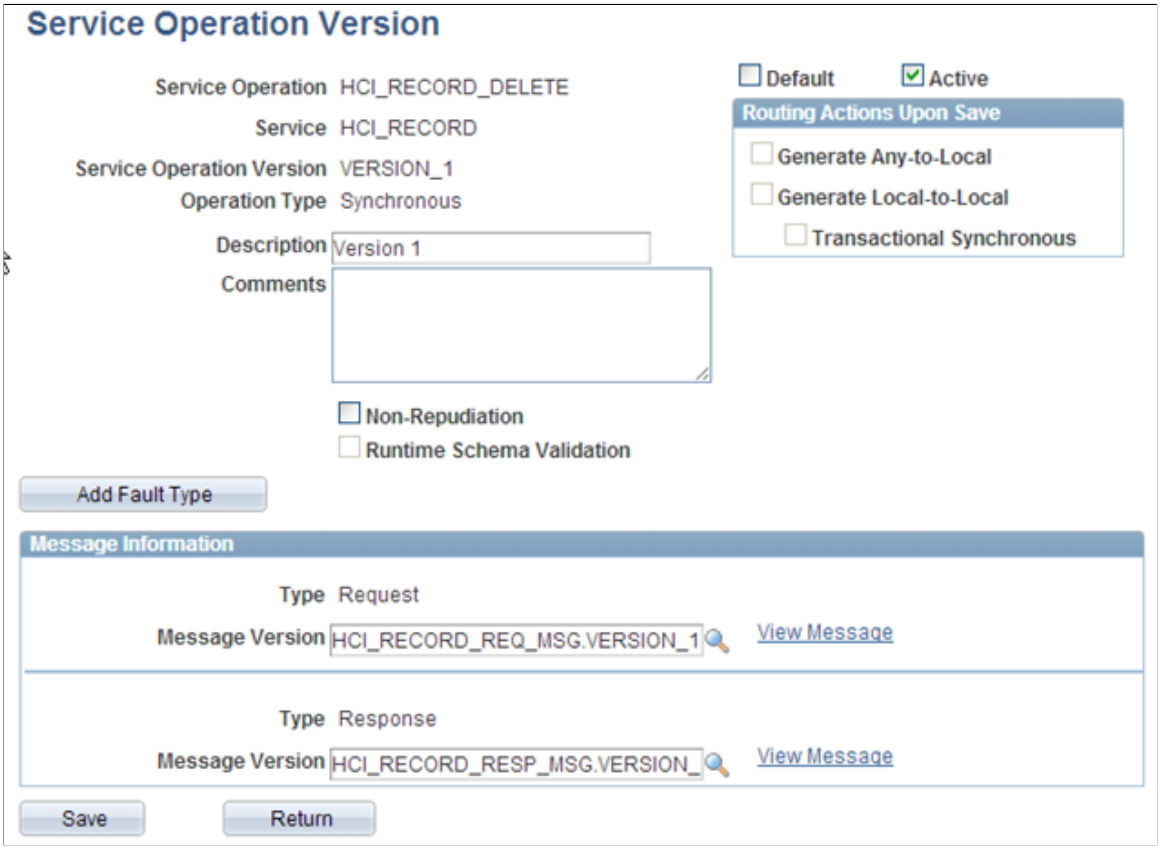
3. In the Non-Default Versions group box, click the *VERSION_1* link.

   Image: Example of Service Operation Version page (HCM)

   This example illustrates the fields and controls on the Example of Service Operation Version page (HCM).



4. Select the Active check box and click Save.

5. Click Return.

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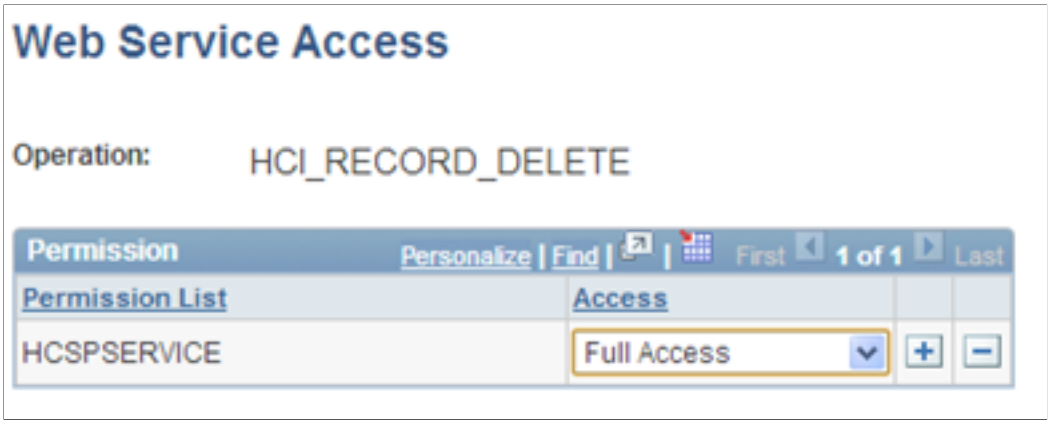
6. On the General page, click the Service Operation Security link and enter the appropriate permission list.

   Image: Example of Web Service Access page (HCM)

   This example illustrates the fields and controls on an example of the Web Service Access page (HCM).

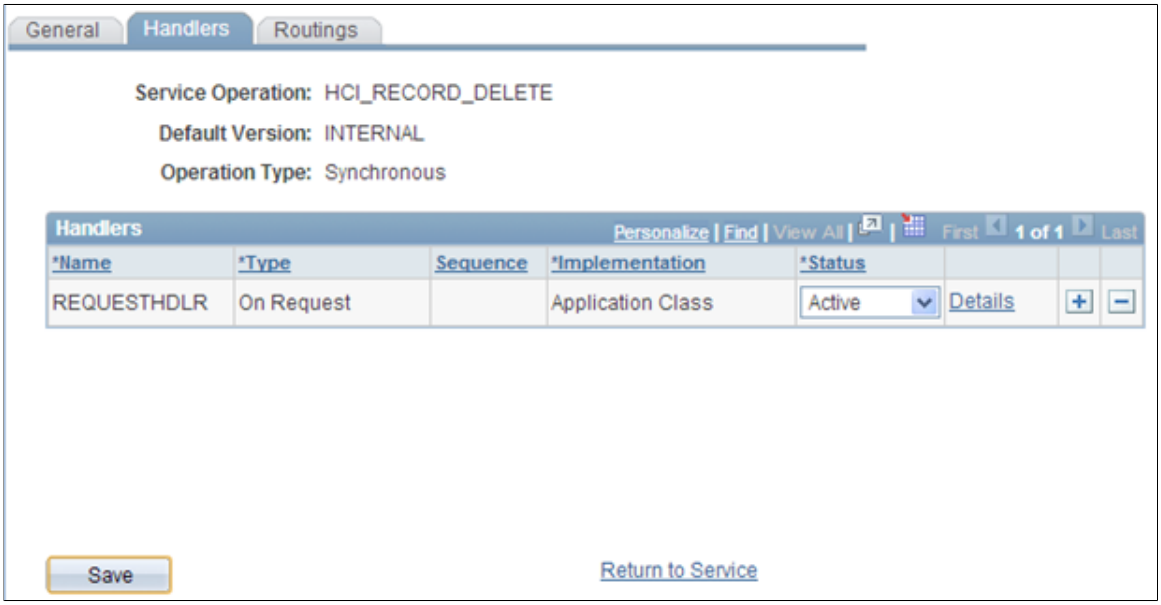


7. Click Save, then close the window.

8. Select the Handlers tab to activate the On-Request Handler, as shown below.

   Image: Example of Service Operations – Handlers page (HCM)

   This example illustrates the fields and controls on an example of the Service Operations – Handlers page (HCM).



9. Select the Routings tab to add a routing to the sender database.

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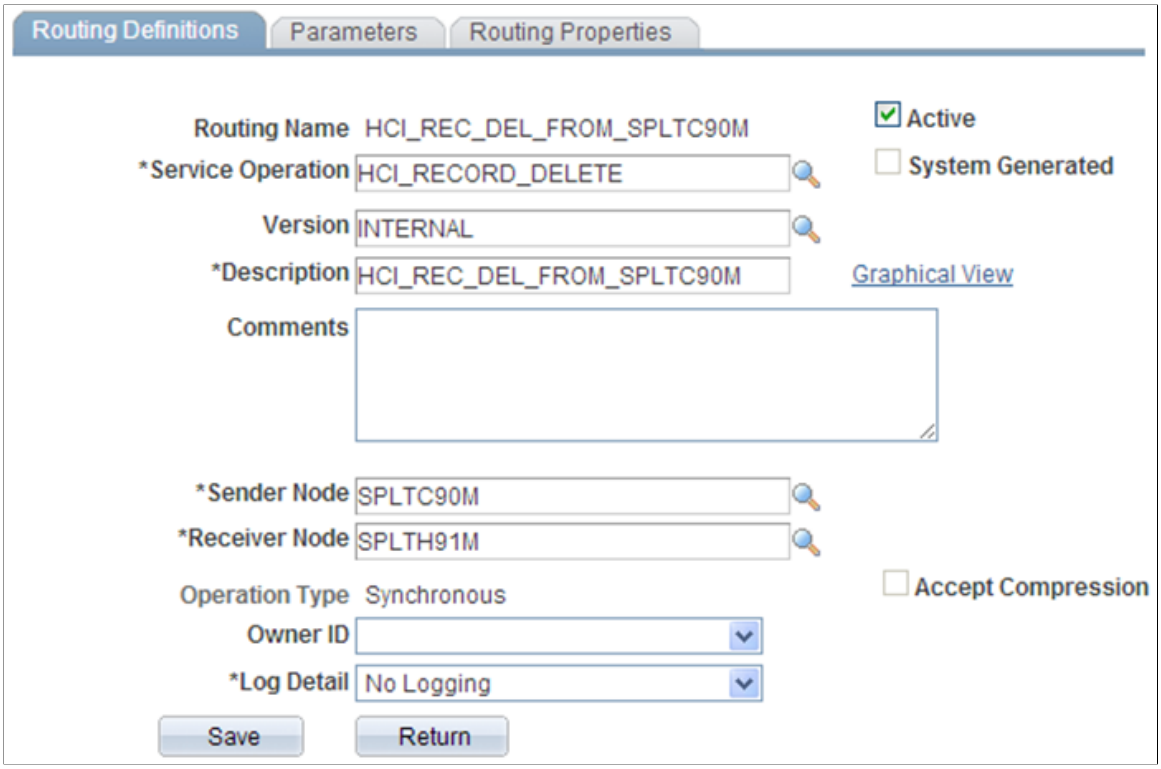
(In this example, the SPLTC90M database is the sender, so the routing is named *HCI_REC_DEL_FROM_SPLTC90M*.)

