Replicating Employee Master Data and Organizational Assignments from Employee Central to SAP ERP HCM
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6.1 Preparing the System

Accessing the Customizing Structure in the SAP ERP HCM System
1 Before Starting: Am I reading the right documentation?

Before you start looking for information in this guide, you need to be sure you’re looking in the right place.

This guide describes how to set up integration between SAP ERP HCM and SAP SuccessFactors Employee Central. It assumes that you have a team of experts in place who know their ways in the systems involved in the integration.

What this guide does not describe:

- How to set up and use Employee Central. For example:
  - How to configure object types in Employee Central. We tell you which prerequisites object types must fulfill so that they can be replicated between SAP ERP HCM and Employee Central. For example, whether a length restriction applies to a specific field. For basics such as how to restrict the length of a field, please see the Employee Central documentation.
  - Why and how to enable Position Management in Employee Central. We tell you what happens in the integration if Position Management is or is not enabled. For basics such as when and how to enable it, please see the Employee Central documentation.

- How to set up and use the SAP ERP HCM system. For example:
  - How to use the Customizing Implementation Guide (IMG) in your system. We tell you which Customizing activities and settings are relevant for integration. For basics such as how to make entries in Customizing views or how to implement a Business Add-In, please see the SAP ERP HCM documentation.
  - How to create a variant for a program or schedule it to be run in the background. We tell you which programs you need to execute or schedule. For basics such as how to define variants or background jobs, please see the SAP ERP HCM documentation.

- How to set up and use the middleware. For example:
  - How to find and use the monitoring UI. We tell you what you should pay attention to when monitoring integration flows. For basics such as how to use middleware monitoring in general, please see the middleware documentation.
  - How to upload a certificate. We tell you when a certificate is required. For basics such as how to upload it, please see the middleware documentation.

Check out the information below to learn how to set up and use the systems that are involved in the integration.

Table 1: Relevant Documentation

<table>
<thead>
<tr>
<th>Looking for information about...</th>
<th>See...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Central</td>
<td><a href="https://help.sap.com/viewer/p/SAP_SUCCESSFACTORS_EMPLOYEE_CENTRAL">https://help.sap.com/viewer/p/SAP_SUCCESSFACTORS_EMPLOYEE_CENTRAL</a> &gt; Implementation</td>
</tr>
</tbody>
</table>

Replicating Employee Master Data and Organizational Assignments from Employee Central to SAP ERP HCM

Before Starting: Am I reading the right documentation?
<table>
<thead>
<tr>
<th>Looking for information about...</th>
<th>See...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middleware</td>
<td><a href="https://help.sap.com/viewer/p/CLOUD_INTEGRATION">https://help.sap.com/viewer/p/CLOUD_INTEGRATION</a></td>
</tr>
</tbody>
</table>
Learn about changes to the documentation for Replicating Employee Master Data and Organizational Assignments from SAP SuccessFactors Employee Central to SAP ERP HCM in recent releases.

2H 2021 / PA_SE_IN SP32

<table>
<thead>
<tr>
<th>Type of Change</th>
<th>Description</th>
<th>More Info</th>
</tr>
</thead>
</table>
| November 19, 2021 | We've updated the information about moving the full transmission start date into the past or future. | Deciding on the Full Transmission Start Date [page 23]  
What Is the Full Transmission Start Date? [page 25] |
| October 15, 2021 | Support package 32 of the PA_SE_IN software component is required in the SAP ERP HCM system. | Checking the Minimum Setup Required for Your Systems [page 18] |
| Added | We added that the integration add-on for SAP ERP HCM and SAP SuccessFactors Employee Central (SFSF EC INTEGRATION 1210) can be used to integrate the cloud HR solution provided by SAP (SAP SuccessFactors) with on-premise ERP applications provided by SAP (SAP ERP HCM) only. | Introduction to Employee Master Data and Organizational Assignment Replication [page 14] |
| Added | We added that the replication considers regular employments (type ST = Standard) and global assignments (type GA) only. | How Replication of Employments from Employee Central Results in Personnel Numbers in SAP ERP HCM [page 47] |
| Added | We ensured that certificate-based authentication is listed consistently as an option for configuring the communication from SAP ERP HCM to the middleware. | Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 91]  
Configuring the Integration Flow for Confirmation [page 95]  
Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the Middleware [page 104] |
<table>
<thead>
<tr>
<th>Type of Change</th>
<th>Description</th>
<th>More Info</th>
</tr>
</thead>
</table>
| Changed       | We’ve made the user roles configurable that you select when you set the User Role authorization for the senders in the integration flows. | Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 91]  
Configuring the Integration Flow for Confirmation [page 95]  
Configuring the Integration Flow for Employee Push Replication [page 99] |
| Changed       | The middleware now ensures that the URL you enter for ERP receivers in the integration flows starts with `https://` if the proxy type is set to Internet. | Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 91]  
Configuring the Integration Flow for Employee Push Replication [page 99] |
| Added         | We added the OAuth2 SAML Bearer Assertion authentication option in the configuration of Employee Central receivers for the integration flows. | Configuring Credentials for Communication Between SAP Cloud Integration and the Integrated Systems [page 84]  
Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 91]  
Configuring the Integration Flow for Confirmation [page 95] |
<p>| Added         | We added two new parameters to the push integration flow: <code>ENABLE_PAYLOAD_LOGGING</code> and <code>REGULAR_EXPRESSION</code> | Configuring the Integration Flow for Employee Push Replication [page 99] |
| New           | The replication now ensures that the final notification for a query is sent to the SAP ERP HCM system only after all response packages from Employee Central have been processed. | Replication Process for Employee Master Data and Organizational Assignments [page 230] |
| New           | <em>Data Replication Monitor Query</em> is no longer a separate query type. To reduce the number of API calls, notifications, and confirmations to be sent for the same employee and to avoid errors, queries of the types <em>Last Modified Query</em> and <em>Data Replication Monitor Query</em> are now combined in one call. | Types of Employee Master Data and Organizational Assignment Queries [page 240] |
| New           | New checks are created for data quality like date of birth and number of working days per week for an employee. | Checking Working Days Per Week [page 167] |</p>
<table>
<thead>
<tr>
<th>Type of Change</th>
<th>Description</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changed</td>
<td>Enhanced the current data model check for position management to check the position field</td>
<td>Checking Position Management [page 166]</td>
</tr>
<tr>
<td>Changed</td>
<td>We now support the address data model consistence checks for 19 new countries.</td>
<td>Checking Position Management [page 166]</td>
</tr>
<tr>
<td>Added</td>
<td>We added that assigning more than 10 employees to a position in Employee Central can impact the performance of SAP ERP HCM replication.</td>
<td>Replication of Shared Positions from Employee Central [page 219] Configuring FTE Limit for Shared Positions [page 223]</td>
</tr>
<tr>
<td>Added</td>
<td>We added information about the new option to determine the start date based on the payroll periods only for bank information of type other bank.</td>
<td>Replicating Bank Information Infotype 0009 Subtype 1 considering the SAP ERP Payroll Period [page 283]</td>
</tr>
<tr>
<td>Added</td>
<td>We added that your Business Add-In (BAdI) implementations must use the classes provided for the new infotype framework once you’ve switched it on.</td>
<td>Enabling Use of New Infotype Framework for Integration Between Organizational Management and Personnel Administration (PA/PD Integration) [page 200]</td>
</tr>
</tbody>
</table>

1H 2021 / PA_SE_IN SP31

<table>
<thead>
<tr>
<th>Type of Change</th>
<th>Description</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 21, 2021</td>
<td>We updated the statement that Unicode is a prerequisite for the installation of the PA_SE_IN software component. This prerequisite refers to the software component (or the add-on in which it is contained) as a whole, not to a specific support package. Unicode has always been a prerequisite for installing the add-on. We just added the information in the 1H 2021 release to make the prerequisite explicit.</td>
<td>Checking the Minimum Setup Required for Your Systems [page 18]</td>
</tr>
<tr>
<td>April 16, 2021</td>
<td>The SAP Cloud Platform Integration brand has been retired. We’ve updated this guide with the new SAP Cloud Integration brand accordingly.</td>
<td></td>
</tr>
<tr>
<td>Type of Change</td>
<td>Description</td>
<td>More Info</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Changed</td>
<td>Support package 31 of the PA_SE_IN software component is required in the SAP ERP HCM system.</td>
<td>Checking the Minimum Setup Required for Your Systems [page 18]</td>
</tr>
<tr>
<td>Added</td>
<td>We added that the PA_SE_IN software component can be installed in Unicode systems only.</td>
<td>Checking the Minimum Setup Required for Your Systems [page 18]</td>
</tr>
<tr>
<td>New</td>
<td>You can now replicate employees as inactive that were terminated in Employee Central before you start the replication of employee data.</td>
<td>Replicating Employees as Inactive That Were Terminated in Employee Central Before the Full Transmission Start Date [page 72]</td>
</tr>
<tr>
<td>New</td>
<td>Replication requests for organizational assignments with the status <em>Failed</em> are now also set to <em>Outdated</em> when a new request is stored in the staging area for the same employee.</td>
<td>Processing and Statuses of Replication Requests [page 208]</td>
</tr>
<tr>
<td>New</td>
<td>You can now use the information provided by the DRTMPurgeStatusOverview segment of the CompoundEmployee API in the replication. Using this segment ensures that the replication no longer fails if an employee's data is purged after the full transmission start date (FTSD) or if an employee is rehired after their data was purged.</td>
<td>Configuring the Parameters for the Employee Master Data and Organizational Assignment Query [page 231] Configuring Validation Options for the Replication of Employee Data Purge [page 285] Use of the Purge Status Overview in the Replication of Data Purge [page 287]</td>
</tr>
<tr>
<td>New</td>
<td>You can now use Check tool to check the Payment Information from Employee Central.</td>
<td>Configuration Checks of Payment Information using Check Tool [page 166]</td>
</tr>
<tr>
<td>New</td>
<td>You can now use Check tool to check if position management is enabled in Employee Central.</td>
<td>Checking Position Management [page 166]</td>
</tr>
<tr>
<td>New</td>
<td>Purging of communication data during the replication process now depends on whether an employee was active or inactive when the employee was rehired.</td>
<td>Replication of Communication Data When the ERP Data Has Been Purged [page 290]</td>
</tr>
<tr>
<td>New</td>
<td>We now provide sample content for replicating contract element data stored in Job information block in Employee Central to SAP ERP HCM international Info-type 0016.</td>
<td>Mapping Infotype 0016 [page 278]</td>
</tr>
<tr>
<td>New</td>
<td>We added a troubleshooting section about how to synchronize Employee Central with the SAP ERP HCM system if you need to change the entry date of an employee after their data was replicated and the payroll run has been completed in SAP ERP HCM.</td>
<td>Changing the Hire Date of an Employee After Payroll Has Run in SAP ERP HCM [page 294]</td>
</tr>
<tr>
<td>Type of Change</td>
<td>Description</td>
<td>More Info</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
<td>-----------</td>
</tr>
<tr>
<td>New</td>
<td>We now support third gender for the country/region New Zealand based on the new law for the support of third gender.</td>
<td>Replication of Employee Master Data for New Zealand [page 196]</td>
</tr>
</tbody>
</table>
Learn about replication of employee master data and employee organizational assignments from SAP SuccessFactors Employee Central to your SAP ERP HCM system.

The integration we explain here is about replicating employee master data together with employee organizational assignments from Employee Central to your SAP ERP HCM system. It’s the standard integration we provide for employee master data and employee organizational assignment replication from Employee Central, and it’s based on the Business Integration Builder (BIB). If you’re starting a new integration project, this is the right document for you. It substitutes all older integration guide versions about employee master data or employee organizational assignment replication from Employee Central to SAP ERP HCM.

Restriction

The integration add-on for SAP ERP HCM and SAP SuccessFactors Employee Central (SFSF EC INTEGRATION 1210) can be used to integrate the cloud HR solution provided by SAP (SAP SuccessFactors) with on-premise ERP applications provided by SAP (SAP ERP HCM) only. The add-on is included in the license for these systems.

The add-on cannot be licensed to use for integration between non-SAP cloud HR solutions and SAP ERP HCM.

This standard integration supports the Core Hybrid HXM deployment option. Core Hybrid HXM means that Employee Central is used as the system of record holding the employee data and reporting lines of all employees. But existing HR processes such as Payroll, Time Management, or custom HR processes still run in an SAP ERP HCM system landscape. If you’re using the Core Hybrid HXM deployment option and want to replicate employee master data and organizational assignments to SAP ERP HCM, go through all implementation steps we describe in this document.

If you’re interested in more information about the Core Hybrid HXM deployment option, go to this guide: Integrating SAP ERP HCM with Employee Central Using the Core Hybrid Deployment Option

Related Information

- Replication Process for Employee Master Data and Organizational Assignments [page 230]
- System Preparation for Employee Master Data and Organizational Assignment Replication [page 17]
- Concepts of Employee Master Data and Organizational Assignment Replication [page 42]
- Middleware Setup for Employee Master Data and Organizational Assignment Replication [page 79]
- Replicating Employee Master Data [page 110]
- Replication of Employee Organizational Assignments [page 197]
- Queries for Replication of Employee Master Data and Organizational Assignments from Employee Central [page 229]
2.1 Your Integration Team

The implementation and integration process of SAP SuccessFactors Employee Central with SAP ERP HCM is a collaborative effort that leverages the skills of various experts.

You need to pull together a team of experts for your implementation project when integrating SAP SuccessFactors Employee Central with SAP ERP HCM. The key experts typically involved in the process are as follows:

Table 2: Your Integration Team

<table>
<thead>
<tr>
<th>This expert...</th>
<th>Does these activities...</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP SuccessFactors consultant</td>
<td>• Is the main point of contact for the entire implementation and integration process.</td>
</tr>
<tr>
<td></td>
<td>• Ensures that all required system settings for Employee Central are done.</td>
</tr>
<tr>
<td></td>
<td>• Works closely with the SAP ERP HCM team, to ensure successful data replication.</td>
</tr>
<tr>
<td>Middleware consultant</td>
<td>Provides support on setting up the middleware.</td>
</tr>
<tr>
<td>SAP ERP HCM consultant</td>
<td>• Is the main point of contact for the configuration of SAP ERP HCM according to the needs of the customer.</td>
</tr>
<tr>
<td></td>
<td>• Works closely with the SAP SuccessFactors consultant to ensure successful data replication.</td>
</tr>
</tbody>
</table>

2.2 Target Group of This Document

Take a look at the target groups this document is intended for.

The following groups of people will benefit from reading this document:

- Implementation partners, consultants, and Product Support, for fast support of customers and prospective customers
- Cloud operations
- SAP-certified administrators at customer site
2.3 Country/Region-Specific Information

You can replicate some country-specific or region-specific employee data from Employee Central to the SAP ERP HCM system.

Table 3: The following table provides an overview of country/region specifics in this guide

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Replication of Country/Region-Specific Employee Master Data [page 189]</td>
</tr>
<tr>
<td>India</td>
<td>Replication of Employee Master Data for India [page 191]</td>
</tr>
<tr>
<td>Germany</td>
<td>Replication of Employee Master Data for Germany [page 195]</td>
</tr>
<tr>
<td>New Zealand</td>
<td>Replication of Employee Master Data for New Zealand [page 196]</td>
</tr>
</tbody>
</table>
3 System Preparation for Employee Master Data and Organizational Assignment Replication

Learn more about what needs to be in place if you want to replicate employee master data and organizational assignments from Employee Central.

**Note**

Don’t change any data that was replicated from Employee Central in the SAP ERP HCM system. Your changes would probably be overwritten by the next replication run from Employee Central. They wouldn’t be replicated back to Employee Central either. That is, the systems would no longer be in sync.

**Checking the Minimum Setup Required for Your Systems [page 18]**
Check if your systems are prepared so that you can set up employee master data and organizational assignments replication from Employee Central to SAP ERP HCM.

**How to Keep Your Systems in Sync [page 23]**
Why we recommend installing the latest support package of the integration add-on in your on-premise SAP ERP HCM system.

**Deciding on the Full Transmission Start Date [page 23]**
Prepare for integration between Employee Central and SAP ERP HCM by deciding on the date when the data replication is to start.

**Permissions for Data Replication from Employee Central [page 31]**
Set up the permissions needed by API users in Employee Central, as well as permissions for data replication users and users who process the replicated data in the SAP ERP HCM.

**Employee Central Preparation for Replication of Employee Master Data and Organizational Assignments [page 34]**
Make these settings in Employee Central so that it can transfer employee master data (including employee organizational assignments) to SAP ERP HCM.

**SAP ERP HCM Preparation for Replication of Employee Master Data and Organizational Assignments [page 35]**
Make these settings in your SAP ERP HCM system so that employee master data (including employee organizational assignments) can be transferred from Employee Central.
3.1 Checking the Minimum Setup Required for Your Systems

Check if your systems are prepared so that you can set up employee master data and organizational assignments replication from Employee Central to SAP ERP HCM.

Procedure

1. Is Employee Central set up?
   For more information, see Implementing Employee Central Core.

2. Is the middleware already set up?
   For more information about how to set up SAP Cloud Integration see SAP Cloud Integration.

⚠️ Caution
You are only allowed to configure the content as described in this guide. If you make modifications not described in this guide, SAP will not provide support for the modified content.

The middleware content described in this guide is meant for use in SAP Cloud Integration. You are not allowed to deploy it in an on-premise SAP Process Orchestration system. For more information, see SAP Note 2428801.

3. Do you meet the minimum setup for SAP ERP HCM systems?

Table 4: Required Software Component Versions and Support Packages

<table>
<thead>
<tr>
<th>Component</th>
<th>Required Software Component Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP NetWeaver</td>
<td>SAP_BASIS with one of the following versions:</td>
</tr>
<tr>
<td></td>
<td>○ 700 with SP27 or a higher SP</td>
</tr>
<tr>
<td></td>
<td>○ 701 with SP12 or a higher SP</td>
</tr>
<tr>
<td></td>
<td>○ 702 with SP08 or a higher SP</td>
</tr>
<tr>
<td></td>
<td>○ 710 with SP15 or a higher SP</td>
</tr>
<tr>
<td></td>
<td>○ 711 with SP10 or a higher SP</td>
</tr>
<tr>
<td></td>
<td>○ 730 with SP03 or a higher SP</td>
</tr>
<tr>
<td>Component</td>
<td>Required Software Component Version</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SAP ERP HCM</td>
<td>The following software component versions are required in your system:</td>
</tr>
<tr>
<td></td>
<td>+ SAP_APPL</td>
</tr>
<tr>
<td></td>
<td>SAP_APPL 600 SP15 or a higher version/SP</td>
</tr>
<tr>
<td></td>
<td>+ SAP_HR</td>
</tr>
<tr>
<td></td>
<td>The required minimum is one of the following versions:</td>
</tr>
<tr>
<td></td>
<td>- SAP_HR 600 SP59</td>
</tr>
<tr>
<td></td>
<td>- SAP_HR 604 SP25</td>
</tr>
<tr>
<td></td>
<td>- SAP_HR 608 (initial delivery version, no SP required)</td>
</tr>
<tr>
<td></td>
<td>The minimum version ensures that the integration works, but you most probably need to implement ad-</td>
</tr>
<tr>
<td></td>
<td>tional SAP Notes. Which SAP Notes are required depends on the exact SP level available in your sys-</td>
</tr>
<tr>
<td></td>
<td>tem.</td>
</tr>
<tr>
<td></td>
<td>To prevent additional effort caused by investigating the required SAP Notes and by implementing them,</td>
</tr>
<tr>
<td></td>
<td>we recommend that you use at least one of the following versions:</td>
</tr>
<tr>
<td></td>
<td>- SAP_HR 600 SPC7 (127)</td>
</tr>
<tr>
<td></td>
<td>- SAP_HR 604 SP93</td>
</tr>
<tr>
<td></td>
<td>- SAP_HR 608 SP21</td>
</tr>
<tr>
<td></td>
<td>+ EA-HR</td>
</tr>
<tr>
<td></td>
<td>The required minimum is one of the following versions:</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 600 SP59</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 602 SP38</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 603 SP33</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 604 SP25</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 605 SP02</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 606 (initial delivery version, no SP required)</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 607 (initial delivery version, no SP required)</td>
</tr>
<tr>
<td></td>
<td>- EA-HR 608 (initial delivery version, no SP required)</td>
</tr>
<tr>
<td></td>
<td>The minimum version ensures that the integration works, but you most probably need to implement ad-</td>
</tr>
<tr>
<td></td>
<td>tional SAP Notes. Which SAP Notes are required depends on the exact SP level available in your sys-</td>
</tr>
<tr>
<td></td>
<td>tem.</td>
</tr>
</tbody>
</table>
To prevent additional effort caused by investigating the required SAP Notes and by implementing them, we recommend that you use at least one of the following versions:

- EA-HR 603 SPA1
- EA-HR 604 SP93
- EA-HR 605 SP64
- EA-HR 606 SP49
- EA-HR 607 SP38
- EA-HR 608 SP21

Integration add-on for SAP ERP HCM and SAP SuccessFactors Employee Central

**PA_SE_IN 100 SP32**

**Note**

Only this newest PA_SE_IN support package ensures that all features described in this document are available in your system.

For more information, see [SFSF EC INTEGRATION 1210](https://launchpad.support.sap.com/) in the SAP Software Center. You can access the Software Center from SAP ONE Support Launchpad by choosing **Software Downloads**.

**Caution**

The PA_SE_IN software component can be installed in Unicode systems only. Non-Unicode systems are not supported.

The Unicode conversion was already announced in the year 2006. The support of non-Unicode systems ends soon. The SFSF EC INTEGRATION 1210 add-on, which comprises the PA_SE_IN software component, has been developed and tested in a Unicode environment. It’s not planned to offer it for non-Unicode systems. This means that Unicode is a prerequisite if you want to run the integrations provided by this add-on. For more information, refer to:

- SAP Note [838402](https://launchpad.support.sap.com/) *(Problems within non-Unicode systems and landscape)* and the customer letter attached to this SAP Note
- SAP Note [1322715](https://launchpad.support.sap.com/) *(Unicode FAQs)*
- SAP Knowledge Base Article (KBA) [2033243](https://launchpad.support.sap.com/) *(End of non-Unicode Support: Release Details)*

4. Are the required SAP Notes installed?

Make sure that you have the up-to-date version of each SAP Note, which you can find in the SAP ONE Support Launchpad at [https://launchpad.support.sap.com/](https://launchpad.support.sap.com/). Check the LOD-EC-INT-EE and LOD-EC-INT-ORG application areas for SAP Notes that are relevant for employee master data and organizational assignment replication from Employee Central to SAP ERP HCM.

a. Install SAP Notes that aren’t contained in the minimum version of the PA_SE_IN 100 software component mentioned above:
Table 5: Required SAP Notes

<table>
<thead>
<tr>
<th>SAP Note Number</th>
<th>Title</th>
<th>Issue Corrected by the SAP Note</th>
<th>Correction Will Be Contained in Support Package</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>1487337</td>
<td>Downporting the class CL_ABAP_DYN_PRG</td>
<td>Contains various quality improvement measures for dynamic programming.</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>1043195</td>
<td>Configuration of Web service runtime</td>
<td>You don’t know how to set up the technical configuration of the Web service runtime environment in your SAP ERP HCM system and how to check it.</td>
<td>none</td>
<td></td>
</tr>
</tbody>
</table>

b. To enable input validation on the selection screen of the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program, implement SAP Note 1743483 or install the following support package for software component SAP_BASIS, depending on your software component version:

Table 6: Minimum SAP_BASIS Support Package Level for Input Validation

<table>
<thead>
<tr>
<th>Software Component Version</th>
<th>Required Minimum SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>700</td>
<td>28</td>
</tr>
<tr>
<td>701</td>
<td>13</td>
</tr>
<tr>
<td>702</td>
<td>13</td>
</tr>
<tr>
<td>710</td>
<td>16</td>
</tr>
<tr>
<td>711</td>
<td>11</td>
</tr>
<tr>
<td>720</td>
<td>08</td>
</tr>
<tr>
<td>730</td>
<td>08</td>
</tr>
<tr>
<td>731</td>
<td>05</td>
</tr>
</tbody>
</table>

Input validation keeps users from entering invalid characters, such as apostrophes, in free-text fields, such as External Employee ID.

c. If you want to enable use of the new infotype framework for integration between Organizational Management and Personnel Administration, ensure that the following support packages or SAP Notes are installed in your SAP ERP HCM system.
For software component SAP_BASIS: Either SAP Note 2504865 or the following support package, depending on your software component version:

Table 7: Minimum SAP_BASIS Support Package Level for New Infotype Framework

<table>
<thead>
<tr>
<th>Software Component Version</th>
<th>Required Minimum SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>700</td>
<td>36</td>
</tr>
<tr>
<td>701</td>
<td>21</td>
</tr>
<tr>
<td>702</td>
<td>20</td>
</tr>
<tr>
<td>710</td>
<td>23</td>
</tr>
<tr>
<td>711</td>
<td>18</td>
</tr>
<tr>
<td>730</td>
<td>18</td>
</tr>
<tr>
<td>731</td>
<td>22</td>
</tr>
<tr>
<td>740</td>
<td>19</td>
</tr>
<tr>
<td>750</td>
<td>11</td>
</tr>
<tr>
<td>751</td>
<td>05</td>
</tr>
<tr>
<td>752</td>
<td>01</td>
</tr>
</tbody>
</table>

For software component SAP_HRRXX: Either SAP Note 2505223 or the following support package, depending on your software component version:

Table 8: Minimum SAP_HRRXX Support Package Level for New Infotype Framework

<table>
<thead>
<tr>
<th>Software Component Version</th>
<th>Required Minimum SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>F3</td>
</tr>
<tr>
<td>604</td>
<td>B9</td>
</tr>
<tr>
<td>608</td>
<td>47</td>
</tr>
</tbody>
</table>

d. If you want to enable use of the new logic for processing actions and additional actions, ensure that the following support packages or SAP Notes are installed in your SAP ERP HCM system.

For software component SAP_HR: Either SAP Note 2141312, 2390655 or the following support package, depending on your software component version:

Table 9: Minimum SAP_HR Support Package Level

<table>
<thead>
<tr>
<th>Software Component Version</th>
<th>Required Minimum SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>604</td>
<td>113 or B31</td>
</tr>
</tbody>
</table>
### 3.2 How to Keep Your Systems in Sync

Why we recommend installing the latest support package of the integration add-on in your on-premise SAP ERP HCM system.

The main use case of the SFSF EC INTEGRATION 1210 add-on, which comprises the PA_SE_IN 100 software component version, is to synchronize data between the cloud solution SAP SuccessFactors Employee Central and an on-premise SAP ERP HCM system.

Cloud solutions are regularly upgraded by SAP. Upgrades of on-premise systems are customer-managed.

New features in Employee Central often require enhancements of the PA_SE_IN software component. New integration features are also made available in the latest version of the PA_SE_IN software component only. You can use these new features only if your on-premise system is up to date. Furthermore, the data synchronization between Employee Central and the SAP ERP HCM system can only run smoothly if regular upgrades are performed on both sides. Therefore, the on-premise add-on must also be upgraded regularly.

Ideally, you install the latest support package of the add-on together with each new Employee Central release.

If this isn’t possible due to upgrade restrictions concerning your on-premise system, we recommend installing the latest support package of the add-on at least once a year. Only then we can ensure that the integration runs smoothly.

### 3.3 Deciding on the Full Transmission Start Date

Prepare for integration between Employee Central and SAP ERP HCM by deciding on the date when the data replication is to start.

**Context**

Deciding on the full transmission start date (FTSD) is an important step. That’s why we recommend that you work it out in an early project phase.
Procedure

1. Choose the date when the data replication from Employee Central to SAP ERP HCM is to start, considering the implications we've listed in this document.

   To reduce the amount of historical data being replicated, set the FTSD as late as possible. But consider that data is replicated from Employee Central to the SAP ERP HCM system only if it has an effective end date that is on or after the FTSD. Data that has an effective end date before the FTSD isn't replicated.

2. Enter the full transmission start date you've chosen as the earliest transfer date of the transformation template group you use for employee data replication.

3. Configure a country/region-specific FTSD for selected countries or regions if you have specific requirements such as a phased go-live.

4. Configure an assignment-specific FTSD for selected employees if the overall or the country/region-specific FTSD don't apply to them.

Results

The SAP ERP HCM system always uses the general FTSD when querying the data from Employee Central. If a country/region-specific and an assignment-specific FTSD are defined for the same personnel number, in addition to the general FTSD that's stored for the template group, the latest of the three dates is used for processing the data in SAP ERP HCM.

Next Steps

The following additional steps are required if you change the full transmission start date after you've already replicated data:

- If you move the date into the past, ensure that you trigger a full load by deleting the entry for the corresponding query from the Administration of Employee Master Data and Org Assign. Query (ECPAO_QRY_ADM) table.
- If you move the date into the future, no full load is required. But you must ensure that all changes made before the new FTSD have been replicated successfully.

Consider the FTSD when configuring retention times for employee data in Employee Central. The FTSD must be after the latest retention date of any Employee Central entity that is contained in data replication to SAP ERP HCM. Otherwise, data replication fails for the employee in question.

What Is the Full Transmission Start Date? [page 25]

Find out what the full transmission start date is, which effects it has on data replication from Employee Central to SAP ERP HCM, and which recommendations we have for defining this date.

Configuring Country/Region-Specific Full Transmission Start Dates [page 27]

Define a specific full transmission start date (FTSD) for each country/region you include in the replication of employee master data from Employee Central to the SAP ERP HCM system if you want to perform a phased go-live, for example.

Full Transmission Start Date for Assignment [page 29]
Find out what effects the assignment-specific full transmission start date (FTSD) has on employee master data and organizational assignment replication from Employee Central.

Configuring Assignment-Specific Full Transmission Start Dates [page 30]

Set an assignment-specific full transmission start date (FTSD) if the overall or the country/region-specific FTSD don’t apply to a specific personnel assignment (personnel number) included in the replication of employee master data from Employee Central to the SAP ERP HCM system.

3.3.1 What Is the Full Transmission Start Date?

Find out what the full transmission start date is, which effects it has on data replication from Employee Central to SAP ERP HCM, and which recommendations we have for defining this date.

The full transmission start date (FTSD) is the date from which the data transfer from Employee Central to the SAP ERP HCM system begins. It is used to determine from which start date on data records (time slices) are provided. Only records that are valid on or after the FTSD are extracted from Employee Central. Processing in SAP ERP HCM doesn’t change or delete any infotype records whose validity ends before the FTSD.

Let’s look at some examples:

<table>
<thead>
<tr>
<th>Time Slice</th>
<th>Time Slice</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 1, 2017 – April 30, 2018</td>
<td>May 1, 2018 – December 31, 9999</td>
</tr>
</tbody>
</table>

Department name: US Sales

Department name: Sales USA
Example

In this example, all three time slices are transferred. The first time slice is considered starting from the full transmission start date.

Table 11: Time Slices Considered in SAP ERP HCM

<table>
<thead>
<tr>
<th>Time Slice</th>
<th>Time Slice</th>
<th>Time Slice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department name: US Sales Department</td>
<td>Department name: US Sales</td>
<td>Department name: Sales USA</td>
</tr>
</tbody>
</table>

The choice of the specific FTSD has some consequences for existing data in SAP ERP HCM – especially if SAP ERP HCM has historical data. During the initial full load from Employee Central to SAP ERP HCM, already existing records in SAP ERP HCM are cut at the FTSD if they have changes after this date. This could trigger consecutive actions on the SAP ERP HCM side. Records that weren’t changed after the FTSD aren’t split by the initial load.

Recommendation

Set the FTSD as late as possible, ideally to the date when you start to use Employee Central as the leading system for employee data.

Make sure that employee master data replication and organizational data replication from Employee Central to SAP ERP HCM use the same FTSD.

If you’ve decided on an FTSD, make sure that you no longer make changes that are valid before the FTSD to data in Employee Central that is to be replicated to SAP ERP HCM. Data that has an effective end date that is before the FTSD isn’t replicated. Therefore, the data wouldn’t be consistent in Employee Central and SAP ERP HCM.

Make sure that the FTSD is on the same date or after the date defined for the retroactive accounting limit in SAP ERP HCM. For more information, see Known Issue: Organizational Assignment Change Extends Too Far Into the Past.

The following additional steps are required if you change the full transmission start date after you’ve already replicated data:

- If you move the date into the past, ensure that you trigger a full load by deleting the entry for the corresponding query from the Administration of Employee Master Data and Org Assign. Query (ECPAO_QRY_ADM) table.
If you move the date into the future, no full load is required. But you must ensure that all changes made before the new FTSD have been replicated successfully.

The FTSD also influences retention times for employee data (which includes employee organizational assignments) in Employee Central: The FTSD must be after the latest retention date of any Employee Central entity that is contained in data replication to SAP ERP HCM. Otherwise, the data replication fails for the employee in question. If the employee’s data is completely purged, this employee can never be replicated again – even if they’re rehired later.

Parent topic: Deciding on the Full Transmission Start Date [page 23]

Related Information

- Configuring Country/Region-Specific Full Transmission Start Dates [page 27]
- Full Transmission Start Date for Assignment [page 29]
- Configuring Assignment-Specific Full Transmission Start Dates [page 30]

### 3.3.2 Configuring Country/Region-Specific Full Transmission Start Dates

Define a specific full transmission start date (FTSD) for each country/region you include in the replication of employee master data from Employee Central to the SAP ERP HCM system if you want to perform a phased go live, for example.

**Prerequisites**

The country/region-specific FTSD is determined by the Business Add-In (BAdI) `Full Transmission Start Date for Assignment` (`ECPAO_IN_ASSIGNMENT_FTSD`). We provide an active implementation of this BAdI: `Implementation to Set the FTSD for Assignment from ECPAO_CGRP_ETD` (`ECPAO_CGRP_FTSD`). Make sure that this implementation isn’t deactivated in your system.

**Context**

The country/region-specific FTSDs can differ from the general FTSD you define for the transformation template group. You can use the country/region-specific FTSD, for example, to move the FTSD for specific countries/regions after the initial replication. Moving the FTSD can be required if you need to consider different timelines in payroll or other legal aspects, such as different financial years in different countries/regions. You can also use the country/region-specific FTSD for a phased go live. That is, you switch from using your on-premise system to store employee master data to using Employee Central country/region by country/region.
i Note

If you make a change in Employee Central that impacts a country/region, make sure that the change happens after the country/region-specific FTSD defined for the corresponding country/region. For example, if you perform an international transfer or add a global assignment for an employee, make sure it’s done after the country/region-specific FTSD. Or else, incomplete data is replicated to the SAP ERP HCM system, which makes the data inconsistent in SAP ERP HCM, compared to Employee Central.

The SAP ERP HCM system always uses the general FTSD when querying the data from Employee Central. If a country/region-specific and an assignment-specific FTSD are defined for the same personnel number, in addition to the general FTSD that’s stored for the template group, the latest of the three dates is used for processing the data in SAP ERP HCM.

Example

You define the following dates:

- FTSD for transformation template group: January 1, 2020
- Country/region-specific FTSD for Germany: March 1, 2020
- Country/region-specific FTSD for India: June 1, 2020
- No country/region-specific FTSD for the US

This means:

- Replication of employee master data for Germany-based employees starts on March 1, 2020.
- Replication of employee master data for India-based employees starts on June 1, 2020.
- If the assignment-specific FTSD for a Germany-based employee is defined as July 1, 2020, replication of employee master data for this employee starts on July 1, 2020.

In the SAP ERP HCM, you store the country/region-specific FTSD in the form of an earliest transfer date that you define per country grouping.

Procedure

1. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central » Business Integration Builder » Employee Data Integration » Define Country/Region-Specific Earliest Transfer Dates.
2. Select the transformation template group that you use for the replication of employee master data from Employee Central.
3. Select the country grouping for which you want to define a specific FTSD.
4. Enter the FTSD as the earliest transfer date for this country grouping.

Task overview: Deciding on the Full Transmission Start Date [page 23]
3.3.3 Full Transmission Start Date for Assignment

Find out what effects the assignment-specific full transmission start date (FTSD) has on employee master data and organizational assignment replication from Employee Central.

The assignment-specific full transmission start date is the date from which the infotypes in the SAP ERP HCM system are updated for a specific personnel assignment of an employee with the data transferred from Employee Central.

In SAP ERP HCM, assignment means an employee’s personnel number. The assignment-specific FTSD determines from which start date on data records (time slices) are provided for this assignment. Only records that are valid on or after this date are considered in replication from Employee Central. Processing in SAP ERP HCM doesn’t change or delete any infotype records whose validity ends before the FTSD.