Image: Example of Routing Definitions page (HCM)

This example illustrates the fields and controls on an example of the Routing Definitions page (HCM).



10. Enter a Description, Sender Node, and Receiver Node.

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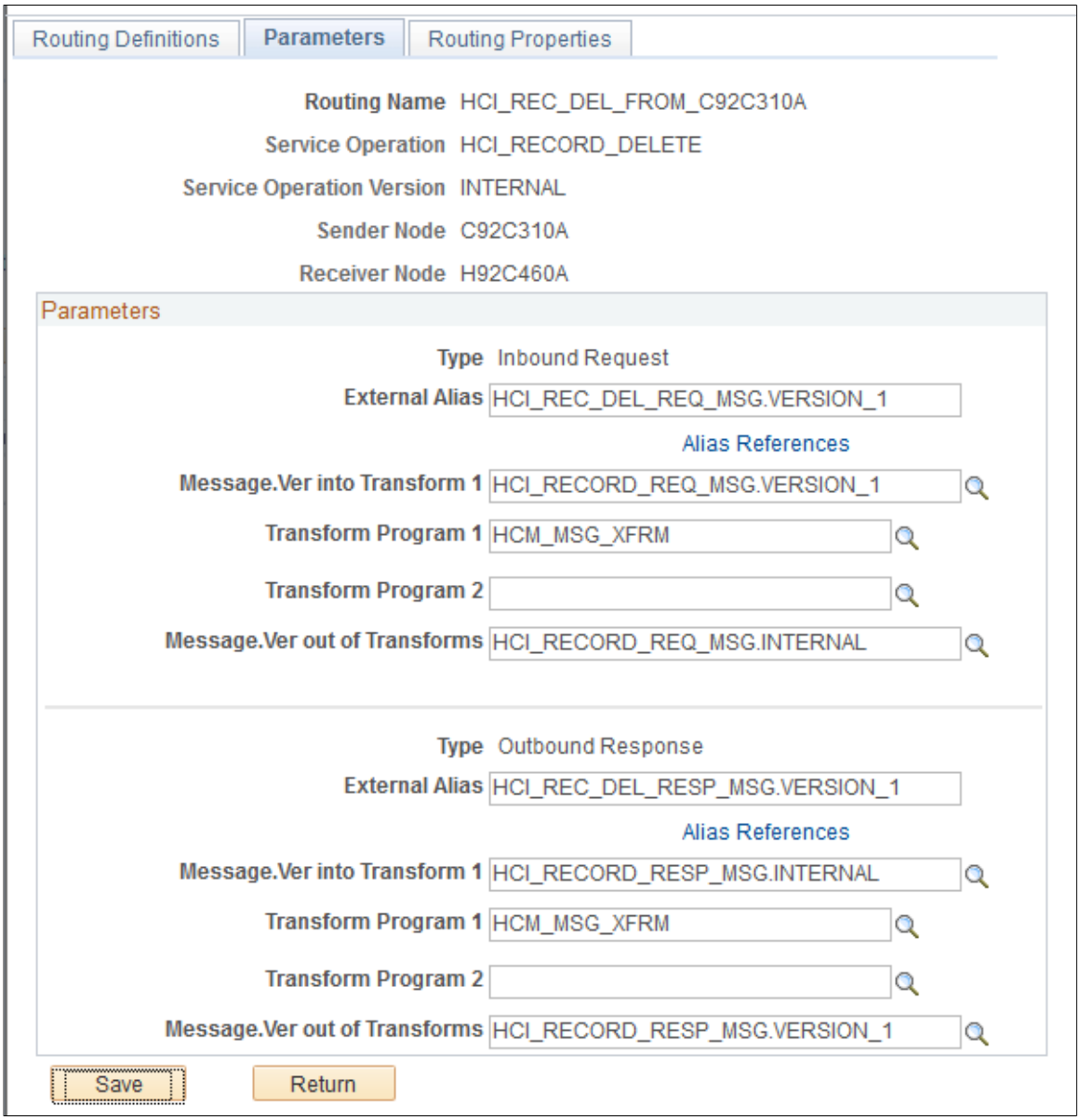
11. On the Parameters tab, enter the required information for the Inbound and Outbound requests.

Image: Example of Parameters page (HCM)

This example illustrates the fields and controls on an example of the Parameters page (HCM).



- Bundle 41. Change in transformation programs.

  The Inbound Request transformation program is *HCM_MSG_XFRM*.

- The Outbound Response transformation program is *HCM_MSG_XFRM*.
- The External Alias is changed to *VERSION_1* in both cases.

Note: On PeopleTools (PT) versions 8.55 and later, all synchronous transformation programs are replaced with HCM_MSG_XFRM. For earlier PT versions, the transformation program for requests is now HCM_MSG_XREQ; and HCM_MSG_XRSP for responses.

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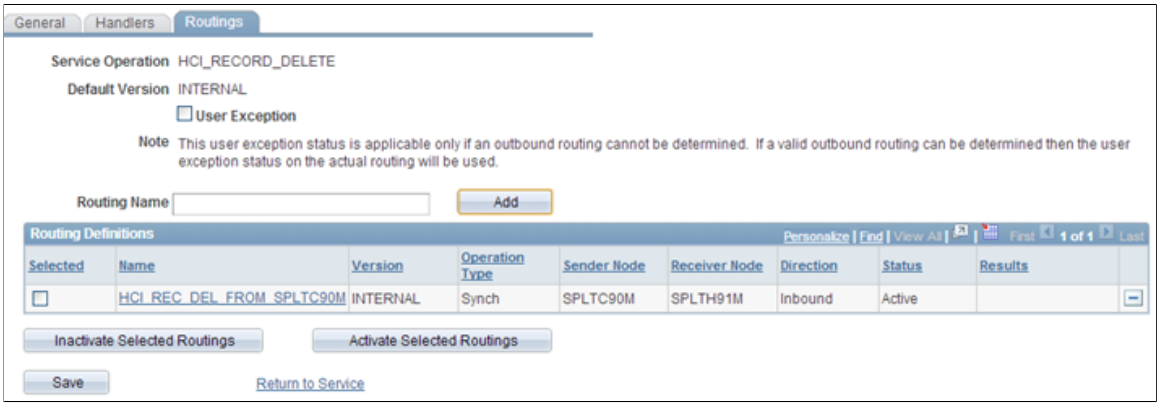
12. Click Save and then click Return.

13. Click Save on the Routings tab.

Image: Example of Service Operations – Routings page (HCM)

This example illustrates the fields and controls on an example of the Service Operations – Routings page (HCM).



Important! Repeat the above steps in the HCM database for the following service operations: HCI_RECORD_GET and HCI_RECORD_PUT.

Configuring HCI_RECORD Service Operations in CS

The configuration steps are similar to those in the HCM database, with the following exceptions:

- Inactivated subscription handlers.
- Different routing transformations parameter settings.

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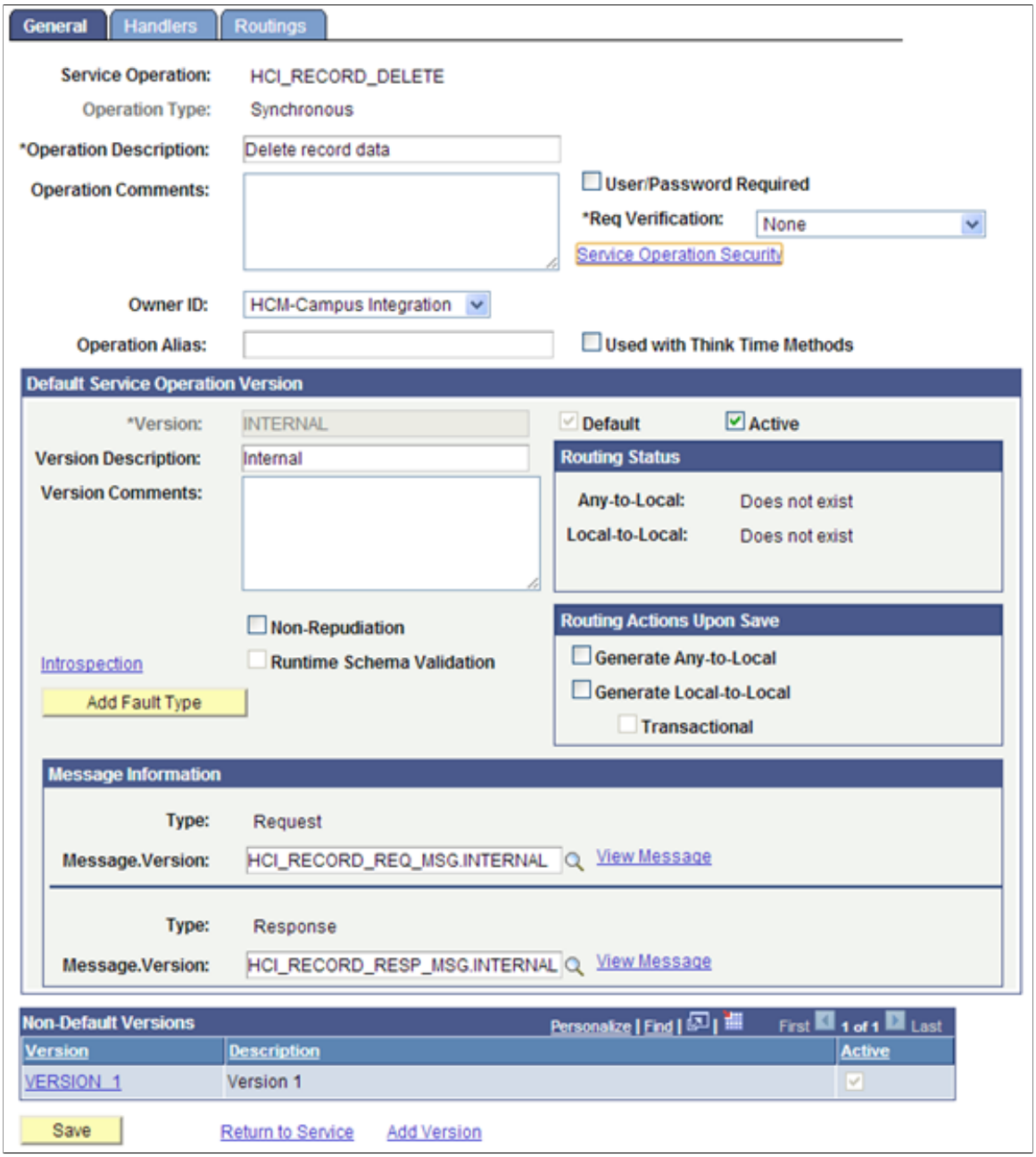
1. Open Service Operation *HCI_RECORD_DELETE.*

Image: Example of General page (CS)

This example illustrates the fields and controls on an example of the General page (CS).