**i Note**

- The assignment-specific FTSD can’t be before the global FTSD or the country/region-specific FTSD you’ve defined for data replication. It can only be on the same date or later.
- We now consider only the relevant dependent data beginning with the assignment-specific FTSD while replicating the data to SAP ERP HCM.

The SAP ERP HCM system always uses the general FTSD when querying the data from Employee Central. If a country/region-specific and an assignment-specific FTSD are defined for the same personnel number, in addition to the general FTSD that’s stored for the template group, the latest of the three dates is used for processing the data in SAP ERP HCM.

Let’s look at an example:

![Figure 3: Example: Global FTSD in First Time Slice, FTSD for Assignment in Second Time Slice, Today's Date in Third Time Slice](image)

In this example, all three time slices are transferred, but only the second and the third time slice are considered in SAP ERP HCM for this assignment. The second time slice is considered starting from the
assignment-specific full transmission start date. The first time slice isn’t considered for this assignment because it is before the assignment-specific full transmission start date.

Table 12: Time Slices Considered in SAP ERP HCM for Specific Assignment

<table>
<thead>
<tr>
<th>Time Slice</th>
<th>Time Slice</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 1, 2017 – April 30, 2018</td>
<td>May 1, 2018 – December 31, 9999</td>
</tr>
<tr>
<td>Department name: US Sales</td>
<td>Department name: Sales USA</td>
</tr>
</tbody>
</table>

Parent topic: Deciding on the Full Transmission Start Date [page 23]

Related Information

What Is the Full Transmission Start Date? [page 25]
Configuring Country/Region-Specific Full Transmission Start Dates [page 27]
Configuring Assignment-Specific Full Transmission Start Dates [page 30]

3.3.4 Configuring Assignment-Specific Full Transmission Start Dates

Set an assignment-specific full transmission start date (FTSD) if the overall or the country/region-specific FTSD don’t apply to a specific personnel assignment (personnel number) included in the replication of employee master data from Employee Central to the SAP ERP HCM system.

Context

You can use the assignment-specific FTSD in situations such as the following: Since the data of a terminated employee can’t be migrated from SAP ERP HCM to Employee Central, or can only be migrated using dummy data, the terminated employee needs to be rehired in Employee Central. You can set the assignment-specific FTSD to the Rehire date in this case to prevent that data of the employee that is before the Rehire date in Employee Central and is replicated to the SAP ERP HCM system is changed or even deleted in SAP ERP HCM.

Procedure

1. Go to the Assignment-Specific Full Transmission Start Date (ECPAO_PN_FTSD) transaction in your SAP ERP HCM system.
2. Enter the personnel number of the employee's personnel assignment and the full transmission start date to be used for this assignment.

Next Steps

The assignment-specific FTSDs you defined are evaluated by a standard implementation of the Full Transmission Start Date for Assignment (ECPAO_IN_ASSIGNMENT_FTSD) Business Add-In (BAdI). The BAdI implementation makes the FTSDs available for the processing of employee master data and organizational assignments in the SAP ERP HCM system. You can create a customer-specific BAdI implementation if you have specific requirements. Find the BAdI in Customizing for Personnel Management, under Integration with SuccessFactors Employee Central ➔ Business Integration Builder ➔ Business Add-Ins (BAdIs) ➔ Data Transfer from Employee Central ➔ BAdI: Setting the Full Transmission Start Date for an Assignment.

→ Tip

To check the assignment-specific FTSD for an employee’s organizational assignment, go to the Replication Request Monitor or the Replication Request Viewer for Organizational Assignments and view the details of the related replication request.

Task overview: Deciding on the Full Transmission Start Date [page 23]

Related Information

What Is the Full Transmission Start Date? [page 25]
Configuring Country/Region-Specific Full Transmission Start Dates [page 27]
Full Transmission Start Date for Assignment [page 29]
Replication Request Monitor for Organizational Data Replication [page 260]
Using the Replication Request Viewer for Organizational Assignment Replication [page 268]

3.4 Permissions for Data Replication from Employee Central

Set up the permissions needed by API users in Employee Central, as well as permissions for data replication users and users who process the replicated data in the SAP ERP HCM.

Granting Permissions to API User [page 32]

Set the permissions required by a user of the SAP SuccessFactors Application Programming Interface (API).

Granting Permissions for Employee Master Data and Organizational Assignment Replication [page 33]
Grant the technical and the business permissions to the users who run the replication of employee master data and employee organizational assignments from Employee Central.

### 3.4.1 Granting Permissions to API User

Set the permissions required by a user of the SAP SuccessFactors Application Programming Interface (API).

#### Context

The permissions listed here give a user access to use the SAP SuccessFactors OData API and SFAPI. SFAPI access includes access to CompoundEmployee API.

For more information about role-based permissions – what they are, how they work, how you set them up – please see Implementing Role-Based Permissions in the SAP Help Portal.

#### Procedure

1. Go to User Permissions and select the General User Permissions category.
2. Select the checkbox for the SFAPI User Login permission.
3. Select the Employee Central API category.
4. Select the checkboxes for the following permissions:
   - Employee Central Foundation SOAP API
   - Employee Central HRIS SOAP API or Employee Central Compound Employee API (restricted access)

   **Note**

   Either grant the Employee Central HRIS SOAP API permission, to give the API users unrestricted access to the CompoundEmployee API. Or grant the Employee Central Compound Employee API (restricted access) permission, to restrict the access to the data of specific employees. Don’t select both permissions for the same permission role. For more information, see Granting Permissions for Full Access to the CompoundEmployee API and Granting Permissions for Restricted Access to the CompoundEmployee API in the Employee Central Compound Employee API guide.

   - Employee Central Foundation OData API (read-only)
   - Employee Central HRIS OData API (read-only)
   - Employee Central Foundation OData API (editable)
   - Employee Central HRIS OData API (editable)
3.4.2 Granting Permissions for Employee Master Data and Organizational Assignment Replication

Grant the technical and the business permissions to the users who run the replication of employee master data and employee organizational assignments from Employee Central.

Prerequisites

You’re familiar with the role administration tools in the SAP ERP HCM system. For more information about role administration, see User and Role Administration of Application Server ABAP in the SAP NetWeaver documentation.

Context

The following template roles are available for the replication of employee master data and employee organizational assignments from Employee Central:

- **Employee Master Data and Org Assignment Replication from EC - Technical User (SAP_HR_ECPAO_BIB_WEB SERVICES)**
  This role is meant for a technical user of type B (System User). It authorizes the user to carry out tasks such as the following:
  - Execute the inbound web services `EmployeeMasterDataAndOrgAssignmentBundleReplicationRequest_In` and `EmployeeMasterDataAndOrgAssignmentPushNotification_In`
  - Process replication requests and store the replicated employee master data in the relevant infotypes
  - Access the query administration tables (`ECPAO_QRY_ADM` and `ECPAO_QRY_ADMDT`)

- **Employee Master Data and Org Assignment Replication from EC - Business User (SAP_HR_ECPAO_BIB_PROCESSING)**
  This role is meant for a business user. It authorizes the user to carry out tasks such as the following:
  - Query employee master data and organizational assignments from Employee Central
  - Reset employee master data and organizational assignment queries
  - Delete employee master data and organizational assignment queries from the query administration tables
  - Monitor the replication using the inventory programs
  - Delete entries from the inventory tables
  - Use the application log to analyze errors

- **Organizational Data Replication from Employee Central - Business User (SAP_HR_SFIOM_PROCESSING)**
  This role is also meant for the business user. It contains the permissions the user needs to process organizational assignments in SAP ERP HCM. The role authorizes the user to carry out tasks such as the following:
  - Process and delete replication requests for organizational assignments
  - Monitor the replication using the Replication Request Monitor and the Replication Request Viewers
Procedure

1. Go to the Role Maintenance (PFCG) transaction in your SAP ERP HCM system.

2. Set up the technical user.
   a. Copy the template role SAP_HR_ECPAO_BIB_WEBSERVICES to the customer namespace.
   b. Adjust the permissions for the copied role if necessary, to suit your specific requirements.
      The permissions contained in the template role list all infotypes that are part of our sample content. You can add permissions for more infotypes or remove infotype permissions you don’t need. Configurable objects, such as subtypes of infotypes, aren’t contained in the template roles. Add all the permissions you require for the subtypes you use in your system. The authorization object HR: Master Data (P_ORGIN) with the permission R (Read) and W (Write) covers all operations required for updating infotypes: read, insert, delete, and update.
   c. Assign the copied role to the user who executes the web services and processes employee master data in the SAP ERP HCM system.

3. Set up the business user.
   a. Copy the template role SAP_HR_ECPAO_BIB_PROCESSING to the customer namespace.
   b. Set up permissions for the copied role to suit your specific requirements.
   c. Copy the template role SAP_HR_SFIOM_PROCESSING to the customer namespace.
   d. Set up permissions for the copied role to suit your specific requirements.
      Some permissions contained in this template role refer to tasks related to organizational object replication, such as querying organizational objects from Employee Central and resetting organizational object queries. Remove all permissions you don’t need from your copied role.
   a. Assign both copied roles to the user who queries employee master data and organizational assignments from Employee Central, processes replication requests for organizational assignments, and monitors the integration in the SAP ERP HCM system.

3.5 Employee Central Preparation for Replication of Employee Master Data and Organizational Assignments

Make these settings in Employee Central so that it can transfer employee master data (including employee organizational assignments) to SAP ERP HCM.

Creating the Replication Target System Object [page 35]
Create a Replication Target System object in Employee Central, to define to which SAP ERP HCM system employee master data (including employee organizational assignments) will be replicated.
3.5.1 Creating the Replication Target System Object

Create a Replication Target System object in Employee Central, to define to which SAP ERP HCM system employee master data (including employee organizational assignments) will be replicated.

Procedure

1. Go to the Admin Center and choose the Manage Data tool.
2. From the Create New dropdown, choose Replication Target System.
3. In External Code, enter a string to uniquely identify your replication target system. The maximum length is 60 characters.
   
   **Note**
   
   Make sure you use the same code here and in the SAP ERP HCM system, when defining the parameters for the employee master data and organizational assignment query.

4. For Relevant for ERP Integration, choose Yes.
5. Define an external name.
6. For Relevant for Payroll Integration, choose No.
7. In the Replication Time Offset in Minutes field, enter the amount of minutes you want the resend of data to be delayed by when the payroll area is locked or in correction phase. If you leave this field empty, the default time until resend is 60 minutes.
8. Save your new object.

Related Information

Configuring the Parameters for the Employee Master Data and Organizational Assignment Query [page 231]

3.6 SAP ERP HCM Preparation for Replication of Employee Master Data and Organizational Assignments

Make these settings in your SAP ERP HCM system so that employee master data (including employee organizational assignments) can be transferred from Employee Central.

**Making Basic SAP ERP HCM Settings [page 36]**

Set up the basic environment for the SAP ERP HCM system, such as enabling the decoupled infotype framework and the Personnel Assignment switchbox.

**Enabling the Business Integration Builder Mode [page 37]**

If you want to use this integration, the Business Integration Builder mode needs to be enabled in your SAP ERP HCM system.
Allowing Data Replication for Payroll Areas in Correction Phase [page 38]
Specify whether you want to allow or not allow data replication from Employee Central when the related payroll area is in the correction phase.

Enabling the SAP ERP HCM Inbound Web Services to Set Up the Connection from the Middleware to SAP ERP HCM [page 40]
Activate the SAP ERP HCM inbound web services used by employee master data and organizational assignment replication to set up the connections for communication from the middleware to SAP ERP HCM.

3.6.1 Making Basic SAP ERP HCM Settings

Set up the basic environment for the SAP ERP HCM system, such as enabling the decoupled infotype framework and the Personnel Assignment switchbox.

Procedure

1. Setting up decoupled infotype framework (data sharing) configuration.

   ![Image](chart.png)

   Figure 4: Customizing Activity: Use Decoupled and Not Decoupled IT Framework

   b. Set the value of the CCURE PC_UI switch to X. This switch enables the use of the Decoupled Infotype Framework also for the SAP ERP transaction PA30 (the employee master data maintenance application within SAP ERP).

   ![Image](chart.png)

   Figure 5: CCURE PC_UI Switch

For more information see SAP Note 2126886.
When decoupled infotype framework is activated using the T77S0 switch CCURE/PC_UI, data maintenance via PA30 will be still valid. There should be no difference from business perspective, even if two different implementations are used. In addition, PA30 also uses the decoupled framework for some of the infotypes. This is indicated via the flag **Permissibility of Infotype for New Framework** within the customizing activity **Assign Check Classes and Determine Permissibility**. This flag is only relevant for PA30 and not for employee master data replication or any other users of the framework.

When a customer enhancement has been done for an infotype the logic done for PA30 must be duplicated. The BAdIs for PA30 and the BAdIs for the decoupled infotype framework are different. The customer specific BAdI logic must be copied to the BAdIs of the decoupled framework. This has also to be done if the employee master data replication is used.

2. **Optional**: Enable the Personnel Assignment switchbox for PA20/PA30.

The Personnel Assignment switchbox lets you switch between Personnel Number (PERNR) and Person ID. This step is recommended if employees move from one country to another.

   a. Enable the switchbox in Customizing activity **Activate Concurrent Employment for Personnel Administration**.
   b. Change default settings in the Customizing activities **Description of Personnel Assignments and Personnel Assignment Overview and Personnel Assignment Details**.

### 3.6.2 Enabling the Business Integration Builder Mode

If you want to use this integration, the Business Integration Builder mode needs to be enabled in your SAP ERP HCM system.

**Context**

Enabling the Business Integration Builder mode means that:

- Only the following employee and organizational data-related inbound web services will run:
  - EmployeeMasterDataAndOrgAssignmentBundleReplicationRequest_In (= combined employee master data and organizational assignment replication)
  - OrganisationalObjectReplicationResponse_In (= generic organizational object replication)

- The following web services will no longer run:
  - EmployeeMasterDataBundleReplicationRequest_In and EmployeeMasterDataReplicationRequest_In (= previous versions of (stand-alone) employee master data replication)
  - EmployeeOrganisationalAssignmentReplicationRequest_In (= previous version of (stand-alone) organizational assignment replication)
  - PositionReplicationRequest_In (= object-specific organizational object replication)
  - JobReplicationRequest_In (= object-specific organizational object replication)
  - OrganisationalStructureReplicationRequest_In (= object-specific organizational object replication)
Procedure

1. In your SAP ERP HCM system, go to Customizing for Personnel Management and choose \[Integration with SuccessFactors Employee Central \] \[Business Integration Builder \] \[Basic Settings \] \[Maintain the Constant Values \].

2. Make a new entry:
   a. In the Constant column, choose Activate BIB for EC to ERP Employee Replication.
   b. In the Constant Value column, enter x.

3.6.3 Allowing Data Replication for Payroll Areas in Correction Phase

Specify whether you want to allow or not allow data replication from Employee Central when the related payroll area is in the correction phase.

Context

By default, the replication of employee master data from Employee Central isn’t allowed when the payroll area of the respective employee is in the correction phase. (That is, when the status of the payroll area is Released for Correction). You can, however, allow replication also for payroll areas that have this status. You have the following options:

- You can make a general setting for all your payroll areas.
- In addition, you can define exceptions from the general setting for specific payroll areas.

Example

You set the value of the EC to ERP (BIB / Non-BIB): Allow Replic. in Correction Phase constant to x. So, replication is allowed for all payroll areas when they are in the correction phase. But you want to exclude the payroll areas P1 and P2 from this general setting. That’s why you list them explicitly and don’t select Allow Replication for them.

Or, the other way around: You don’t set the EC to ERP (BIB / Non-BIB): Allow Replic. in Correction Phase constant. So, replication isn’t allowed for payroll areas in the correction phase. But you want to allow data replication for the payroll area P4 when it has the status Released for Correction. That’s why you list it explicitly and select Allow Replication for it.

- If you don’t want to allow the replication for whole payroll areas, you can still allow it for those employees whose personnel numbers are flagged for a payroll correction run. That is, for personnel numbers stored in the Matchcode W.
Procedure

1. To allow replication in general for all payroll areas in the correction phase, go to Customizing of Business Integration Builder and choose [Basic Settings] > [Maintain the Constant Values]. Add the constant EC to ERP (BIB / Non-BIB): Allow Replic. in Correction Phase and set the constant value to X.

   If you don’t want to allow the data replication when related payroll areas are in the correction phase, you don’t need to add the constant. You can still allow the data replication for specific payroll areas by continuing with the next step. Or you can allow it for specific employees by continuing with the third step.
2. To allow or not allow the replication for specific payroll areas, go to Customizing of Business Integration Builder and choose Basic Settings > Allow Data Replication from EC for Payroll Areas in Correction Phase. Add the corresponding payroll areas and select the Allow Replication checkbox or make sure it’s deselected, as applicable.

3. To allow the replication for personnel numbers that are flagged for a payroll correction run, go to Customizing of Business Integration Builder and choose Basic Settings > Maintain the Constant Values. Add the constant EC to ERP (BIB): Allow Replic. for Employees in Matchcode W and set the constant value to X.

Setting this constant only makes sense if you’ve made the following settings in the previous steps:
- You haven’t added the constant EC to ERP (BIB / Non-BIB): Allow Replic. in Correction Phase in the first step or haven’t set its value to X.
- You haven’t entered any payroll areas with the Allow Replication checkbox selected in the second step.

Related Information

The Payroll Process

3.6.4 Enabling the SAP ERP HCM Inbound Web Services to Set Up the Connection from the Middleware to SAP ERP HCM

Activate the SAP ERP HCM inbound web services used by employee master data and organizational assignment replication to set up the connections for communication from the middleware to SAP ERP HCM.

Context

The inbound web services for employee master data and organizational assignment replication are:
- The service used for the response and notification coming in from Employee Central through the middleware, EmployeeMasterDataAndOrgAssignmentBundleReplicationRequest_In
- The service used for push replication from Employee Central, coming in through the middleware, EmployeeMasterDataAndOrgAssignmentPushNotification_In

You activate them by enabling the service definitions in your SAP ERP HCM system.

Procedure

1. Go to the SOA Management (SOAMANAGER) transaction in your SAP ERP HCM system.
2. Choose **Simplified Web Service Configuration**.

   **Note**
   The **Simplified Web Service Configuration** tool described here is available from SAP NetWeaver 7.0 enhancement package 2 (**SAP_BASIS 702**). If you’re using a lower SAP NetWeaver release, you must use the **Web Service Configuration** tool instead. For more information, see **Configuring a Service Provider** in the SAP NetWeaver documentation for release 7.0. For a detailed how-to description of **Web Service Configuration** and **Simplified Web Service Configuration** see the SAP Community Network, at ABAP Connectivity - Web Services ABAP > **How to configure a Service Provider** and **How to configure a Service Provider (Simplified)**. To find the SOA Manager documentation for your SAP NetWeaver release, go to [http://help.sap.com](http://help.sap.com) and search for **working with soamanager**. Then filter the search result for your SAP NetWeaver release and support package.

3. Enter the web service definition name in the **Search Pattern** field and choose **Go**.
4. In the result list, select the **User Name / Password (Basic)** checkbox for the web service definition, then choose **Save**.

**Next Steps**

You’ve now activated the inbound web services, but you also need to activate the outbound services. Since the endpoint URL of the corresponding middleware process is needed for enabling the outbound web services, you’ll find more information about how to activate them in the middleware section.

**Related Information**

- Web Services Used for Employee Master Data and Organizational Assignment Replication [page 43]
- Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the Middleware [page 104]
4 Concepts of Employee Master Data and Organizational Assignment Replication

Take a look at some concepts used in employee master data and organizational assignment replication from Employee Central.

Web Services Used for Employee Master Data and Organizational Assignment Replication [page 43]
Replication of employee master data and organizational assignments from Employee Central to SAP ERP HCM comes with two outbound and two inbound web services.

How Employee Master Data and Organizational Assignments Are Written to the SAP ERP HCM System [page 44]
Employee master data transferred from Employee Central is written to the database in SAP ERP HCM synchronously. Employee organizational assignments are stored in a staging area first.

Staging Area for Organizational Assignment Replication [page 44]
To minimize time delays and temporary error situations, organizational assignment replication from Employee Central uses a staging area in SAP ERP HCM, where replication requests are stored before updates are made in the database.

Integration Between Organizational Management and Personnel Administration in SAP ERP HCM (PA/PD Integration) [page 45]
See what implications PA/PD integration has when you integrate Employee Central to SAP ERP HCM, and how you can find out whether it’s active or not.

How Replication of Employments from Employee Central Results in Personnel Numbers in SAP ERP HCM [page 47]
Find out how SAP ERP HCM handles employments of employees when they’re replicated from Employee Central, in the form of personnel numbers.

How Replication of Events from Employee Central Results in Personnel Actions in SAP ERP HCM [page 58]
Learn more about how SAP ERP HCM handles events you replicate from Employee Central, in the form of personnel actions.

Replication of No-Shows from Employee Central [page 74]
Find out what reporting no-shows in Employee Central means for integration with an SAP ERP HCM system.
4.1 Web Services Used for Employee Master Data and Organizational Assignment Replication

Replication of employee master data and organizational assignments from Employee Central to SAP ERP HCM comes with two outbound and two inbound web services.

Employee master data and org assignment replication from Employee Central uses the following web services:

- **getEmployeeMasterDataAndOrgAssignmentBundleReplicationQuery_Out**
  This SAP ERP HCM outbound service triggers data replication from Employee Central. It contains a query that is based on the configuration you made in the SAP ERP HCM system. The service first reaches the middleware, which then triggers a Compound Employee API call to query the data from Employee Central. The service has a *ProcessingParameter* node, which contains a list of the processing parameters you have configured in SAP ERP HCM.

- **EmployeeMasterDataAndOrgAssignmentBundleReplicationRequest_In**
  This SAP ERP HCM inbound service returns information back to the SAP ERP HCM system. It either contains the response, that is, the result of the query made to Employee Central in the Base64 XML format. Or it contains a notification, that is, status information about the query, together with general, employee-independent error information. Note that either the response or the notification are transferred, but not both together.
  The service also contains the time stamp of when the Compound Employee API started processing. This time stamp is used to determine the last modified date for the next call.
  The service also has a *ProcessingParameter* node, which contains a list of parameters from Employee Central. You can use these parameters to further control the processing.

- **EmployeeMasterDataReplicationConfirmation_Out**
  This SAP ERP HCM outbound service updates the Employee Central Data Replication Monitor with information about whether data transfer to the SAP ERP HCM system was successful or not.

- **If you use push replication:** **EmployeeMasterDataAndOrgAssignmentPushNotification_In**
  This SAP ERP HCM inbound service tells the SAP ERP HCM that a push event was carried out in Employee Central that is relevant for the SAP ERP HCM system. The notification contains the list of employees, that is, a list of user IDs or external person IDs. It also contains the transformation template group to be used in SAP ERP HCM.

**Related Information**

Enabling the SAP ERP HCM Inbound Web Services to Set Up the Connection from the Middleware to SAP ERP HCM [page 40]
4.2 How Employee Master Data and Organizational Assignments Are Written to the SAP ERP HCM System

Employee master data transferred from Employee Central is written to the database in SAP ERP HCM synchronously. Employee organizational assignments are stored in a staging area first.

Employee Master Data

The data transferred from Employee Central is posted synchronously to the infotypes in the SAP ERP HCM system.

Organizational Assignments

When the employee master data was posted without errors, the organizational assignment data that was transferred along with the employee master data is filled into a staging area in SAP ERP HCM. Apart from the data itself, the middleware also sends a notification about whether the data could be successfully queried from Employee Central. If it was successful, the `SAP_SFIOM_EE_ORGAS_RPPQ_CREATED` event is triggered in the SAP ERP HCM system. A database update program – which you schedule in the background – reacts on the event and posts the organizational assignment data from the staging area to the database.

Related Information

Scheduling the Database Update Program as a Regular Background Job [page 206]

4.3 Staging Area for Organizational Assignment Replication

To minimize time delays and temporary error situations, organizational assignment replication from Employee Central uses a staging area in SAP ERP HCM, where replication requests are stored before updates are made in the database.

The staging area in the SAP ERP HCM system decouples organizational assignment replication from employee master data replication. It is used to resolve internal dependencies and to minimize time delays and temporary issues, such as when an employee is locked by another session.
Replication requests for employee organizational assignments are stored in a staging area in the SAP ERP HCM system using the main table SFIOM_RPRQ_EE and the following additional tables:

- SFIOM_RPRQ_EOA XT
- SFIOM_RPRQ_JOBRS
- SFIOM_RPRQ_ORGAS

Use the Replication Request Monitor or the Replication Request Viewer to check the staging area for organizational assignments.

→ Tip

We recommend cleaning up the staging area tables regularly to minimize the number of records in these tables. That is, deleting replication requests that were processed in the SAP ERP HCM system and are no longer needed.

Use the Delete Employee Org. Assignment Replication Requests (RH_SFIOM_DEL_EE_ORG_ASS_RPRQ) program to do this. Schedule the program to be run in the background.

Related Information

Replication Request Monitor for Organizational Data Replication [page 260]
Using the Replication Request Viewer for Organizational Assignment Replication [page 268]

4.4 Integration Between Organizational Management and Personnel Administration in SAP ERP HCM (PA/PD Integration)

See what implications PA/PD integration has when you integrate Employee Central to SAP ERP HCM, and how you can find out whether it’s active or not.

In your SAP ERP HCM system, you may have active integration between Organizational Management (OM) and Personnel Administration (PA), called PA/PD integration. PA/PD integration synchronizes the Organizational Management data, such as position, job, organizational unit, or cost center between Organizational Management and Personnel Administration. You can use PA/PD integration in the data replication from Employee Central to synchronize the organizational data between the Relationships (1001) infotype in Organizational Management and the Organizational Assignment (0001) infotype in Personnel Administration.

The organizational assignment replication always creates the relationship between the person and the position (P – S relation) in the Relationships infotype in Organizational Management. By default, also the following relationships in the Relationships infotype are created by the organizational assignment replication:

- Position to cost center (S – K)
- Position to organizational unit (S – O)
- Position to job (S – C)
You can configure your SAP ERP HCM system to exclude position relations from the organizational assignment replication and to replicate the organizational objects together with their associations from Employee Central. If you make this setting, the position to cost center, position to organizational unit, and position to job relationships are created by the organizational object replication.

In Personnel Administration, the assignment of a person (object type P) to a cost center, position, job, and organizational unit is stored in the Organizational Assignment (0001) infotype.

**What Happens in the Replication When PA/PD Integration Is Active**

If PA/PD integration is active, the Relationships infotype in Organizational Management and the Organizational Assignment infotype in Personnel Administration are kept in sync. The replication of employee master data updates all fields in the Organizational Assignment infotype except for the Organizational Management fields Position, Job, Organizational Unit, and Cost Center. The Position, Job, Organizational Unit, and Cost Center fields are updated either by the organizational assignment replication or by the organizational object replication in the Relationships infotype. The PA/PD integration then synchronizes these fields with the corresponding fields in the Organizational Assignment infotype of Personnel Administration.

If the employee is a new hire, the organizational unit, the job, and the cost center in the Organizational Assignment infotype are left empty by the replication of employee master data. The Position field is filled with the default position from SAP ERP HCM Customizing. The fields show their actual value once the organizational assignment or organizational object replication has filled them in the Relationships infotype and the PA/PD integration has synchronized this update with the Organizational Assignment infotype.

**Note**

If PA/PD integration is active, we recommend that you don't map the Organizational Management fields Position, Job, Organizational Unit, and Cost Center in the template group you use for the replication of employee master data. Mappings you define for these fields in the replication of employee master data aren't considered by the replication.

Only make an exception from this rule if you use Funds Management. Funds Management requires each employee to have a valid cost center assigned at any time. To ensure that a valid cost center is replicated from Employee Central, map the Cost Center field even if PA/PD integration is active. Add a value mapping entity to this field mapping that has the Cost Center Keys from Mapping Table value mapping type. This value mapping type ensures that the data replication uses the standard logic for determining cost centers.

The sample content we provide contains a COST_CENTER_WS value mapping entity with the right value mapping type. You can copy the sample value mapping in the Define Value Mapping Entities Customizing activity and then use the copied value mapping entity for your field mapping. If you create your own value mapping entity, ensure that it uses the Cost Center Keys from Mapping Table value mapping type.

**What Happens in the Replication When PA/PD Integration Is Inactive**

If PA/PD integration is inactive, the person (object type P) is the only link between the data stored for Personnel Administration and for Organizational Management. The objects and the relationships aren't synchronized across the two components.
The organizational data fields Position, Job, Organizational Unit, and Cost Center in the Organizational Assignment infotype are updated by the replication of employee master data, provided that you’ve created the corresponding field mapping in the template group you use for the replication of employee master data.

**How PA/PD Integration Is Enabled in SAP ERP HCM Customizing**

Integration between Organizational Management and Personnel Administration is active if the value of the PLOGI ORGA switch in the T77S0 table is set to x. You can restrict the PA/PD integration to subsets of employees using the Control: Integration of Personnel Planning and Master Data Management (PLOGI) feature.

Make these settings in Customizing for Personnel Management. Go to Organizational Management >> Integration >> Integration with Personnel Administration >> Set up Integration with Personnel Administration. Choose Basic Settings to set the PLOGI ORGA switch. Choose Participate in Integration to maintain the PLOGI feature.

**4.5 How Replication of Employments from Employee Central Results in Personnel Numbers in SAP ERP HCM**

Find out how SAP ERP HCM handles employments of employees when they’re replicated from Employee Central, in the form of personnel numbers.

**Employment Types Considered in the Replication**

The replication of employee master data and organizational assignments from Employee Central considers regular employments (type ST = Standard) and global assignments (type GA) only.

**New Employment = New Personnel Number**

A new employment created for an employee in Employee Central results in a new personnel number (PERNR) when the employee is replicated to the SAP ERP HCM system.

**Preventing Waste of Personnel Numbers in SAP ERP HCM**

When you replicate a new hire from Employee Central to SAP ERP HCM, the SAP ERP HCM system makes sure that a personnel number that was generated during a failed replication run is retained for future replication runs. This feature supports you in using your limited number ranges in SAP ERP HCM efficiently, without wasting any personnel numbers only because an error occurred in data replication from Employee Central.
4.5.1 Use of Assignment ID in Employee Central Integration with SAP ERP HCM

Find out what assignment ID (assignment_id_external) in Employee Central means for integration with an SAP ERP HCM system.

Assignment ID is an identifier assigned to the work relationship between a person and the company. The relationship could be an employment relationship, contingent relationship, pensioner relationship, intern, global assignment, or others. A person can have one or many work relationships with a company at the same time, for example, concurrent employments or home and host assignment in a global assignment.

If you enable use of assignment ID in Employee Central, it’s transferred to the SAP ERP HCM system and used there as the personnel number when new hires are replicated.

Using assignment ID is helpful if you have a heterogeneous system landscape with multiple cross-system business processes. For example, if you integrate Employee Central with an ERP system for Payroll and also integrate SAP Concur with Employee Central and an ERP system for Financials. All integrated systems run business processes around employees and therefore generate system-specific employee IDs. But you want to use one unique identifier to be able to easily identify employee data that belongs to the same business context. Such as determine which accruals in the ERP Payroll system belong to which Financials vendor and which employment in Employee Central.

For more information, see Assignment ID in Implementing Employee Central Core.

\[\text{Note}\]

Currently, assignment ID is not supported in some SAP SuccessFactors areas, for example, Learning, Compensation, Onboarding, and data protection and privacy features. This might cause display inconsistencies across the suite. See Important Notes about Assignment ID to find the specific areas impacted by assignment ID as well as the areas where assignment ID is not supported. This document will be regularly updated to reflect the latest development of assignment ID.

Important Notes About Assignment ID in Employee Central Integration with an ERP System

If you plan to integrate Employee Central with your SAP S/4HANA on-premise or SAP ERP system, consider the following before you enable use of assignment ID in Employee Central.

Configuring Assignment ID for Employee Central Integration with SAP ERP HCM and Migrating to Employee Central

Set up assignment ID for integration of Employee Central with an SAP ERP HCM system. Once assignment ID is set up, migrate your employees to Employee Central, using personnel numbers from SAP ERP HCM as assignment IDs in Employee Central.

Running Initial Load for Assignment ID
Trigger an initial full load of assignment ID from Employee Central to the SAP ERP HCM system.

Replicating Assignment ID from Employee Central [page 54]
Replicate assignment ID from Employee Central to use it in SAP ERP HCM as the personnel number for new hires.

4.5.1.1 Important Notes About Assignment ID in Employee Central Integration with an ERP System

If you plan to integrate Employee Central with your SAP S/4HANA on-premise or SAP ERP system, consider the following before you enable use of assignment ID in Employee Central.

Data Migration to Employee Central

Before you migrate employees from your SAP S/4HANA on-premise or SAP ERP system to Employee Central, make sure that the following prerequisites are fulfilled:

- To include the assignment ID during the migration process, you need to enable the switch ERP to EC/EC to ERP (BIB): Activate Assignment ID External in the view V_ECPAO_CONSTANT using the Maintain the Constant Values Customizing activity.
- If the ERP to EC/EC to ERP (BIB): Activate Assignment ID External field is switched on, the Assignment ID External field is included in the User, Employment, and Global Assignment entities during the migration of the employee data.
- Assignment ID must be enabled in the following entities:
  - User
  - Employment Details
  - Global Assignment Details
  Use the Manage Business Configuration admin tool to do so.

Data Replication from Employee Central

Before you replicate employee data from Employee Central to your SAP S/4HANA on-premise or SAP ERP system, make sure that the following prerequisites are fulfilled:

- You can only use assignment ID if you set up a new integration project for the Core Hybrid HXM deployment option. You can’t switch a running integration to using assignment ID.
- You must set up a business rule to generate assignment IDs in Employee Central. Assignment IDs generated by this business rule must comply with the format used for personnel numbers in the SAP S/4HANA on-premise or SAP ERP system. The business rule must also be able to handle error situations.
- In the Employment Settings Configuration object you create in Employee Central, Activate "Generate Assignment ID External" by Using a Business Rule must be set to Yes.
  For more information, see Managing the Employment Settings Configuration Object in Implementing Employee Central Core.
• The **Assignment ID** field must be set up in your Employee Central data model in a way that complies with the format used for personnel numbers in the SAP S/4HANA on-premise or SAP ERP system. That is, it must be eight characters long and can only contain numeric values, no letters.

• You must ensure that the behavior for creating new employments in Employee Central is the same as for creating new personnel numbers in the SAP S/4HANA on-premise or SAP ERP system. For example, you must have a new employment created when transferring an employee to a new country/region in Employee Central. If you perform an international transfer using the same employment, the SAP S/4HANA on-premise or SAP ERP system raises an error message and aborts replication of employee data from Employee Central.

• Once you’ve enabled the use of assignment ID in Employee Central integration with an SAP S/4HANA on-premise or SAP ERP system, ensure that no function import changes the assignment IDs in Employee Central.

• Once you’ve enabled the use of assignment ID in Employee Central and replicated employee data to the SAP S/4HANA on-premise or SAP ERP system, we recommend that you don’t disable assignment ID again. Otherwise, you must also disable use of assignment ID in your SAP S/4HANA on-premise or SAP ERP system and adjust the number ranges you use for creating personnel numbers there. That is, reverting to the previous behavior causes major administration effort.

### 4.5.1.2 Configuring Assignment ID for Employee Central Integration with SAP ERP HCM and Migrating to Employee Central

Set up assignment ID for integration of Employee Central with an SAP ERP HCM system. Once assignment ID is set up, migrate your employees to Employee Central, using personnel numbers from SAP ERP HCM as assignment IDs in Employee Central.

**Prerequisites**

You enabled use of assignment ID in Employee Central. And you made sure that the requirements listed in the important notes section for assignment ID in Employee Central integration with SAP ERP HCM are met.
Context

Here’s an overview of the setup and migration process:

Procedure

1. Analyze the number ranges you defined in the SAP ERP HCM system from which you plan to migrate employee master data to Employee Central.

   When doing so, consider that the SAP ERP HCM number range logic will be replaced by business rules in Employee Central. Most probably you’re currently using an internal number range so that personnel numbers are assigned by the SAP ERP HCM system automatically. Once assignment ID is turned on, you can no longer use this internal number range. You must use an external number range because only then personnel numbers can be assigned by an external system (that is, by Employee Central).

2. Define a business rule in Employee Central for generating assignment IDs, to replace the number range logic you currently use in your SAP ERP HCM system for generating personnel numbers.
3. Enable use of assignment ID in Employee Central. Make sure that the Assignment ID field is an 8-digit field in your Employee Central data model.

4. Enable use of assignment ID in SAP ERP HCM.

   To do so, go to Customizing of Business Integration Builder and choose Basic Settings > Maintain the Constant Values. Add the constant ERP to EC/EC to ERP (BIB): Activate Assignment ID External and set the constant value to X.

5. Migrate employee data from your SAP ERP HCM system to Employee Central.

   The migrated employees are allocated the personnel number from the SAP ERP HCM system as assignment ID.

**Results**

You successfully set up assignment ID and migrated your personnel numbers from SAP ERP HCM to Employee Central, to use them as assignment IDs.

**Next Steps**

You can now run an initial load and then start the regular replication of assignment IDs either from SAP ERP HCM to Employee Central or from Employee Central to SAP ERP HCM.

**4.5.1.3 Running Initial Load for Assignment ID**

Trigger an initial full load of assignment ID from Employee Central to the SAP ERP HCM system.

**Prerequisites**

You configured assignment ID for integration of Employee Central with an SAP ERP HCM system. That is, you migrated personnel numbers to Employee Central, to use them there as assignment IDs.
Context

Here's an overview of the initial load process:

Procedure

1. Switch from using internal number ranges in SAP ERP HCM for generating personnel numbers to using external number ranges.

   This way, assignment IDs can be used as personnel numbers. To switch from internal to external number ranges, go through the following steps:
   
   a. Go to Customizing of Personnel Administration and choose Basic Settings.
   
   b. Go to Maintain Number Range Intervals for Personnel Numbers and make sure that an external number range is defined that is consistent with assignment ID transferred from Employee Central.
   
   c. Go to Maintain Defaults for Number Ranges and make sure that the Infotype 0000 (Actions) (NUMKR) feature is set up in a way so that the external number range you defined in the previous step is used when personnel numbers are created in the SAP ERP HCM system for new hires.

   ▲ Caution
   
   Once you ran employee data replication, you must not switch back number ranges from external to internal.

2. Carry out the initial load from Employee Central and ensure that new hires are allocated the assignment ID that was generated in Employee Central for the corresponding employment as their personnel number.
4.5.1.4 Replicating Assignment ID from Employee Central

Replicate assignment ID from Employee Central to use it in SAP ERP HCM as the personnel number for new hires.

Prerequisites

You configured assignment ID for integration of Employee Central with an SAP ERP HCM system. That is, you migrated personnel numbers to Employee Central, to use them there as assignment IDs.

You ran an initial replication of assignment IDs from Employee Central to use them as personnel numbers in SAP ERP HCM.
Context

Here’s an overview of the replication process:

![Diagram of the replication process](image)

Figure 9: Replicating Assignment ID from Employee Central

*Validity checks:*
- Is the personnel number unused in SAP S/4HANA or SAP ERP system?
- Is the personnel number compliant with the required SAP S/4HANA or SAP ERP format?
- In case the employee was transferred to a new country in Employee Central—did this international transfer result in a new employment?
**Procedure**

1. Switch from using internal number ranges in SAP ERP HCM for generating personnel numbers to using external number ranges.

   This way, personnel numbers can be used as assignment IDs and assignment IDs can be used as personnel numbers. To switch from internal to external number ranges, go through the following steps:
   
   a. Go to Customizing of Personnel Administration and choose **Basic Settings**.
   
   b. Go to **Maintain Number Range Intervals for Personnel Numbers** and make sure that an external number range is defined that is consistent with assignment ID transferred from Employee Central.
   
   c. Go to **Maintain Defaults for Number Ranges** and make sure that the Infotype 0000 (Actions) (NUMKR) feature is set up in a way so that the external number range you defined in the previous step is used when personnel numbers are created in the SAP ERP HCM system for new hires.

   △ **Caution**
   
   Once you ran employee data replication, you must not switch back number ranges from external to internal.

2. The HR administrator performs a process in Employee Central that leads to creation of a new employment.

   For example, they hire a new employee or transfer an employee to a new country/region using a new employment.

3. Employee Central triggers the business rule that creates a new assignment ID for the employment.

4. Employee Central creates the employment using the assignment ID.

5. Employee master data replication transfers the new employment with the new assignment ID to SAP ERP HCM.

6. The SAP ERP HCM system checks whether it can use the assignment ID and create a new personnel number from it.

   It validates the following:

   - Is the personnel number not yet used in the SAP ERP HCM system?
   - Is the personnel number compliant with the required SAP ERP HCM format?
   - In case the employee was transferred to a new country/region in Employee Central – did this international transfer result in a new employment?

   If the answer is Yes to all questions, SAP ERP HCM continues with the next step. If not, it raises one or more of the following error messages and aborts the replication:

   - Use of EC assignment ID is enabled, but no valid ID is transferred for <person ID>
   - EC assignment ID <assignment ID> and ERP personnel number <PERNR> differ for person ID <person ID>
   - Use of EC assignment ID is enabled, but <assignment ID> isn't a valid personnel number
   - Use of EC assignm. ID enabled; no intl. transfer of <person ID> in same employment

7. The SAP ERP HCM system creates the new personnel number using the assignment ID transferred from Employee Central and adds all relevant infotypes to it.
Results

You successfully replicated employee master data and you now use assignment IDs from Employee Central as personnel numbers in your SAP ERP HCM system.

Next Steps

If you’ve implemented the Defining the PERNR and Central Person ID (ECPAO_IN_EXT_PERNR_MAP) Business Add-In (BAdI) in SAP ERP HCM, enabling use of assignment ID from Employee Central affects the results of your BAdI implementation. Personnel numbers generated by the MAP_EXT_PERNR method of this BAdI are no longer used when new hires are transferred from Employee Central. For new hires, personnel numbers generated by this BAdI are overwritten with assignment IDs from Employee Central.

4.5.2 Enforcement of New Employment (Personnel Number) on Change of Legal Entity (Company)

You can define that changing the legal entity for an employee in Employee Central must always result in a new employment. The new employment in Employee Central also creates a new personnel number in the SAP ERP HCM system.

General Recommendation

We recommend that you set up Employee Central so that it doesn’t tolerate a change of legal entity within one employment. In this case, you always terminate the employee in the system from the old legal entity and then rehire them with new employment on the new legal entity. For more information, refer to Optional: Prohibiting Change of Legal Entity in Any Employment in Implementing and Managing the Employment Lifecycle (from Hiring to Termination) in Employee Central.

Rehiring an employee with a new employment in Employee Central means that a new personnel number is created in SAP ERP HCM when the data is replicated.

Recommendation If Country/Region-Specific Payroll Has Problems with New Personnel Numbers

Payroll for some countries/regions runs into problems if a new personnel number is created when the legal entity is changed for an employee. If you don’t want to create new personnel numbers for these countries/regions, set up business rules in Employee Central that enforce new employments only in specific cases. For more information, refer to Enforcing New Employment Using Business Rules in Implementing and Managing the Employment Lifecycle (from Hiring to Termination) in Employee Central.
4.6 How Replication of Events from Employee Central Results in Personnel Actions in SAP ERP HCM

Learn more about how SAP ERP HCM handles events you replicate from Employee Central, in the form of personnel actions.

- Replication of Action Types (Event Reasons) from Employee Central [page 58]
  Learn more about replication of Employee Central event reasons, which are stored as personnel action types in SAP ERP HCM.

- Handling of Multiple Action Types (Event Reasons) Replicated on the Same Day [page 60]
  Find out what happens when you replicate multiple events performed for an employee on the same day in Employee Central.

- Replicating Employees as Inactive That Were Terminated in Employee Central Before the Full Transmission Start Date [page 72]
  Replicate employees as inactive employees if they were hired and terminated in Employee Central before you start the replication of employee data.

4.6.1 Replication of Action Types (Event Reasons) from Employee Central

Learn more about replication of Employee Central event reasons, which are stored as personnel action types in SAP ERP HCM.

How Do Event Reasons from Employee Central Map with Personnel Action Types in SAP ERP HCM?

Event reasons from Employee Central correspond to personnel action types in the SAP ERP HCM system. We recommend that you use the sample content we provide for replication of employee master data from Employee Central. The sample content version EE_WS_3 contains a mapping of the eventReason field from Employee Central Job Information with the SAP ERP HCM field Action Type (MASSN), using the EVENT_REASON value mapping entity. Create value mapping details for the EVENT_REASON value mapping entity, to map all Employee Central event reasons you replicate with the corresponding personnel action types in SAP ERP HCM.

Example

If you’ve defined an event reason New Hire (HIRNEW) for the Hire event in Employee Central, map this event reason with the personnel action type Hire (01).
Where Are Personnel Actions Stored in SAP ERP HCM?

SAP ERP HCM uses two infotypes to log actions performed for an employee:

- **Actions** (0000)
  SAP ERP HCM only stores one personnel action per day for an employee in the **Actions** infotype.

- **Additional Actions** (0302)
  The **Additional Actions** infotype enables you to log all of the personnel actions that are performed for an employee on a specific date.

What Settings Are Required in SAP ERP HCM for Replication of Events from Employee Central?

To set up personnel actions, go to Customizing for Personnel Administration and choose **Customizing Procedures** > **Actions**. In the context of data replication from Employee Central, it’s important that you’ve made the following settings here:

- You’ve defined whether you want to use the **Additional Actions** (0302) infotype. Using it requires that the **ADMIN EVSUP** switch in the T77S0 table is set to 1 and that the **Update IT 0302** checkbox is selected for the action types in **Set Up Personnel Actions** > **Personnel Action Types**.

- You’ve defined which action types are to create a new record of the **Actions** (0000) infotype. Make sure that the **Update IT 0000** checkbox is selected for these action types in **Set Up Personnel Actions** > **Personnel Action Types**. Note that selecting **Update IT 0000** requires that you also select the **Update IT 0302** checkbox.

- You’ve defined which action types are to change the status of an employee. Make sure the status indicators for **Customer-Defined** (STAT1), **Employment** (STAT2), and **Special Payment** (STAT3) are set according to your requirements for these action types in **Set Up Personnel Actions** > **Personnel Action Types**. Note that setting one of the status indicators requires that you’ve selected the **Update IT 0000** checkbox.

- You’ve defined a priority for action types that don’t change the status of an employee, but for which the **Update IT 0000** checkbox is selected. The priority determines which action is to be stored in the **Actions** infotype if multiple non-status-changing events are replicated on the same day. Make sure that sequence numbers are entered in the **Priority** (ORDNR) field for these action types in **Set Up Personnel Actions** > **Priority List for Personnel Action Types**. The smaller the sequence number, the higher the priority of the personnel action type.

- You’ve defined action reasons for all action types you map with Employee Central event reasons. For technical reasons, at least one action reason must be defined for these action types in **Create Reasons for Personnel Actions**. If you don’t want to use action reasons from a business point of view, add an entry for each action type in **Create Reasons for Personnel Actions** and just leave it empty.

What Happens If Only Unmapped Event Reasons Are Replicated?

If you perform one or more events for an employee on a specific day in Employee Central using event reasons that aren’t mapped, the SAP ERP HCM system applies the changes you made for the employee. But it doesn’t
log the unmapped event reason itself in the form of a personnel action type in the **Actions** or **Additional Actions** infotype. Instead, it extends the validity of the previous infotype record (created for an event reason that is mapped to a personnel action type) to fill the gap.

### 4.6.2 Handling of Multiple Action Types (Event Reasons) Replicated on the Same Day

Find out what happens when you replicate multiple events performed for an employee on the same day in Employee Central.

Note that the following settings must be in place before multiple events can be replicated on the same day:

- The `ADMIN EVSUP` switch must be set to 1 in the T77S0 table.
- In Customizing of the Business Integration Builder, under **Employee Data Integration > Define Parameters for Employee Master Data and Org. Assignment Query**, the **Multiple Job Events per Day** checkbox must be selected for the transformation template group you use for data replication from Employee Central.

**How SAP ERP HCM Decides in Which Infotypes to Log Multiple Actions** [page 61]

SAP ERP HCM must determine the main action to be stored in the **Actions** (0000) infotype and the additional actions to be stored in the **Additional Actions** (0302) infotype if replication of event reasons from Employee Central leads to multiple actions with the same start date for an employee.

**Preventing Additional Actions from Being Deleted by Replication of Event Reasons from Employee Central** [page 62]

Protect additional actions you perform in the SAP ERP HCM system so that they aren’t overwritten by data replication from Employee Central.

**Typical Situations When Multiple Event Reasons Are Replicated on the Same Day** [page 63]

Look at some sample scenarios, in which the events X and Y have the same start date in Employee Central and are replicated to the SAP ERP HCM system.

**Ignoring Actions If the Assigned Feature Leads to an Error** [page 64]

Define that the SAP ERP HCM system is to ignore an event reason replicated from Employee Central in cases such as the following: The mapped action type has a feature assigned in Customizing and this feature would raise an error. Making this setting prevents that the processing is aborted in such a case.

**Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day** [page 65]

Specify how the SAP ERP HCM system is to react when the replication of event reasons from Employee Central results in two status-changing action types to be logged with the same start date for the same personnel number.

**Example: Configuring Action Sequence for National Transfer with Same Employment** [page 67]

Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee is transferred to a new company within the same country/region using the same employment.

**Example: Configuring Action Sequence for Turning Global Assignment into Permanent Employment When a Feature Is Assigned to the Action Type** [page 68]

Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee is on a global assignment and decides to stay in the country/region of the host assignment permanently. In this example, the action type used to end the home assignment has a feature assigned in Customizing that enforces a specific source and target employment status.
Example: Configuring Action Sequence for Turning Global Assignment into Permanent Employment When No Feature Is Assigned to the Action Type [page 69]
Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee is on a global assignment and decides to stay in the country/region of the host assignment permanently. In this example, the action type used to end the home assignment doesn’t have a feature assigned in Customizing.

Example: Configuring Action Sequence for Consecutive Global Assignments [page 71]
Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee returns from a global assignment and immediately goes on a new global assignment in another country/region.

4.6.2.1 How SAP ERP HCM Decides in Which Infotypes to Log Multiple Actions

SAP ERP HCM must determine the main action to be stored in the Actions (0000) infotype and the additional actions to be stored in the Additional Actions (0302) infotype if replication of event reasons from Employee Central leads to multiple actions with the same start date for an employee.

If multiple actions with the same start date are to be logged for an employee, SAP ERP HCM decides what needs to be done based on the settings you made for action types in Customizing for Personnel Administration, at Customizing Procedures > Actions > Set Up Personnel Actions > Personnel Action Types and Priority List for Personnel Action Types.

Example

Let’s say you hire a new employee, perform a data change in Employee Central, and finally change their job classification on the same day. Only one of the action types mapped with the corresponding event reasons, New Hire, Data Change, and Job Re-Classification, can be stored in the Actions infotype in SAP ERP HCM. The other actions can only be stored in the Additional Actions infotype.

1. SAP ERP HCM checks whether one of the actions potentially changes the status of the employee. That is, at least one of the status indicators for Customer-Defined (STAT1), Employment (STAT2), and Special Payment (STAT3) is set for the action type in Customizing.
   ○ If only one status-changing event is replicated, this action is stored in the Actions infotype, all other actions are stored in the Additional Actions infotype.
   ○ If multiple status-changing actions are replicated, SAP ERP HCM raises an error by default because it can only store one status-changing action for an employee on a specific day. You can overrule this default behavior by defining how the SAP ERP HCM system is to react to each sequence of two status-changing event reasons that are replicated from Employee Central.

2. If only non-status-changing events are replicated, which could possibly be logged in the Actions as well as the Additional Actions infotype, SAP ERP HCM checks whether unambiguous priorities are defined in Customizing.
   ○ If clear priorities are defined, the action that has the lowest sequence number entered in the Priority (ORDNR) field in Customizing is stored in the Actions infotype.
   ○ If no or unclear priorities are defined, SAP ERP HCM stores the earliest action in the Actions infotype (the one that corresponds to the event reason used for the event that was first performed in Employee Central on that day).
Related Information

- Replication of Action Types (Event Reasons) from Employee Central [page 58]
- Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day [page 65]

4.6.2.2 Preventing Additional Actions from Being Deleted by Replication of Event Reasons from Employee Central

Protect additional actions you perform in the SAP ERP HCM system so that they aren’t overwritten by data replication from Employee Central.

Context

Personnel actions that you perform in SAP ERP HCM and log in the Additional Actions infotype aren’t mapped to Employee Central event reasons. You can prevent them from being deleted if event reasons are replicated from Employee Central and are mapped to action types, which are also logged in the Additional Actions infotype.

Procedure

1. Go to Customizing of Business Integration Builder and choose Employee Data Integration Define Actions to Be Protected in Employee Data Replication.
2. List all action types to be protected in the SAP ERP HCM system.
   - You can only enter personnel action types in this Customizing activity that are exclusively stored in the Additional Actions infotype. That is, action types that don’t change the status of an employee and for which the Update IT 0302 checkbox is selected, while the Update IT 0000 checkbox isn’t selected.

Next Steps

You can also implement the Exclude Personnel Actions (0302) from Deletion in ERP (ECPAO_IN_NO_MASS_DELETION) Business Add-In (BAdI) for the same purpose. But if you haven’t implemented this BAdI yet, we recommend that you use the Customizing activity instead of a BAdI implementation.

If you’ve already implemented the BAdI, you can continue to use this implementation. In addition, you can add actions in the Customizing activity. The system brings together the information from both, the BAdI implementation and the Customizing activity.
4.6.2.3 Typical Situations When Multiple Event Reasons Are Replicated on the Same Day

Look at some sample scenarios, in which the events X and Y have the same start date in Employee Central and are replicated to the SAP ERP HCM system.

The event reason of event X is mapped to the action type X in SAP ERP HCM. The event reason of event Y is mapped to the action type Y.

Scenario 1

Configuration in SAP ERP HCM

For action type X, one of the status indicators STAT1, STAT2, and STAT3 is set. For action type Y, the status indicators are not set.

Result

- Action X is stored in the Actions and the Additional Actions infotypes.
- Action Y is stored only in the Additional Actions infotype.

Scenario 2

Configuration in SAP ERP HCM

For both action types X and Y, the status indicators STAT1, STAT2, or STAT3 are not set. For action type X, both the Update IT 0000 and Update IT 0302 checkboxes are selected. For Y, only the Update IT 0302 checkbox is selected.

Result

- Action X is stored in the Actions and the Additional Actions infotypes.
- Action Y is stored only in the Additional Actions infotype.

Scenario 3

Configuration in SAP ERP HCM

For both action types X and Y, the status indicators STAT1, STAT2, or STAT3 are not set. For both X and Y, both the Update IT 0000 and Update IT 0302 checkboxes are selected. For X, the sequence number 7 is stored in the Priority (ORDNR) field. For Y, the sequence number 3 is stored in the Priority field.
Result

- Action Y is stored in the Actions and the Additional Actions infotypes.
- Action X is stored only in the Additional Actions infotype.

Scenario 4

Configuration in SAP ERP HCM

For both action types X and Y, one of the status indicators STAT1, STAT2, and STAT3 is set. That is, both are status-changing action types.

Result

SAP ERP HCM raises an error by default. You can overrule this default behavior by defining how the SAP ERP HCM is to react to each sequence of two status-changing event reasons that are replicated from Employee Central.

Related Information

Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day [page 65]

4.6.2.4 Ignoring Actions If the Assigned Feature Leads to an Error

Define that the SAP ERP HCM system is to ignore an event reason replicated from Employee Central in cases such as the following: The mapped action type has a feature assigned in Customizing and this feature would raise an error. Making this setting prevents that the processing is aborted in such a case.

Context

Features can be assigned to action types in the Feature for Checking Action Sequence (NAMEn) field in the Customizing view Personnel Action Types (T529A). An assigned feature can enforce a specific source and target employment status for the action type and raise an error when an action doesn’t comply with this setting. You can choose to overrule this behavior for action types that are mapped to event reasons replicated from Employee Central. If you do so, the corresponding actions are ignored in your SAP ERP HCM system so that the replication doesn’t break.

Example

Let’s say, the feature MSN20 (Action: Termination) is assigned to the Termination action type. The feature determines that the Termination action is performed only when the employment status of the affected
personnel number is different from Withdrawn. Only then the target status Withdrawn can be set by the Termination action. If the personnel number is already in status Withdrawn, the feature raises an error. You set the EC to ERP (BIB): Ignore Action If T529A Feature Raises Error constant because you want to ignore Termination event reasons replicated from Employee Central that would lead to a status change from Withdrawn to Withdrawn, thus causing an error.

Procedure

1. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Basic Settings > Maintain the Constant Values.
2. Add the constant EC to ERP (BIB): Ignore Action If T529A Feature Raises Error and set the constant value to x.

Related Information

Example: Configuring Action Sequence for Turning Global Assignment into Permanent Employment When a Feature Is Assigned to the Action Type [page 68]
Example: Configuring Action Sequence for Consecutive Global Assignments [page 71]

4.6.2.5 Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day

Specify how the SAP ERP HCM system is to react when the replication of event reasons from Employee Central results in two status-changing action types to be logged with the same start date for the same personnel number.

Context

The SAP ERP HCM system allows for only one status-changing action type to be logged for a personnel number with the same start date. Logging means that the action type that’s mapped to the event reason transferred from Employee Central is stored in the Actions (0000) infotype. If multiple status-changing events are performed for the same employment on the same day in Employee Central and replicated to the SAP ERP HCM system, SAP ERP HCM stops the processing for this personnel number by default and raises an error. You can overrule this default behavior.
Procedure

1. Go to Customizing for Personnel Administration and choose **Customizing Procedures > Actions > Set Up Personnel Actions > Personnel Action Types**.

2. Define a reference action type if you want to store more information in the **Additional Actions** (0302) infotype about how status-changing actions were handled in SAP ERP HCM.

   Reference action types are only required if you want to document that two status-changing events were replicated on the same day and identified for processing according to the reaction you define in the next steps.

   
   ❖ Example
   
   You could define an action type such as *Handle Stat.-Changing Actions*.

3. Select the **Update IT 0302** checkbox for your reference action type and make sure that the **Update IT 0000** checkbox isn’t selected.

4. Go to Customizing for Personnel Administration and choose **Customizing Procedures > Actions > Create Reasons for Personnel Actions**.

5. Define one or more action reasons for the reference action type or types you created.

   
   ❖ Example
   
   You could create an action reason such as *Leaving - Reentry: Ignore Both* for the *Handle Stat.-Changing Actions* action type.

6. Go to Customizing for Personnel Administration and choose **Integration with SuccessFactors Employee Central > Business Integration Builder > Employee Data Integration > Define Reaction to Two Status-Changing Actions With Same Start Date**.

7. Add an entry for each unique sequence of status-changing event reasons replicated from Employee Central for which you want to define a specific reaction.

8. For each entry, select the action type that’s mapped to the first event reason replicated from Employee Central in the **First Action** column.

9. Select the action type that’s mapped to the second event reason replicated from Employee Central in the **Second Action** column.

   In both, the first and the second step, you can select only status-changing action types that don’t have the **Function Character for Action** (FUNCH) indicator set as 1 or 7.

10. Select a reaction to this sequence of action types. You can choose to store the second action type in the **Actions** infotype or to store neither action type in the SAP ERP HCM system.

11. Select one of the reference action types and action reasons that you created in the previous steps if you want to store more information in the **Additional Actions** infotype.

   You can use the reference action type regardless of which option you chose in the previous step. You can select all action types in the **Reference Action** column that are stored only in the **Additional Actions** infotype.
4.6.2.6 Example: Configuring Action Sequence for National Transfer with Same Employment

Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee is transferred to a new company within the same country/region using the same employment.

Context

The HR administrator terminates the employment for the previous company in Employee Central and then rehires the employee in the same employment, but with the new company.

This information is replicated to the SAP ERP HCM system.

Terminating a personnel number (using an action type such as Leaving) sets the employment status to Withdrawn. Rehiring the employee with the same personnel number (using an action type such as Reentry into Company) sets the status to Active again. This means that two status-changing actions are to be logged for the same personnel number with the same start date, which isn’t possible by default.

You can overrule the default behavior.

Procedure

1. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central ➤ Business Integration Builder ➤ Employee Data Integration ➤ Define Reaction to Two Status-Changing Actions With Same Start Date ➤.
2. Select the action type Leaving in the First Action column.
3. Select the action type Reentry into Company in the Second Action column.
4. Select Store Neither Action in Actions Infotype in the Reaction column.
5. Select the action type Handle Stat.-Changing Actions, which you’ve created for documentation purposes, in the Reference Action column.
6. Select the action reason Leaving - Reentry: Ignore Both, which you’ve created for your reference action type, in the Reason for Reference Action column.
Or else, leave the Reference Action and Reason for Reference Action columns empty if you don’t want to document the system reaction.

Related Information

Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day [page 65]

4.6.2.7 Example: Configuring Action Sequence for Turning Global Assignment into Permanent Employment When a Feature Is Assigned to the Action Type

Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee is on a global assignment and decides to stay in the country/region of the host assignment permanently. In this example, the action type used to end the home assignment has a feature assigned in Customizing that enforces a specific source and target employment status.

Context

The HR administrator ends the global assignment in Employee Central, sets the employee’s home employment to active again and terminates it, and finally rehires the employee, either with the employment that used to be the global assignment or with a new employment.

This information is replicated to the SAP ERP HCM system.

Ending the global assignment and rehiring the employee with the same or a new employment (that is, the same or a new personnel number) isn’t an issue. But the personnel number for the home employment has the status Withdrawn. The status of this personnel number must be changed to Active, using an action type such as Reentry into Company. Directly after that, the home personnel number must be set to Withdrawn again, using an action type such as Termination. This means that two status-changing actions are to be logged for the same personnel number with the same start date, which isn’t possible by default.

In addition, the Termination action type has the feature MSN20 (Action: Termination) assigned in Customizing of your SAP ERP HCM system. This feature enforces a specific source and target employment status. This means that your system raises an error when the employment status of the home personnel number is already in status Withdrawn, which is the target status of the Termination action type.

You can overrule the default behavior.
Procedure

1. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Employee Data Integration > Define Reaction to Two Status-Changing Actions With Same Start Date.
2. Select the action type Reentry into Company in the First Action column.
3. Select the action type Termination in the Second Action column.
4. Select Store Second Action in Actions Infotype in the Reaction column because the Termination action type is the relevant action type in this case. Reentry into Company is only transitory and doesn’t need to be logged.
5. Leave the Reference Action and Reason for Reference Action columns empty because Termination is logged anyway.
   Or else, if you want to document that Reentry into Company was ignored, select the reference action type and action reason that you’ve created for this purpose.
6. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Basic Settings > Maintain the Constant Values.
7. Add the constant EC to ERP (BIB): Ignore Action If T529A Feature Raises Error and set the constant value to x.
   Setting the constant prevents that SAP ERP HCM raises the error, as defined in the MSN20 feature.

Related Information

Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day [page 65]
Ignoring Actions If the Assigned Feature Leads to an Error [page 64]

4.6.2.8 Example: Configuring Action Sequence for Turning Global Assignment into Permanent Employment When No Feature Is Assigned to the Action Type

Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee is on a global assignment and decides to stay in the country/region of the host assignment permanently. In this example, the action type used to end the home assignment doesn’t have a feature assigned in Customizing.
Context

The HR administrator ends the global assignment in Employee Central, sets the employee’s home employment to active again and terminates it, and finally rehires the employee, either with the employment that used to be the global assignment or with a new employment.

This information is replicated to the SAP ERP HCM system.

Ending the global assignment and rehiring the employee with the same or a new employment (that is, the same or a new personnel number) isn’t an issue. But the personnel number for the home employment has the status Inactive. The status of this personnel number must be changed to Active, using an action type such as Back from Inactivity. Directly after that, the home personnel number must be set to Withdrawn, using an action type such as Termination. This means that two status-changing actions are to be logged for the same personnel number with the same start date, which isn’t possible by default.

You can overrule the default behavior.

Procedure

1. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central ▶ Business Integration Builder ▶ Employee Data Integration ▶ Define Reaction to Two Status-Changing Actions With Same Start Date.
2. Select the action type Back from Inactivity in the First Action column.
3. Select the action type Termination in the Second Action column.
4. Select Store Second Action in Actions Infotype in the Reaction column because the Termination action type is the relevant action type in this case. Back from Inactivity is only transitory and doesn’t need to be logged.
5. Leave the Reference Action and Reason for Reference Action columns empty because Termination is logged anyway.

Or else, if you want to document that Back from Inactivity was ignored, select the reference action type and action reason that you’ve created for this purpose.

Related Information

Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day [page 65]
4.6.2.9  Example: Configuring Action Sequence for Consecutive Global Assignments

Define a reaction to multiple status-changing event reasons being replicated from Employee Central if an employee returns from a global assignment and immediately goes on a new global assignment in another country/region.

Context

The HR administrator ends the global assignment in Employee Central and sets the employee’s home employment to *Back from Global Assignment*. They immediately start a new global assignment for the employee and set the home employment to *Away on Global Assignment* again.

This information is replicated to the SAP ERP HCM system.

Ending the global assignment and starting a new one isn’t an issue. But the personnel number for the home employment has one of the statuses *Withdrawn* or *Inactive*, depending on how your system is set up. The status of this personnel number must be changed to *Active*, using an action type such as *Back from Global Assignment*. Directly after that, the home personnel number must be set to *Withdrawn* or *Inactive* again, using an action type such as *Activation in Host Country*. This means that two status-changing actions are to be logged for the same personnel number with the same start date, which isn’t possible by default.

You can overrule the default behavior.

Procedure

1. Go to Customizing for Personnel Administration and choose [Integration with SuccessFactors Employee Central ➤ Business Integration Builder ➤ Employee Data Integration ➤ Define Reaction to Two Status-Changing Actions With Same Start Date].
2. Select the action type *Back from Global Assignment* in the *First Action* column.
3. Select the action type *Activation in Host Country* in the *Second Action* column.
4. Select *Store Second Action in Actions Infotype* in the *Reaction* column because the *Activation in Host Country* action type is the relevant action type in this case. *Back from Global Assignment* is only transitory and doesn’t need to be logged.
5. Leave the *Reference Action* and *Reason for Reference Action* columns empty because *Activation in Host Country* is logged anyway.
   Or else, if you want to document that *Back from Global Assignment* was ignored, select the reference action type and action reason that you’ve created for this purpose.
6. Continue with the next steps if a feature that enforces a specific source and target employment status is assigned to the *Activation in Host Country* action type in Customizing. For example, feature *MSN20 (Action: Termination)*.
   If no feature is assigned to the *Activation in Host Country* action type, the next steps aren’t required.
7. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Basic Settings > Maintain the Constant Values.

8. Add the constant EC to ERP (BIB): Ignore Action If T529A Feature Raises Error and set the constant value to X.

   Setting the constant prevents that SAP ERP HCM raises the error, as defined in the MSN20 feature.

Related Information

Configuring Reaction to Replication of Two Status-Changing Event Reasons on the Same Day [page 65]
Ignoring Actions If the Assigned Feature Leads to an Error [page 64]

4.6.3 Replicating Employees as Inactive That Were Terminated in Employee Central Before the Full Transmission Start Date

Replicate employees as inactive employees if they were hired and terminated in Employee Central before you start the replication of employee data.

Prerequisites

You've created a specific action type to use in the SAP ERP HCM system when an employee is to be replicated as inactive from Employee Central. To do so, go to Customizing for Personnel Administration and choose Customizing Procedures > Actions > Set Up Personnel Actions > Personnel Action Types. Create an action type with the following settings:

- Set the Function Character for Action (FUNCH) indicator as 1 (Initial Hiring) or 7 (Initial Hiring and Transfer of Data from Recruitment).
- Set the status indicator for Employment (STAT2) as 0 (Employee Not with Company).

You've created an action reason for this action type. To do so, go to Customizing Procedures > Actions > Create Reasons for Personnel Actions in the same Customizing structure.

Context

An employee can be hired and terminated in Employee Central before the full transmission start date (FTSD) you defined for the replication of employee master data. If the employee never existed in the SAP ERP HCM system and is replicated for the first time, the SAP ERP HCM system uses the Hiring action type by default. That is, the employee is active in SAP ERP HCM.
You can configure a specific action type that the SAP ERP HCM system is to use instead of the Hiring action type in such cases, so that the employee is inactive in SAP ERP HCM.

You can make this setting for all employees or depending on the country/region of the replicated employee.

**Example**

Let’s say, you hire and terminate your employees in Employee Central. You haven’t migrated any employee data from your SAP ERP HCM system to Employee Central. You don’t set up an integration with SAP ERP HCM first. But after some time, you set up the integration and start to replicate employee master data to SAP ERP HCM.

By default, all employees are replicated as active employees because they never existed in the SAP ERP HCM system. Even the ones you terminated before you started the replication. You configure the action type Inactive Hire and the action reason Termination Before FTSD to be used for terminated employees, so that these employees are replicated as inactive.

**Procedure**

1. To configure the action type and reason for all employees, go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central ➔ Business Integration Builder ➔ Basic Settings ➔ Maintain the Constant Values.
2. Add the constant EC to ERP (BIB): Fallback Action Type for Inactive Hire and select the action type you created as the constant value.
3. Add the constant EC to ERP (BIB): Fallback Action Reason for Inactive Hire and select the action reason you created as the constant value.
4. To configure the action type and reason depending on the country/region of the employees, go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central ➔ Business Integration Builder ➔ Basic Settings ➔ Maintain Constant Values Based on Country/Region.
5. Add the constant Fallback Action Type Inactive Hire for Country/Region, select the country/region you want to use the action type for, and select the action type you created as the constant value.
6. Add the constant Fallback Action Reason Inactive Hire for Country/Region, select the country/region you want to use the action reason for, and select the action reason you created as the constant value.

**Results**

If you replicate an employee that was hired and terminated in Employee Central before the FTSD and never existed in the SAP ERP HCM system, the system checks whether the constants are set. If you’ve added a constant for the employee’s country/region, SAP ERP HCM uses this constant. If no country/region-specific constant is available, SAP ERP HCM uses the general constant you’ve defined. It stores the action type you configured with the constant as the first record of the Actions (0000) infotype for the affected employee. Together with the action type, the corresponding action reason is stored in the infotype record. The employee has the employment status Employee Not with Company. That is, the employee is inactive in the SAP ERP HCM system.
If none of the constants are available, SAP ERP HCM uses the default setting. The default is that the Hiring action type with the employment status 3 (Employee Active in Company) is stored for the affected employee as the first record in the Actions infotype. That is, the employee is active in the SAP ERP HCM system.

**i Note**

If the employee was hired, terminated, and then rehired before the FTSD, SAP ERP HCM also stores the Hiring action type in the Actions infotype because the employee is replicated for the first time.

### 4.7 Replication of No-Shows from Employee Central

Find out what reporting no-shows in Employee Central means for integration with an SAP ERP HCM system.

It’s possible that previously hired employees ignore their signed contracts and don’t show up to start work. Since the person is technically hired in the system, you can consider them a no-show and set their status to Inactive by choosing [Take Action ➔ Report No-Show] in Employee Central. For more information, see Reporting No-Show New Hires in Implementing and Managing the Employment Lifecycle (from Hiring to Termination) in Employee Central.

If you enable reporting of new hires as no-shows in Employee Central, this information is transferred to SAP ERP HCM. This way, you can store the information that a new hire was reported as no-show also in your SAP ERP HCM system to avoid problems for follow-on HR processes as well as payroll.

- **Configuring the SAP ERP HCM System for Replication of No-Shows [page 75]**
  Make the required settings in SAP ERP HCM so that no-shows can be replicated from Employee Central.

- **What Happens When New Hire and No-Show Are Replicated from Employee Central [page 76]**
  See what the SAP ERP HCM system does when a new hire and a no-show event are replicated from Employee Central.

- **What Happens When Rehire and No-Show Are Replicated from Employee Central [page 77]**
  Learn more about the reaction of the SAP ERP HCM system when a rehire and a no-show event are replicated from Employee Central.

- **What Happens When No-Show Is Deleted in Employee Central After Replication to SAP ERP HCM [page 78]**
  Find out how the SAP ERP HCM system reacts when a no-show event that was already replicated is deleted in Employee Central.

- **How Organizational Assignment Processing Considers No-Show [page 78]**
  See how the processing of employee organizational assignments in SAP ERP HCM reacts to replication of no-shows from Employee Central.
### 4.7.1 Configuring the SAP ERP HCM System for Replication of No-Shows

Make the required settings in SAP ERP HCM so that no-shows can be replicated from Employee Central.