2. In the Default Service Operation Version group box, select the Active check box and click Save.

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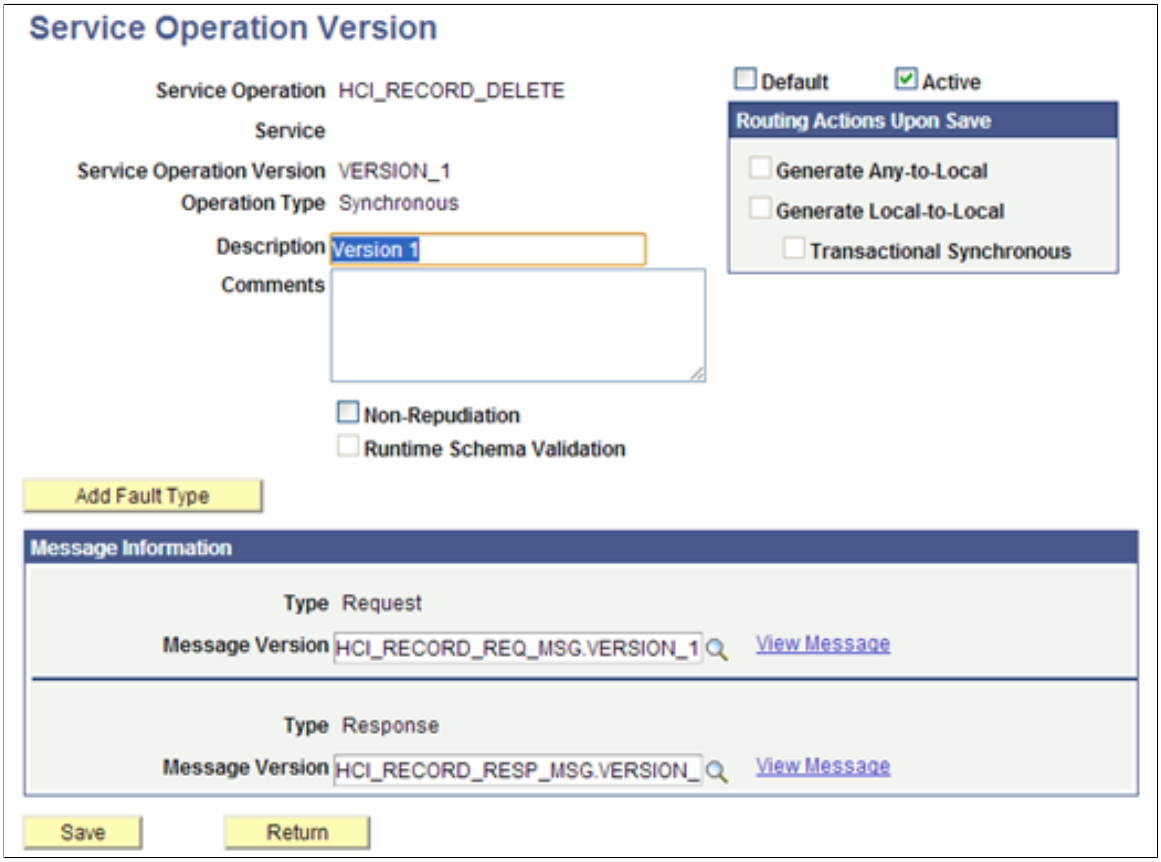
3. In the Non-Default Versions group box, click the *VERSION_1* link.

   Image: Example of Service Operation Version page (CS)

   This example illustrates the fields and controls on an example of the Service Operation Version page (CS).



4. Select the Active check box and click Save.

5. Click Return.

6. On the General page, click the Service Operation Security link and enter the appropriate permission list.

7. Click Save, then close the window.

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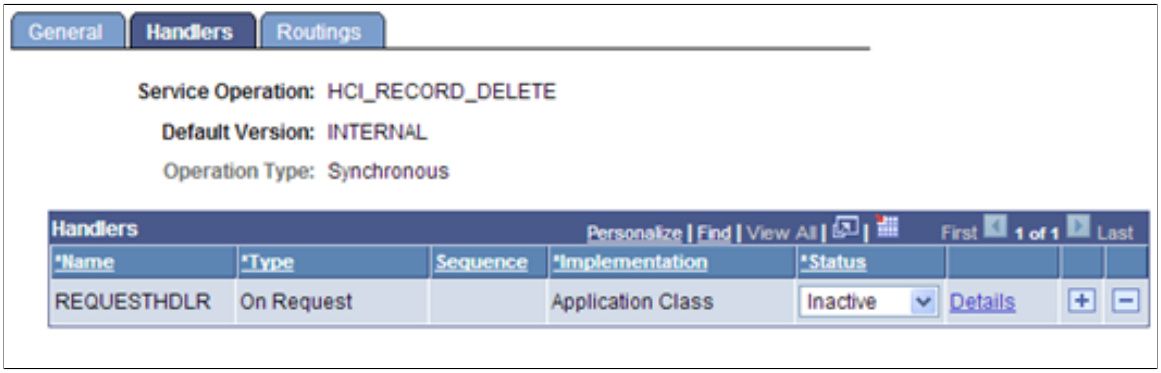
8. Select the Handlers tab to confirm that the On-Request Handler is *Inactive*.

   Image: Example of Service Operations – Handlers page (CS)

   This example illustrates the fields and controls on an example of the Service Operations – Handlers page (CS).

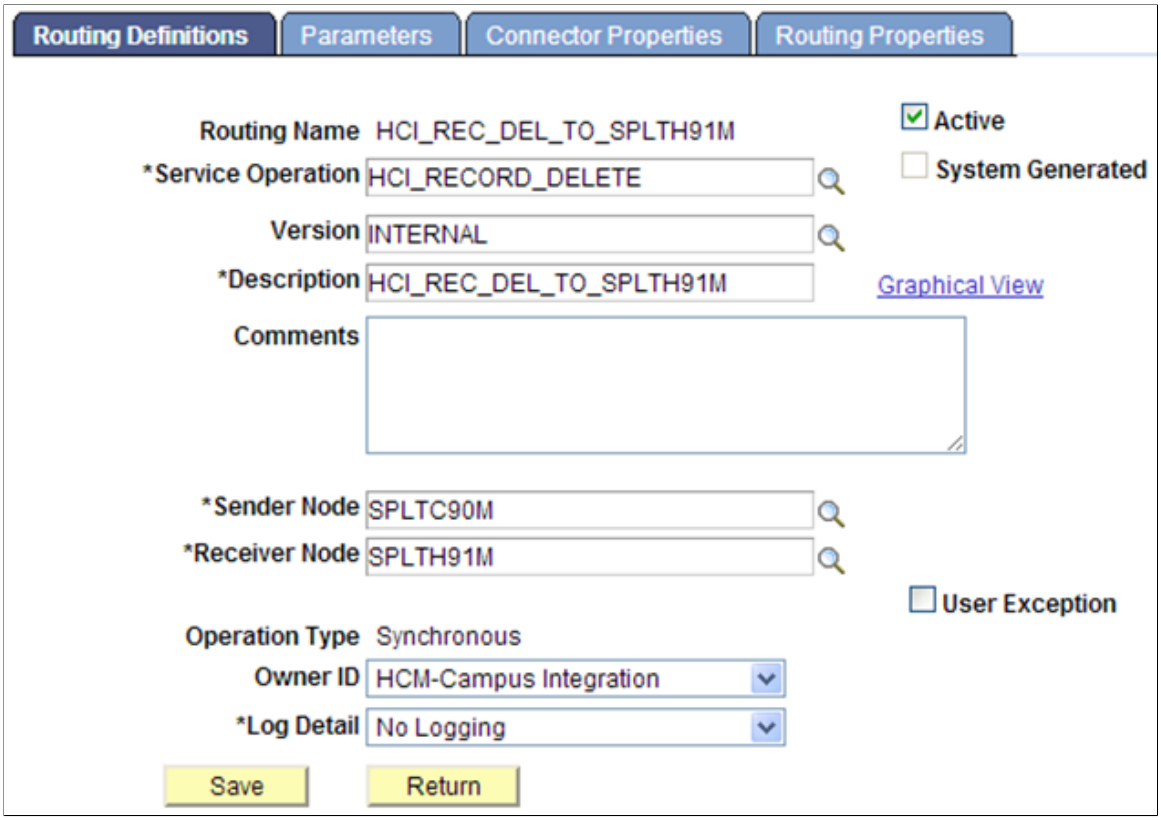


9. Select the Routings tab to add a routing to the sender database.

   (In this example, the SPLTC90L database is the sender, so the routing is named *HCI_REC_DEL_TO_SPLTH91M*.)

   Image: Example of Routing Definitions page (CS)

   This example illustrates the fields and controls on an example of the Routing Definitions page (CS).