#### Prerequisites

You’ve set up reporting of no-shows in Employee Central. For more information, see Reporting No-Show New Hires in Managing the Employment Lifecycle (from Hiring to Termination) in Employee Central.

#### Procedure

1. Make sure that the SAP Note [2869412](https://epm.sap.com/notes/2869412) (IT0000: Overwriting incorrect entry not possible) is implemented in your SAP ERP HCM system so that an action type that’s stored in the Actions (0000) infotype can be overwritten by another action type.

2. Go to Customizing for Personnel Administration and choose Customizing Procedures > Actions > Set Up Personnel Actions > Personnel Action Types.

3. Create an action type for no-show actions setting the following attributes.
   a. Set the Function Character for Action (FUNCH) indicator as 1 (Initial Hiring).
   b. Set the status indicator for Employment (STAT2) as 0 (Employee Not with Company).

4. Go to Customizing for Personnel Administration and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Basic Settings > Define Value Mapping.

5. Create value mapping details for the EVENT_REASON value mapping entity, to map the event reason you use for reporting no-shows in Employee Central to the action type you’ve defined in the previous step for no-show actions in SAP ERP HCM.

   We recommend that you use the sample content we provide for replication of employee master data from Employee Central. The sample content version EE_WS_3 contains a mapping of the eventReason field from Employee Central Job Information with the SAP ERP HCM field Action Type (MASSN), using the EVENT_REASON value mapping entity. In case you use another value mapping for event reasons, map the no-show event reason accordingly.


7. Set the value of the PLOGI_NITF switch to X to determine that the new infotype framework is used in PA/PD integration for organizational data that was replicated from Employee Central.

8. Go to Customizing for Personnel Management and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Employee Data Integration > Define Parameters for Employee Master Data and Org. Assignment Query.
9. Ensure that the value you use for the no-show employment status isn’t entered in the Exclude Org. Assignm. w. Employment Status column.

Entering the no-show status in this column would prevent the replication of organizational assignments for employees with this status. But the SAP ERP HCM relies on the no-show time slices to be replicated because the employee’s organizational assignments must also be adjusted.

When you set up the reporting of no-shows in Employee Central, it’s recommended that you create a picklist value for the Employee Status picklist with RNS as the external code and Reported No Show as the label. For more information, see Reporting No-Show New Hires. If you’ve configured the picklist according to this recommendation, ensure that the Exclude Org. Assignm. w. Employment Status column in Define Parameters for Employee Master Data and Org. Assignment Query doesn’t contain the entry RNS.

Related Information

How to Use the Sample Content for Employee Data [page 143]
Enabling Use of New Infotype Framework for Integration Between Organizational Management and Personnel Administration (PA/PD Integration) [page 200]
Configuring the Parameters for the Employee Master Data and Organizational Assignment Query [page 231]

4.7.2 What Happens When New Hire and No-Show Are Replicated from Employee Central

See what the SAP ERP HCM system does when a new hire and a no-show event are replicated from Employee Central.

New Hire and No-Show Transferred in Different Replication Runs

A person is hired in Employee Central. The event reason, for example, New Hire (HIRNEW), for the hiring event is replicated to the SAP ERP HCM system. SAP ERP HCM creates a new record in the Actions (0000) infotype, to store the personnel action type that’s mapped to the New Hire event reason, for example, Hire (01).

The new hire doesn’t show up to start work and is reported as no-show in Employee Central, using the event reason created for that purpose, for example, Reported No-Show (NOSHOW). With the next replication run, both the New Hire and the Reported No-Show event reasons are replicated to SAP ERP HCM.

Since the Hire action type was already stored in the Actions infotype, it’s changed into a No-Show action type, which is the action type mapped to the Reported No-Show event reason.
New Hire and No-Show Transferred in the Same Replication Run

A person is hired, doesn’t show up to start work, and is reported as no-show in Employee Central. Both the New Hire and the Reported No-Show event reasons are transferred in the same replication run. That is, they’re contained in the same payload of the initial replication of the new hire (or no-show in this case).

Since the Hire action type doesn’t exist yet, SAP ERP HCM creates a new record in the Actions (0000) infotype, to store the No-Show action type that’s mapped to the Reported No-Show event reason. This also means that a new personnel number is created for the no-show. But you can reuse this personnel number later, in case the person shows up after all and is then replicated as a new hire.

4.7.3 What Happens When Rehire and No-Show Are Replicated from Employee Central

Learn more about the reaction of the SAP ERP HCM system when a rehire and a no-show event are replicated from Employee Central.

A previous employee is rehired in Employee Central, but doesn’t show up to start work. The HR administrator has the following options in this case:

- They can just delete the rehire event in Employee Central.
- They can delete the rehire event and report another event, which is used for documentation purposes in Employee Central.
- They can report the rehire as no-show.

In all cases, both event reasons are ignored. That is, neither the action type mapped to the rehire event reason nor the action type mapped to the no-show event reason is stored in the SAP ERP HCM system. Neither in the Actions (0000) nor in the Additional Actions (0302) infotype.

Ignoring both event reasons in SAP ERP HCM has the following effects:

- The employee remains in their previous employment status (which can be another status than Withdrawn).
- The Actions (0000) infotype holds a record for the previously stored action type only. This record is extended until high date.

If the HR administrator has used an event for documentation purposes in Employee Central and the event reason is mapped to a corresponding action type in SAP ERP HCM, this action type is stored in the Additional Actions (0302) infotype (or, depending on the action type configuration, in the Actions and the Additional Actions infotypes).
4.7.4 What Happens When No-Show Is Deleted in Employee Central After Replication to SAP ERP HCM

Find out how the SAP ERP HCM system reacts when a no-show event that was already replicated is deleted in Employee Central.

A person is hired, doesn’t show up to start work, and is reported as no-show in Employee Central. This information is replicated to the SAP ERP HCM system. SAP ERP HCM stores the No-Show action type, which is mapped to the Reported No-Show event reason, in the Actions (0000) infotype.

Some days later, the person shows up to start work after all. That’s why the HR administrator deletes the no-show time slice in Employee Central and moves the hire date to the day when the person showed up. Again, this information is replicated to SAP ERP HCM. In this case, SAP ERP HCM overwrites the record stored for the No-Show action type in the Actions infotype with a record for the Hire action type, which starts on the moved hire date.

4.7.5 How Organizational Assignment Processing Considers No-Show

See how the processing of employee organizational assignments in SAP ERP HCM reacts to replication of no-shows from Employee Central.

When a person is reported as no-show in Employee Central and the information is replicated to the SAP ERP HCM system, organizational assignments of this person are also adjusted:

- When a newly hired employee is reported as no-show, the organizational data fields (Organizational Unit, Job, and Cost Center) in the corresponding record of the Organizational Assignment (0001) infotype take over the values from the no-show time slice replicated from Employee Central. Position, however, is set to the default position.
- When a rehired employee is reported as no-show, the fields Organizational Unit, Job, and Cost Center in the corresponding record of the Organizational Assignment infotype keep the values they had before. Position is set to the default position.
- The Relationships (1001) infotype doesn’t hold any records for the Organizational Assignment infotype record.
Set up SAP Cloud Integration as the middleware for the combined employee master data and organizational assignment replication from SAP SuccessFactors Employee Central to SAP ERP HCM.

**i Note**
For more information about which versions of the middleware content provided for this integration are still supported and which have been deprecated, see SAP Note 2684991.

**Caution**
You are only allowed to configure the content as described in this guide. If you make modifications not described in this guide, SAP will not provide support for the modified content.

The middleware content described in this guide is meant for use in SAP Cloud Integration. You are not allowed to deploy it in an on-premise SAP Process Orchestration system. For more information, see SAP Note 2428801.

Middleware Content for Employee Master Data and Organizational Assignment Replication [page 80]
Get an overview of the integration content that’s available in SAP Cloud Integration for replicating employee master data and organizational assignments from Employee Central to SAP ERP HCM.

Prerequisites for Using SAP Cloud Integration [page 82]
Before you start configuring SAP Cloud Integration for the combined employee master data and organizational assignment replication from Employee Central to SAP ERP HCM, make sure that the prerequisites listed below are fulfilled.

Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]
Some configuration steps are required to set up the integration flows. Their sequence depends on the communication used by the integration scenario.

Monitoring in SAP Cloud Integration [page 107]
Use the monitoring features of SAP Cloud Integration to check whether any issues occurred in your middleware processes.

Resetting Queries [page 108]
In some cases it is necessary to reset the status of employee master data and organizational assignment queries, so that the next scheduled query can run.

How to Report a Middleware Incident [page 108]
If you have issues that you can’t solve using the monitoring in SAP Cloud Integration, please report an incident and provide information about the process run.
5.1 Middleware Content for Employee Master Data and Organizational Assignment Replication

Get an overview of the integration content that’s available in SAP Cloud Integration for replicating employee master data and organizational assignments from Employee Central to SAP ERP HCM.

Replication of employee master data and organizational assignments from Employee Central uses the following integration packages and integration flows:

Table 13: Integration Packages and Integration Flows Used in This Integration

<table>
<thead>
<tr>
<th>Integration package...</th>
<th>And contained integration flow or flows...</th>
</tr>
</thead>
</table>
| SAP SuccessFactors Employee Central Integration with SAP ERP or SAP S/4HANA: Employee and Organizational Data | Replicate Employee Master Data and Org. Assignments from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA  
Replicate Organizational Objects from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA |

**Note**

The setup of the first integration flow is described in this document. For information about how to set up the second integration flow, see the Replicating Organizational Objects from Employee Central to SAP ERP HCM integration guide. Find the most current version of the guide in SAP Help Portal at [http://help.sap.com/hr_ecintegration](http://help.sap.com/hr_ecintegration).

<table>
<thead>
<tr>
<th>Integration package...</th>
<th>And contained integration flow or flows...</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAP ERP or SAP S/4HANA Integration with SAP SuccessFactors Employee Central: Confirmation v2</td>
<td>Send Confirmations from SAP ERP or SAP S4HANA to SAP SuccessFactors Employee Central</td>
</tr>
<tr>
<td>SAP SuccessFactors Employee Central Integration with SAP ERP or SAP S/4HANA: Push Notification</td>
<td>Push Employee Master Data from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA</td>
</tr>
</tbody>
</table>
Here’s graphical overview of how the integration flows work and how the systems interact with each other:

**SAP ERP / SAP S/4HANA**

1. Request organizational object data (SOA)
2. Organizational object data
3. Add organizational object data to staging area (SOA)
4. Configure
5. Process employee master data and organizational assignments (SOA)
6. Send confirmations (SOA)

**SAP CP Tools**

- IF hop: SAP SuccessFactors Employee Central to SAP Enterprise Object
- Update Employee Central
- Push Employee Central with data changes (SOAP)
- Process employee master data and organizational assignments (SOA)
- Send confirmation (SOA)
- Process employee master (SOA)

**SAP SuccessFactors Employee Central**

- Change to Employee Central
- Update Employee Central
- Query employee master data and organizational assignments (SOA)
- Push Employee Central with data changes (SOAP)
- Process employee master data and organizational assignments (SOA)
- Send confirmation (SOA)
5.2 Prerequisites for Using SAP Cloud Integration

Before you start configuring SAP Cloud Integration for the combined employee master data and organizational assignment replication from Employee Central to SAP ERP HCM, make sure that the prerequisites listed below are fulfilled.

Some basic things need to be in place before you can set up the integration flows in SAP Cloud Integration. For more information about the basic setup, refer to Initial Setup.

- You have been provided with an SAP Cloud Integration account.
- You have access to the web-based SAP Cloud Integration tools. For details refer to Tool Access.
- You have access to the runtime node. For details refer to Runtime in Detail.
- You have an SAP Cloud Integration communication user, which enables the customer system for authentication based on user credentials. SAP Community Network (SCN) users are used for this purpose. For details, refer to the SAP Cloud Integration notification email you’ve received from SAP and to Creating a User for Cloud Integration, Neo Environment.

5.3 Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication

Some configuration steps are required to set up the integration flows. Their sequence depends on the communication used by the integration scenario.

Configuring the integration scenario for employee master data and organizational assignment replication from Employee Central to SAP ERP HCM means that you set up three integration flows:

- **Replicate Employee Master Data and Org. Assignments from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA**
  This integration flow is triggered by the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program in the SAP ERP HCM system. The integration flow calls the CompoundEmployee API of Employee Central to get the relevant data. Then it sends back the result to the SAP ERP HCM system in the XML format, without further processing. The middleware also sends a notification to the SAP ERP HCM system in the SOAP format, which informs SAP ERP HCM about the success or failure of the query in Employee Central.

- **Send Confirmations from SAP ERP or SAP S4HANA to SAP SuccessFactors Employee Central**
  This integration flow updates the Employee Central Data Replication Monitor.

- **Push Employee Master Data from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA** (if you want to use push replication)
  Use this integration flow if you want to have data replication triggered immediately from Employee Central for certain job events.

Go through the following steps to set up the integration flows.
1. Configuring Certificates and Permissions [page 83]
   Configure certificates and permissions to enable a secure connection between your SAP ERP HCM system and SAP Cloud Integration.

2. Configuring Credentials for Communication Between SAP Cloud Integration and the Integrated Systems [page 84]
   Create and deploy the credentials for the technical integration users. SAP Cloud Integration needs the credentials for communication with SAP SuccessFactors Employee Central and with SAP ERP HCM.

3. How to Find the Endpoint URLs [page 86]
   Find the URLs you need to enter so that senders and receivers of the integration flows know which system they are to address.

4. Copying the Integration Package to Your Workspace [page 89]
   Copy and deploy the integration content provided for employee master data and organizational assignment replication from Employee Central to SAP ERP HCM.

5. Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 91]
   Configure the sender and the receivers of the integration flow we provide for replication of employee master data and organizational assignments from Employee Central.

6. Configuring the Integration Flow for Confirmation [page 95]
   Configure the sender, the receiver, and the externalized parameters of the integration flow we provide for sending confirmations for employee master data replication to Employee Central.

7. Configuring the Integration Flow for Employee Push Replication [page 99]
   Configure the sender, the receiver, and the externalized parameters of the integration flow we provide for pushing employee master data and organizational assignments from Employee Central.

8. Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the Middleware [page 104]
   Activate the SAP ERP HCM outbound web services used by employee master data and org assignment replication to set up the connections for communication from the SAP ERP HCM system to SAP Cloud Integration.

5.3.1 Configuring Certificates and Permissions

Configure certificates and permissions to enable a secure connection between your SAP ERP HCM system and SAP Cloud Integration.

Context

Even if you use basic authentication for your integration, certificates are needed to enable a secure HTTPS communication between SAP ERP HCM and SAP Cloud Integration. For more information, refer to Connecting a Customer System to Cloud Integration. The SAP Cloud Integration user must also have the required permissions.
**Procedure**

1. Add the root certificate from SAP Cloud Integration in the **Trust Manager (STRUST)** transaction in your SAP ERP HCM system, for connections initiated by the SAP ERP HCM system to SAP Cloud Integration.

   For more information, refer to Trust Manager in the SAP NetWeaver documentation.

2. Verify that the root certificate from your SAP ERP HCM system was added in the keystore in your SAP Cloud Integration tenant, for connections initiated by SAP Cloud Integration to the SAP ERP HCM system.

   This step has been taken care of during the initial setup phase by the Cloud Operations team.

3. Make sure that the SAP Cloud Integration user that is used to trigger calls from outside the middleware to SAP Cloud Integration has the necessary permission for sending messages.

   For more information, refer to Persona for the Cloud Foundry Environment or Persona for the Neo Environment.

**Task overview:** Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

**Next task:** Configuring Credentials for Communication Between SAP Cloud Integration and the Integrated Systems [page 84]

### 5.3.2 Configuring Credentials for Communication Between SAP Cloud Integration and the Integrated Systems

Create and deploy the credentials for the technical integration users. SAP Cloud Integration needs the credentials for communication with SAP SuccessFactors Employee Central and with SAP ERP HCM.

**Prerequisites**

Determine the SAP SuccessFactors credentials for the API user you want to use for the integration. The user must have the permission to call the SAP SuccessFactors CompoundEmployee and OData APIs.

Determine the SAP ERP HCM credentials for the user that you want to use for the integration.

**Context**

For more information about credentials artifacts and other security material in SAP Cloud Integration, refer to Managing Security Material.
Procedure

1. Go to the SAP Cloud Integration Web UI and choose *Operations View* from the top-level menu on the left.
3. To create a credentials artifact for the communication between SAP Cloud Integration and Employee Central, choose *Create* and select a credentials type.
   - If you want to use the *Basic* authentication type for Employee Central receivers, select *User Credentials* and deploy a credentials artifact with the following attributes:
     
     | Field Name | User Action and Values |
     |------------|------------------------|
     | Name       | Enter any name.        |
     | Type       | Select *SuccessFactors*. |
     | User       | Enter the name of the SAP SuccessFactors API user. |
     | Password   | Enter the password of the SAP SuccessFactors API user. |
     | Company ID | Enter the name of your SAP SuccessFactors Employee Central instance. |

   - If you want to use the *OAuth2 SAML Bearer Assertion* authentication type for Employee Central receivers, select *OAuth2 SAML Bearer Assertion* and deploy a corresponding credentials artifact. For more information, refer to *Deploying an OAuth2 SAML Bearer Assertion*.
4. To create a credentials artifact for the communication between SAP Cloud Integration and SAP ERP HCM, select *User Credentials* again.
5. Deploy a credentials artifact with the following attributes:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>User Action and Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter any name.</td>
</tr>
<tr>
<td>Type</td>
<td>Select <em>User Credentials</em>.</td>
</tr>
<tr>
<td>User</td>
<td>Enter the name of the SAP ERP HCM integration user.</td>
</tr>
<tr>
<td>Password</td>
<td>Enter the password of the SAP ERP HCM integration user.</td>
</tr>
</tbody>
</table>

Next Steps

You enter the names given to these credentials artifacts when you configure the integration flows.

**Task overview:** Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

**Previous task:** Configuring Certificates and Permissions [page 83]
5.3.3 How to Find the Endpoint URLs

Find the URLs you need to enter so that senders and receivers of the integration flows know which system they are to address.

Finding the URL for Communication from the Middleware to SAP ERP HCM [page 86]
Determine the endpoint URL for SAP ERP HCM that you need to enter in the middleware.

Finding the URL for Communication from SAP ERP HCM or Employee Central to the Middleware [page 88]
Determine the endpoint URL for the middleware that you need to enter in SAP ERP HCM and in Employee Central.

Finding the URL for Communication from the Middleware to Employee Central [page 89]
Determine the endpoint URL for Employee Central that you need to enter in the middleware.

Parent topic: Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

Previous task: Configuring Credentials for Communication Between SAP Cloud Integration and the Integrated Systems [page 84]

Next task: Copying the Integration Package to Your Workspace [page 89]

5.3.3.1 Finding the URL for Communication from the Middleware to SAP ERP HCM

Determine the endpoint URL for SAP ERP HCM that you need to enter in the middleware.

Context

To be able to send responses and notifications to the SAP ERP HCM system, the integration flow for employee master data and organizational assignment replication needs to know the endpoint URL that it is to call there.
Procedure

1. Go to the SOAMANAGER transaction in your SAP ERP HCM system.
2. Choose Simplified Web Service Configuration.

   i Note
   The Simplified Web Service Configuration tool described here is available from SAP NetWeaver 7.0 enhancement package 2 (SAP_BASIS 702). If you’re using a lower SAP NetWeaver release, you must use the Web Service Configuration tool instead. For more information, see Configuring a Service Provider in the SAP NetWeaver documentation for release 7.0. For a detailed how-to description of Web Service Configuration and Simplified Web Service Configuration see the SAP Community Network, at ABAP Connectivity - Web Services ABAP > How to configure a Service Provider and How to configure a Service Provider (Simplified). To find the SOA Manager documentation for your SAP NetWeaver release, go to http://help.sap.com and search for working with soamanager. Then filter the search result for your SAP NetWeaver release and support package.

3. Search for the EEMASTERDATAANDORGASSBNDLREQ service definition.
4. Select the entry and choose Show Details to find the access URL in the Configuration Details section of the details popup.
5. Copy the URL to use it later for the configuration of the integration flow.
6. If you use push replication: Go back, search for the EEMASTERDATAANDORGASSPUSHNOTI service definition, and repeat the same steps.
5.3.3.2 Finding the URL for Communication from SAP ERP HCM or Employee Central to the Middleware

Determine the endpoint URL for the middleware that you need to enter in SAP ERP HCM and in Employee Central.

Context

SAP ERP HCM and Employee Central need to know the specific endpoint URL for each integration flow instance they are to call in the middleware. The endpoint URLs are needed here:

- In the employee master data and organizational assignment integration flow, SAP ERP HCM needs to address the middleware since it triggers the replication.
- The confirmation is also sent by SAP ERP HCM to the middleware and from there to Employee Central.
- In the integration flow for push replication, Employee Central triggers the replication and therefore needs to address the middleware.

![Diagram](image.png)

Figure 12: Example: Endpoint URL in the Middleware Addressed by SAP ERP HCM

Procedure

1. Go to Manage Integration Content in SAP Cloud Integration.
2. Copy the URL shown in the Endpoints section.

For more information, refer to Managing Integration Content.

The URL looks like this: https://<runtime URL of your SAP Cloud Integration environment>/cxf/<sender address>.

i Note

The sender address part is the suffix you enter in the Address field of the sender in SAP Cloud Integration when setting up the corresponding integration flow. For example:

- EC_to_ERP_Master_Data_And_Org_Query
- EC_to_ERP_Push
- ERP_to_EC_EmployeeMasterDataReplicationConfirmation

To get the complete endpoint URL, configure and deploy the integration flow first, then copy the URL from Manage Integration Content.
5.3.3.3 Finding the URL for Communication from the Middleware to Employee Central

Determine the endpoint URL for Employee Central that you need to enter in the middleware.

Context

To be able to trigger calls to Employee Central, the middleware needs to know the Compound Employee API endpoint URL it is to call there.

![Endpoint URL in Employee Central](image)

Procedure

1. Check which is your data center.
2. When setting up the integration flow, choose Select next to the Address field to add the base URL of your SAP SuccessFactors system, depending on your data center.

5.3.4 Copying the Integration Package to Your Workspace

Copy and deploy the integration content provided for employee master data and organizational assignment replication from Employee Central to SAP ERP HCM.

Context

You use the SAP Cloud Integration Web UI to access and manage integrations configured in SAP Cloud Integration. For more information, refer to Developing Integration Content With SAP Cloud Integration.

Procedure

1. Go to the SAP Cloud Integration tenant for which you want to set up the integration content.
2. Browse the content catalog to find the SAP SuccessFactors Employee Central Integration with SAP ERP or SAP S/4HANA: Employee and Organizational Data integration package.
Note

This integration package contains two integration flows:

- *Replicate Employee Master Data and Org. Assignments from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA*
- *Replicate Organizational Objects from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA*

The setup of the first integration flow is described here. For information about how to set up the second integration flow, refer to the guide *Replicating Organizational Objects from Employee Central to SAP ERP HCM*.

3. Copy the content of the integration package to your workspace to be able to configure and deploy it.
4. Browse the content catalog again to find the *SAP ERP or SAP S/4HANA Integration with SAP SuccessFactors Employee Central: Confirmation v2* integration package.
5. Copy the content of the integration package to your workspace to be able to configure and deploy it.
6. If you want to use push replication: Browse the content catalog again to find the *SAP SuccessFactors Employee Central Integration with SAP ERP or SAP S/4HANA: Push Notification* integration package.
7. Copy the content of the integration package to your workspace to be able to configure and deploy it.

Next Steps

Configure the integration flows.

Task overview: Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

Previous: How to Find the Endpoint URLs [page 86]

Next task: Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 91]
5.3.5 Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication

Configure the sender and the receivers of the integration flow we provide for replication of employee master data and organizational assignments from Employee Central.

Context

You make the following settings for the Replicate Employee Master Data and Org. Assignments from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA integration flow.

Procedure

1. Configure the sender, ERP_Query, which is used by the SAP ERP HCM system to send the query to the middleware:

   Table 16: ERP_Query Sender Configuration

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sender</td>
<td>Choose ERP_Query.</td>
</tr>
<tr>
<td>Adapter Type</td>
<td>Choose SOAP (no other entries are possible).</td>
</tr>
<tr>
<td></td>
<td>For more information, refer to SOAP (SOAP 1.x) Adapter.</td>
</tr>
<tr>
<td>Address</td>
<td>Enter a suffix, such as /EC_to_ERP_Master_Data_And_Org_Query, which is added</td>
</tr>
<tr>
<td></td>
<td>to the service endpoint URL (the access URL for communication from SAP ERP</td>
</tr>
<tr>
<td></td>
<td>HCM to the middleware). The suffix must be unique for each process instance</td>
</tr>
<tr>
<td></td>
<td>within the same SAP Cloud Integration environment. It’s used to uniquely</td>
</tr>
<tr>
<td></td>
<td>address this specific process instance.</td>
</tr>
<tr>
<td></td>
<td>For example, if you enter /EC_to_ERP_Master_Data_And_Org_Query here, the URL</td>
</tr>
<tr>
<td></td>
<td>is:</td>
</tr>
<tr>
<td></td>
<td>https://&lt;runtime URL of your SAP Cloud Integration environment&gt;/cxf/</td>
</tr>
<tr>
<td></td>
<td>EC_to_ERP_Master_Data_And_Org_Query.</td>
</tr>
</tbody>
</table>
2. Configure the Employee_Central receiver, which is used by the middleware to request the queried data from Employee Central:

Table 17: Employee_Central Receiver Configuration

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver</td>
<td>Choose Employee_Central.</td>
</tr>
<tr>
<td>Adapter Type</td>
<td>Choose SuccessFactors (no other entries are possible).</td>
</tr>
<tr>
<td></td>
<td>For more information, refer to SuccessFactors (SOAP) Adapter.</td>
</tr>
<tr>
<td>Address</td>
<td>Choose Select to add the base URL of your SAP SuccessFactors system, depending on your data center.</td>
</tr>
<tr>
<td></td>
<td>! Restriction  We don’t support IP addresses in URLs as part of our reference architecture. Use domain names instead. If you think you have a special case that requires IP addresses instead of domain names, contact Product Support.</td>
</tr>
<tr>
<td>Authentication</td>
<td>Choose either Basic or OAuth2 SAML Bearer Assertion.</td>
</tr>
</tbody>
</table>
3. Configure the **ERP_Response** receiver, which is used by the middleware to send back the queried data from Employee Central to the SAP ERP HCM system:

**Table 18: ERP_Response Receiver Configuration**

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver</td>
<td>Choose <strong>ERP_Response</strong>.</td>
</tr>
<tr>
<td>Adapter Type</td>
<td>Choose <strong>SOAP</strong> (no other entries are possible). For more information, refer to <strong>SOAP (SAP RM) Adapter</strong>.</td>
</tr>
<tr>
<td>Address</td>
<td>Enter the endpoint URL of the SAP ERP HCM inbound web service for replication of employee master data and organizational assignments. If you don’t use SAP Cloud Connector, the URL must start with <code>https://</code>. If you use SAP Cloud Connector, the URL must start with <code>http://</code>. For more information about using SAP Cloud Connector, refer to <strong>Outbound: SAP Cloud Connector</strong>.</td>
</tr>
<tr>
<td>Proxy Type</td>
<td>If you don’t use SAP Cloud Connector, choose <strong>Internet</strong>. If you use SAP Cloud Connector, choose <strong>On-Premise</strong>.</td>
</tr>
</tbody>
</table>
### Field | What to Enter
--- | ---
**Location ID** *(only in case On-Premise is selected for Proxy Type)* | To connect to a cloud connector instance associated with your account, enter the location ID that you defined for this instance in the destination configuration on the cloud side. Or else enter `${header.headername}` to dynamically read the value from a header.

The location ID identifies the location of this cloud connector for a specific account. It’s used as routing information. Thus, it’s possible to connect multiple cloud connectors to a single account. If you don’t specify any value for Location ID, the default is used, which is representing the behavior of previous cloud connector versions. The location ID must be unique per account and must be an identifier that can be used in a URI.

**Authentication** | In case Internet is selected for Proxy Type: Choose either Basic or Client Certificate. Don’t use the other options.

In case On-Premise is selected for Proxy Type: Choose either Basic or Principal Propagation. Don’t use the other options. For more information about principal propagation, refer to Setting Up Principal Propagation (Example Scenario).

**Credential Name** *(only in case Basic is selected for Authentication)* | Enter the name of the credentials artifact with the type User Credentials that you created before.

For more information, refer to Basic Authentication.

**Private Key Alias** *(only in case Client Certificate is selected for Authentication)* | Upload the appropriate certificate and enter it in the Private Key Alias field.

For more information, refer to Client Certificate Authentication (Outbound).

**Timeout (in ms)** | Use the default value. Only change this value if you’re facing issues. In that case, try a higher number.

**Allow Chunking** | By default, this checkbox is selected. This setting is supported by all HTTP 1.1 servers. If you use an HTTP server that doesn’t support chunking and therefore face connection issues, deselect this checkbox.

4. Make the same settings for the `ERP_Notification` receiver as for the `ERP_Response` receiver.

`ERP_Notification` is used by the middleware to send notifications about the status of the query in Employee Central to the SAP ERP HCM system.

5. Make the same settings for the `ERP_Exception_Notification_Main` receiver as for the `ERP_Response` receiver. `ERP_Exception_Notification_Main` is used by the middleware to send error messages to the SAP ERP HCM system.
6. Make the same settings for the `ERP_Exception_Notification_Sub` receiver as for the `ERP_Response` receiver. `ERP_Exception_Notification_Sub` is used by the middleware to send error messages to the SAP ERP HCM system.

Next Steps

You don't configure any process properties in the middleware. Process properties are defined in the SAP ERP HCM system using a Customizing view.

Task overview: Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

Previous task: Copying the Integration Package to Your Workspace [page 89]

Next task: Configuring the Integration Flow for Confirmation [page 95]

Related Information

How to Find the Endpoint URLs [page 86]

5.3.6 Configuring the Integration Flow for Confirmation

Configure the sender, the receiver, and the externalized parameters of the integration flow we provide for sending confirmations for employee master data replication to Employee Central.

Context

You make the following settings for the `Send Confirmations from SAP ERP or SAP S4HANA to SAP SuccessFactors Employee Central` integration flow.

Procedure

1. Configure the sender, `SAP_ERP`, which is used by the SAP ERP HCM system to send the confirmation to the middleware:
Table 19: SAP_ERP Sender Configuration

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sender</strong></td>
<td>Choose SAP_ERP.</td>
</tr>
<tr>
<td><strong>Adapter Type</strong></td>
<td>Choose SOAP (no other entries are possible). For more information, refer to SOAP (SAP RM) Adapter.</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>Enter a suffix, such as /ERP_to_EC_EmployeeMasterDataReplication Confirmation, which is added to the service endpoint URL (the access URL for communication from SAP ERP HCM to the middleware). The suffix must be unique for each process instance within the same SAP Cloud Integration environment. It’s used to uniquely address this specific process instance. For example, if you enter /ERP_to_EC_EmployeeMasterDataReplication Confirmation here, the URL is: https://&lt;runtime URL of your SAP Cloud Integration environment&gt;/cxf/ERP_to_EC_EmployeeMasterDataReplication Confirmation.</td>
</tr>
<tr>
<td><strong>Authorization</strong></td>
<td>Choose either User Role or Client Certificate.</td>
</tr>
<tr>
<td><strong>User Role</strong></td>
<td>(only in case User Role is selected for Authorization) Select the role that you’ve configured. For more information, refer to Connection Setup for Inbound Communication - Integration Flow Endpoints.</td>
</tr>
<tr>
<td><strong>Certificate</strong></td>
<td>(only in case Client Certificate is selected for Authorization) Browse to upload the certificate. For more information, refer to Client Certificate Authentication (Inbound).</td>
</tr>
</tbody>
</table>

2. Configure the receiver, SFSF_EC, which is used by the middleware to update the Employee Central Data Replication Monitor:
### Table 20: SFSF_EC Receiver Configuration

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiver</td>
<td>Choose SFSF_EC.</td>
</tr>
<tr>
<td>Adapter Type</td>
<td>Choose SuccessFactors (no other entries are possible). For more information, refer to SuccessFactors (OData V2) Adapter.</td>
</tr>
<tr>
<td>Address</td>
<td>Choose Select to add the base URL of your SAP SuccessFactors system, depending on your data center.</td>
</tr>
</tbody>
</table>

**Restriction**

We don’t support IP addresses in URLs as part of our reference architecture. Use domain names instead. If you think you have a special case that requires IP addresses instead of domain names, contact Product Support.

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentication</td>
<td>Choose either Basic or OAuth2 SAML Bearer Assertion.</td>
</tr>
<tr>
<td>Credential Name</td>
<td>If you’ve selected Basic for Authentication: Enter the name of the credentials artifact with the type SuccessFactors that you created before.</td>
</tr>
<tr>
<td></td>
<td>If you’ve selected OAuth2 SAML Bearer Assertion for Authentication: Enter the name of the credentials artifact with the type OAuth2 SAML Bearer Assertion that you created before.</td>
</tr>
<tr>
<td>Timeout (in min)</td>
<td>Use the default value. Only change this value if you’re facing issues. In that case, try a higher number.</td>
</tr>
</tbody>
</table>

3. Configure the process parameter:
Table 21: Process Parameter

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENABLE_PAYLOAD_LOGGING</td>
<td>Enter <code>true</code> to transfer extended information to the process log in the middleware to be able to analyze issues more easily. You can also reset the parameter to <code>false</code> again if you no longer need the extended log.</td>
</tr>
</tbody>
</table>

⚠️ Caution

For data protection reasons, enable this extended log for troubleshooting purposes only. Make sure to disable the parameter again afterwards.

If you enable the extended log, the complete message payload containing all data that is to be transferred is stored in the log. Make sure that you configure permissions in a way that only authorized persons can view the payload in the log. Also ensure that you’re compliant with the data protection and privacy regulations so that your data gets the highest level of protection.

For more information, refer to:
- Data Protection and Privacy
- Identity and Access Management and Persona for the Cloud Foundry Environment
- Managing Users and Role Assignments and Persona for the Neo Environment

---

Next Steps

The confirmation message is turned on by default. You can turn it off in exceptional situations when defining the query parameters.

**Task overview:** Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

**Previous task:** Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 91]

**Next task:** Configuring the Integration Flow for Employee Push Replication [page 99]
5.3.7 Configuring the Integration Flow for Employee Push Replication

Configure the sender, the receiver, and the externalized parameters of the integration flow we provide for pushing employee master data and organizational assignments from Employee Central.

Context

You make the following settings for the Push Employee Master Data from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA integration flow.

Procedure

1. Configure the sender, \textit{EC\_Push\_Event}, which is used by Employee Central to send the push notification to the middleware:

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sender</td>
<td>Choose \textit{EC_Push_Event}.</td>
</tr>
<tr>
<td>Adapter Type</td>
<td>Choose HTTPS (no other entries are possible).</td>
</tr>
<tr>
<td></td>
<td>For more information, refer to HTTPS Sender Adapter.</td>
</tr>
</tbody>
</table>

Replicating Employee Master Data and Organizational Assignments from Employee Central to SAP ERP HCM
Enter a suffix, such as `/push_notification`, which is added to the service endpoint URL (the access URL for communication from Employee Central to the middleware). The suffix must be unique for each process instance within the same SAP Cloud Integration environment. It’s used to uniquely address this specific process instance.

For example, if you enter `/push_notification` here, the URL is:

`https://<runtime URL of your SAP Cloud Integration environment>/http/push_notification`

**Authorization**

Choose either **User Role** or **Client Certificate**.

**iNote**

If you choose **User Role**, you must select the **User ID / Password** authentication option when you enable the SAP ERP HCM outbound web services. If you choose **Client Certificate** here, you must select the **X.509 SSL Client Certificate** authentication option when you enable the outbound web services.

- **User Role** (only in case **User Role** is selected for **Authorization**) Select the role that you’ve configured.
  
  For more information, refer to **Connection Setup for Inbound Communication - Integration Flow Endpoints**.

- **Certificate** (only in case **Client Certificate** is selected for **Authorization**) Browse to upload the certificate.
  
  For more information, refer to **Client Certificate Authentication (Inbound)**.

2. Configure the receiver, **SAP_ERP**, which is used by the middleware to send back the query result to the SAP ERP HCM system:

**Table 23: SAP_ERP Receiver Configuration**

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Receiver</strong></td>
<td>Choose <strong>SAP_ERP</strong>.</td>
</tr>
<tr>
<td><strong>Adapter Type</strong></td>
<td>Choose <strong>SOAP</strong> (no other entries are possible).</td>
</tr>
</tbody>
</table>

For more information, refer to **SOAP (SAP RM) Adapter**.
<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address</strong></td>
<td>Enter the endpoint URL of the SAP ERP HCM inbound web service for push replication.</td>
</tr>
<tr>
<td></td>
<td>If you don’t use SAP Cloud Connector, the URL must start with <code>https://</code>.</td>
</tr>
<tr>
<td></td>
<td>If you use SAP Cloud Connector, the URL must start with <code>http://</code>. For more information about using SAP Cloud Connector, refer to <a href="#">Outbound: SAP Cloud Connector</a>.</td>
</tr>
<tr>
<td><strong>Proxy Type</strong></td>
<td>If you don’t use SAP Cloud Connector, choose <code>Internet</code>.</td>
</tr>
<tr>
<td></td>
<td>If you use SAP Cloud Connector, choose <code>On-Premise</code>.</td>
</tr>
<tr>
<td><strong>Location ID (only in case On-Premise is selected for Proxy Type)</strong></td>
<td>To connect to a cloud connector instance associated with your account, enter the location ID that you defined for this instance in the destination configuration on the cloud side. Or else enter <code>${header.headername}</code> to dynamically read the value from a header. The location ID identifies the location of this cloud connector for a specific account. It’s used as routing information. Thus, it’s possible to connect multiple cloud connectors to a single account. If you don’t specify any value for Location ID, the default is used, which is representing the behavior of previous cloud connector versions. The location ID must be unique per account and must be an identifier that can be used in a URI.</td>
</tr>
<tr>
<td><strong>Authentication</strong></td>
<td>In case <code>Internet</code> is selected for Proxy Type: Choose either <code>Basic</code> or <code>Client Certificate</code>. Don’t use the other options.</td>
</tr>
<tr>
<td></td>
<td>In case <code>On-Premise</code> is selected for Proxy Type: Choose either <code>Basic</code> or <code>Principal Propagation</code>. Don’t use the other options. For more information about principal propagation, refer to <a href="#">Setting Up Principal Propagation (Example Scenario)</a>.</td>
</tr>
<tr>
<td><strong>Credential Name (only in case Basic is selected for Authentication)</strong></td>
<td>Enter the symbolic name of the credentials artifact with the type <code>User Credentials</code> that you created before. For more information, refer to <a href="#">Basic Authentication</a>.</td>
</tr>
<tr>
<td><strong>Private Key Alias (only in case Client Certificate is selected for Authentication)</strong></td>
<td>Upload the appropriate certificate and enter it in the Private Key Alias field. For more information, refer to <a href="#">Client Certificate Authentication (Outbound)</a>.</td>
</tr>
<tr>
<td><strong>Timeout (in ms)</strong></td>
<td>Use the default value. Only change this value if you’re facing issues. In that case, try a higher number.</td>
</tr>
</tbody>
</table>
3. Configure the process parameters:

Table 24: Process Parameters

<table>
<thead>
<tr>
<th>Field</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENABLE_PAYLOAD_LOGGING</strong></td>
<td>Enter <code>true</code> to transfer extended information to the process log in the middleware to be able to analyze issues more easily. You can also reset the parameter to <code>false</code> again if you no longer need the extended log.</td>
</tr>
</tbody>
</table>

⚠️ Caution

For data protection reasons, enable this extended log for troubleshooting purposes only. Make sure to disable the parameter again afterwards.

If you enable the extended log, the complete message payload containing all data that is to be transferred is stored in the log. Make sure that you configure permissions in a way that only authorized persons can view the payload in the log. Also ensure that you’re compliant with the data protection and privacy regulations so that your data gets the highest level of protection.

For more information, refer to:
- Data Protection and Privacy
- Identity and Access Management and Persona for the Cloud Foundry Environment
- Managing Users and Role Assignments and Persona for the Neo Environment
### Field: REGULAR_EXPRESSION

This parameter is optional. But we recommend that you use it so that the user IDs transferred by the push replication can be validated. Using the parameter prevents requests with arbitrary user IDs being sent, which could cause a high system load.

If you want to use the parameter, specify a regular expression that represents what your user IDs look like in SAP SuccessFactors.

<table>
<thead>
<tr>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify \D\d+ if your user IDs look like this: I123456, D1, S123.</td>
</tr>
<tr>
<td>Specify \d+ if your user IDs look like this: 1, 123, 123456.</td>
</tr>
</tbody>
</table>

### Field: TRANSFORMATION_TEMPLATE_GROUP

Enter the transformation template group you want to use for push replication.

If you want to use multiple template groups for different groups of employees, for example, based on their country/region assignment, deploy this integration flow multiple times and specify each template group in one of the instances.

---

**Task overview:** Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

**Previous task:** Configuring the Integration Flow for Confirmation [page 95]

**Next task:** Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the Middleware [page 104]

**Related Information**

- Push Replication of Employee Master Data and Organizational Assignments from Employee Central [page 246]
- How to Find the Endpoint URLs [page 86]
5.3.8 Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the Middleware

Activate the SAP ERP HCM outbound web services used by employee master data and org assignment replication to set up the connections for communication from the SAP ERP HCM system to SAP Cloud Integration.

Context

The outbound web services for employee master data and org assignment replication are:

- The service used for querying data from Employee Central through the middleware, `getEmployeeMasterDataAndOrgAssignmentBundleReplicationQuery_Out`
  The employee master data and organizational assignment replication process reads data from SAP SuccessFactors Employee Central and sends it to SAP ERP HCM. The Replicate Employee Master Data and Org. Assignments from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA integration flow is scheduled in the SAP ERP HCM system. For this integration flow, you need to set up a consumer proxy in the SAP ERP HCM system, which redirects a query to the service endpoint URL in SAP Cloud Integration.

- The service used for sending the confirmation to Employee Central through the middleware, `EmployeeMasterDataReplicationConfirmation_Out`
  The Employee Replication Confirmation Message is triggered by the SAP ERP HCM system by sending the employee replication status to the Employee Central Data Replication Monitor using the middleware.

Procedure

1. Copy the URL used for the communication from SAP ERP HCM to the middleware from Manage Integration Content ▶ Endpoints ▶ in SAP Cloud Integration.

   i Note
   The URL looks like this: https://<runtime URL of your SAP Cloud Integration environment>/cxf/<sender address>
   The sender address part is the suffix you enter in the Address field of the sender in SAP Cloud Integration when setting up the corresponding integration flow. For example:
   EC_to_ERP_Master_Data_And_Org_Query or ERP_to_EC_EmployeeMasterDataReplicationConfirmation
   To get the complete endpoint URL, configure and deploy the integration flow first, then copy the URL from Manage Integration Content.

2. Go to the SOA Management (SOAMANAGER) transaction in your SAP ERP HCM system and choose Web Service Configuration.

3. Search for these consumer proxies:
Select the corresponding entry in the search result and carry out the next steps for both proxies.

4. Choose **Create > Manual Configuration** and create a new logical port.
5. Select either the **User ID / Password** or the **X.509 SSL Client Certificate** authentication option.

---

### Note

If you select the **User ID / Password** authentication option, you must choose **User Role** when you configure authorizations for the ERP sender in the corresponding integration flow. If you select the **X.509 SSL Client Certificate** authentication option, you must choose **Client Certificate** when you configure authorizations for the ERP sender in the integration flow.

6. If you've selected **User ID / Password**, enter the user ID and password of your SAP Cloud Integration communication user. If you've selected **X.509 SSL Client Certificate**, select an SSL Client Personal Security Environment (PSE).

For more information, refer to *Creating PSEs and Maintaining the PSE Infrastructure* in the SAP NetWeaver documentation.

7. Configure the transport settings.

<table>
<thead>
<tr>
<th>Setting</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>URL access path settings</strong></td>
<td></td>
</tr>
<tr>
<td>URL components</td>
<td>Select this radio button.</td>
</tr>
<tr>
<td>Protocol</td>
<td>Select <strong>HTTPS</strong>.</td>
</tr>
<tr>
<td>Host</td>
<td>Enter the <code>&lt;runtime URL of your SAP Cloud Integration environment&gt;</code> part of the URL that you've copied in the first step.</td>
</tr>
<tr>
<td>Port</td>
<td>Enter the port number of your SAP Cloud Integration environment. If you haven't set up a specific port, enter <strong>443</strong> (the default port for HTTPS).</td>
</tr>
<tr>
<td>Path</td>
<td>Enter the <code>/cf/&lt;sender address&gt;</code> part of the URL you've copied, such as:</td>
</tr>
<tr>
<td></td>
<td>○ <code>/cf/&lt;sender address&gt;/EC_to_ERP_Master_Data_And_Org_Query</code> for the query</td>
</tr>
<tr>
<td></td>
<td>○ <code>/cf/&lt;sender address&gt;/ERP_to_EC_EmployeeMasterDataReplicationConfirmation</code> for the confirmation</td>
</tr>
<tr>
<td>Logon language</td>
<td>Select <strong>Language of User Context</strong>.</td>
</tr>
</tbody>
</table>
8. Configure the SOAP protocol.

Table 26: Protocol Configuration

<table>
<thead>
<tr>
<th>Setting</th>
<th>What to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliable messaging protocol</td>
<td>Select <strong>SAP RM</strong></td>
</tr>
<tr>
<td>Message ID protocol</td>
<td>Select <strong>Suppress ID Transfer</strong></td>
</tr>
<tr>
<td>Data transfer scope</td>
<td>Select <strong>Enhanced Data Transfer</strong></td>
</tr>
<tr>
<td>Transfer protocol</td>
<td>Select <strong>Transfer via SOAP Header</strong></td>
</tr>
</tbody>
</table>

9. Leave the other fields empty and finish the **Web Service Configuration** setup.

**i Note**

You don’t need to make any entries in the **Identifiable Business Context** and **Operation Settings** steps.

10. To set your new logical port as default port, select the entry end choose **Set Log. Port Default**.

11. Test outbound connectivity from SAP ERP HCM to SAP Cloud Integration.

a. Press the **Ping Web Service** button.

You get an **HTTP ERROR 405**. Don’t worry, from a technical point of view everything is fine. You get this error message because the Ping can’t fill the business content of the web service.
b. If you get this or a similar error message when you start the Ping web service, you’re most probably missing one or more certificates: 

*SRT Framework exception: Service Ping ERROR: Error when calling SOAP Runtime functions: SRT: Processing error in Internet Communication Framework: (“ICF Error when receiving the response: ICM_HTTP_SSL_ERROR”)*

This error message is generated at the technical handshake between SAP ERP HCM and the middleware systems, at the level of the Internet Communication Framework (ICF).

**Task overview:** Configuration of SAP Cloud Integration for Employee Master Data and Organizational Assignment Replication [page 82]

**Previous task:** Configuring the Integration Flow for Employee Push Replication [page 99]

**Related Information**

Web Services Used for Employee Master Data and Organizational Assignment Replication [page 43]
Finding the URL for Communication from SAP ERP HCM or Employee Central to the Middleware [page 88]
Enabling the SAP ERP HCM Inbound Web Services to Set Up the Connection from the Middleware to SAP ERP HCM [page 40]

### 5.4 Monitoring in SAP Cloud Integration

Use the monitoring features of SAP Cloud Integration to check whether any issues occurred in your middleware processes.

SAP Cloud Integration provides a web-based monitoring UI that allows you to check the status of messages and integration content artifacts for a tenant cluster. For more information, see Monitoring.

Use the log ID that you find in the monitoring to find the log of a specific process that didn’t run successfully and to filter the log for detailed information.
5.5 Resetting Queries

In some cases it is necessary to reset the status of employee master data and organizational assignment queries, so that the next scheduled query can run.

Context

Since this integration flow is triggered by a program in the SAP ERP HCM system, you cannot reset queries in the middleware.

Procedure

Use the Reset Query Administration Table (ECPAO_RESET_QRY_ADM) transaction in your SAP ERP HCM to reset queries.

For details, see the Related Information.

Related Information

Resetting Employee Master Data and Organizational Assignment Queries [page 242]

5.6 How to Report a Middleware Incident

If you have issues that you can’t solve using the monitoring in SAP Cloud Integration, please report an incident and provide information about the process run.

If you face an issue with your SAP Cloud Integration-based integration scenario and want to report an incident, make sure that the failed process run was carried out with the extended logging option activated. You can enable this option on the selection screen of the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program in the SAP ERP HCM system. For employee master data and organizational assignment replication, select the Enable Payload Logging checkbox. For employee master data, you can also select the Enable Verbose Logging checkbox. Switching on the extended log ensures that the data that’s needed for analyzing the issue is written to the log. Add the log ID to the incident so that the support team can find the log easily.

⚠️ Caution

For data protection reasons, enable this extended log for troubleshooting purposes only. Make sure to disable the parameter again afterwards.
If you enable the extended log, the complete message payload containing all data that is to be transferred is stored in the log. Make sure that you configure permissions in a way that only authorized persons can view the payload in the log. Also ensure that you’re compliant with the data protection and privacy regulations so that your data gets the highest level of protection.

For more information, refer to:

- Data Protection and Privacy
- Identity and Access Management and Persona for the Cloud Foundry Environment
- Managing Users and Role Assignments and Persona for the Neo Environment

**Note**

When reporting a middleware incident, please make sure that you include all required information, as listed in the SAP Knowledge Base Article (KBA) 2763716.
6 Replicating Employee Master Data

Take a look at the prerequisites, the SAP ERP HCM system settings, and the extensibility concept for replication of employee master data from Employee Central.

Preparing the System [page 110]
Take a look at the settings you need to make in SAP ERP HCM to enable replication of employee master data from Employee Central.

Mapping Types [page 169]
Take a look at the different mapping types that you can have to make in SAP ERP HCM to enable replication of employee master data from Employee Central.

Business Add-Ins (BAdI) [page 186]

Extensibility [page 187]
Take a look at how you can enhance employee master data replication from Employee Central.

Replication of Country/Region-Specific Employee Master Data [page 189]
Learn about specific information about some country-specific or region-specific configuration or replication of data.

6.1 Preparing the System

Take a look at the settings you need to make in SAP ERP HCM to enable replication of employee master data from Employee Central.

Accessing the Customizing Structure in the SAP ERP HCM System [page 113]
To define customer-specific settings, you use the Customizing activities and Business Add-Ins (BAdIs) in the integration of SAP ERP HCM and SAP SuccessFactors Employee Central (PA_SE_IN) add-on.

Synchronizing Splits in the Organizational Assignment Infotype with Splits in the Actions Infotype [page 115]
Define how the Organizational Assignment (0001) infotype is to react when a split is set in the Actions (0000) infotype, so that the system behavior in SAP ERP HCM is similar to the handling of time slices in Employee Central Job Information.

Defining Your Employee Central Instance [page 116]
You need to define an ID in the SAP ERP HCM system, which represents your Employee Central configuration and refers to the metadata you use in Employee Central and to basic settings for data transfer between SAP ERP HCM and Employee Central.

Importing Metadata from Employee Central [page 117]
You import the metadata from SAP SuccessFactors Employee Central to make Employee Central fields available in the SAP ERP HCM system so that you can use them for field mappings.

Defining Value Mappings [page 118]
Value mapping means that Employee Central field values are mapped to values of SAP ERP HCM fields.

Defining Custom Employee Central Entities for Employee Data Entities [page 128]
An Employee Central entity represents an entity from Employee Central, such as an OData entity, or a generic object (also known as MDF entity). You only need to define custom Employee Central entities if you want to transfer data to SAP ERP HCM for which SAP hasn't provided a default entity.

**Importing Sample Customizing for Employee Data Into Your Working Client in the SAP ERP HCM System [page 131]**

We provide sample template groups, which are defined for the Employee Central company SBS_MODEL in the delivered sample Customizing. Here’s how to use the sample Customizing.

**Creating a Transformation Template Group for Employee Data [page 132]**

A template group bundles all field mappings that you want to use when transferring data from Employee Central to SAP ERP HCM.

**Defining Templates to Map Employee Data Fields [page 134]**

The transformation template is the counterpart of the Employee Central entity. You can map fields from the transformation template to fields from the assigned Employee Central entity.

**Defining Field Mapping for Employee Data [page 135]**

To enable the data replication programs to extract the right Employee Central fields information for the right SAP ERP HCM fields, you need to map Employee Central fields to SAP ERP HCM fields.

**How to Use the Value Mapping Entity [page 145]**

The value mapping entity that was created previously can be assigned to the primary or secondary mapping of an Employee Central field.

**Formatting the Employee Central Fields by Value Conversion [page 146]**

You can now format the Employee Central fields by using value conversion when replicating the data to Employee Central system.

**Cloning Transformation Templates [page 153]**

Cloning a transformation template means that you reuse the field mapping you define for an infotype and subtype in the Primary Mapping view of the VC_ECPAO_MAP view cluster for some or all subtypes of this infotype.

**Filtering of Infotype and Subtype for Employee Central [page 155]**

You can define the infotypes and subtype, which should be ignored during the replication process at the country grouping level based on the work-force. If you are replicating an employee without setting the infotypes and sub-types, all the data mapped in the mapping table would be replicated.

**Mandatory Templates Required for a Successful Replication [page 156]**

For the successful replication of the employee data using BiB, you will have to active some of the templates.

**How to Have the Sample Configuration for Employee Data Replication Generated Automatically [page 156]**

You can automate some of the configuration steps required for setting up employee data replication.

**Using the Check Tool for EC to ERP Integration Checks [page 162]**

Learn how to use the check tool to find potential issues that have impact on the EC to ERP replication.

**How to Replicate Contingent Workers Specific Details [page 168]**

You can replicate the basic details of a contingent worker details using a template.

**Parent topic:** Replicating Employee Master Data [page 110]
Related Information

Mapping Types [page 169]
Business Add-Ins (BAdI) [page 186]
Extensibility [page 187]
Replication of Country/Region-Specific Employee Master Data [page 189]
6.1.1 Accessing the Customizing Structure in the SAP ERP HCM System

To define customer-specific settings, you use the Customizing activities and Business Add-Ins (BAdIs) in the integration of SAP ERP HCM and SAP SuccessFactors Employee Central (PA_SE_IN) add-on.
In your SAP ERP HCM system, go to the Customizing: Execute Project (SPRO) transaction and choose SAP Reference IMG. In the SAP Customizing Implementation Guide structure, open Personnel Management > Integration with SuccessFactors Employee Central > Business Integration Builder.

Figure 14: Overview of Customizing Structure
In the Customizing structure, you can find detailed information for each Customizing activity and BAdI:

![Figure 15: Details of Customizing Structure](image)

The next sections describe the steps you need to carry out in the SAP ERP HCM system.

### 6.1.2 Synchronizing Splits in the Organizational Assignment Infotype with Splits in the Actions Infotype

Define how the Organizational Assignment (0001) infotype is to react when a split is set in the Actions (0000) infotype, so that the system behavior in SAP ERP HCM is similar to the handling of time slices in Employee Central Job Information.

#### Prerequisites

The **PLOGI NITF** switch must be set in your SAP ERP HCM system, to determine that the new infotype framework is used in PA/PD integration for organizational data that was replicated from Employee Central. To set the switch, go to Customizing for Personnel Management and choose **Integration with SuccessFactors Employee Central** > **Business Integration Builder** > **Organizational Data Integration** > **Enable Use of New Infotype Framework When Processing Replicated Org. Data**.

#### Context

The replication of events from Employee Central results in personnel actions being stored in the Actions infotype in SAP ERP HCM. Whether the replication leads to a split in the Actions infotype depends on the mapping in SAP ERP HCM: When the Employee Central event reason is mapped to an SAP ERP HCM action type, a split is inserted in the Actions infotype. When the Employee Central event reason isn't mapped, no split is inserted.

You can specify how the Organizational Assignment infotype is to react when the replication inserts an infotype split in the Actions infotype for an employee.

Regardless of your choice, infotype splits in the Organizational Assignment infotype are always created if organizational data is changed for the employee.
**Procedure**

1. Go to Customizing for Personnel Administration and choose [Integration with SuccessFactors Employee Central > Business Integration Builder > Basic Settings > Maintain the Constant Values](#).

2. Add the constant **EC to ERP (BIB): Synchronize IT0001 Splits w. IT0000 Splits** and enter one of the following options for the constant value:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>By default, the constant value is empty. Leave it empty if only splits that are set for employment status-changing actions in the Actions infotype are to result in a corresponding split in the Organizational Assignment infotype. Employment status-changing means that the Employment Status (STAT2) indicator is set for the action type and that the action type changes the employment status compared to the previous infotype record.</td>
</tr>
<tr>
<td>1</td>
<td>Use this option if all infotype splits that are set in the Actions infotype are to result in a corresponding split in the Organizational Assignment infotype.</td>
</tr>
<tr>
<td>2</td>
<td>Use this option if no infotype split that is set in the Actions infotype is to result in a split in the Organizational Assignment infotype. We recommend that you use option 2 because this setting corresponds to the default system behavior of the SAP ERP HCM system.</td>
</tr>
</tbody>
</table>

**Related Information**

Enabling Use of New Infotype Framework for Integration Between Organizational Management and Personnel Administration (PA/PD Integration) (page 200)

**6.1.3 Defining Your Employee Central Instance**

You need to define an ID in the SAP ERP HCM system, which represents your Employee Central configuration and refers to the metadata you use in Employee Central and to basic settings for data transfer between SAP ERP HCM and Employee Central.

**Procedure**

1. Go to the **Specify Employee Central Instance ID** Customizing activity (view V_ECPAO_COMPANY).
2. Enter an ID and a description.
6.1.4 Importing Metadata from Employee Central

You import the metadata from SAP SuccessFactors Employee Central to make Employee Central fields available in the SAP ERP HCM system so that you can use them for field mappings.

To import the metadata, use the following program:

*Import of Metadata from Employee Central Using XML File (ECPAO_ECTMPL_METADATA_WRITER)*

This program is available in the Import Metadata for Web Service-Based Data Transfer from Employee Central Customizing activity.

---

**i Note**

You can only use this program to import metadata for web service entities.

---

**Defining additional fields for mapping purpose**

You can now define additional fields which could be used for the mapping purpose. When you are replicating the data from Employee Central, two values are configured for a particular field in the ERP system while you are entering only one value in Employee Central. Hence any additional fields can be added to the ECPAO_FLD table without the need of adding any additional unused fields from Employee Central. Make sure that all the field properties are maintained properly.

---

**i Note**

If you are adding additional fields, then you should set the IS_INVALID field (*Deleted* check box) in V_ECPAO_FLD view. This is to ensure that these fields are not considered during extraction for migration/integration to Employee Central via the infoporter tool (ECPAO_EMPL_EXTRACTION).

---

**Example**

**One value entered in Employee Central can feed two ERP fields:** An example is the Russian Bank Account Number and the Bank control key. There is no separate field in EC containing the Bank control key which could be mapped to the ERP field. The first two digits of the Bank Account Number contain the Bank control key.
6.1.5 Defining Value Mappings

Value mapping means that Employee Central field values are mapped to values of SAP ERP HCM fields.

The data replication programs use the value mappings when extracting data. They replace the Employee Central keys by the corresponding SAP ERP HCM keys if a value mapping is defined for the corresponding field mapping. Value mappings are assigned to field mappings in the Primary Mapping and Secondary Mapping views of the field mapping view cluster. Field mappings are grouped together in a transformation template group. You enter the transformation template group on the selection screen to tell the extraction program which field mappings and which value mappings it is to use.

There are standard value mappings provided by SAP. Standard value mappings are provided for values that can’t be configured in the SAP ERP HCM system and in Employee Central and therefore always stay the same.

Example

Language codes can’t be configured. The Employee Central language code English always corresponds to the language code EN in the SAP ERP HCM system. Therefore, a standard value mapping is provided for language codes.

However, if you want to map values that can be configured in the SAP ERP HCM system and in Employee Central, you need to define custom value mappings.

Import Picklists and Picklist Values from Employee Central [page 119]
You can import picklists and picklist values from Employee Central to the SAP ERP HCM system to use them in Customizing when mapping Employee Central field values to values of SAP ERP HCM fields.

Defining Value Mapping Entities [page 121]
A value mapping entity combines a set of value mappings for a specific purpose (for example, gender code value mappings).

Defining Value Mapping Details [page 125]
The value mapping details actually map SAP ERP HCM values to the corresponding Employee Central values.

Defining Value Mapping Details Depending on Employee’s Country Grouping [page 127]
Country-specific value mapping details actually map SAP ERP HCM values to the corresponding Employee Central values, depending on the country version.
6.1.5.1 Import Picklists and Picklist Values from Employee Central

You can import picklists and picklist values from Employee Central to the SAP ERP HCM system to use them in Customizing when mapping Employee Central field values to values of SAP ERP HCM fields.

Context

To import picklists, you use the Import of Picklists from Employee Central (ECPAO_PICKLIST_WRITER) program. This program is available in the Import Picklists from Employee Central Customizing step. You can use a transport link to import the picklists from Employee Central. If you run the picklist import programs in an SAP ERP HCM test system or client system, the programs now automatically ask for a transport request, to which the imported picklist report will be assigned. You no longer need to go to a specific customizing activity to transport the entries.

Before you run the picklist writer report, you must set the mode of the picklist file in the view V_ECPAO_CONSTANT. Set “X” for ERP to EC / EC to ERP (BIB): Mode of Picklist File value. If the switch is set to X, then MDF picklist without Option ID is chosen. And if this switch is set to Y, then the new MDF picklist with Option ID is chosen. If you leave the field blank, then the legacy picklist would be chosen.

**Note**

Before starting the migration process, you need to decide which mode of picklist file you want to use. Also you should not change the mode of picklist settings once the Employee Central instance has been already configured for migration.

Procedure

1. Import the picklist file from Employee Central.
   
   Here’s how you download picklist from Employee Central:
   a. Go to the Admin Center and choose the Import and Export Data tool.
   b. Select the action to perform as Export data.
   c. Choose Picklist-Values as the generic object.
   d. Choose No for Include dependencies option.
   e. Choose External Code for key preference.
   f. Click Export.

2. Download the picklists that you want to import from Employee Central and store the picklist file in the comma-separated values (CSV) format on a server or on your local disk.

   Here’s how you download picklists:
   a. Go to the Admin Center and choose the Picklists Management tool.
Note
If you are using legacy picklist, then you will have to choose Picklist Center.

b. Choose Refresh.
c. Choose Export all picklist(s).
d. Choose Submit.
e. Save and extract the exported picklist file.

3. On the selection screen of the ECPAO_PICKLIST_WRITER program, select your Employee Central instance and the picklist file that you want to upload.

![Import of Picklists from Employee Central](image)

Figure 16: Selection Screen of Picklist Import Program

4. Enter the locale of the picklist labels that you want to import.

Only the labels of the locale you enter here are imported. The labels listed for other locales are ignored. You can only choose one locale.

Example
If you enter `en_US`, the labels Female and Male are imported for the gender picklist. All other labels of this picklist, such as Femenino and Masculino for locale es_ES or Femme and Homme for locale fr_FR, are not imported.

We recommend that you use the locale of the user who logs on to Employee Central and replicates the data from SAP ERP HCM.

5. Select the Update Picklist checkbox to import picklists and picklist values.

6. Optional. Carry out a test run of the program to check the data that will be uploaded to SAP ERP HCM.

7. Clear the Test Run checkbox and execute the program to upload the data from the Employee Central picklist file into the following tables:
   - Picklists Imported from Employee Central (ECPAO_PIKLST_ENT)
   - Picklist Values Imported from Employee Central (ECPAO_PIKLST_VAL)
The program generates an SAP ERP HCM ID for each picklist. This ID is used as the unique key to identify each picklist without ambiguity in the SAP ERP HCM system. Now you need to maintain only the external code, and the system automatically generates the option IDs.

**Example**

248 could be the SAP ERP HCM picklist ID that is generated for the *addressType* picklist.

**Optional**: To delete picklists and picklist values that you have imported to the SAP ERP HCM system, select the *Delete Picklist* checkbox and execute the program.

**Note**

You can’t delete picklist values in the SAP ERP HCM system that you have already used for value mappings because your value mappings might become invalid. You are shown an error message if you try to delete picklist values that are used for value mappings.

**Results**

You are now ready to use the picklists and picklist values in the next Customizing steps when you define value mappings.

**Task overview**: Defining Value Mappings [page 118]

**Related Information**

Defining Value Mapping Entities [page 121]
Defining Value Mapping Details [page 125]
Defining Value Mapping Details Depending on Employee’s Country Grouping [page 127]

## 6.1.5.2 Defining Value Mapping Entities

A value mapping entity combines a set of value mappings for a specific purpose (for example, gender code value mappings).

**Context**

You define value mapping entities in the *Define Value Mapping Entities* Customizing step (view V_ECPAO_VALUENTY). The easiest way to create value mapping entities is to copy the sample entities by choosing the *Copy Sample Value Mapping* pushbutton. You can also create country specific value mapping
entries and create a new value mapping entity using the Create Value Mapping Entity and Define Ctry. Spec. Value Mapping Entries pushbuttons from the primary mapping details screen.

Figure 17: Copy Sample Value Mapping

Tip
If you want to check first which sample value mapping entities are available, choose the Show Sample Value Mapping pushbutton.

Figure 18: Create Value Mapping Entity/Define Country Specific Value Mapping Entries

You'll get a list of all standard entities provided for the integration, which you can adjust to your needs.
During the employee replication from Employee Central, the value mapping type Organizational Object Keys from Mapping Table is considered for mapping of organizational objects like Position, Departments, Divisions etc. When these types are maintained in the value mapping entity, the data replication uses the mapping from SFIOM_KMAP_OSI key mapping table. This table maps the keys of organizational objects (such as divisions or job classifications) from Employee Central to organizational object IDs (such as organizational unit IDs or job IDs) from ERP. For value mapping entities with this mapping type, you need not enter the Employee Central and ERP values that are to be mapped in the Define Value Mapping Details Customizing activity. Instead, the replication uses the mapping that is defined in the key mapping table. When this value mapping type is assigned, the type of the related object (for example, Business Unit) also needs to be specified (column ‘EC Org. Object Type’ in the maintenance view).

Procedure

1. To create a value mapping entity from scratch, enter a name and description. If you want to use a standard entity, you need to keep its name, but you can adjust the description.

2. Specify how the values are to be mapped. If you want to use a standard entity, we recommend that you use the suggested mapping types.
   ○ Picklist mapping using the External Code field from the picklist
     Use this type if the picklist value you want to map is an External Code. This is the case for most of the picklists.

3. To make available picklist values you’ve imported to the SAP ERP HCM system from Employee Central in the value mapping details, assign a picklist to the value mapping entity.
This enables you to choose the imported picklist values in the Employee Central Key field when you actually map the values. If you don’t assign a picklist, you can still enter keys in the Employee Central Key field, but you can’t choose from the imported picklist values.

4. To make available input help values from an infotype field in the value mapping details, specify the SAP ERP HCM value help.

This is a combination of the technical name of the infotype table (such as PA0002) and the technical name of the infotype field (such as GESCH), connected with a hyphen (as in PA0002-GESCH). This means that you can choose the input help values from the Gender Key (GESCH) field of the Personal Data (0002) infotype in the ERP Key field when you actually map the values. It does not mean that you can only use the value mapping entity for the GESCH field. If you want to use a sample entity, we recommend that you use the suggested SAP ERP HCM value helps.

Results

You are now ready to map the actual Employee Central and SAP ERP HCM values in the next Customizing steps, where you define the value mapping details.

Task overview: Defining Value Mappings [page 118]
6.1.5.3  Defining Value Mapping Details

The value mapping details actually map SAP ERP HCM values to the corresponding Employee Central values.

Procedure

1. Go to the Define Value Mapping Details Customizing activity (view V_ECPAO_VALENTY).
2. Map SAP ERP HCM keys and the corresponding Employee Central keys.

   If the value mapping entity has a picklist ID and a SAP ERP HCM value help assigned, you can select suitable picklist values in the EC Key field and corresponding input help values in the ERP Key field.

   ![Figure 23: Choose SAP ERP HCM Key for Value Mapping](image)
You can also enter the wildcard * in the ERP Key field. If only the wildcard is defined in the value mapping details, any SAP ERP HCM value will be mapped to the Employee Central key for the field that uses this value mapping entity. If the wildcard is defined in addition to specific SAP ERP HCM keys, the system first checks for the specific keys. If an Employee Central key is mapped to a specific SAP ERP HCM key, this mapping is used. For all other SAP ERP HCM values, the Employee Central key mapped to the wildcard is used.

**Results**

The data extraction programs can now use the value mappings. When extracting data, they will replace the SAP ERP HCM keys by the assigned Employee Central keys if a value mapping is defined for the corresponding field mapping. If no value mapping is available, they won’t map any values for the specific field and use the values from SAP ERP HCM as they are.

**Task overview:** Defining Value Mappings [page 118]

**Related Information**

- Import Picklists and Picklist Values from Employee Central [page 119]
- Defining Value Mapping Entities [page 121]
- Defining Value Mapping Details Depending on Employee’s Country Grouping [page 127]
6.1.5.4 Defining Value Mapping Details Depending on Employee's Country Grouping

Country-specific value mapping details actually map SAP ERP HCM values to the corresponding Employee Central values, depending on the country version.

Procedure

1. Go to the Define Value Mapping Details Depending on Employee's Country Grouping Customizing activity (view V_ECPAO_VALENTYC).
2. Map SAP ERP HCM keys and the corresponding Employee Central keys as described in the previous section, and additionally assign ISO codes.

Results

The data extraction programs can now use the value mappings. When extracting data, they will replace the SAP ERP HCM keys by the assigned Employee Central keys if a value mapping is defined for the corresponding field mapping. If a suitable country-specific value mapping is defined for the ISO code that corresponds the employee’s country grouping (MOLGA), they will use this mapping. If no country-specific value mapping is available, they'll use the country-independent value mapping. If no value mapping is available, they won’t map any values for the specific field and use the values from SAP ERP HCM as they are.

Task overview: Defining Value Mappings [page 118]

Related Information

Import Picklists and Picklist Values from Employee Central [page 119]
Defining Value Mapping Entities [page 121]
6.1.6 Defining Custom Employee Central Entities for Employee Data Entities

An Employee Central entity represents an entity from Employee Central, such as an OData entity, or a generic object (also known as MDF entity). You only need to define custom Employee Central entities if you want to transfer data to SAP ERP HCM for which SAP hasn’t provided a default entity.

Context

In the Define Additional Employee Central Entities for Employee Data Customizing activity (view V_ECPAO_ECTMPL) you can also see the default entities defined by SAP. If the default entities suit your requirements, there’s no need to define any custom entities.
To define custom Employee Central entities carry out the steps described below for each entity that you add.

**Procedure**

1. Define the basic settings.
   a. Enter a unique entity ID and a description. The ID has to be in the customer namespace, which means that it has to start with a number (0* - 9*). You can enter any description.
b. Enter the entity name. You must use the exact name of the corresponding entity in Employee Central.

To find out about the name for OData entities and generic objects, go to the Admin Center and choose the OData API Data Dictionary tool.

c. If you want to be able to assign your Employee Central entity to several transformation templates, select the Multiple Use checkbox.

d. Specify if the Employee Central entity is effective dated.

   i Note
   If you define a cutoff date for a transformation template group in the Define Field Mapping for Employee Data Customizing step, this date influences effective-dated and non-effective dated entities in different ways.

   e. If your entity should inherit the metadata that you upload for another Employee Central entity, specify the entity that is to be used as the metadata basis.

   i Note
   If you make an entry in this field for an Employee Central entity, you can't import metadata for this entity. You can only import metadata for the Employee Central entity that you've entered, meaning the entity from which the metadata is to be inherited.

   ❖ Example
   The Dependent Biographical Information entity inherits metadata from the Biographical Information entity. This means it uses the same data model comprising fields such as date-of-birth, country-of-birth, or place-of-birth. You need to import the metadata for the Biographical Information entity only and can then reuse it for the Dependent Biographical Information entity. You can't import metadata for the Dependent Biographical Information entity.

   f. Optional: Specify the Employee Central field (such as effectiveStartDate) in which the start date is stored for the corresponding entity and which is to be mapped to the Start Date (BEGDA) field in SAP ERP HCM.

   g. Optional: Specify the Employee Central field (such as endDate) in which the end date is stored for the corresponding entity and which is to be mapped to the End Date (ENDDA) field in SAP ERP HCM.

   h. CE API Segment: Specify the Compound Employee API segment to makes sure that the correct segment of the API is used when replicating employee data from Employee Central based on the settings made for the corresponding Employee Central template in the ERP system.