10. Enter a Description, Sender Node, and Receiver Node.

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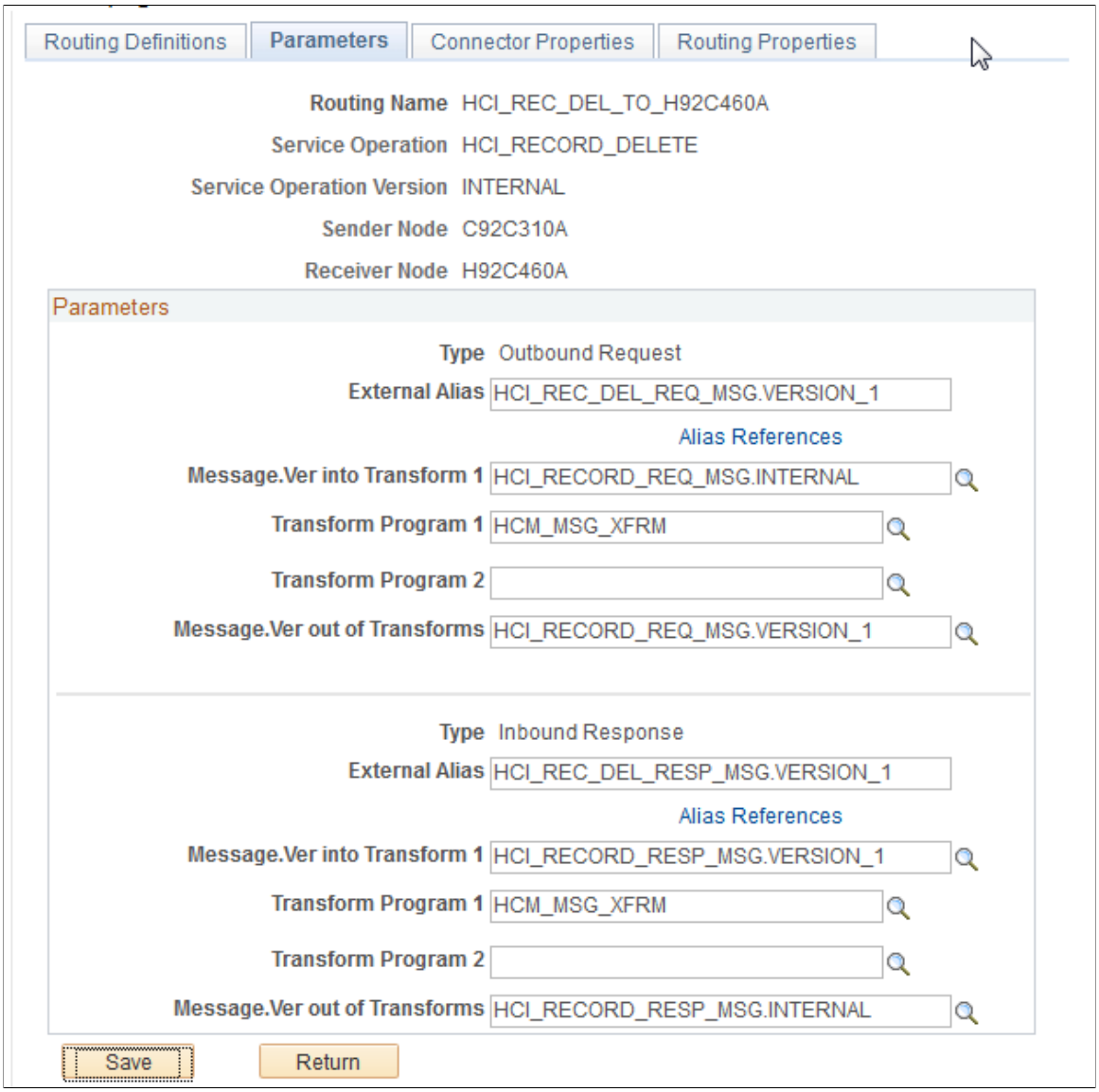
11. On the Parameters tab, enter information as shown in the screenshot below:

Image: Example of Parameters page (CS)

This example illustrates the fields and controls on an example of the Parameters page (CS).



- Bundle 41. Change in transformation programs.

  The Inbound Request transformation program is *HCM_MSG_XFRM*.

- The Outbound Response transformation program is *HCM_MSG_XFRM*.

- The External Alias is changed to *VERSION_1* in both cases.

Note: On PeopleTools (PT) versions 8.55 and later, all synchronous transformation programs are replaced with HCM_MSG_XFRM. For earlier PT versions, the transformation program for requests is now HCM_MSG_XREQ; and HCM_MSG_XRSP for responses.

---

12. Click Save and then click Return.

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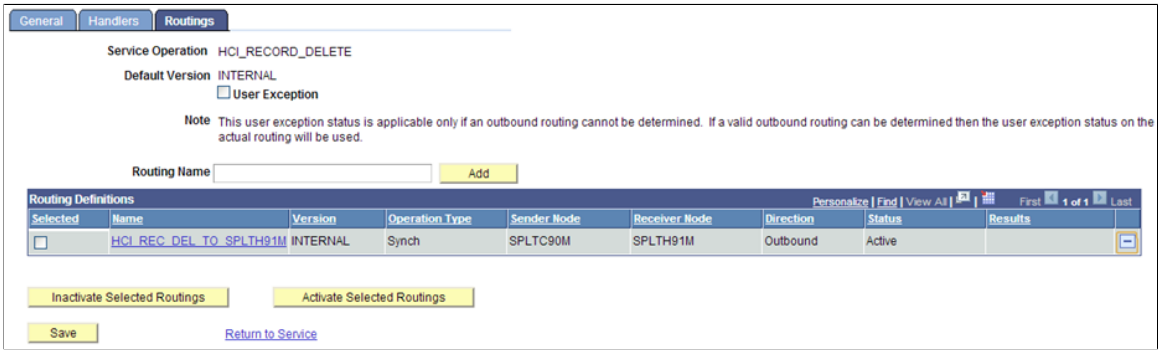
13. Click Save on the Routings tab.

Image: Example of Service Operations – Routings page (CS)

This example illustrates the fields and controls on an example of the Service Operations – Routings page (CS).



Important! Repeat the above steps in the CS database for the following service operations: HCI_RECORD_GET and HCI_RECORD_PUT.

Warning! The HCI_RECORD service is intended for use with the Synchronous Message resolution method of the Integration Integrity Utility only. The delivered service operations can – depending on security permission settings – perform data updates to any table in the system. As such, Security Administrators should carefully review which users will have access to the pages, record and permission mappings, and process settings related to this service. Improper use may result in data compromise or corruption. The HCI_RECORD_DELETE, HCI_RECORD_GET, and HCI_RECORD_PUT service operations should only be activated if the Synchronous Message Resolution method is to be used.

Running Discrepancy Comparison

The Run Discrepancy Comparison page is the primary run control page where you set the list of tables to be compared and the methods for the data compare. The process initiates a comparison of the data for the listed records between the databases, and logs discrepancy results in the Integration Discrepancies tables for review.

Individually add record names to the grid or populate a list of records from a message definition by using the Append Table Names from Message button.

Note: When populating the list of records from a message, choose the INTERNAL version of the message if it exists for the selected message name.

- Run the compare process as many times as desired for any set of tables. When a process is launched, any previous data discrepancy results for the same tables are deleted and refreshed with the latest results of the compare.
- If using the Database Link method, confirm that a Database Link Map is defined for all the records you specify. The process aborts if it does not find an entry in the Database Link Map table for the specified record.

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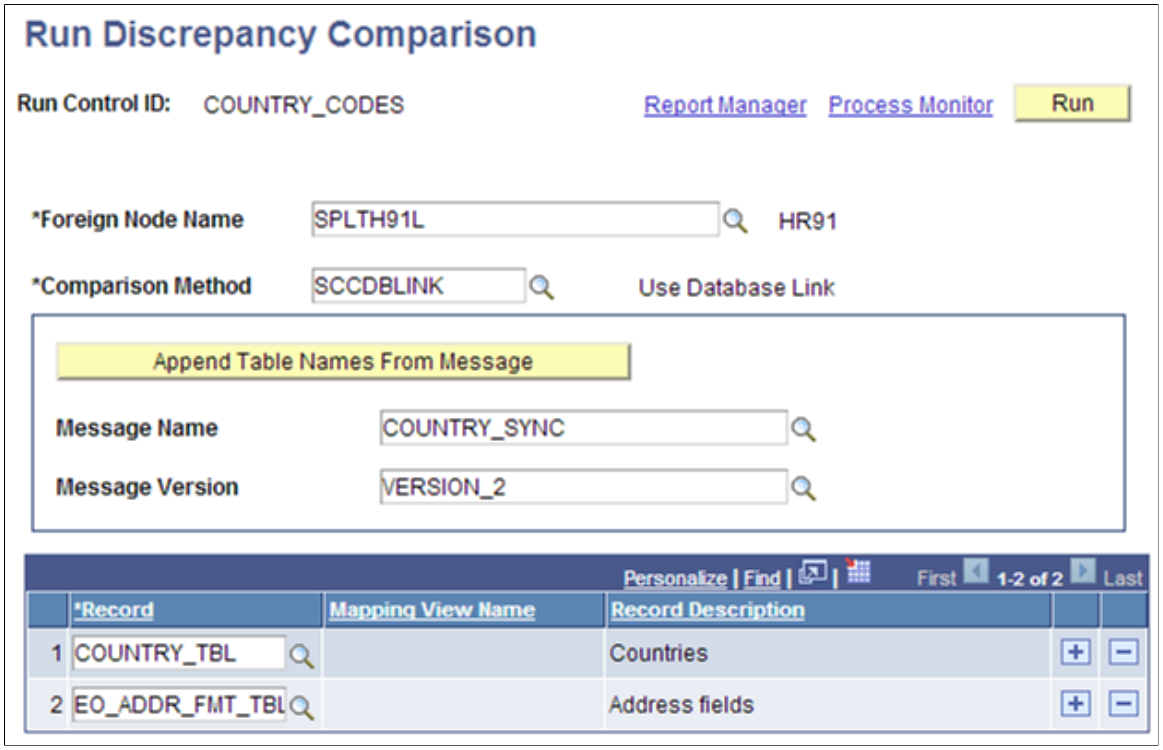
- Confirm that Permission Maps are defined for all records you specify for comparison. Confirm that the user running the process has an appropriate permission list defined. The process aborts if it does not find an entry in the Permission Maps table for the record name being compared.

Access the Run Discrepancy Comparison page (Set Up SACR, System Administration, Utilities, HCM Integration, Run Discrepancy Comparison).

Image: Run Discrepancy Comparison page

This example illustrates the fields and controls on the Run Discrepancy Comparison page. You can find definitions for the fields and controls later on this page.



Foreign Node Name	Enter the data source name; this must be a valid Integration Broker Node name.
Comparison Method	Select the comparison method to be used. The delivered choices include *SCCDBLINK* and *SCCJDBC*.
Append Table Names from Message	Click this button after the Message Name and Message Version fields are entered.
Message Name	Select the message name for which records are being compared.
Message Version	Select the desired message version.
Record	The base table being compared.
Mapping View Name	A view defined on the Record Map for the base table.
Record Description	The description of the base table, or mapping view if defined.

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Reviewing Integration Discrepancies

Once a comparison is run, all data discrepancies found by the process appear on the Integration Discrepancies page. The data results displayed in the Integration Discrepancies page are specific to each table name. Use the results to analyze the data that is out of sync, and then investigate its cause.

Once data discrepancies are resolved and the data is re-synced, they no longer appear on this page on subsequent comparisons of the table.

Data discrepancies due to errors in Integration Broker processing should be investigated and then resubmitted for proper Integration Broker handling.

Select the Winner value for all data rows that are to be re-synced using the Resolve Discrepancies process.

- *Foreign*: the row or values in the foreign node replace those in the local node.
- *Local:* the row or values in the local node replace those in the foreign node.
- *Undecided:* nothing changes

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Access the Integration Discrepancies page by selecting the appropriate record name on the search record (Set Up SACR, System Administration, Utilities, HCM Integration, Integration Discrepancies.).

Image: Example of Integration Discrepancies page (1 of 2)

This example illustrates the fields and controls on an example of the Integration Discrepancies page, after the initial comparison is done.

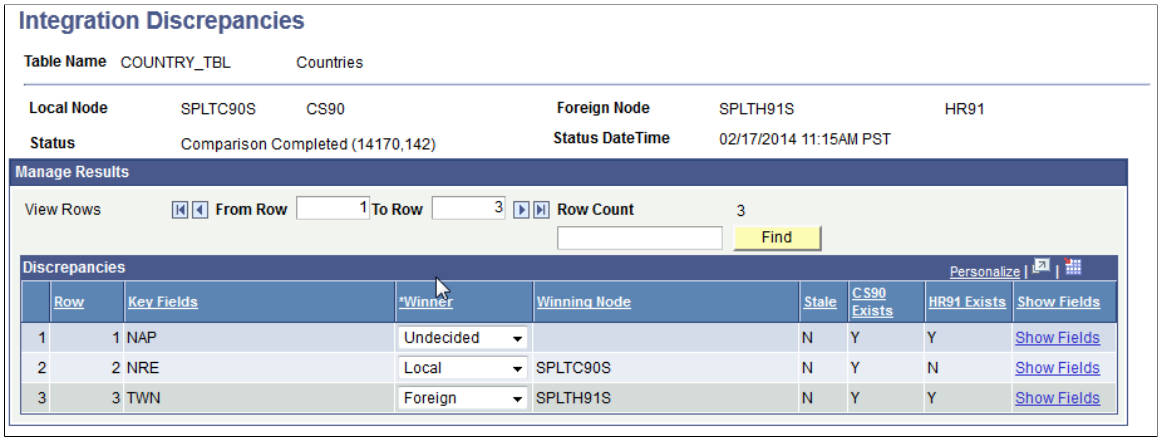
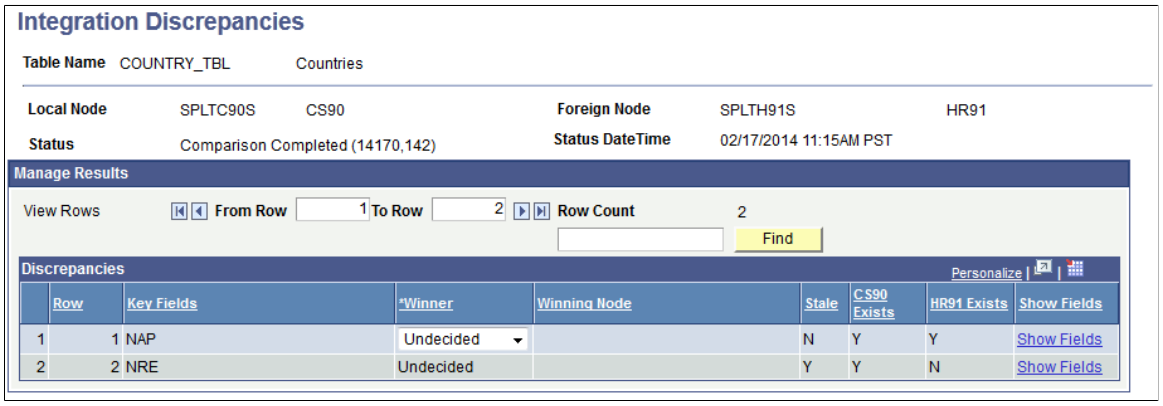


Image: Example of Integration Discrepancies page (2 of 2)

This example illustrates the fields and controls on an example of the Integration Discrepancies page, after the Stale data column = *Y* and the system has made the Winner field unavailable for entry.



The page displays data rows that are missing in either of the database instances and where field values are different.

View Rows

The Row Count shows the total number of data rows identified by the compare.

Enter numbers in the From Row and To Row fields and then click the Find button to navigate between many rows.

Find

Enter a search value in the box and click this button to locate a value string within results.

Key Fields

The key field values for the data rows on the table that was compared.

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Winner Select the value for the resolution process to follow, if desired. Options are: *Undecided, Foreign,* or *Local.*

Winning Node The description of the node set by the value selected in the Winner field.

Stale Indicates that the data has changed in the foreign or local database after the Discrepancy Comparison process was run.

Y = Stale data conditions are detected.

N = Data is unchanged since the Discrepancy Comparison process was run.

When Stale = Y, the Resolve Discrepancies process has detected data that has changed since the Discrepancy Comparison process was run. The Winner field becomes unavailable for such rows. Investigate why this data may have changed. The next run of the Discrepancy Comparison process may no longer show a discrepancy for such rows of data if the values are back in sync.

Exists columns The Local and Foreign node names appear in the column header and appear if the data row exists.

Y = Yes exists in this node.

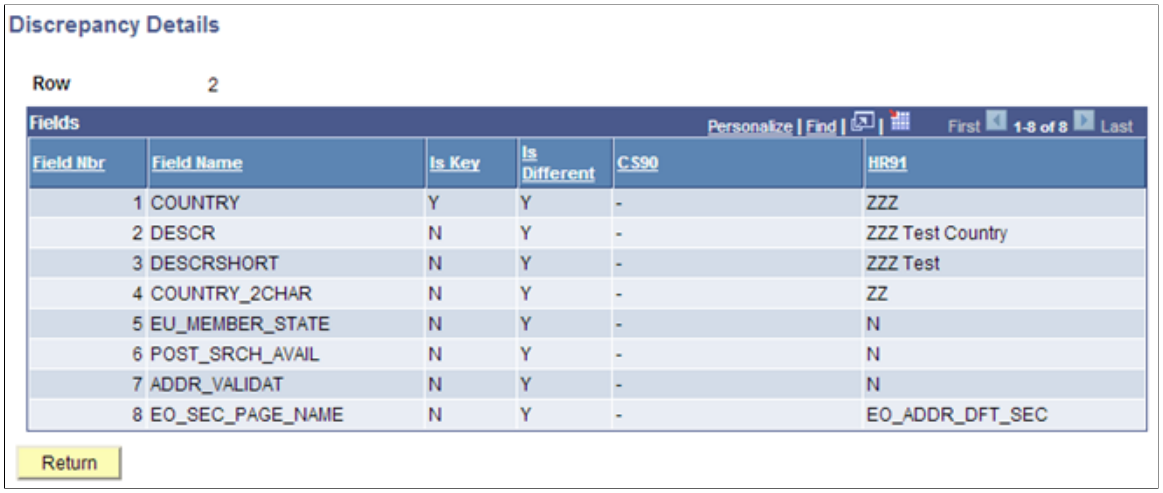
N = No does not exist in this node.

Show Fields Click the link to access the Discrepancy Details page. This page shows field value differences for the selected row.

Access the Discrepancy Details page (Click the Show Fields link for any row on the Integration Discrepancies page).

Image: Discrepancy Details page

This example illustrates the fields and controls on the Discrepancy Details page.



Discrepancy Details

Row 2

Fields Personalize | Find | First 1-8 of 8 Last

Field Nbr	Field Name	Is Key	Is Different	CS90	HR91
1	COUNTRY	Y	Y	-	ZZZ
2	DESCR	N	Y	-	ZZZ Test Country
3	DESCRSHORT	N	Y	-	ZZZ Test
4	COUNTRY_2CHAR	N	Y	-	ZZ
5	EU_MEMBER_STATE	N	Y	-	N
6	POST_SRCH_AVAIL	N	Y	-	N
7	ADDR_VALIDAT	N	Y	-	N
8	EO_SEC_PAGE_NAME	N	Y	-	EO_ADDR_DFT_SEC

Return

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Resolving Integration Discrepancies