2. Define infotype-specific settings.

   a. Specify the SAP ERP HCM infotype that is required for your Employee Central entity to be able to use it for a proper field mapping. The infotype you specify in this field is used by the SAP ERP HCM system to check if the necessary field mapping is defined.

   ❖ Example
   The Personal Data (0002) infotype is required for the Personal Information entity in Employee Central. You can't transfer any data from SAP ERP HCM to this entity if you haven't defined a mapping for any of the infotype fields.

   b. Only for Employee Central entities defined by SAP: An infotype can be specified that requires a special mapping (such as the Date Specifications (0041) infotype).
c. If you need a special processing for the Employee Central entity, specify the processing mode you need. The processing mode refers to the infotype you enter in the next step. The following processing modes are available:
   ○ Repetitive Structure Mapping
   ○ Object Identification Mapping
   ○ Only for Employee Central entities defined by SAP: Time Constraint 3 Mapping
d. Enter the SAP ERP HCM infotype for which a special processing is needed.
e. If you’ve selected the Object Identification Mapping processing mode, specify the object identification (OBJID) field for which a unique key needs to be generated.
f. If you’ve selected the Repetitive Structure Mapping processing mode, specify a structure that contains the fields for which you want to use the repetitive mapping.

6.1.7 Importing Sample Customizing for Employee Data Into Your Working Client in the SAP ERP HCM System

We provide sample template groups, which are defined for the Employee Central company SBS_MODEL in the delivered sample Customizing. Here’s how to use the sample Customizing.

Context

You can copy the delivered sample Customizing and use it as an example for your own field mappings. The sample Customizing is contained in the SAP reference client (000) and needs to be copied into other clients.

To copy the entries delivered by SAP to the working client that you use in your SAP ERP HCM system, carry out the steps described below.

i Note

We also provide sample content, which contains configurable standard field mappings, Define Field Mapping for Employee Data Customizing step. When you define a field mapping there, you can easily copy these standard field mappings using a pushbutton and then adapt them if necessary.

Procedure

1. Create an RFC connection from client 000 (the comparison client) to your working client.
   a. Log on to client 000.
   b. Go to the Configuration of RFC Connections (SM59) transaction.
   c. Create an ABAP connection to your working client.
   d. Log off from client 000.
2. Copy the view and view cluster entries from client 000 to your working client.
   a. Log on to your working client.
b. Go to the *Maintain Table Views* (SM30) transaction.

c. Enter the view name and click *Maintain*. These are the views that contain default Customizing settings:
   - V_ECPAO_COMPANY
   - V_ECPAO_FLD

   **i Note**
   This Customizing view is only used for displaying data. Entries in this view can’t be made directly, but only using the metadata import programs.

   - V_ECPAO_TEMPLSET: from the VC_ECPAO_MAP view cluster
   - V_ECPAO_ERPTEMPL: from the VC_ECPAO_MAP view cluster
   - V_ECPAO_FLDMAP: from the VC_ECPAO_MAP view cluster

   The other Customizing views don’t contain any default Customizing settings.

d. For each Customizing view, choose *Utilities > Adjustments*.

e. Select the RFC connection that you have created in step 1.

f. Select the entries listed below and click *Adjust*.

   These are the default entries that you need to copy:
   - V_ECPAO_COMPANY: SBS_MODEL company
   - V_ECPAO_FLD: SBS_MODEL company
   - V_ECPAO_TEMPLSET: template groups that are assigned to the SBS_MODEL company
   - V_ECPAO_FLDMAP: all entries that are assigned to the template groups and templates you have selected before

g. Click *Copy All Entries*, then save your changes.

### 6.1.8 Creating a Transformation Template Group for Employee Data

A template group bundles all field mappings that you want to use when transferring data from Employee Central to SAP ERP HCM.

**Context**

To define template groups, you go to the *Transformation Template Groups* view of the VC_ECPAO_MAP view cluster. You can access this VC_ECPAO_MAP view cluster by the customizing activity *Define Field Mapping for Employee Data* at Personnel Management > Integration with SuccessFactors Employee Central > Business Integration Builder > Employee Data Integration > Define Field Mapping for Employee Data.
Procedure

1. Enter a name and description for the transformation template group.
2. Assign it to the Employee Central company defined in the Specify Employee Central Company ID Customizing activity.
3. Choose Web Service Transfer as the communication channel for the transformation template group to transfer data using a Web service call.
4. Select the sample content that you want to use for your transformation template group. We provide sample content for different use cases.
5. Define an earliest transfer date.

   You can specify this date to start employee data replication at a specific point in time. This prevents the complete history of data records being replicated from Employee Central to SAP ERP HCM. If you define an earliest transfer date for a transformation template group, this date influences effective-dated and non-effective dated templates in different ways.

Results

You are now ready to define templates for your transformation template group.
6.1.9 Defining Templates to Map Employee Data Fields

The transformation template is the counterpart of the Employee Central entity. You can map fields from the transformation template to fields from the assigned Employee Central entity.

**Context**

To define a set of transformation templates for each transformation template group, you go to the Transformation Templates view of the VC_ECPAO_MAP view cluster. You can access this VC_ECPAO_MAP view cluster by the customizing activity Define Field Mapping for Employee Data at Personnel Management Integration with SuccessFactors Employee Central Business Integration Builder Employee Data Integration Define Field Mapping for Employee Data.

Figure 29: Transformation Templates Assigned to a Transformation Template Group

Figure 30: Details of an Transformation Template

**iNote**

If you want to map managers from SAP ERP HCM to the Job Relationship template in Employee Central, you need a separate transformation template for each type of manager. You could, for example, define the...
transformation templates ERP_JOBREL_CUSTOM (Job Relationship - Custom Manager) and ERP_JOBREL_MATRIX (Job Relationship - Matrix Manager).

These are the settings that you need to make for each transformation template you define:

Procedure

1. Enter a name and description for the template.
2. Select the Is Active checkbox to define that the template is to be used for data extraction.
3. Assign one of the default Employee Central entities or a custom Employee Central entity that you’ve created before.

6.1.10 Defining Field Mapping for Employee Data

To enable the data replication programs to extract the right Employee Central fields information for the right SAP ERP HCM fields, you need to map Employee Central fields to SAP ERP HCM fields.

To map fields, you go to the Define Field Mapping for Employee Data Customizing step, which has the VC_ECPAO_MAP view cluster assigned. The configuration in this view cluster is done in several steps:

1. You create at least one transformation template group. A transformation template group bundles all field mappings that you want to use when running the data extraction program. This is the entity that you specify on the program selection screen. From the transformation template group the data extraction program determines all information it needs to replicate data from Employee Central fields and map it to SAP ERP HCM field IDs.
2. You create all the required mandatory transformation template for your template group. The transformation template groups information from the SAP ERP HCM system that belongs together logically. It is the SAP ERP HCM counterpart of the Employee Central entity. For more information on the mandatory template, refer to Mandatory templates required for successful replication topic.
3. You define a primary mapping for each of your transformation templates. This means you choose Employee Central fields from the Employee Central template assigned to the transformation template, and you map suitable SAP ERP HCM fields to these Employee Central field IDs.
4. If you need an additional field mapping, for example for country-specific fields, you also define a secondary field mapping.

Example

The following sample transformation template groups are defined for the Employee Central company SBS_MODEL in the delivered sample Customizing:

- SBS_MODEL_WS
  This is an example for data replication using the Web Service Transfer communication channel.

You can copy the transformation template group to your Employee Central company and change the field mapping of the transformation templates to suit your requirements.
We also provide sample content, which contains configurable standard field mappings, in Primary Mapping of the Define Field Mapping for Employee Data Customizing step. When you define a field mapping there, you can easily copy these standard field mappings using a pushbutton and then adapt them if necessary. This is a different kind of sample content than the transformation template groups, templates, and field mappings contained in the delivered sample Customizing.

Defining the Primary Field Mapping for Employee Data [page 136]
You can choose Employee Central fields from the Employee Central metadata that you’ve uploaded to the SAP ERP HCM system, and you map suitable SAP ERP HCM fields to these Employee Central fields and define additional transformations if needed.

If Needed, Define a Secondary Field Mapping [page 139]
If you need an additional field mapping, for example for country/region-specific fields, define a secondary mapping.

Defining the Subtype Field Mapping [page 143]
This section describes how to map the subtype field when applicable for a particular infotype in a BiB configuration.

How to Use the Sample Content for Employee Data [page 143]
We provide sample content for different use cases in the Define Field Mapping for Employee Data Customizing step, which you can copy and adapt to your needs.

6.1.10.1 Defining the Primary Field Mapping for Employee Data

You can choose Employee Central fields from the Employee Central metadata that you’ve uploaded to the SAP ERP HCM system, and you map suitable SAP ERP HCM fields to these Employee Central fields and define additional transformations if needed.

Context

To define a field mapping for each transformation template, you go to the Primary Mapping view of the VC_ECPAO_MAP view cluster. An easy way to define your field mapping is to copy the sample content we provide and adapt it to your requirements. You can use the sample content that you’ve selected for your transformation template group.

Figure 31: Sample Content Options in Primary Mapping View

Choose Show Sample Primary Mapping to check which sample content is available.
Choose Copy Sample Content to copy the sample field mappings. This includes primary mappings as well as secondary mappings (if available).

If you want to define your own field mapping, here’s how to do this:

**Procedure**

1. Choose an Employee Central field from the assigned Employee Central entity.

   **i Note**
   
   Make sure that you have imported the metadata for this Employee Central entity to the SAP ERP HCM system using the metadata import program. Otherwise no fields are available here.

2. Map each Employee Central field to an SAP ERP HCM field using a suitable mapping mode:
   - When you select the mapping mode Infotype Mapping, you assign an infotype or subtype field in the primary mapping. You can use fields from the Personnel Administration infotypes for field mapping. Some infotypes require a special processing such as:
     - Repetitive mapping: If you enter an infotype such as Basic Pay (0008), for which a repetitive mapping is needed, you can’t make entries in the Infotype Field field. Instead, the Repetitive Field field is displayed. Here you can select the infotype field for which you want to use a repetitive mapping.
     - Date type mapping: If you enter the Date Specifications (0041) infotype, you can’t make entries in the Infotype Field field either. Instead, the Date Type field is displayed. Here you can select the date type that you want to map.
   - If the value from the Employee Central needs to be converted into a SAP ERP field value, enter the value mapping entity that you have defined in the Define Value Mapping Entities Customizing step.

   **Example**
   
   You might want to map the Employee Central address type Home Address to the the SAP ERP HCM address type Permanent Address.

   **Caution**
   
   If the EC Field Has Picklist flag is set for the Employee Central field that you have imported to SAP ERP HCM in the Import Metadata from Employee Central Customizing step, you need to assign a value mapping entity. Otherwise the corresponding infotype field will be filled with wrong data.
You can define the value mappings for this entity directly from here by choosing Define Value Mapping Entries.

Results

If you don’t have any specific requirements, such as mapping country-specific fields, you are now ready to use your field mapping for data replication. Otherwise, define a secondary field mapping in addition.

Task overview: Defining Field Mapping for Employee Data [page 135]
6.10.2 If Needed, Define a Secondary Field Mapping

If you need an additional field mapping, for example for country/region-specific fields, define a secondary mapping.

Context

⚠️ Caution

When a secondary mapping is defined for an SAP transformation template, you cannot clone this template.

To define an additional field mapping for an SAP transformation template, you go to the Secondary Mapping view of the VC_ECPAO_MAP view cluster. An easy way to define a custom secondary mapping is to copy the sample secondary mappings that are provided by SAP and adapt them to your requirements. Sample secondary mappings are available for the following country/regions:

- Argentina
- Australia
- Austria
- Brazil
- Canada
- Chile
- China
- Colombia
- Finland
- France
- Germany
- Hong Kong
- India
- Ireland
- Italy
- Japan
- Malaysia
- Mexico
- Netherlands
- New Zealand
If you need to define field mappings for other countries, you can also copy and adapt the sample content provided for one of these countries.

Choose **Show Sample Secondary Mapping** in the **Primary Mapping** view to check which sample content is available.
Choose **Copy Sample Content** to copy the sample field mappings. This includes primary mappings as well as secondary mappings.

If you want to define your own field mapping, here’s how to do this. You have two options:

### Procedure

1. You can use a linking field.

   This is one of the fields from the infotype or subtype that you have defined in the primary mapping. You can choose the linking field from the value help in the **Secondary Mapping** view. The linking field is dynamically populated based on the infotype or subtype you have specified in the **Primary Mapping** view.
2. You can use the **Country Grouping** (MOLGA) field.

**Related Information**

- Defining the Primary Field Mapping for Employee Data [page 136]
- Defining the Subtype Field Mapping [page 143]
- How to Use the Sample Content for Employee Data [page 143]
6.1.10.3 Defining the Subtype Field Mapping

This section describes how to map the subtype field when applicable for a particular infotype in a BiB configuration.

Value mapping should be performed for such mappings to a valid ERP subtype values if required. The subtypes which will be replicated can be entered either in the primary mapping view or in the cloning views. If the subtype values from Employee Central after value mapping don’t match with the values maintained either in the primary mapping or the cloning view, they will be ignored.

For example, Infotype 0006 has a subtype field ANSSA, so a valid mapping from EC entity has to be configured for ANSSA field. In the EC entity, field addressType is mapped to ANSSA field of IT0006. The valid ERP subtype values can be maintained in the primary mapping or in the cloning views, say only ‘1’ (home address) is maintained. If the addressType value is ‘home’, it has to be converted to ‘1’ by value mapping, otherwise ‘home’ address type will be ignored.

If the infotype does not have a valid subtype field, mapping need not be maintained for the subtype field. The subtype values maintained in the primary mapping or in the cloning views will be directly used as the subtype for such infotypes.

Parent topic: Defining Field Mapping for Employee Data [page 135]

Related Information

Defining the Primary Field Mapping for Employee Data [page 136]
If Needed, Define a Secondary Field Mapping [page 139]
How to Use the Sample Content for Employee Data [page 143]

6.1.10.4 How to Use the Sample Content for Employee Data

We provide sample content for different use cases in the Define Field Mapping for Employee Data Customizing step, which you can copy and adapt to your needs.

i Note

The sample field and value mapping is also available in the form of an editable spreadsheet containing sheets for the different sample content versions. Download this spreadsheet from SAP Help Portal, at http://help.sap.com/hr_ecintegration, under Implement tab in Configuration section.

Use cases

Sample content is available for all employee-related templates apart from: Job Relationships, Payment Information Details USA, Dependent Address, Dependent National ID, and Dependent Global Information.
Sample content is available for these use cases:

**Employee Data EC to ERP: Replication (EE_WS_3)**

Provides field mapping for employee master data to be replicated from Employee Central to SAP ERP HCM system. You can use this sample content to set up a regular Web service-based replication of employee data from Employee Central to SAP ERP HCM system.

- **Note**
  
  This sample content includes field mappings for all entities supported by the standard delivery.

- **Note**
  
  The sample content for the Pay Component Recurring and Pay Component Non Recurring entities does not contain any entries in the Subtype column since each subtype corresponds to a wage type. Wage types are customer-specific, therefore no sample mapping can be provided for them. The sample content for the Dependent ... templates contains entries for the Family Member/Dependents (0021) infotype, but the Subtype column is also empty here. If you want to use the sample content for these entities, copy it and fill in the subtypes.

You can use the cloning feature to define a field mapping for these entities. But make sure that you don’t add a secondary mapping in this case, since templates for which a secondary mapping is defined cannot be cloned.

For a new hire employee, before creating any income tax record (House rent, Section 80 investment, or Section 80C investment) in EC, a successful replication is must. The employee details should be available in the R/3 system before any income tax record is replicated.

**How to proceed**

Here is how to use the sample content provided in the Define Field Mapping for Employee Data Customizing activity:

1. Create a transformation template group and select the sample content that you want to use for it.
2. In your transformation template group, create transformation templates for all entities you want to use and assign the corresponding Employee Central entities.
3. Copy the sample content for each transformation template. Which field mappings are copied depends on the sample content you have selected for the transformation template group.
4. If needed, adapt the copied sample content to suit your requirements. You can, for example, delete mappings you don’t need, change the mapped field, or add new mappings.
5. Make the following additional settings:
   1. If sample value mapping entities are assigned to the sample content you use, but no value mapping details are provided, you need to create corresponding custom value mapping entities and define a suitable value mapping for them.

- **Example**
  
  You use the sample content provided for the Address template. The ADDRESS_BY_WS value mapping entity is assigned to the mapping of the address-type field. A sample value mapping
entity with this name is provided. But no value mapping details are assigned to the ADDRESS_BY_WS value mapping entity. Therefore you go to the Define Value Mapping Entities Customizing activity and create an ADDRESS_BY_WS custom value mapping entity. Then you go to the Define Value Mapping Details Customizing activity and define the values to be mapped for this value mapping entity.

**Note**

Delete the unwanted entries from the sample content.

Once you have made custom entries in the Primary Mapping view (either by copying and adapting the sample content or by making your custom entries from scratch), you can no longer copy the sample content. If you have defined custom mappings and decide that you want to use the mappings provided by the sample content instead, delete the transformation template and create a new template.

If you have already defined field mappings in the previous releases, you can continue to use them without any changes. However, if you want to replace your custom mappings with mappings provided with the sample content, create new transformation templates for all entities for which you want to use the sample mapping. Then continue as described above. Remove your existing transformation templates for the same entities from the transformation template group or clear the Is Active checkbox for them so that the new transformation templates are used instead.

**Parent topic:** Defining Field Mapping for Employee Data [page 135]

**Related Information**

- Defining the Primary Field Mapping for Employee Data [page 136]
- If Needed, Define a Secondary Field Mapping [page 139]
- Defining the Subtype Field Mapping [page 143]
- Implementing Income Tax Declaration for India in Employee Central

### 6.1.11 How to Use the Value Mapping Entity

The value mapping entity that was created previously can be assigned to the primary or secondary mapping of an Employee Central field.

To assign the value mapping entity to the primary mapping, you can enter the value mapping entity in the field for value mapping.
6.12 Formatting the Employee Central Fields by Value Conversion

You can now format the Employee Central fields by using value conversion when replicating the data to Employee Central system.

Before you replicate the data to SAP ERP System, you might have to format the EC field in a transformation template group to a valid ERP value. Value conversion enables you to format the value of the ERP fields by maintaining a sequence of supported operations. This value conversion is performed for the Employee Central fields after the field mapping and the value mapping is done for the Employee Central fields based on the configurations. The conversion supports a set of arithmetic and string operations which can be used in a sequence. You can define the sequence at which the different value conversion operations that needs to be executed. There are two customizing views available, one will be generic value conversion view and the other view is based on country or linking field. The customizing view can be maintained at each Employee Central field level for a particular transformation template.

![Display View "Primary Mapping": Overview](image)

The value conversion for a field is configured in the view cluster under **Generic Value Conversion** and **Country Specific Value Conversion**. Following fields to be maintained while using the conversion logic:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country Grouping</td>
<td>Value of Employee Central linking field (required only in case of country-specific value conversion)</td>
</tr>
<tr>
<td>Seq No</td>
<td>Sequence number for multiple actions, order of actions is based on this number</td>
</tr>
<tr>
<td>CONV_RULE</td>
<td>Supported value conversion rules</td>
</tr>
<tr>
<td>PARAMETER_1</td>
<td>Parameter 1 for rule (function of parameter depends on rule selected)</td>
</tr>
</tbody>
</table>
Watch this how-to video about how to perform value conversion for Employee Central fields:

The Employee Central field after the formatting based on the value conversion would be replicated to the corresponding infotype field.

**Note**
If you want to enter a single-space character in the view cluster, you must use `<nbsp>`.

**Caution**
"_" alone is not supported while using value conversion rules.

**Example**

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
<td>1</td>
<td>Replace using patterns with string/EC field</td>
<td>(.*)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$_1</td>
<td>_Test</td>
<td></td>
</tr>
</tbody>
</table>

**Note**
In the parameter fields, you can only enter the Employee Central fields and you will not able to directly use an infotype field as a parameter in the value conversion rules. In case you need to perform some operations based on an infotype field, then you will have to first map another Employee Central field of that template to the infotype field and then use this new Employee Central field as a parameter in the value conversion. Both these EC field values would be transferred to Infotype field.

Operations supported for value conversion:

**Arithmetic operations - Multiplication with a number**

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value to be multiplied with</td>
<td>Nil</td>
<td>Nil</td>
<td>Multiply with a constant value.</td>
</tr>
</tbody>
</table>
### Replace using patterns with string/Employee Central field

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern (any standard Regular expression)</td>
<td>Constant string</td>
<td>Employee Central field Id</td>
<td>Replace the characters in Employee Central field value matching the pattern entered in Parameter1 with the constant string or the value of another Employee Central field</td>
</tr>
</tbody>
</table>

#### Example

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>First_Middle-Surname</td>
<td>1</td>
<td>Replace using patterns with string/EC field</td>
<td></td>
<td>/</td>
<td>First/Middle-Surname</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Replace using patterns with string/EC field</td>
<td>-</td>
<td>\</td>
<td>First/Middle\Surname</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Replace using patterns with string/EC field</td>
<td>Middle</td>
<td> </td>
<td>First/\Surname</td>
</tr>
</tbody>
</table>

#### Tip

For more information on Regular Expression, see [ABAP - By Theme > Process Internal Data > Byte String and Character String > Regular Expressions](#) in the ABAP keyword documentation. For testing the regular expression, you can use the report program [DEMO_REGEX_TOY](#).

### Append with string/EC field

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String/Character to be used as separator</td>
<td>Constant String</td>
<td>Employee Central field Id</td>
<td>Concatenate the Employee Central field value with the constant string/EC field in parameter3 by suffixing the Employee Central field separated by the characters in Parameter1</td>
</tr>
</tbody>
</table>

Replicating Employee Master Data and Organizational Assignments from Employee Central to SAP ERP HCM

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Replicating Employee Master Data
### Example

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Parameter for EC Field</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCD</td>
<td>1</td>
<td>Append with string/EC field</td>
<td>1234</td>
<td></td>
<td></td>
<td>ABCD1234</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Append with string/EC field</td>
<td></td>
<td>Test</td>
<td></td>
<td>ABCD1234/Test</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Append with string/EC field</td>
<td></td>
<td>10</td>
<td></td>
<td>ABCD1234/Test/\text{Test/string1}</td>
</tr>
</tbody>
</table>

### Adjust string to length

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for EC field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length to be adjusted to</td>
<td>Filler characters to be used in case the EC value length is less than the parameter1</td>
<td>Nil</td>
<td>Adjust the Employee Central field value to a fixed length, which can be either shorter or greater than the original length and fill with characters in case the length of the value is less that the fixed length.</td>
</tr>
</tbody>
</table>

### Example

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCD</td>
<td>1</td>
<td>Adjust string to length</td>
<td>10</td>
<td>X</td>
<td>ABCDXXXXXXX</td>
</tr>
</tbody>
</table>

### Prepend with string/Employee Central field

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for EC field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String/Character to be used as separator</td>
<td>Constant String</td>
<td>EC field Id</td>
<td>Concatenate the Employee Central field value with the constant string/Employee Central field in parameter3 by prefixing the Employee Central field separated by the characters in Parameter1.</td>
</tr>
</tbody>
</table>
### Replace with string/EC field

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for EC field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Constant string</td>
<td>EC field Id</td>
<td>Replace the Employee Central field string value irrespective of the content with the constant string or the value of another EC field.</td>
</tr>
</tbody>
</table>

### Split before string/character

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String/character to be used for splitting</td>
<td>Nil</td>
<td>Nil</td>
<td>Split at the first occurrence of the string/character in parameter1 and return the substring before parameter1.</td>
</tr>
</tbody>
</table>

### Example

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCD</td>
<td>1</td>
<td>Prepend with string/EC field</td>
<td>-</td>
<td>Test</td>
<td>Test-ABCD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCD-Test</td>
<td>1</td>
<td>Split before string/character</td>
<td>-</td>
<td></td>
<td>ABCD</td>
</tr>
</tbody>
</table>
**Split after string/character**

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String/character to be used for splitting</td>
<td>Nil</td>
<td>Nil</td>
<td>Split at the first occurrence of the string/character in parameter1 and return the sub-string after parameter1.</td>
</tr>
</tbody>
</table>

**Example**

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCD-Test</td>
<td>1</td>
<td>Split after string/character</td>
<td>-</td>
<td></td>
<td>Test</td>
</tr>
</tbody>
</table>

**Edit using pattern**

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mask</td>
<td>Nil</td>
<td>Nil</td>
<td>Simple insertion of characters/strings at specific positions of Employee Central field string Eg:- AAABBBCC, to convert this into a string like – AAA-BBB/CCC, mask can be given as : <em><strong>:</strong></em>/___ Each underscore represents a character of the incoming string and final output string will have the additional characters given in mask .</td>
</tr>
</tbody>
</table>

**Example**

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AABBCCDD</td>
<td>1</td>
<td>Edit using pattern</td>
<td><em><strong>:</strong></em>/<em><strong>+</strong></em></td>
<td></td>
<td>AA:BB/CC+DD</td>
</tr>
</tbody>
</table>
### Check and Replace

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String value to be compared with</td>
<td>String value to be used for replacement</td>
<td>ID of the EC field to be used for comparison</td>
<td>Replaces the value of an EC field with a constant string based on the value of another field under the same EC entity.</td>
</tr>
</tbody>
</table>

**Example**

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for EC field</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABCD</td>
<td>1</td>
<td>Check and Replace</td>
<td>X</td>
<td>TEST</td>
<td>10</td>
<td>TEST</td>
</tr>
</tbody>
</table>

**Note**

Check and Replace operation is supported only when you replicate the data to SAP ERP HCM.

### Check and Remove

<table>
<thead>
<tr>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for Employee Central field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String to be compared with</td>
<td>Not valid</td>
<td>EC field id of the field to be used for comparison</td>
<td>Remove the EC payload records during replication which are not valid for a transformation template based on a condition.</td>
</tr>
</tbody>
</table>

**Example**

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter 1</th>
<th>Parameter 2</th>
<th>Parameter for EC Field</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEST</td>
<td>1</td>
<td>Check and remove</td>
<td>X</td>
<td>10</td>
<td>Payload record removed if the EC field 10 value is &quot;X&quot;</td>
<td></td>
</tr>
</tbody>
</table>

**Note**

Check and Remove operation is supported only when you replicate the data to SAP ERP HCM. This rule is also not supported when migrating organizational data to Employee Central.
### Sample scenario with multiple operations

<table>
<thead>
<tr>
<th>EC field value</th>
<th>Sequence number</th>
<th>Operation</th>
<th>Parameter1</th>
<th>Parameter2</th>
<th>Parameter for Employee Central field</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA-BB/CC</td>
<td>1</td>
<td>Split before string/character</td>
<td>&lt;nbsp&gt;</td>
<td></td>
<td></td>
<td>AA-BB/CC</td>
</tr>
<tr>
<td>Test_string</td>
<td>2</td>
<td>Replace using patterns with string/EC field</td>
<td>/CC$</td>
<td></td>
<td></td>
<td>AA-BB</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Append with string/EC field</td>
<td>+</td>
<td>10</td>
<td></td>
<td>AA-BB+string1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Prepend with string/EC field</td>
<td>/</td>
<td>Constant</td>
<td></td>
<td>Constant/AA-BB+string1</td>
</tr>
</tbody>
</table>

**Note**
Assuming that the value for the EC field is `string1`.

### 6.1.13 Cloning Transformation Templates

Cloning a transformation template means that you reuse the field mapping you define for an infotype and subtype in the `Primary Mapping` view of the `VC_ECPAO_MAP` view cluster for some or all subtypes of this infotype.

**Prerequisites**

Define the field mapping for the transformation template using `VC_ECPAO_MAP` view cluster.
**Context**

You can define the infotypes to be cloned and their subtypes in the *Clone SAP Transformation Templates* Customizing section.

**Example**

This is useful for the *Recurring Payments/Deductions* (0014) and *Additional Payments* (0015) infotypes since each wage type is itself a subtype of these infotypes. Using the cloning feature, you can use the same field mapping for all or some of these wage types. The cloning feature is also useful for infotypes such as *Addresses* (0006), which has, for example, subtypes for the home or mailing address, or *Communication* (0105), which has, for example, subtypes for the business phone number or private phone number.

**Procedure**

1. Define which infotypes are relevant for cloning transformation templates and for which subtypes of these infotypes you want to clone the corresponding templates in the *Define Infotypes and Subtypes for Cloning Transformation Templates* Customizing activity (*V_ECPAO_CLN_INTY* view).
   - Select the transformation template group and transformation template.
   - Enter the infotype and subtype. Repeat this for all subtypes for which you want to clone the corresponding transformation template.

2. Define which infotypes (primary or secondary) are relevant for cloning transformation templates and for which country-specific subtypes of these infotypes (primary or secondary) you want to clone the corresponding transformation templates in the *Define Country-Specific Infotypes and Subtypes for Cloning Transformation Templates* Customizing activity (*V_ECPAO_CLN_CINT* view).
   - Select the transformation template group and transformation template.
   - Enter the country grouping, the infotype, and the subtype. Repeat this for all subtypes for which you want to clone the corresponding transformation template.

**Note**

While performing cloning for the dependent template, make sure that the number of clone subtypes defined for Person Relationship (WS_19) should be the same as the number of clone subtypes for Biographical Info for dependents (WS_2_DEP). For more information on dependent template, see *How Object Identification Mapping Works*. Cloning will not be successful for all dependents if all the subtypes of infotype 21 are not cloned for all the dependent related EC entities.

**Example**

In the view cluster you can now configure a transformation template using both primary infotype and the corresponding secondary infotype. Consider the primary infotype 0021 and secondary infotype 0106 (secondary infotype of 0021 for US). You can now clone this in the *V_ECPAO_CLN_CINT* view for the required subtypes using the primary infotype 0021, which would clone the transformation template for all the fields (fields using both 0021 and 0106 would be cloned).
Results

Once a transformation template group has been configured for a subtype cloning using the views ECPAO_CLON_INTY and ECPAO_CLON_CINTY, then the Clone Infity and Ctry Clone Infity will be enabled at the transformation template level. This will help you to identify which type of clone infotype was configured for that transformation template without going into the primary mapping details screen.

Next Steps

If you want to define a different field mapping for a specific subtype of an infotype, don’t enter it in the Customizing activities listed above. Instead, define a separate transformation template for this combination of infotype and subtype in the VC_ECPAO_MAP view cluster.

6.1.14 Filtering of Infotype and Subtype for Employee Central

You can define the infotypes and subtype, which should be ignored during the replication process at the country grouping level based on the work-force. If you are replicating an employee without setting the infotypes and sub-types, all the data mapped in the mapping table would be replicated.

Procedure

1. Go to the Define Filtering of infotype and subtype for Employee Central Customizing activity (view V_ECPAO_IT_FILT).
2. Enter the infotype field.
3. Enter the subtype.
4. Enter the country grouping.

   i Note
   Wildcard (*) characters are supported for both country grouping and subtype. If you enter wildcard *, all subtypes or country grouping would not be replicated. In addition, you can also enter a specific subtype and country grouping for which you don’t want the data to be replicated.

5. Enter the work-force category.

   The type of workforce will determine if the employee in the current scope is a contingent worker or a normal employee.

   i Note
   V_ECPAO_IT_FILT table would act as a negative list of infotypes, which would be ignored during the replication process. Any infotypes/subtypes that is entered in this list would be ignored during the replication process based on the country grouping and workforce category.
### 6.1.15 Mandatory Templates Required for a Successful Replication

For the successful replication of the employee data using BiB, you will have to active some of the templates.

Below is the basic configuration that needs to be setup to enable the Business Integration Builder. Certain transformation templates are to be mandatorily activated in the view cluster to replicate Employee Central employee to ERP PERNR. The mandatory transformation templates are:

- **WS_2** (Biographical Info Template for Web Service)
- **WS_3** (Employment Info Template for Web Service)
- **WS_4** (Job Info Template for Web Service)
- **WS_5** (Personal Info Template for Web Service)
- **WS_11** (Compensation Template for Web Service)

No field mapping is required for these two entities.

Mandatory SAP ERP Infotypes:

- **IT0000**
- **IT0001**
- **IT0002**

This mandatory basic configuration successfully replicates an EC employee to ERP PERNR for hiring and updating the existing PERNR. Apart from these basic settings, configuration can be enhanced further with more templates and infotypes to extend the scope of replication.

### 6.1.16 How to Have the Sample Configuration for Employee Data Replication Generated Automatically

You can automate some of the configuration steps required for setting up employee data replication.

Using the tool to automate the configuration of EC data integration/replication to ERP 
ECPAO_EC_TO_ERP_REPL, you can have the basic business configuration for the default employee data (Biographical, Employment, Job Info, Personal Info, Compensation) generated automatically.

The program makes the following settings:

- It creates the Employee Central instance you specify on the selection screen.
- It defines the default locale to be used for this Employee Central instance, based on what you enter on the selection screen.

**i Note**

Currently only en_US locale is supported.
It creates the following mappings of Employee Central locales with SAP ERP HCM language:

**Table 27: Language Mappings**

<table>
<thead>
<tr>
<th>Employee Central Locale</th>
<th>SAP ERP HCM Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>en_US</td>
<td>EN</td>
</tr>
</tbody>
</table>

Value mapping entities existing in `ECPAO_VALENTY_S` (standard table) for a given EC company will be picked.

**Table 28: Value mappings for GENDER_CODE**

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>M</td>
</tr>
<tr>
<td>2</td>
<td>F</td>
</tr>
</tbody>
</table>

**Note**
The values for 1 & 2 corresponds to Male and Female. And the picklist ID which has been used is 'gender'.

**Table 29: Value mappings for LANGUAGE_CODE**

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>External Code</td>
</tr>
</tbody>
</table>

**Note**
External Code is picked from the picklist table, provided that the value mapping entity is `LANGUAGE_CODE` and the value entity type is E in the table `ECPAO_MAP_ENTITY`. The value for E corresponds to English. And the picklist ID which has been used is 'language'.

**Caution**
If you choose a different value mapping entity name or a different value mapping type, then this mapping won’t be created.

**Table 30: Value mappings for NATIONALITY_WS**

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN</td>
<td>EXTERNAL_CODE</td>
</tr>
<tr>
<td>US</td>
<td>EXTERNAL_CODE</td>
</tr>
</tbody>
</table>
Note
The external code is picked from the picklist table, provided that the value mapping entity is \texttt{NATIONALITY\_WS} and the value entity type is \texttt{E} in the table \texttt{ECPAO\_MAP\_ENTITY}. The values for \texttt{IN} and \texttt{US} corresponds to India and United States. The picklist ID which has been used is \texttt{ISOCountryList}.

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>External Code</td>
</tr>
<tr>
<td>2</td>
<td>External Code</td>
</tr>
<tr>
<td>3</td>
<td>External Code</td>
</tr>
</tbody>
</table>

**Table 31: Value mappings for SALUTATION**

Note
External Code is picked from the picklist table, provided that the value mapping entity is \texttt{SALUTATION} and the value entity type is \texttt{E} in the table \texttt{ECPAO\_MAP\_ENTITY}. The values for 1, 2, & 3 corresponds to Mr., Mrs., & Ms. The picklist ID which has been used is ‘salutation’.

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>External Code</td>
</tr>
<tr>
<td>1</td>
<td>External Code</td>
</tr>
<tr>
<td>3</td>
<td>External Code</td>
</tr>
</tbody>
</table>

**Table 32: Value mappings for MARTIAL\_STATUS\_WS**

Note
External Code is picked from the picklist table, provided that the value mapping entity is \texttt{MARTIAL\_STATUS\_WS} and the value entity type is \texttt{E} in the table \texttt{ECPAO\_MAP\_ENTITY}. The values 0, 1, & 3 corresponds to Single, Married, & Divorced. The picklist ID which has been used is ‘ecMaritalStatus’.