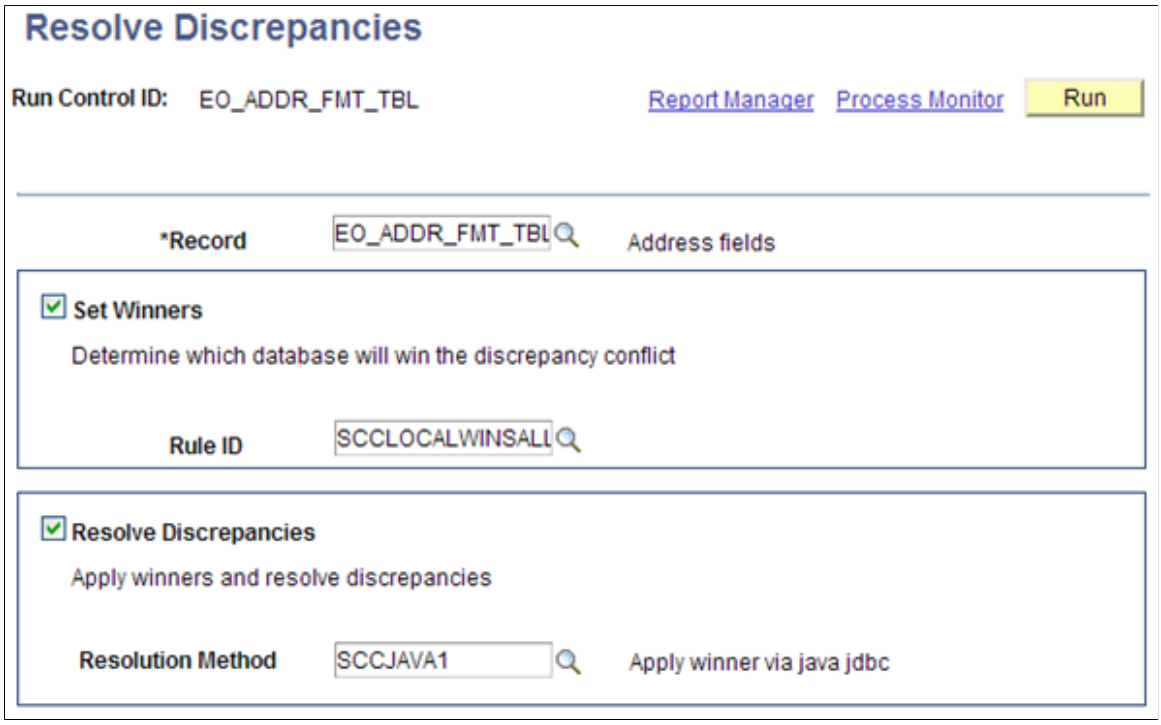
You can use the Resolve Discrepancies page to run the process for each table in which data discrepancies have been found, and that you determine should be updated through the resolution process. Winner dispositions are set on the Integration Discrepancies page. It is important to ensure that data rows selected to be updated by the resolution process have been thoroughly investigated and this method of re-sync is desired.

The resolution process is performed by table. Run the resolution process for all tables with data discrepancies. If there are multiple tables related to an entity, be sure all table data discrepancies are resolved.

Access the Resolve Discrepancies page (Set Up SACR, System Administration, Utilities, HCM Integration, Resolve Discrepancies).

Image: Resolve Discrepancies page

This example illustrates the fields and controls on the Resolve Discrepancies page. You can find definitions for the fields and controls later on this page.



Record Select the table name where data discrepancies are being resolved.

Set Winners Select the check box if a Winner Rule is to be used. If selected, the process updates all Undecided rows on the Integration Discrepancies page with the selected winner rule logic (such as local wins, foreign wins).

Rule ID Select the Rule ID to use.

Resolve Discrepancies Select the check box to apply winners and update data values in the databases accordingly.

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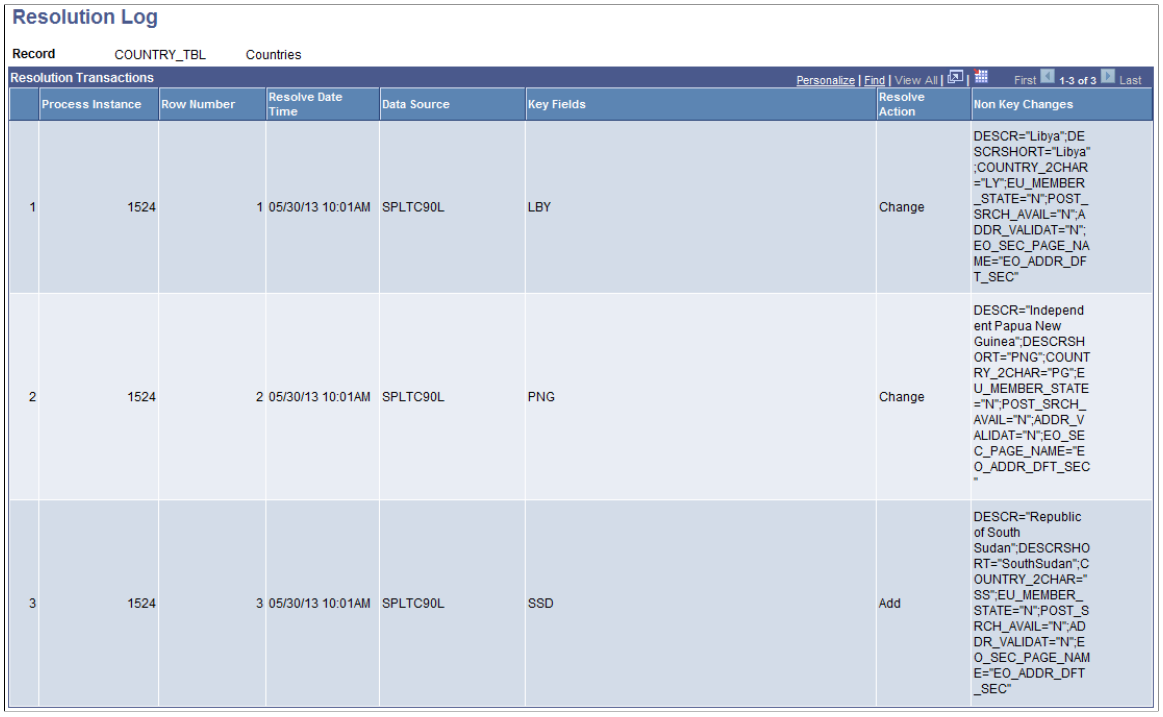
Resolution Method Select the resolution method being used for the updates.

Reviewing the Resolution Log

Access the Resolution Log page (Set Up SACR, System Administration, Utilities, HCM Integration, Resolution Log).

Image: Resolution Log page

This example illustrates the fields and controls on the Resolution Log page. You can find definitions for the fields and controls later on this page.



Resolution Log

Record COUNTRY_TBL Countries

Resolution Transactions Personalize | Find | View All | First 1-3 of 3 Last

	Process Instance	Row Number	Resolve Date Time	Data Source	Key Fields	Resolve Action	Non Key Changes
1	1524	1	05/30/13 10:01AM	SPLTC90L	LBY	Change	DESCR="Libya";DESCRSHORT="Libya";COUNTRY_2CHAR="LY";EU_MEMBER_STATE="N";POST_SRCH_AVAIL="N";ADDR_VALIDAT="N";EO_SEC_PAGE_NAME="EO_ADDR_DFT_SEC"
2	1524	2	05/30/13 10:01AM	SPLTC90L	PNG	Change	DESCR="Independent Papua New Guinea";DESCRSHORT="PNG";COUNTRY_2CHAR="PG";EU_MEMBER_STATE="N";POST_SRCH_AVAIL="N";ADDR_VALIDAT="N";EO_SEC_PAGE_NAME="EO_ADDR_DFT_SEC"
3	1524	3	05/30/13 10:01AM	SPLTC90L	SSD	Add	DESCR="Republic of South Sudan";DESCRSHORT="SouthSudan";COUNTRY_2CHAR="SS";EU_MEMBER_STATE="N";POST_SRCH_AVAIL="N";ADDR_VALIDAT="N";EO_SEC_PAGE_NAME="EO_ADDR_DFT_SEC"

When you run the Resolve Discrepancies process, the system logs all data discrepancies that are updated and displays them on this page. The log entries provide an audit history of the data updated through this process.

Process Instance The Resolve Discrepancies process instance used.

Row Number The row number from the Integration Discrepancies page that is updated.

Resolve Date/Time The date and time when the Resolve Discrepancies process updated the row of data.

Data Source The database that was used to provide the winner data values.

Key Fields The key value(s) for the data row that has been updated.

Resolve Action The action taken on the data row. Delivered values include: *Add, Change,* and *Delete.*

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Non Key Changes The value(s) for the additional non-key fields in the data row that has been updated.

Purging the Resolution Log

Access the Purge Resolution Log page (Set Up SACR, System Administration, Utilities, HCM Integration, Purge Resolution Log).

The Purge Resolution Log process removes unwanted history rows from the Transaction Log table. Run this process as frequently as desired. The system deletes data rows purged by this process from the database. Carefully consider your record retention policies to determine with what frequency you run this process.

Transaction Age Enter the number of days' worth of history rows to delete. For example, *30* causes the system to remove all rows dated 30 days prior to the current system date. The default value is 0 (zero) and when the process runs, all rows from the Resolution Log table are deleted.

Examples of Integration Discrepancies

The following are examples of setting up, running, and viewing Integration Discrepancies.

Example: Country Codes COUNTRY_SYNC (Tables: COUNTRY_TBL, EO_ADDR_FMT_TBL)

- No Record Maps required (tables do not include audit fields, and so on).
- CS – HCM.
- Using SCCDBLINK Database Link compare method.
- Data will be resolved using the Local Wins All winner rule.

1. Database Link *HRDBLINK* created on the CS database server. (not shown here).

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2. Database Link Maps for the tables included in COUNTRY_SYNC.

Image: Example of Database Link Maps for COUNTRY_TBL record

This example illustrates the fields and controls on an example of the Database Link Maps page for the COUNTRY_TBL record.