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>HIRNEW</td>
</tr>
<tr>
<td>02</td>
<td>DATACHG</td>
</tr>
<tr>
<td>10</td>
<td>TERRTMNT</td>
</tr>
<tr>
<td>12</td>
<td>REHREH</td>
</tr>
</tbody>
</table>

**Table 33: Value mappings for EVENT\_REASON**
### Note
The value entity type which has been used here is F.

#### Table 34: Value mappings for PAY GROUP WS

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>UB</td>
<td>UX</td>
</tr>
<tr>
<td>US</td>
<td>US</td>
</tr>
<tr>
<td>U1</td>
<td>UM</td>
</tr>
<tr>
<td>UN</td>
<td>UN</td>
</tr>
</tbody>
</table>

### Note
The value entity type which has been used here is F.

#### Table 35: Value mappings for COST_CENTER_WS

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>US01</td>
<td>1000CC_US_BP01</td>
</tr>
</tbody>
</table>

### Note
The value entity type which has been used here is C. The EC Cost center value which has been used here is a dummy cost center. Hence you should change this according to your requirement.

#### Table 36: Value mappings for BUSINESS_UNIT_WS

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td>New_BP_Test2</td>
</tr>
<tr>
<td>0002</td>
<td>ACE_IND</td>
</tr>
<tr>
<td>0003</td>
<td>ACE_IND</td>
</tr>
<tr>
<td>0004</td>
<td>ACE_IND</td>
</tr>
<tr>
<td>0005</td>
<td>ACE_IND</td>
</tr>
<tr>
<td>0006</td>
<td>ACE_IND</td>
</tr>
<tr>
<td>0007</td>
<td>ACE_IND</td>
</tr>
<tr>
<td>0008</td>
<td>ACE_IND</td>
</tr>
<tr>
<td>0009</td>
<td>ACE_IND</td>
</tr>
</tbody>
</table>
### Table 37: Value mappings for DEPARTMENT_WS

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>50000076</td>
<td>IND</td>
</tr>
</tbody>
</table>

**Note**

The value entity type which has been used here is K. The EC department value which has been used here is a dummy department. Hence you should change this according to your requirement.

### Table 38: Value mappings for DIVISION_WS

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td>IND</td>
</tr>
</tbody>
</table>

**Note**

The value entity type which has been used here is K. The EC division value which has been used here is a dummy division. Hence you should change this according to your requirement.

### Table 39: Value mappings for EMPLOYEE_CLASS_WS

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>External Code</td>
</tr>
</tbody>
</table>

**Note**

External Code is picked from the picklist table, provided that the value mapping entity is EMPLOYEE_CLASS_WS and the value entity type is E in the table ECPAO_MAP_ENTITY. And the picklist ID which has been used is ‘EMPLOYEECLASS’.

**Caution**

If you choose a different value mapping entity name or a different value mapping type, then this mapping won’t be created.
### Table 40: Value mappings for EMPLOYMENT_TYPE_WS

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>U0</td>
<td>External Code</td>
</tr>
</tbody>
</table>

**Note**

External Code is picked from the picklist table, provided that the value mapping entity is `EMPLOYMENT_TYPE_WS` and the value entity type is E in the table `ECPAO_MAP_ENTITY`. The value U0 corresponds to Hourly. And the picklist ID which has been used is `employmentType`.

**Caution**

If you choose a different value mapping entity name or a different value mapping type, then this mapping won’t be created.

### Table 41: Value mappings for JOB_CODE

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>00000000</td>
<td>IC-CLNC</td>
</tr>
</tbody>
</table>

**Note**

The value entity type which has been used here is F. The EC job code value which has been used here is a dummy job code. Hence you should change this according to your requirement.

### Table 42: Value mappings for LOCATION

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>US01</td>
<td>US_NY_1001</td>
</tr>
<tr>
<td>US02</td>
<td>US_IL_1001</td>
</tr>
<tr>
<td>US03</td>
<td>US_MA_1001</td>
</tr>
<tr>
<td>US04</td>
<td>US_TX_1001</td>
</tr>
<tr>
<td>USPS</td>
<td>US_CO_1001</td>
</tr>
</tbody>
</table>

**Note**

The value entity type which has been used here is F. The EC location value which has been used here is a dummy location. Hence you should change this according to your requirement.

### Table 43: Value mappings for COMPANY_CODE_CSV

<table>
<thead>
<tr>
<th>SAP ERP Field</th>
<th>EC Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>US01</td>
<td>1710</td>
</tr>
</tbody>
</table>
The value entity type which has been used here is F. The EC company value which has been used here is a dummy company. Hence you should change this according to your requirement.

- It imports the metadata you have downloaded from Employee Central. The metadata file you import needs to hold metadata for the default entities (WS_2, WS_3, WS_4, WS_5, & WS_11). These are the minimum set of templates that are required for you to successfully replicate the employee data. Hence make sure that you are importing these templates using the Import Metadata program.

⚠️ Caution

If you don’t import the following templates: WS_2, WS_3, WS_4, WS_5, & WS_11, the data replication would not be successful. And if you choose only one template and perform the replication, the template group would be created with empty data.

- It imports the picklist files from your local system, which you have already downloaded from the Employee Central system. You can use the imported picklists and picklist values when defining value mappings in Customizing to map Employee Central field values to values of ERP fields.

- It creates a transformation template group, based on the name and description you enter on the selection screen. The template group created contains:
  - The transformation templates that correspond to the default Employee Central entities
  - The field mappings contained in the sample content for these entities

### 6.1.17 Using the Check Tool for EC to ERP Integration Checks

Learn how to use the check tool to find potential issues that have impact on the EC to ERP replication.

#### Prerequisites

Following are the prerequisites that you need to know or perform before you use the check tool.

Enable Metadata Framework.

Assign Access Check Tool and Allow Configuration Export to your role in Role-Based Permissions (RBP). If you want to use the Quick Fix feature for the checks that have it, assign the Allow Check Tool Quick Fix permission too.

- Access Check Tool authorizes users to access the tool.
- Allow Configuration Export authorizes users to attach configuration information to a ticket.
- Some checks have a quick fix, which can be used to immediately correct any issues found by that check. Assign the Allow Check Tool Quick Fix permission to authorize users to run these quick fixes.
Context

The SAP SuccessFactors check tool helps you identify and resolve issues when your system doesn’t work as you expect. When you run the check tool, you can see the list of issues in your configuration or data and the severity of each issue and solution or recommendation to address the issue.

Follow the steps mentioned below to access the Check Tool from the Employee Central Admin Center page. Use the check tool to perform the check in Employee Central for any configuration issues that might impact the integration process.

Procedure

1. Go to Admin Center.
2. In the tools search field, type Check Tool.
3. In Application, select EC ERP Replication.

You see the checks for the application you selected. The description for each check describes the situation you hope to find in running the check. For example, in running the check Employee Central Position Management feature is enabled, you hope to find that the Position Management Switch is indeed enabled.

4. Click the check the box at top left in the table to run all checks.
5. If you want to run only some checks, select them individually.

6. Click Run Checks to check your applications for the checks you selected.

Next Steps

Evaluate the results by checking the results in the Results column and resolve the issues.
6.1.17.1 Checking Validation Switch Status

Use the check tool to check if the required validation switches are enabled.

There are several validation switches that are available in EC which will help you during the integration process.

- Enable Address Validations
- Enable National ID Validations
- Enable Bank Account Validations
- Enable Payment Information Validations

If these switches are enabled, then the tool will provide a success message and if the switches are disabled, then the tool will provide you a warning message to enable the corresponding switch.

The check tool checks if there are any issues for the validation switches and propose a solution. You can then choose the correction and apply the fix for the corresponding switch.

6.1.17.2 Checking Data Model Consistency

Use the check tool to perform the data model comparison to find if there is any mismatch of data model between SAP ERP HCM and Employee Central.

Check tool allows you to perform a comparison of the data model in SAP ERP HCM system and Employee Central system and ensure that the fields and attributes are same in both the systems. This ensures that there is no issues while you perform the Employee Central to SAP ERP HCM integration. The check tool will also perform validation for picklist in Employee Central side and also validate the address entity field attributes and picklist.

6.1.17.3 Checking Employee Central SOAP API Configuration in Provisioning

Some configurations are required to perform replication of data from an Employee Central instance to ERP.

Context

To replicate data from an Employee Central instance to SAP ERP HCM, “EC SOAP API switch is enabled” switch has to be enabled in Admin Center. If the switch is not enabled, the replication will fail.

Procedure

1. Navigate to the Admin Center.
2. Go to Edit Company Settings > Company Settings.
3. Under Web Services flag select the Employee Central SOAP API setting and save your changes.

6.1.17.4 Checking Rule Based Permissions Assignments for Integration Users

Some permissions are required to perform replication of data from an Employee Central instance to ERP or S/4HANA.

Context

In-order to ensure that the integration of data is successful, the users should be checked if they have the necessary permission to perform the integration process. You should check if the necessary role based permissions are assigned to the user with respect to the corresponding integration scenarios.

Before performing the integration make sure than an user is existing with the required permission. Check if the permission category is assigned to at least one user for integration. If the user is exiting with the required permission, then you can go-ahead with the integration process. If no user is existing, then create an user and provide the necessary permission.

Procedure

1. Navigate to the Admin Center.
2. Go to Set User Permissions > Manage Permission Roles.
3. Choose the Permission Role.
4. Click Permission... under Permission settings.
5. Navigate to Administrator Permissions > Employee Central API.
6. Choose all the required permissions.
7. Click Finished.
6.1.17.5 Configuration Checks of Payment Information using Check Tool

Use the check tool to check the configuration settings of payment information.

Context

The check tool for payment information checks if the field attributes in the Employee Central payment information block are consistent with the field attributes in the Configuration Checks of Payment Information using Check Tool infotype or subtype Main Bank information.

Procedure

1. Go to Admin Center.
2. In the tools search field, type Check Tool.
3. In Application, select Employee Central ERP Replication from the drop down list box.
4. Expand the Payment Information Configuration.
5. Select Field Validation and Field Attribute Check and click Run checks.

6.1.17.6 Checking Position Management

Use the check tool to check if position management is enabled in Employee Central.

Context

Position management in SAP SuccessFactors Employee Central has to be enabled for you to replicate organizational assignment of an employee. Hence, you need to enable position management. You can validate the position management configuration by using checktool.

Procedure

1. Go to Admin Center.
2. In the tools search field, type Check Tool.
3. In Application, select Employee Central ERP Replication from the dropdown list box.
4. Expand the Position Management Switch Configuration Status.
5. Select Employee Central Position Management feature is enabled and click Run checks.

6.1.17.7 Checking Birth Date

Use the check tool to ensure the date of birth of employees is valid.

Context

The date of birth validation checks if the date of birth is entered correctly or is missing in the system. The check is successful in case all employees have a valid date of birth and if not a list of employee is generated that do not have a valid date of birth.

Procedure

1. Go to Admin Center.
2. In the tools search field, type Check Tool.
3. In Application, select Employee Central ERP Replication from the dropdown list box.
4. Expand the Data Quality for an Employee.
5. Select Birth Date Validation.
6. Enter the minimum and maximum year range and click Run.

6.1.17.8 Checking Working Days Per Week

Use the check tool to check if the number of working days per week in correctly entered in SAP SuccessFactors Employee Central system.

Context

The working days per week check ensures that all employee have a valid work day entry stored in Employee Central job information that is equal or less than 7.
Procedure

1. Go to Admin Center.
2. In the tools search field, type Check Tool.
3. In Application, select Employee Central ERP Replication from the dropdown list box.
4. Expand the Data Quality for an Employee.
5. Select Working Days Per week should be less than 7 and click Run checks.

6.17.9 Check Results

After you run checks in the check tool, it returns the results of the check so that you can resolve issues that it found.

To see the results of the checks, look in the Result column. If you run the checks multiple times to see how you are resolving issues, look in the Previous Result column to compare the current results to previous results.

Table 44: Possible Results of Check Tool

<table>
<thead>
<tr>
<th>Result</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No issues found</td>
<td>If the tool cannot find issues, you see a green check mark in the Result column.</td>
</tr>
<tr>
<td>Issues found</td>
<td>If the tool finds issues, it reports the number of issues and a yellow warning icon or a red alarm icon.</td>
</tr>
<tr>
<td></td>
<td>• The yellow icon indicates a low severity issue. The system proposes a solution.</td>
</tr>
<tr>
<td></td>
<td>• The red icon indicates a high severity issue. You must take action, which could include creating a support ticket.</td>
</tr>
</tbody>
</table>

Note

- The maximum text size of a cell is limited, which can result in the text being truncated in the Result or Details column. Select the Export Results button to download the check results and view the complete text.
- The downloaded check result table can display a maximum number of 10,000 rows.

6.18 How to Replicate Contingent Workers Specific Details

You can replicate the basic details of a contingent worker details using a template.

Context

You can hire, re-hire, and terminate a contingent worker with work order details.
To define template groups, you go to the Transformation Template Groups view of the VC_ECPAO_MAP view cluster.

Procedure

1. Choose the transformation template group for which you want to add the contingent worker work order details.
2. Select the transformation template group and add WS_EE_WOR EC entity.
3. Go to the primary mapping of the EC entity and add the mapping for vendor to the infotype 0315 and LIFNR infotype field.
4. Go to Generic Value Conversion to replicate only the active period in 0315 infotype. Here you need to choose the conversion rule as Check and remove and set the Parameter 1 as I for the EC field effectiveStatus.
5. Save the configuration to replicate the work order details of a contingent worker.

**Note**

A work order is mandatory for contingent workers in Employee Central. However, there is no corresponding work order object in ERP. Optionally, you can use infotype 0315 (Time Sheet Defaults) to map the vendor ID as described above. For more information about rehiring and converting contingent workers, see the guide Contingent Workforce Management on SAP Help Portal.

6.2 Mapping Types

Take a look at the different mapping types that you can have to make in SAP ERP HCM to enable replication of employee master data from Employee Central.

- **How Repetitive Structure Mapping Works** [page 170]
  Repetitive structure mapping is used for infotypes such as Basic Pay (0008) or Cost Distribution (0027) that use a repetitive structure.

- **Repetitive Structure Mapping of Dates** [page 170]
  Repetitive structure mapping is used for the Date (0041) infotype, which has a repetitive structure.

- **How Date Type Mapping Works** [page 175]
  The Date Specifications (0041) infotype can't use a straightforward field mapping, but has special requirements.

- **How Time Constraint 3 Mapping Works** [page 179]
  Time constraint 3 mapping is used for the infotypes Bank Details (0009), Additional Payments (0015), Additional Off-Cycle Payments (0267), and Additional Actions (0302), which can have overlapping records.

- **How Object Identification Mapping Works** [page 182]
  Object identification mapping is used for infotypes such as Family Member/Dependents (0021) that use the Object Identification (OBJPS) field to make a distinction between data records with the same infotype, subtype, lock indicator, start date, and end date.
How Start Date of Infotypes from Non-Effective Dated EC Entities is Configured [page 185]
You can configure the start date of infotypes generated from the non effective dated Employee Central blocks. This function is supported for infotypes, which are configured only from the non effective dated blocks.

Parent topic: Replicating Employee Master Data [page 110]

Related Information

Preparing the System [page 110]
Business Add-Ins (BAdI) [page 186]
Extensibility [page 187]
Replication of Country/Region-Specific Employee Master Data [page 189]

6.2.1 How Repetitive Structure Mapping Works

Repetitive structure mapping is used for infotypes such as Basic Pay (0008) or Cost Distribution (0027) that use a repetitive structure.

In this kind of infotype, data is entered in table form. The user can enter the data such as wage types or cost distribution items several times. The input line for the data is available several times on the input screen. The structure of the input line is stored in the infotype structure, and the individual fields are numbered.

Without repetitive structure mapping you would have to create a separate SAP transformation template for each repetitive field (for example, for each wage type or cost distribution item that can be entered) to map the fields separately to the corresponding Employee Central field ID’s.

If you use repetitive structure mapping, you only need a single SAP transformation template, which maps the repetitive fields once. There’s no need to create several SAP transformation templates. The data extraction program extracts the wage types or cost distribution items that are stored in an employee’s infotype using the field mapping you have defined once.

6.2.2 Repetitive Structure Mapping of Dates

Repetitive structure mapping is used for the Date (0041) infotype, which has a repetitive structure.

In this infotype, you can enter up to twelve different date types. The structure of the date type line is stored in the infotype structure (P0014), and the individual fields are numbered from one to twelve.

Without repetitive structure mapping you would have to create an SAP transformation template for each date type to map the infotype fields such as DAR01 separately to the corresponding Employee Central fields.
You'd create an ERP_RECURRING_1 template to map the DAR01 and DAT01 fields. You'd create an ERP_RECURRING2 template to map the DAR02 and DAT02 fields. And so on – up to twelve templates.

If you use repetitive structure mapping, you only need a single SAP transformation template, which maps the repetitive fields once. A repetitive structure is needed for this, which comprises the infotype fields to be mapped. This structure needs to be entered in the Repetitive Structure field in the Define Employee Central Templates for Additional Employee Data Entities Customizing step. We provide the default repetitive structure ECPAO_REPETITIVE_ST_IT0041. This structure contains the following fields:

- **Date type** (DAR01)
- **Date for data type** (DAT01)

The ECPAO_REPETITIVE_ST_IT0041 structure is assigned to the Date Specification Custom MDF Object Employee Central entity in the Define Employee Central Templates for Additional Employee Data Entities Customizing step.
In the Define Field Mapping for Employee Data Customizing step, you can now create an SAP transformation template for the mapping of recurring date components. If you assign the Date Specification Custom MDF Objects Employee Central entity to this SAP transformation template, the Repetitive Field entry field is added to the Primary Mapping view. Here you can select a field from the repetitive structure such as Date Type (DAR01) and map it to the Employee Central field ID such as cust_DateType.
There’s no need to create several SAP transformation templates. The data extraction program extracts all date types that are stored in an employee’s Date infotype using the field mapping you have defined once.

If you do not use the repetitive structure mapping as like in the job information or employment information block, you need not mention the repetitive structure in the V_ECPAO_ECTMPL view.
When the repetitive structure is not mapped in the `V_ECPAO_ECTMPL` view, then we have a provision to map the date type in the view cluster for the corresponding primary mapping of infotype ITO041. In addition to this, you should mention the infotype field name. Usually the field name would be the first field, which is getting replicated from EC. In this case, Date of Date type is replicated from the EC side, so we are maintaining DAT01 in the Infotype field.
Start date and original start date is now available for mapping in the VC_ECPAO_MAP view cluster. If these fields are mapped at the view cluster, then the mapping would be considered from the view cluster level. If you have not defined at the view cluster level, then the standard mapping would be considered.

6.2.3 How Date Type Mapping Works

The Date Specifications (0041) infotype can’t use a straightforward field mapping, but has special requirements.

This infotype allows you to enter a user-defined combination of data. It uses a combination of Date Type fields (DAR01, DAR02, and so on) and Date for Date Type fields (DAT01, DAT02, and so on). You can select any date type, such as First Working Day, in any DARnn field and store the corresponding date in the corresponding DATnn field. For another employee, you can use the same combination of DARnn and DATnn fields to store a different type of date. Or you can store the same type of date in a different combination of DARnn and DATnn fields.
This means that you can't map the actual **Date Type** infotype field, such as DAR01, to an Employee Central field, such as *initial-entry-date*, because the infotype field can have different meanings. Instead, you need to be able to map the actual date types, such as *First Working Day*, to the Employee Central field. To support this, a special mapping makes available an additional *Date Type* field in the **Primary Mapping** view of the **Define Field Mapping for Employee Data** Customizing step.

![Figure 46: Primary Mapping for Employment Details Template – Overview Screen](image)

This field provides the input help entries defined for the **Date Type** infotype field so that you can use them for field mapping. The input help is populated from the **Date Types** (T548Y) table that contains standard date
types as well as date types defined in Customizing (for example, in Customizing for Personnel Management under Personnel Administration ➤ Evaluation Basis ➤ Date Specifications ➤ Define Date Type).

Date type mapping can also be used for country-specific fields. Meaning, for SAP ERP HCM templates that use the secondary field mapping.

**Example**

Let’s say you want to map the professionalServiceDate field from Employee Central to different country-specific date types, such as:

- The Adjust service date (U2) date type for the US
- The Probation Expire - NZ (32) date type for New Zealand

![Figure 48: Secondary Mapping for Employment Details Template](image-url)

The mapping of date types is currently used for the Employment Details and Job History Employee Central entities.
The employee data extraction program determines which type of date is stored in which field of an employee’s Date Specifications infotype to transfer this information to the corresponding field of the Employment Details or Job History entity in Employee Central.
6.2.4 How Time Constraint 3 Mapping Works

Time constraint 3 mapping is used for the infotypes Bank Details (0009), Additional Payments (0015), Additional Off-Cycle Payments (0267), and Additional Actions (0302), which can have overlapping records.

Time constraint 3 means that any number of valid records of an infotype can exist at any one time. If several infotype records with the same start date and end date exist, they are assigned different sequence numbers in the Number of Infotype Record With Same Key (SEQNR) field.

Fields from infotypes that have time constraint 3 can be mapped to fields from Employee Central entities that also support overlapping data records. The infotypes listed above, for example, can be mapped to these entities:

Table 45: Entities Supporting Time Constraint 3

<table>
<thead>
<tr>
<th>SAP ERP HCM Infotype</th>
<th>Employee Central Entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Details (0009)</td>
<td>Payment Information Details</td>
</tr>
<tr>
<td>Additional Payments (0015)</td>
<td>Non-Recurring Pay Component</td>
</tr>
<tr>
<td>Additional Off-Cycle Payments (0267)</td>
<td>Non-Recurring Pay Component</td>
</tr>
<tr>
<td>Additional Actions (0302)</td>
<td>Job History</td>
</tr>
</tbody>
</table>

The Time Constraint 3 Mapping processing mode and the corresponding infotype are assigned to the Employee Central templates that can have overlapping data. This enables the employee data extraction program to extract the overlapping data records.

**Example**

Let’s say, these records of the Bank Details (0009) infotype exist for an employee:

Table 46: An Employee’s Bank Details in SAP ERP HCM

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Seq.No</th>
<th>Payment Method</th>
<th>Amount</th>
<th>Currency</th>
<th>Standard Percentage</th>
<th>Type of Bank Details Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2016</td>
<td>December 31, 9999</td>
<td>0</td>
<td>Check</td>
<td>0.00</td>
<td>USD</td>
<td>0.00</td>
<td>Main Bank</td>
</tr>
<tr>
<td>January 1, 2015</td>
<td>December 31, 2015</td>
<td>0</td>
<td>Check</td>
<td>0.00</td>
<td>USD</td>
<td>0.00</td>
<td>Main Bank</td>
</tr>
<tr>
<td>January 1, 2016</td>
<td>December 31, 9999</td>
<td>1</td>
<td>Check</td>
<td>0.00</td>
<td>USD</td>
<td>10.00</td>
<td>Other Bank</td>
</tr>
<tr>
<td>January 1, 2016</td>
<td>December 31, 9999</td>
<td>0</td>
<td>Bank Transfer</td>
<td>1500.00</td>
<td>USD</td>
<td>0.00</td>
<td>Other Bank</td>
</tr>
<tr>
<td>January 1, 2015</td>
<td>December 31, 2015</td>
<td>1</td>
<td>Check</td>
<td>0.00</td>
<td>USD</td>
<td>10.00</td>
<td>Other Bank</td>
</tr>
<tr>
<td>Start Date</td>
<td>End Date</td>
<td>Seq.No.</td>
<td>Payment Method</td>
<td>Amount</td>
<td>Currency</td>
<td>Standard Percentage</td>
<td>Type of Bank Details Record</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
<td>---------</td>
<td>----------------</td>
<td>----------</td>
<td>----------</td>
<td>----------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>January 1, 2015</td>
<td>December 31, 2015</td>
<td>0</td>
<td>Bank Transfer</td>
<td>1.500,00</td>
<td>USD</td>
<td>0,00</td>
<td>Other Bank</td>
</tr>
<tr>
<td>January 1, 2016</td>
<td>December 31, 9999</td>
<td>0</td>
<td>Check</td>
<td>0,00</td>
<td>USD</td>
<td>25.25</td>
<td>Other Bank Details for Off-Cycle</td>
</tr>
<tr>
<td>January 1, 2015</td>
<td>December 31, 2015</td>
<td>0</td>
<td>Check</td>
<td>0,00</td>
<td>USD</td>
<td>25.25</td>
<td>Other Bank Details for Off-Cycle</td>
</tr>
</tbody>
</table>

**Overview Bank details**

![Overview Bank details](image)

Figure 50: Example: Employee’s Bank Details in SAP ERP HCM
Using the *Time Constraint 3 Mapping* processing mode, this *Bank Details* information can be transferred to Employee Central:

![Diagram showing Bank Details information in Employee Central](image)

**Figure 51: Example: Employee’s Payment Information Details in Employee Central**

And here's another example showing the records of the *Additional Payments (0015)* infotype:

**Table 47: Example: Employee’s Additional Payments in SAP ERP HCM**

<table>
<thead>
<tr>
<th>Start Date</th>
<th>End Date</th>
<th>Seq.No.</th>
<th>Wage Type</th>
<th>Amount</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 31, 2015</td>
<td>July 31, 2015</td>
<td>0</td>
<td>M114</td>
<td>1,250.00</td>
<td>USD</td>
</tr>
<tr>
<td>July 31, 2015</td>
<td>July 31, 2015</td>
<td>0</td>
<td>M116</td>
<td>250.00</td>
<td>USD</td>
</tr>
<tr>
<td>January 15, 2015</td>
<td>January 15, 2015</td>
<td>0</td>
<td>M114</td>
<td>1,000.00</td>
<td>USD</td>
</tr>
<tr>
<td>January 15, 2015</td>
<td>January 15, 2015</td>
<td>1</td>
<td>M114</td>
<td>250.00</td>
<td>USD</td>
</tr>
<tr>
<td>January 15, 2015</td>
<td>January 15, 2015</td>
<td>2</td>
<td>M114</td>
<td>1,000.00</td>
<td>USD</td>
</tr>
</tbody>
</table>
6.2.5 How Object Identification Mapping Works

Object identification mapping is used for infotypes such as Family Member/Dependents (0021) that use the Object Identification (OBJPS) field to make a distinction between data records with the same infotype, subtype, lock indicator, start date, and end date.

With object identification mapping, you have two options to define a field mapping for this kind of infotype:

- **Option 1:** You map the necessary fields once for each type of relationship. The mapping includes country-independent as well as country-specific fields. The relationships are represented by subtypes such as Spouse (subtype 1), Child (subtype 2), or Mother (subtype 12). You can create one SAP transformation template per type of relationship, such as ERP_PERSONAL_SPOUSE, ERP_PERSONAL_CHILD, ERP_PERSONAL_MOTHER. You specify the subtype in the Primary Mapping view of the Define Field Mapping for Employee Data Customizing step. You only need one ERP_PERSONAL_CHILD SAP transformation template group for the Child subtype, even if an employee has several children. The SAP ERP HCM system creates the additional SAP transformation templates that are needed for the data records that are identified by the OBJPS field.
Let’s say an employee has three children. This means that three records of the Family Member/Dependents infotype with the Child subtype exist for this employee, each with a different OBJPS entry (01, 02, and 03). You have created an SAP transformation template to map the fields of the Child subtype. This transformation template is used for the data record with the OBJPS entry 01. The SAP ERP HCM system creates two additional SAP transformation templates for the data record with the OBJPS entries 02 and 03.

- **Option 2:** If no country-specific field mapping is needed, you can also create one single SAP transformation template, such as ERP_PERSONAL_DEPEND, for all dependents (meaning for all subtypes). In this case you don’t enter the subtypes in the Primary Mapping view. Instead you use the Clone SAP transformation templates Customizing steps to reuse the field mapping you define for the Family Member/Dependents infotype for the subtypes of this infotype. So you enter, for example, the Family Member/Dependents infotype and the subtypes 01 and 02 in the Define Country-Specific Infotypes and Subtypes for Cloning Transformation Templates Customizing step.

**Note**

You can’t use the cloning feature for SAP transformation templates that use the secondary field mapping. The Addresses, National ID, and Global Information templates for an employee’s dependents, for example, comprise country-specific fields and therefore need a secondary mapping. Use option 1 for these templates. This means you create, for example, an ERP_ADDR_CHILD SAP transformation template. For this template, you can use primary as well as secondary field mapping.

For both options an additional logic is needed to generate a unique key for the entities defined by the OBJPS entry. This logic is applied to the Employee Central field that is entered in the Object Identification Field field in the Define Employee Central Templates for Additional Employee Data Entities Customizing step.

**Example**

Object identification mapping is used for the Biographical Information Employee Central entity. Therefore, person-id-external is specified in the Object Identification Field for this template. This means, a unique key is generated that can be transferred to the person-id-external field in Employee Central to identify the employee’s dependents.

To store the key mapping information for OBJPS relevant infotype replication we use the table (ECPAO_OBJPS_KMAP). This table will be relevant for all the templates having GENERATOR_MODE as “O” in the ECPAO_ECTMPL table. The external and the internal value of the generator field are part of the table. In case of infotype 21 replication, the internal generator field signifies the person ID of the dependents (this is an EC internal value) and the external generator file value will store the person ID external of the dependent. This key mapping table would be populated only for those subtypes which are OBJPS relevant subtypes.

Table 48: ECPAO_OBJPS_KMAP table

<table>
<thead>
<tr>
<th>Fields</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERNR</td>
<td>Personal Number</td>
</tr>
<tr>
<td>INFTY</td>
<td>Infotype</td>
</tr>
</tbody>
</table>
### Updating the Employee Key Mapping Table

The key mapping defines the relation between Employee Central employee’s represented by employments, person data, and SAP ERP HCM personnel numbers (PERNRs).

#### Context

This is necessary to prevent new personnel numbers being created during the next data replication from Employee Central to SAP ERP HCM for employees whose data was migrated or replicated from SAP ERP HCM to Employee Central. The table maps an employee’s unique identifiers from the SAP ERP HCM system and from Employee Central.

The key mapping table ECPAO_EE_KMAP defines to which User ID in EC a PERNR in SAP ERP system is associated to.

**Table 49: ECPAO_EE_KMAP table**

<table>
<thead>
<tr>
<th>Fields</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERNR</td>
<td>Personal Number</td>
</tr>
<tr>
<td>USER_ID</td>
<td>User ID</td>
</tr>
<tr>
<td>PERSON_ID</td>
<td>Employee ID</td>
</tr>
<tr>
<td>PERSON_ID_EXTERNAL</td>
<td>Third Party Employee ID</td>
</tr>
<tr>
<td>PERSON_GUID</td>
<td>Person GUID</td>
</tr>
<tr>
<td>EMPLOYMENT_ID</td>
<td>Employment ID</td>
</tr>
</tbody>
</table>

#### Note

When the data replication from EC is successful, then the employee key mapping table would be updated.
6.2.6 How Start Date of Infotypes from Non-Effective Dated EC Entities is Configured

You can configure the start date of infotypes generated from the non effective dated Employee Central blocks. This function is supported for infotypes, which are configured only from the non effective dated blocks.

**Default Option**

If the *Start Date* field in EC is left blank, then the default option is used. The default behavior is to insert the infotype records with start date chosen from the hire date, last rehire date, and the earliest transfer date whichever is the latest. History is maintained based on this chosen date, that is, existing records up to this chosen date is retained. If an employee has hire and rehire data, the last rehire date is chosen (if not lesser than the earliest transfer date) and changes is effective from this date, that is, delimiting and insertion of new changes or deletion of the records. The validity of the last infotype record formed will be up to 31.12.9999.

**Start date based on last changed date**

To use this option, you have to first copy the standard EC entity to a custom EC entity in customer namespace. In the *Start Date* in EC, enter the string `C_LASTMODIF`. With this option, insertion and changes are done based on the last modified date (assuming the field lastModifiedOn is present in payload). New record is inserted from the last changed date. Any change if done in EC is inserted from the last modified date and the history is retained. If deletion happens in EC, no data for the EC entity would be present in the payload. So deletion in SAP ERP HCM will happen from the SAP ERP HCM system date (SY-DATUM), that is, existing infotype record is delimited to SY_DATUM – 1. The validity of the last infotype record formed will be up to 31.12.9999.

**Start date based on payroll period start date**

To use this option, copy the standard EC entity to a custom EC entity in customer namespace. In the *Start Date* in EC, enter the string `C_PAYRDATE`. With this option, insertion and changes is done from the payroll period start date. Deletion is effective in SAP ERP HCMSAP ERP HCM from this date, that is, existing records is delimited based on this date. History is maintained in this case. The validity of the last infotype record formed will be up to 31.12.9999.

**Start date from custom date field in block**

To use this option, copy the standard EC entity to a custom EC entity in customer namespace. In the *Start Date* in EC, enter the string custom date field name as appearing in SuccessFactors Employee Central OData Dictionary. The date in the custom date field is used as the start date of the infotype record that is generated from the block. If the earliest transfer date is after this date, then the earliest transfer date is used. The end
date will be 31.12.9999. History is not retained in this case. If deletion is done in EC, existing records are deleted completely after the earliest transfer date.

**i Note**
- In all the above options, changes are always inserted after the earliest transfer date.
- When the start date rule is other than C_DEFAULT and if there is already an existing record in ERP for the infotype configured from non-effective dated EC entity, then changes are inserted only after the start date of this existing record. No data will be inserted before the start date of the first existing record.
- If an infotype is configured from multiple non effective dated EC entities, only one option can be used for all the entities used.
- When last modified date is chosen as the non-effective template start date, then time zone conversion will not happen neither in Employee Central nor in the SAP ERP HCM system time zone.

**i Note**
- If an infotype is configured from both effective and non effective dated EC entities, then the first option (Default option) should be used.
- If multiple records are maintained in a non-effective dated EC entities, then a single record would be replicated.
- When an infotype is mapped from both effective and non-effective dated block, you can define any of the start date rule but there will be no option for retaining the history in any cases.

### 6.3 Business Add-Ins (BAdi)

#### Context

⚠️ **Caution**
If you have to change infotype data after replication do not implement the BAdi: `Master Data, Infotype Database update logic` (HRPAD001INFOTYDB). Doing so will lead to retro-calculation to the start date of each changed record.

Instead, use the BAdi `Process Infotype ECPAO_IN_EXT_PROCESS_INFOTYPE`. In the IMG structure open `SAP Customizing Implementation Guide > Personnel Management > Integration with SuccessFactors Employee Central > Business Integration Builder > Business Add-Ins (BAdis) > Data Transfer from Employee Central > BAdi: Change of Infotype record during EC to ERP replication`.

**i Note**
If you are going to use any BAdi implementation, SAP recommends that you read the payload and then perform your custom enchantments (based on your business requirements or you can also read the data from the infotype data).
**Procedure**

- **Assign External Personnel Numbers**
  a. In the IMG structure open [SAP Customizing Implementation Guide > Personnel Management > Integration with SuccessFactors Employee Central > Business Integration Builder > Business Add-Ins (BAdIs) > Data Transfer from Employee Central > BAdI: Defining the PERNR and Central Person ID]
  b. You implement this BAdI if you want Employee Central to specify the personnel numbers used in the on-premise system. Here you can define which Employee Central field is used to determine the personnel number.
  c. In addition, you have to define this external number range in the IMG activity [Maintain number range intervals for personnel numbers]. For more information see step 2 of Basic Settings in Defining Settings in Personnel Administration.

- **Change Infotype Data**
  a. In the IMG structure open [SAP Customizing Implementation Guide > Personnel Management > Integration with SuccessFactors Employee Central > Business Integration Builder > Business Add-Ins (BAdIs) > Data Transfer from Employee Central > BAdI: Change of Infotype record during EC to ERP replication]
  b. You implement this BAdI to change the content of the PA Infotypes. With this BAdI ECPAO_IN_EXT_PROCESS_INFOTYPE you can modify the infotype records created from EC system.
  c. This BAdI is only called for those infotype which are configured as part of the BIB configuration.

**Task overview**: Replicating Employee Master Data [page 110]

**Related Information**

Preparing the System [page 110]
Mapping Types [page 169]
Extensibility [page 187]
Replication of Country/Region-Specific Employee Master Data [page 189]

### 6.4 Extensibility

Take a look at how you can enhance employee master data replication from Employee Central.

**Scheduling a Custom Follow-Up Program as a Regular Background Job** [page 188]

Here’s how you can have custom programs triggered in SAP ERP HCM when employee master data replication from Employee Central is finished.

**Parent topic**: Replicating Employee Master Data [page 110]
6.4.1 Scheduling a Custom Follow-Up Program as a Regular Background Job

Here’s how you can have custom programs triggered in SAP ERP HCM when employee master data replication from Employee Central is finished.