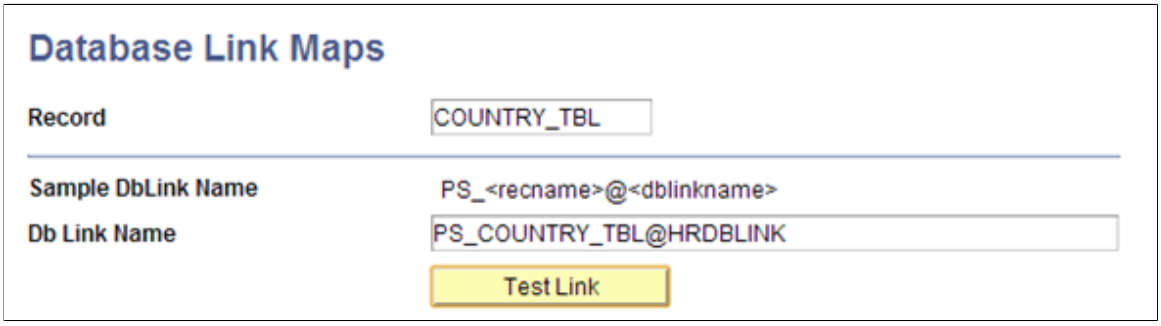
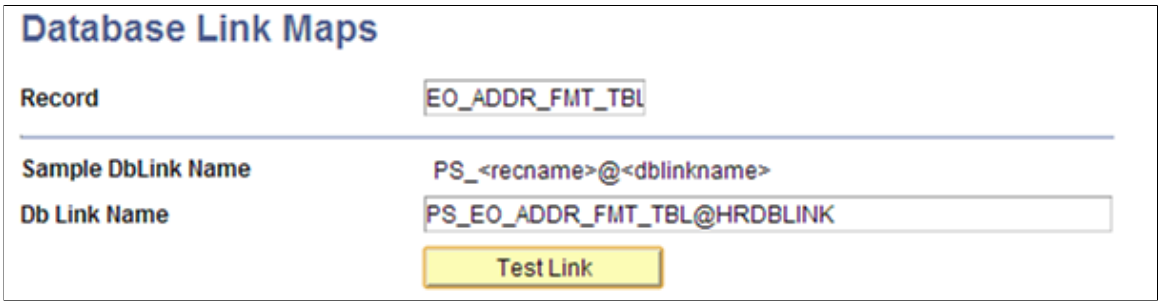


Image: Example of Database Link Maps for EO_ADDR_FMT_TBL record

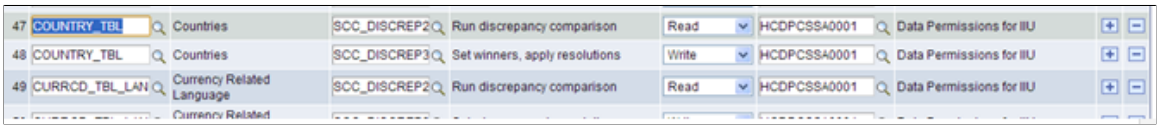
This example illustrates the fields and controls on an example of the Database Link Maps page for the EO_ADDR_FMT_TBL record.



3. Confirm tables are listed in CS Permission Maps.

Image: Example of table list

This example illustrates the fields and controls on an example of the CS Permission Maps list.



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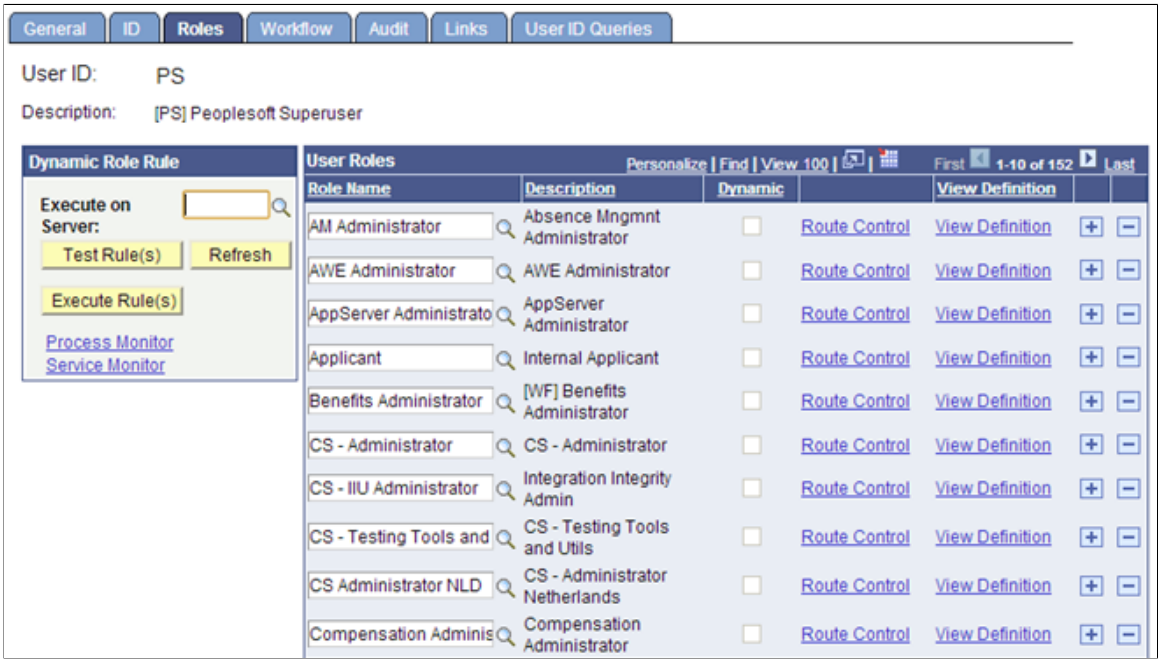
4. Confirm User ID has an assigned Role of *CS – IIU Administrator* (this includes the data permission list for record permissions).

Image: Example of Roles page

This example illustrates the fields and controls on an example of the Roles page.



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5. Run the Discrepancy Comparison process.

Image: Example of Run Discrepancy Comparison run control page

This example illustrates the fields and controls on an example of the Run Discrepancy Comparison page.

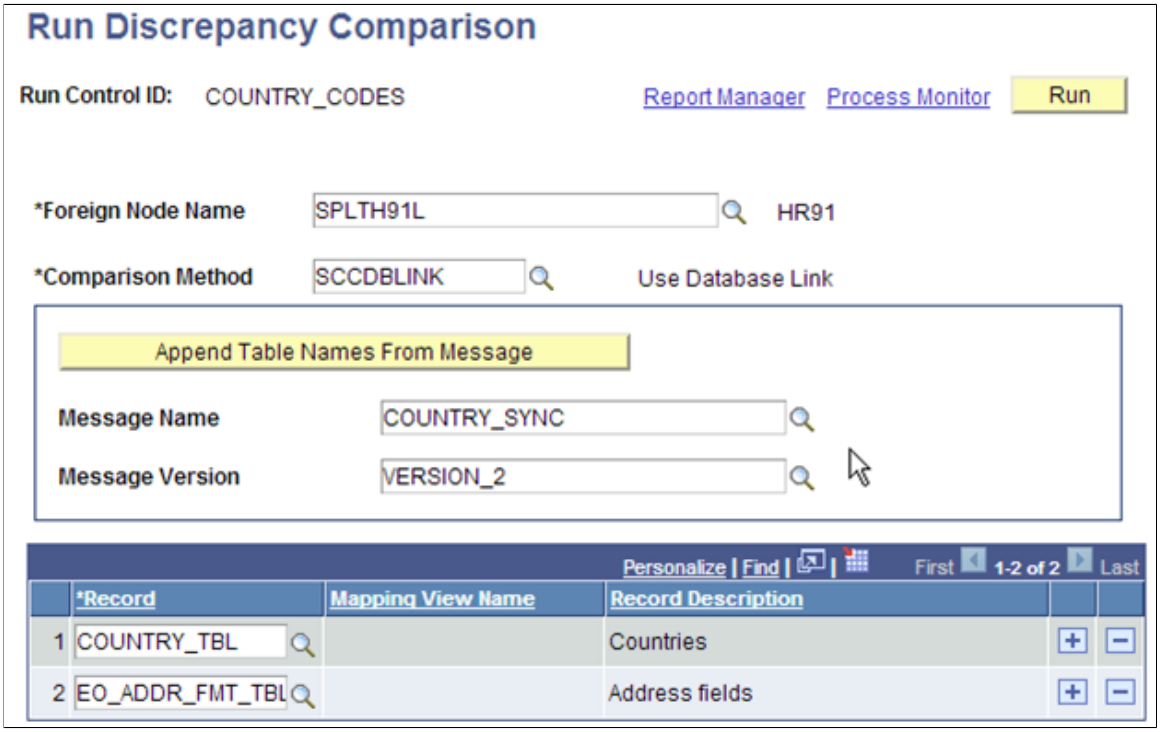
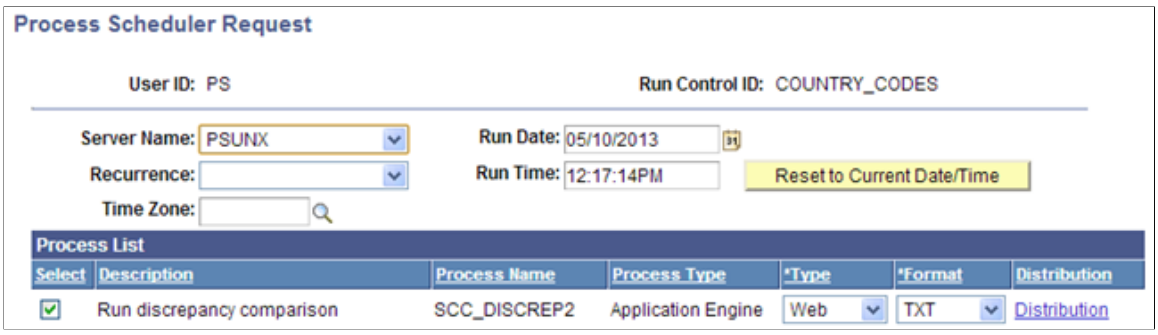


Image: Example of Process Scheduler Request page for Run Discrepancy Comparison process

This example illustrates the fields and controls on an example of the Process Scheduler Request page.



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6. Review Integration Discrepancies for both tables.

Image: Example of Integration Discrepancies page (1 of 2)

This example illustrates the fields and controls on an example of the Integration Discrepancies page for COUNTRY_TBL.

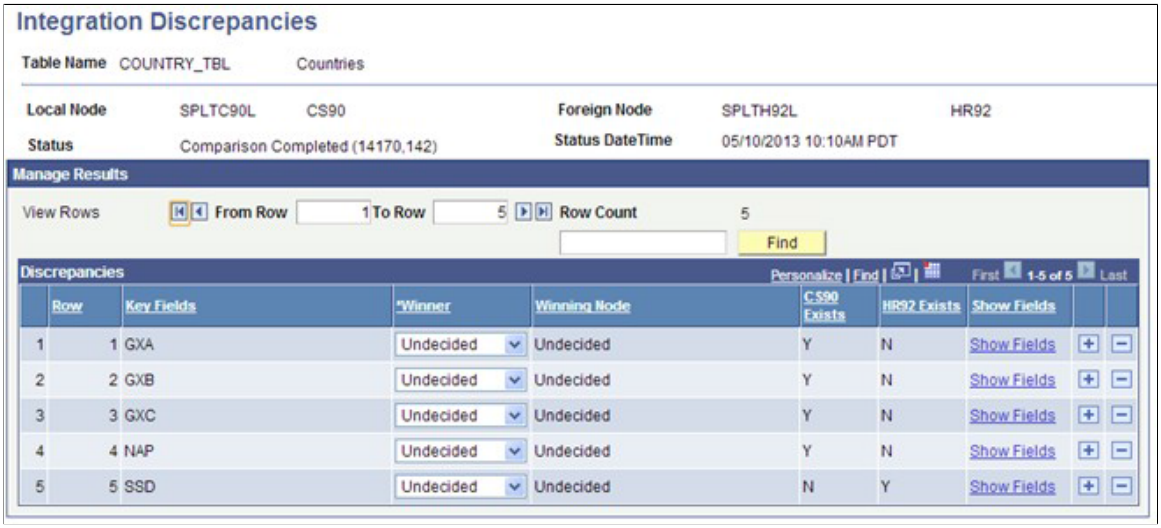
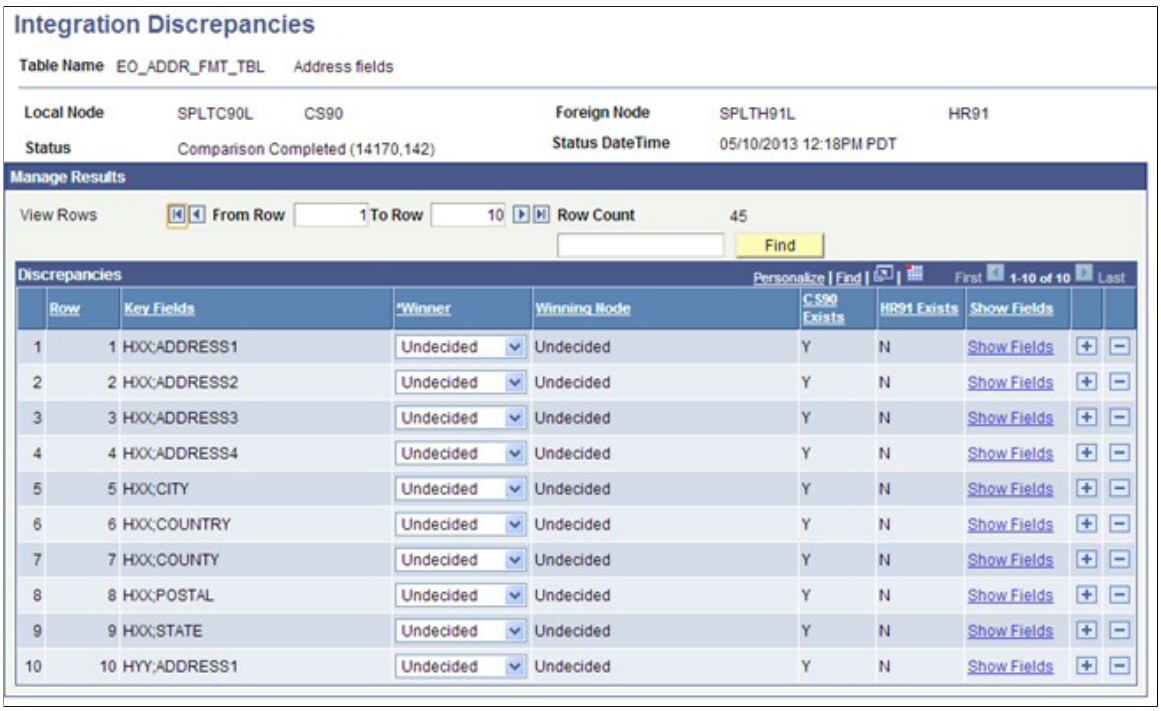


Image: Example of Integration Discrepancies page (2 of 2)

This example illustrates the fields and controls on an example of the Integration Discrepancies page for EO_ADDR_FMT_TBL.



7. Review data to determine that no discrepancies are due to blocked Integration Broker queue issues.

8. Use the Resolution Process with Java JDBC method to update all rows to use the Local Wins All winner rule.

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All CS values will be updated to the HCM database.

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9. Resolve parent COUNTRY_TBL rows first, then run the Resolve Discrepancies process.

Image: Example of Resolve Discrepancies page (1 of 2)

This example illustrates the fields and controls on an example of the Resolve Discrepancies page for COUNTRY_TBL.

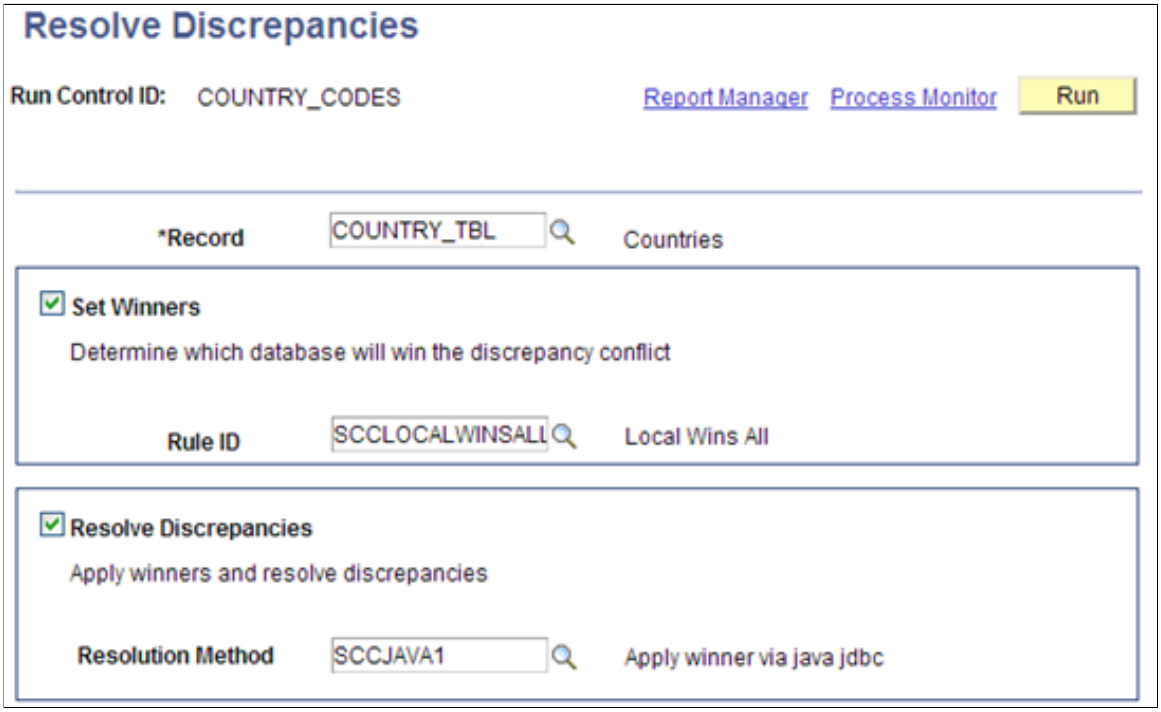
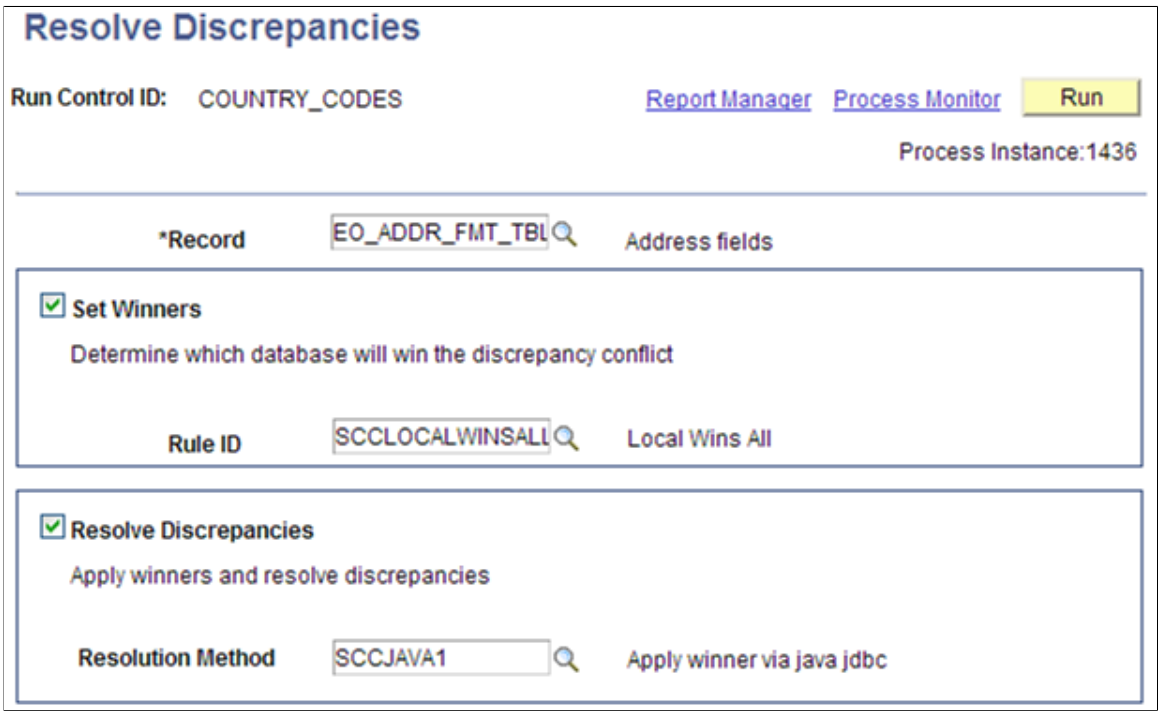


Image: Example of Resolve Discrepancies page (2 of 2)

This example illustrates the fields and controls on an example of the Resolve Discrepancies page for EO_ADDR_FMT_TBL.



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10. Confirm that the data was updated by first reviewing Integration Discrepancies (search does not include the tables). Then review data in the HCM database to confirm that the updates were successful.

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