Prerequisites

You have defined a suitable variant for your custom program.

Context

When employee master data was successfully replicated from Employee Central, an event is triggered in the SAP ERP HCM system. You can schedule custom programs as background jobs that are registered on this event, to trigger follow-up activities in SAP ERP HCM.

You can define and schedule background jobs in two ways:

- Directly from the Define Background Job (SM36) transaction. This is best for users already familiar with background job scheduling.
- Using the Job Scheduling Wizard. This is best for users unfamiliar with SAP background job scheduling. To use the Job Scheduling Wizard, choose Job Wizard in the Define Background Job transaction.

Procedure

1. Go to the Define Background Job (SM36) transaction.
2. Decide on a name for the job you are defining and enter it in the Job Name field.
3. Select the job’s priority in the Job Class field:
   - High priority: class A
Medium priority: class B
Low priority: class C

4. In the **Target Server** field, indicate whether to use system load balancing. For the system to use system load balancing to automatically select the most efficient application server to use at the moment, leave this field empty. To use a particular application server to run the job, enter a specific target server.

5. If spool requests generated by this job are to be sent to someone by e-mail, specify the e-mail address. To do so, choose **Spool List Recipient**.

6. Define when the job is to start. To do so, choose **Start Condition** > **After Event** and enter the event name, `SAP_ECPAO_EE_REPLICATED`.

   If you want the job to be executed only when the event was raised in a specific client of your SAP ERP HCM system, enter the client ID (such as 200) in the **Parameter** field. If you want the job to be executed in all clients, leave the **Parameter** field empty.

   Select **Periodic Job** for the job to repeat.

7. Define the job’s steps by choosing **Step** > **ABAP Program**. Specify the corresponding program and variant to be used (see above).

8. Save the fully defined job to submit it to the background processing system.

9. Release the job so that it can run.

**Next Steps**

When you need to modify, reschedule, or otherwise manipulate a job after you’ve scheduled it the first time, you’ll manage jobs from the **Simple Job Selection** (`SM37`) or **Extended Job Selection** (`SM37C`) transactions.

### 6.5 Replication of Country/Region-Specific Employee Master Data

Learn about specific information about some country-specific or region-specific configuration or replication of data.

- **Replication of Employee Master Data for Brazil** [page 190]
  Learn about specific configuration or process information about country Brazil while replicating data from Employee Central to SAP ERP HCM system.

- **Replication of Employee Master Data for India** [page 191]
  Learn about specific configuration or process information about country India while replicating data from Employee Central to SAP ERP HCM system.

- **Replication of Employee Master Data for Germany** [page 195]
  Learn about specific configuration or process information about country Germany while replicating data from Employee Central to SAP ERP HCM system.

- **Replication of Employee Master Data for New Zealand** [page 196]
  Learn about specific configuration or process information about country New Zealand while replicating data from Employee Central to SAP ERP HCM system.
6.5.1 Replication of Employee Master Data for Brazil

Learn about specific configuration or process information about country Brazil while replicating data from Employee Central to SAP ERP HCM system.

Supporting Multiple Compensation Event at the Same Day [page 190]
Countries supporting multiple salary changes on the same day need to store the historical data of all the salary changes in SAP ERP HCM system for downstream applications.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 189]

Related Information

Replication of Employee Master Data for India [page 191]
Replication of Employee Master Data for Germany [page 195]
Replication of Employee Master Data for New Zealand [page 196]

6.5.1.1 Supporting Multiple Compensation Event at the Same Day

Countries supporting multiple salary changes on the same day need to store the historical data of all the salary changes in SAP ERP HCM system for downstream applications.

When an employee salary is changed twice on the same day, the data history has to be stored in SAP ERP HCM system. The data history is stored in SAP ERP HCM Infotype Basic Pay (IT0008) - Basic Contract, subtype Increase Basic Contract - Brazil (BR01). Replication of Multiple compensation to ERP is currently supported only for Brazil country.
Prerequisites

- To support multiple compensation, you should map the data from standard EmpCompensation (WS_11) and EmpPayCompRecurring (WS_12) entities (Compensation block in EC).
- Enable the flag “Multiple Compensation events Per Day” in the Customizing activity Define Parameters for Employee Master Data and Organizational Assignment (VC_ECPAO_QRY_CFG) view. For more information refer: Configuring the Parameters for the Employee Master Data and Organizational Assignment Query topic.
- Map the event reason from WS_11 to IT0008-PREAS. This step is mandatory and you cannot skip if you want multiple compensation changes to be updated in the ERP system. In addition, you should not map the event and event reason from WS_11 to infotype 0000. The mapping has to be done only from jobinfo (WS_4) template. Infotype 0734 is the secondary infotype for Infotype 0008 for country Brazil. For infotype 0734, communication date (COMDT) field has to be mapped in the template group. If the mapping is not maintained, then the replication logic will determine the current date as COMDT (system date) value in the ERP system. And this will always be identified as a change in the data and Infotype 0008 will be always updated.

Since Employee Central is the leading system, all the data present in EC will be replicated to ERP.

**Note**

If there are any data history in SAP ERP HCM Infotype Basic Pay (IT0008), subtype Increase Basic Contract - Brazil (BR01) after FTSD, which is not present in EC, then the same will be deleted in ERP during the replication process to keep the data in sync between EC and ERP. To avoid the deletion, the FTSD can be adjusted to a future date or assignment FTSD can be used.

**Parent topic:** Replication of Employee Master Data for Brazil [page 190]

### 6.5.2 Replication of Employee Master Data for India

Learn about specific configuration or process information about country India while replicating data from Employee Central to SAP ERP HCM system.

- How to Use the Sample Content for Income Tax Declaration [page 192]
  Learn how to replicate the master data related to housing, Section 80 Deductions and Section 80c deductions from Employee Central to SAP ERP HCM system.

- Supporting the Third Gender for India [page 194]
  Learn about third gender support for the country India.

**Parent topic:** Replication of Country/Region-Specific Employee Master Data [page 189]

**Related Information**

Replication of Employee Master Data for Brazil [page 190]
6.5.2.1 **How to Use the Sample Content for Income Tax Declaration**

Learn how to replicate the master data related to housing, Section 80 Deductions and Section 80c deductions from Employee Central to SAP ERP HCM system.

We provide sample content for different use cases in the Define Field Mapping for Employee Data Customizing step, which you can copy and adapt to your needs.

*i Note*

The sample field and value mapping is also available in the form of an editable spreadsheet containing sheets for the different sample content versions. Download this spreadsheet from SAP Help Portal, at http://help.sap.com/hr_ecintegration, under Implement tab in Configuration section.

**Use cases**

Sample content is available for these use cases:

**Housing(HRA / CLA / COA) - EC to ERP Replication Only (WS_HRA_581)**

Provides sample content for HRA accomodation type for employee master data to be replicated from Employee Central to SAP ERP HCM system. You can use this sample content to set up a regular Web service-based replication of employee data from Employee Central to SAP ERP HCM system.

*i Note*

After you copy the sample content, you need to map the field ItDeclInvestmentType to the infotype field METRO and value mapping as METRO_TYPE_WS for the IT0581 replication. The EC field investment type is mapped to two different ERP target fields ACCOM and METRO (HRA type and Location category). To support this, you should create two transformation templates by mapping investment type as ACCOM in the first template and METRO in the second template.

Due to some restriction the standard value mapping entity METRO_TYPE_WS is only available for the new customer. Existing customers should create the value mapping entity and details for METRO_TYPE_WS manually.

**Section 80 Deductions - EC to ERP Replication Only (WS_80_585)**

Provides sample content for section 80D deductions for employee master data to be replicated from Employee Central to SAP ERP HCM system. You can use this sample content to set up a regular Web service-based replication of employee data from Employee Central to SAP ERP HCM system.
Section 80C Deductions - EC to ERP Replication Only (WS_80C_586)

Provides sample content for section 80C deductions for employee master data to be replicated from Employee Central to SAP ERP HCM system. You can use this sample content to set up a regular Web service-based replication of employee data from Employee Central to SAP ERP HCM system.

How to proceed

Here is how to use the sample content provided in the Define Field Mapping for Employee Data Customizing activity:

1. Create a transformation template group and select the sample content that you want to use for it.
2. In your transformation template group, create transformation templates for all entities you want to use and assign the corresponding Employee Central entities.
3. Copy the sample content for each transformation template. Which field mappings are copied depends on the sample content you have selected for the transformation template group.
4. If needed, adapt the copied sample content to suit your requirements. You can, for example, delete mappings you don’t need, change the mapped field, or add new mappings.
5. Make the following additional settings:
   1. If sample value mapping entities are assigned to the sample content you use, but no value mapping details are provided, you need to create corresponding custom value mapping entities and define a suitable value mapping for them.

   ❖ Example

   You use the sample content provided for the HRA template. The METRO_TYPE_WS value mapping entity is assigned to the mapping of the investment-type field. A sample value mapping entity with this name is provided. But no value mapping details are assigned to the METRO_TYPE_WS value mapping entity. Therefore you go to the Define Value Mapping Entities Customizing activity and create an METRO_TYPE_WS custom value mapping entity. Then you go to the Define Value Mapping Details Customizing activity and define the values to be mapped for this value mapping entity.

   ❖ Note

   Delete the unwanted entries from the sample content.

   Once you have made custom entries in the Primary Mapping view (either by copying and adapting the sample content or by making your custom entries from scratch), you can no longer copy the sample content. If you have defined custom mappings and decide that you want to use the mappings provided by the sample content instead, delete the transformation template and create a new template.

   If you have already defined field mappings in the previous releases, you can continue to use them without any changes. However, if you want to replace your custom mappings with mappings provided with the sample content, create new transformation templates for all entities for which you want to use the sample mapping. Then continue as described above. Remove your existing transformation templates for the same entities from the transformation template group or clear the Is Active checkbox for them so that the new transformation templates are used instead.

Parent topic: Replication of Employee Master Data for India [page 191]

Related Information

Supporting the Third Gender for India [page 194]

6.5.2.2 Supporting the Third Gender for India

Learn about third gender support for the country India.

Third gender is now supported for the country India based on the new Indian law. Hence Employee Central now supports a new country-specific gender field and corresponding country-specific picklists for India and same will be replicated to SAP ERP HCM system. During the replication process, replication of the new country-specific fields with new picklist values are considered.

Employee Central supports the new country-specific gender field in Personal Information/Global Information block. In the replication process, we support replicating the new country-specific gender information to SAP.
ERP HCM Infotype Person Data (IT0002). The gender values will be taken from both Personal Information and Global Information in Employee Central and the same will be replicated to ERP via Compound API. If the gender value is maintained in both Personal Information and Global Information, the value from Global Information gets the priority and the same will be replicated to ERP infotype 0002.

Parent topic: Replication of Employee Master Data for India [page 191]

Related Information

How to Use the Sample Content for Income Tax Declaration [page 192]

6.5.3 Replication of Employee Master Data for Germany

Learn about specific configuration or process information about country Germany while replicating data from Employee Central to SAP ERP HCM system.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 189]

Related Information

Replication of Employee Master Data for Brazil [page 190]
Replication of Employee Master Data for India [page 191]
Replication of Employee Master Data for New Zealand [page 196]

6.5.3.1 Supporting the Third Gender for Germany

Learn about third gender support for the country Germany.

Third gender is now supported for the country Germany based on the new German law. Hence Employee Central now supports a new country-specific gender field and corresponding country-specific picklists for Germany and same will be replicated to SAP ERP HCM system. During the replication process, replication of the new country-specific fields with new picklist values are considered.

Employee Central supports the new country-specific gender field in Personal Information/Global Information block. In the replication process, we support replicating the new country-specific gender information to SAP ERP HCM Infotype Person Data (IT0002). The gender values will be taken from both Personal Information and Global Information in Employee Central and the same will be replicated to ERP via Compound API. If the gender value is maintained in both Personal Information and Global Information, the value from Global Information gets the priority and the same will be replicated to ERP infotype 0002.
6.5.4 Replication of Employee Master Data for New Zealand

Learn about specific configuration or process information about country New Zealand while replicating data from Employee Central to SAP ERP HCM system.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 189]

Related Information

- Replication of Employee Master Data for Brazil [page 190]
- Replication of Employee Master Data for India [page 191]
- Replication of Employee Master Data for Germany [page 195]

6.5.4.1 Supporting the Third Gender for New Zealand

Learn about third gender support for the country New Zealand.

Third gender is now supported for the country New Zealand based on the new New Zealand law. Hence Employee Central now supports a new country-specific gender field and corresponding country-specific picklists for New Zealand and same will be replicated to SAP ERP HCM system. During the replication process, replication of the new country-specific fields with new picklist values are considered.

Employee Central supports the new country-specific gender field in Personal Information/Global Information block. In the replication process, we support replicating the new country-specific gender information to SAP ERP HCM Infotype Person Data (IT0002). The gender values will be taken from both Personal Information and Global Information in Employee Central and the same will be replicated to ERP via Compound API. If the gender value is maintained in both Personal Information and Global Information, the value from Global Information gets the priority and the same will be replicated to ERP infotype 0002.
7 Replication of Employee Organizational Assignments

Look at the prerequisites, the business logic, the SAP ERP HCM system settings, and the extensibility concept for replication of organizational assignments from Employee Central.

**Prerequisites for Organizational Assignment Replication [page 197]**
What you should check before starting the replication of organizational assignments from Employee Central.

**Configuration of Organizational Assignment Replication in the SAP ERP HCM System [page 198]**
Make settings in SAP ERP HCM to configure the replication of employee organizational assignments from Employee Central.

**Processing and Statuses of Replication Requests [page 208]**
Find out what statuses are used in the processing of replication requests for organizational assignments.

**Business Logic of Organizational Assignment Replication [page 209]**
Take a look at the business logic of organizational assignment replication from Employee Central.

**Extensibility of Organizational Assignment Replication [page 225]**
See how you can enhance organizational assignment replication from Employee Central.

### 7.1 Prerequisites for Organizational Assignment Replication

What you should check before starting the replication of organizational assignments from Employee Central.

**Position Assignments**

To be able to replicate position assignments from Employee Central to SAP ERP HCM, Position Management must be enabled for your account using the *Manage Employee Central Settings* admin tool in Employee Central.

**Organizational Objects**

The organizational objects used for employee organizational assignments (such as business units, divisions, positions, jobs) should have been replicated from the Employee Central system to the SAP ERP HCM system before you replicate organizational assignments.
If organizational objects haven’t been replicated yet when you replicate the organizational assignments, the corresponding replication requests get the status *Pending*.

### 7.2 Configuration of Organizational Assignment Replication in the SAP ERP HCM System

Make settings in SAP ERP HCM to configure the replication of employee organizational assignments from Employee Central.

**Customizing Settings for Organizational Assignment Replication [page 198]**

To define customer-specific settings for the replication of employee organizational assignments, use the Customizing activities and Business Add-Ins (BAdIs) in the integration add-on for SAP ERP HCM and SAP SuccessFactors Employee Central (PA_SE_IN).

**Enabling Use of New Infotype Framework for Integration Between Organizational Management and Personnel Administration (PA/PD Integration) [page 200]**

Determine that the new infotype framework is to be used in PA/PD integration for organizational data that was replicated from Employee Central, to improve the performance and allow for a better message handling in the replication processes.

**Using the CompoundEmployee API Format for Custom Fields of Organizational Assignments [page 202]**

Specify that the CompoundEmployee API format, such as custom_string, is to be used when storing custom fields for employee organizational assignments in the staging area.

**Replicating Relations of Vacant and Staffed Positions from Different Sources in Employee Central [page 203]**

If it’s essential for your integration use case that relations of positions to other organizational objects are replicated from Employee Central Job Information when the position is staffed and from position management when the position is vacant, set a switch in SAP ERP HCM to prevent redundant replication of position time slices from both sources.

**Excluding Position Relations from Organizational Assignment Replication [page 204]**

Prevent relations from being created in SAP ERP HCM by organizational assignment replication from Employee Central if you use generic replication of organizational objects and replicate the org objects together with their associations from Employee Central.

**Scheduling the Database Update Program as a Regular Background Job [page 206]**

Here’s how you can have the database update triggered in SAP ERP HCM when organizational assignment replication from Employee Central is finished.

### 7.2.1 Customizing Settings for Organizational Assignment Replication

To define customer-specific settings for the replication of employee organizational assignments, use the Customizing activities and Business Add-Ins (BAdIs) in the integration add-on for SAP ERP HCM and SAP SuccessFactors Employee Central (PA_SE_IN).

In your SAP ERP HCM system, go to the Customizing: Execute Project (SPRO) transaction and choose *SAP Reference IMG*. In the *SAP Customizing Implementation Guide* structure, open *Personnel Management*. 

Replicating Employee Master Data and Organizational Assignments from Employee Central to SAP ERP HCM

Replication of Employee Organizational Assignments
Integration with SuccessFactors Employee Central ➔ Other Integration Settings ➔ Replicating Data from SuccessFactors to SAP ERP ➔ Replicating Organizational Data ➔

**Display IMG**

**Structure**

- Personnel Management
  - Integration Settings for SuccessFactors Employee Central Payroll
    - Integration with SuccessFactors Employee Central
  - Business Integration Builder
    - Other Integration Settings
      - Replicating Data from Employee Central to SAP ERP
        - Business Add-Ins
        - Assignment of Code Values
        - Key Mapping of Organizational Terms
        - Switches for Employee Replication Settings
        - Wage Type Processing
        - Display Application Log
        - Extensibility
        - Country Filtering
        - Infotype Filtering
        - Replicating Organizational Data
          - Define If Position Management in Employee Central Is Active
          - BAdI: Enhancements for Key Mapping of Org. Structure Items
          - BAdI: Enhancements for Setting the Parent of Organizational Structure Items
          - BAdI: Processing Country-Specific Fields for Object-Specific Replication
          - BAdI: Processing Customer-Specific Fields for Object-Specific Replication
          - BAdI: Enhancements for Adapting Employee Organizational Assignment
          - BAdI: Enhancements for Adapting Employee Organizational Assignment Request

Figure 54: Overview of Customizing Structure

In the Customizing structure, you can find detailed information for each Customizing activity and BAdI:

Figure 55: Details of Customizing Structure

The following Customizing activities are available for organizational assignments replication:
Table 50: Customizing Activities for Organizational Assignments Replication

<table>
<thead>
<tr>
<th>This Customizing activity ...</th>
<th>Includes this Customizing object ...</th>
<th>And is used for this purpose ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define If Position Management in Employee Central Is Active</td>
<td>View variant <code>V_T77S0_SFSFI_PMACT</code></td>
<td>Set the SFSFI PMACT switch to specify if Position Management is enabled in your Employee Central instance</td>
</tr>
<tr>
<td>BAdI: Enhancements for Adapting Employee Organizational Assignment</td>
<td>BAdI definition <code>EX_SFIOM_ADAPT_EE_ORG_ASSIGNMNT</code></td>
<td>Adapt the standard organizational assignments replicated from Employee Central to the SAP ERP HCM system to suit your specific requirements.</td>
</tr>
<tr>
<td>BAdI: Enhancements for Adapting Employee Organizational Assignment Request</td>
<td>BAdI definition <code>EX_SFIOM_ADAPT_EE_ORG_ASS_REQ</code></td>
<td>Adapt the standard organizational assignment requests used to replicate organizational assignments from Employee Central, before they’re processed in the SAP ERP HCM system.</td>
</tr>
</tbody>
</table>

7.2.2 Enabling Use of New Infotype Framework for Integration Between Organizational Management and Personnel Administration (PA/PD Integration)

Determine that the new infotype framework is to be used in PA/PD integration for organizational data that was replicated from Employee Central, to improve the performance and allow for a better message handling in the replication processes.

Prerequisites

Check the minimum setup required for your systems to see which support packages (SPs) or SAP Notes must be installed in your SAP ERP HCM system to make this feature work.

i Note

The new infotype framework doesn’t support dynamic actions. But since the Business Integration Builder (BIB) uses the new infotype framework, you can’t use dynamic actions in BIB-based data replication from Employee Central anyway.

Context

If you’ve enabled the integration between Organizational Management and Personnel Administration (PA/PD integration) in your SAP ERP HCM system, it synchronizes organizational data between the Relationships (1001) and the Organizational Assignment (0001) infotypes. Using the new infotype framework for this
synchronization improves the performance and allows for a better message handling in the replication processes. We recommend that you enable use of the new infotype framework, in particular if one of the following applies:

- You haven’t replicated data from Employee Central to the SAP ERP HCM system yet and are starting to implement BIB-based integration with Employee Central.
- You already replicate data from Employee Central to the SAP ERP HCM system and don’t use dynamic actions in SAP ERP HCM.
- You already replicate data from Employee Central to the SAP ERP HCM system and use dynamic actions in SAP ERP HCM. But you ensure that updates that would be triggered by a dynamic action in SAP ERP HCM are either also included in employee master data replication from Employee Central or are being made manually.

Example
Let’s say a dynamic action would change a field in another infotype, in addition to the infotype that’s being updated by employee master data replication anyway. Then you would enhance the replication by the second infotype field.

Tip
You can automate the configuration to some extent using the Generate Sample Configuration for Generic Object Replication (SFIOM_ORGOBJ_GENERATE_SPL_CUST) program.

Procedure

1. In Customizing for Personnel Management, choose Integration with SuccessFactors Employee Central > Business Integration Builder > Organizational Data Integration > Enable Use of New Infotype Framework When Processing Replicated Org. Data.

2. Choose New Entries and enter the following data:

   Table 51: Change View T77S0

<table>
<thead>
<tr>
<th>Group</th>
<th>Sem.Abbr.</th>
<th>Value Abbr.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLOGI</td>
<td>NITF</td>
<td>X</td>
<td>Enter a user-defined description, such as: Update Infotype 0001 Using New Infotype Framework</td>
</tr>
</tbody>
</table>

3. Save and transport your entry.
Next Steps

If you've implemented any Business Add-Ins (BAdIs) to enhance the replication of organizational assignments, check them after you've set the **PLOGI NITT** switch to **X**. Ensure that you use the classes provided for the new infotype framework in your BAdI implementations to prevent runtime errors.

Related Information

Checking the Minimum Setup Required for Your Systems [page 18]

7.2.3 Using the CompoundEmployee API Format for Custom Fields of Organizational Assignments

Specify that the CompoundEmployee API format, such as **custom_string1**, is to be used when storing custom fields for employee organizational assignments in the staging area.

Context

Using the Employee Central CompoundEmployee API format for custom fields of organizational assignments makes sense in the following situation: You've replicated organizational assignments before, using a previous integration version. You've implemented the Business Add-Ins (BAdIs) provided for employee organizational assignment replication. In your BAdI implementations, you have added code for custom fields. Now, you switch to the new combined integration for employee master data replication including employee organizational assignments, which is described in this guide. Since this new integration version uses a different format, such as **customString1** for custom fields, you would have to adjust your BAdI implementations. To get around changing your code, you can define instead that SAP ERP HCM is to continue to use the CompoundEmployee API format (**custom_string1**) for custom fields. If you do this, your BAdI implementations work as before. There's no need to change them.

i Note

Don't make this setting if you haven't replicated employee organizational assignments from Employee Central before.

Procedure

1. In Customizing for Personnel Management, choose **Integration with SuccessFactors Employee Central** ➤ **Business Integration Builder** ➤ **Basic Settings** ➤ **Maintain the Constant Values**.
2. Choose New Entries and select the Use CE API Format for Custom Fields in Org. Assgmt constant.
3. Enter x in the Constant Value field.

7.2.4 Replicating Relations of Vacant and Staffed Positions from Different Sources in Employee Central

If it’s essential for your integration use case that relations of positions to other organizational objects are replicated from Employee Central Job Information when the position is staffed and from position management when the position is vacant, set a switch in SAP ERP HCM to prevent redundant replication of position time slices from both sources.

Prerequisites

- Specify in Employee Central that the To Be Hired status is automatically updated for the position in Employee Central whenever an employee is assigned to the position. To do so, go to Admin Center and choose the Position Management Settings tool. On the General tab, in section 'To Be Hired' Status Adaptation, select the option Only if Planned FTE Value is Reached for field Reset 'To Be Hired' Status if Incumbent is Assigned to a Position. For more information, see the guide Implementing Position Management in Employee Central.
- Add a conditional mapping in the transformation template for Position. The conditional mapping must ensure that the relations of the position to other objects (such as department, parent position, cost center, or job classification) are mapped only when the position is vacant. We provide sample content for this setting. It’s contained the Organizational Data EC to ERP: Job Info Relationships and Vacancies from Position Mgmt (OM_WS_2) use case.
- Make sure you include position relations in the organizational assignment replication process. That is, you haven’t set any of the switches in the Restrict Relations Created When Replicating Organizational Assignments Customizing activity.

Context

Setting the SFSFI VCNCY switch is required only if your integration approach depends on implementing the following scenario:

- If a position is staffed (that is, it has an incumbent in Employee Central), the position relations are created based on Employee Central Job Information using the organizational assignment replication process.
- If a position is vacant (that is, it has the To Be Hired status in Employee Central), you replicate position relations from Employee Central Position Management using the organizational object replication process.

i Note

We don’t recommend using this "mixed" scenario. We rather recommend that you replicate all position relations from Employee Central Position Management using the organizational object replication process.
In case you use the "mixed" scenario, however, you must set the SFSFI VCNCY switch to X to ensure that the organizational object replication process only considers time slices where the position is vacant. Whereas the organizational assignment replication process is to care only about time slices where the position is staffed.

Don't use this "mixed" scenario if you've enabled replication of shared positions from Employee Central. The status of shared positions can't be automatically updated in Employee Central when an employee is assigned to the position. This results in time slices being transferred by organizational object replication as well as organizational assignment replication, thus overwriting each other.

 Procedure

1. In Customizing for Personnel Management, choose Integration with SuccessFactors Employee Central > Business Integration Builder > Organizational Data Integration > Replicate Relations of Vacant and Staffed Positions from Different Sources.
2. Set the value of the SFSFI VCNCY switch to X.

7.2.5 Excluding Position Relations from Organizational Assignment Replication

Prevent relations from being created in SAP ERP HCM by organizational assignment replication from Employee Central if you use generic replication of organizational objects and replicate the org objects together with their associations from Employee Central.

 Prerequisites

If you turn off replication of relations in the organizational assignment replication process and set up organizational object replication to include these relations instead, make sure that you enable synchronization of Job Information to position management in Employee Central. This ensures that whenever a relation is changed in Job Information in Employee Central, this change is passed on to Employee Central position management and can then be transferred from there using organizational object replication. For more information, see section Define Synchronization Job Information to Position Management in Employee Central in Implementing Position Management in Employee Central.

 Procedure

1. Go to Customizing for Personnel Management and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Organizational Data Integration > Restrict Relations Created When Replicating Organizational Assignments.
2. Set the following switches as applicable:

<table>
<thead>
<tr>
<th>Relation Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position-Org Unit</td>
<td>SFSFI OANSO</td>
</tr>
<tr>
<td>Position-Job</td>
<td>SFSFI OANSC</td>
</tr>
<tr>
<td>Position-Manager Position</td>
<td>SFSFI OANSS</td>
</tr>
<tr>
<td>Position-Cost Center</td>
<td>SFSFI OANSK</td>
</tr>
</tbody>
</table>

### 7.2.5.1 Why Exclude Position Relations from Organizational Assignment Replication

By default, relations of positions to other organizational objects (such as business units) are considered in organizational assignment replication from Employee Central. If you use organizational object replication to transfer position relations instead, turn off replication of these relations by organizational assignment replication so that the relations are replicated from only one source.

You can replicate relations of positions to other organizational objects in two ways from Employee Central:

- **The default setting** is that the position relation to a specific object type is replicated from the employee’s Job Information, using organizational assignment replication. Note that the relation of an employee (object type P in SAP ERP HCM) to a position (object type S) is always transferred by the organizational assignment replication process. You can’t exclude the employee-position relation from organizational assignment replication. This relation is always contained in organizational assignment replication, even if you turn off replication of all other position relations.
  
  By default, also the following relations are contained in organizational assignment replication:
  - Position to org unit (object type O)
  - Position to job (object type C)
  - Position to manager’s position (object type S)
  - Position to cost center (object type K)

Using organizational assignment replication to transfer position relations has one disadvantage though: SAP ERP HCM doesn’t consider the relations of a position if it doesn’t have an incumbent. This means, if the position becomes vacant in Employee Central, the position relations are delimited in SAP ERP HCM upon replication.

- **You replicate the position together with its association to a specific object type** from Position Management, using organizational object replication. We recommend that you include position relations in the organizational object replication rather than in the organizational assignment replication process. Because then position relations remain unchanged in SAP ERP HCM, regardless of whether the position has an incumbent or is vacant. If you include position relations in the organizational object replication, turn off replication of the corresponding relations in the organizational assignment replication process.
Once you’ve turned off replication of some or all of the position relations, organizational assignment replication not only stops creating new position relations of this type in SAP ERP HCM. It also stops updating or delimiting existing relations that it has created before.

7.2.6 Scheduling the Database Update Program as a Regular Background Job

Here’s how you can have the database update triggered in SAP ERP HCM when organizational assignment replication from Employee Central is finished.

Prerequisites

You have defined a suitable variant for the database update program, Replicate Employee Org. Assignments from EC to ERP Org. Mgmt (RH_SFIOM_PROC_EE_ORG_ASS_RPRQ).

Context

Whenever replication requests from Employee Central are written to the staging area in the SAP ERP HCM system, an event is triggered. Schedule the database update program, which processes the replication requests in the staging area and posts the results to the database, as a background job that is registered on this event.

You can define and schedule background jobs in two ways:

- Directly from the Define Background Job (SM36) transaction. This is best for users already familiar with background job scheduling.
- Using the Job Scheduling Wizard. This is best for users unfamiliar with SAP background job scheduling. To use the Job Scheduling Wizard, choose Job Wizard in the Define Background Job transaction.

Carry out the following steps:

Procedure

1. Go to the Define Background Job (SM36) transaction.
2. Decide on a name for the job you are defining and enter it in the Job Name field.
3. Select the job’s priority in the Job Class field:
   ○ High priority: class A
4. In the Target Server field, indicate whether to use system load balancing. For the system to use system load balancing to automatically select the most efficient application server to use at the moment, leave this field empty. To use a particular application server to run the job, enter a specific target server.

5. If spool requests generated by this job are to be sent to someone by e-mail, specify the e-mail address. To do so, choose Spool List Recipient.

6. Define when the job is to start. To do so, choose Start Condition After Event and enter the event name, SAP_SFICM_EE_ORGAS_RPPQ_CREATED.

   If you want the job to be executed only when the event was raised in a specific client of your SAP ERP HCM system, enter the client ID (such as 200) in the Parameter field. If you want the job to be executed in all clients, leave the Parameter field empty.

   Select Periodic Job for the job to repeat.

7. Define the job’s steps by choosing Step ABAP Program. Specify the corresponding program and variant to be used (see above).

8. Save the fully defined job to submit it to the background processing system.

9. Release the job so that it can run.

Next Steps

When you need to modify, reschedule, or otherwise manipulate a job after you’ve scheduled it the first time, you’ll manage jobs from the Simple Job Selection (SM37) or Extended Job Selection (SM37C) transactions.

Tip

In addition to the background job that is registered on the event as described above, we recommend that you schedule a periodical background job for the database update program, which picks up all replication requests that couldn’t be processed yet. During initial load, for example, often two events follow each other in close succession. If this happens, the processing triggered by the second event might not be successful if the staging area is still locked by the processing triggered by the first event.

To process open, pending, or failed requests again, schedule a background job that runs at a time when the system load is low (for example, each night). This way, you don’t need to wait until the next event is triggered that would start the next run of the database update program.

To schedule periodical background jobs, carry out the steps described above. However, in step 6, don’t select an event. Instead, choose Start Condition Date/Time. Enter a suitable date and time and select the Periodic Job checkbox.
### 7.3 Processing and Statuses of Replication Requests

Find out what statuses are used in the processing of replication requests for organizational assignments.

Table 53: Status Flow of a Replication Request

<table>
<thead>
<tr>
<th>Situation</th>
<th>Present Status</th>
<th>New Status</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>A new request is stored in the staging area.</td>
<td></td>
<td>Open</td>
<td></td>
</tr>
<tr>
<td>Processing is successful.</td>
<td>Open</td>
<td>Successful</td>
<td></td>
</tr>
<tr>
<td>Processing isn’t successful due to a temporary issue</td>
<td>Open</td>
<td>Pending</td>
<td>For some temporary issues that might be fixed before long, the request is immediately reprocessed. If the situation hasn't changed after this retry, the system assumes that the issues won’t be solved immediately and stores the request with the Pending status on the database.</td>
</tr>
<tr>
<td>Processing isn’t successful due to a data or configuration issue</td>
<td>Open</td>
<td>Failed</td>
<td></td>
</tr>
<tr>
<td>A request with the status Pending isn’t processed within three days.</td>
<td>Pending</td>
<td>Failed</td>
<td></td>
</tr>
<tr>
<td>There are replication requests that don’t have the status Successful yet</td>
<td>Open, Pending, or Failed</td>
<td>Outdated</td>
<td></td>
</tr>
</tbody>
</table>

→ Recommendation

We recommend that you schedule a regular job to trigger the processing of replication request.

Related Information

- Statuses of Employee Master Data and Organizational Assignment Queries [page 239]
- Scheduling the Database Update Program as a Regular Background Job [page 206]
7.4 Business Logic of Organizational Assignment Replication

Take a look at the business logic of organizational assignment replication from Employee Central.

Organizational Assignment Types in Employee Central and SAP ERP HCM [page 209]
Here’s an overview of the types of organizational assignments an employee can have in Employee Central and how they are mapped to SAP ERP HCM.

Key Mapping [page 216]
Find out what key mapping is used by organizational assignment replication.

Replication Scenarios Depending on Position Management Enablement in Employee Central [page 217]
Depending on whether Position Management is enabled or disabled in Employee Central, the handling of positions and employee-position assignments in SAP ERP HCM differs.

Replication of Shared Positions from Employee Central [page 219]
Configure Employee Central to replicate shared positions (also known as mass positions) and employee assignments to shared positions to the SAP ERP HCM system.

7.4.1 Organizational Assignment Types in Employee Central and SAP ERP HCM

Here’s an overview of the types of organizational assignments an employee can have in Employee Central and how they are mapped to SAP ERP HCM.

Organizational Assignments in Employee Central

Employee organizational assignments you can replicate from Employee Central are: business unit, division, department, job classification, position, and cost center assignments, and reporting lines. These assignments are stored in the employees’ Job Information in Employee Central.
Organizational Assignments in SAP ERP HCM

The assignments from the employee’s Job Information in Employee Central map to these organizational assignments in SAP ERP HCM:

Table 54: Mapping of Organizational Assignment Types

<table>
<thead>
<tr>
<th>Employee Central</th>
<th>SAP ERP HCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business unit assignment</td>
<td>Assignment to organizational unit (object type O)</td>
</tr>
<tr>
<td>Division assignment</td>
<td></td>
</tr>
<tr>
<td>Department assignment</td>
<td></td>
</tr>
<tr>
<td>Job classification assignment</td>
<td>Assignment to job (object type C)</td>
</tr>
<tr>
<td>Position assignment</td>
<td>Assignment to position (object type S)</td>
</tr>
<tr>
<td>Cost center assignment</td>
<td>Assignment to cost center (object type K)</td>
</tr>
<tr>
<td>Reporting line</td>
<td>Assignment to manager’s position (object type S)</td>
</tr>
</tbody>
</table>
In the SAP ERP HCM system the position (object type S) is the central object. All assignments are related to the position of an employee. By default, the position is linked to the following objects in the *Relationships* (1001) infotype:

![Diagram showing position relationships]

**Table 55: Position Relationships**

<table>
<thead>
<tr>
<th>Object</th>
<th>Object Type</th>
<th>T77S0 Entry</th>
<th>Default Relationship Name</th>
<th>Default Relationship ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td>P</td>
<td>SPREL</td>
<td>Holder</td>
<td>A008</td>
</tr>
<tr>
<td>Organizational unit</td>
<td>O</td>
<td>SOREL</td>
<td>Belongs to</td>
<td>A003</td>
</tr>
<tr>
<td>Job</td>
<td>C</td>
<td>CTREL</td>
<td>Is described by</td>
<td>B007</td>
</tr>
<tr>
<td>Cost center</td>
<td>K</td>
<td>KOSTA</td>
<td>Cost center assignment</td>
<td>A011</td>
</tr>
<tr>
<td>Manager’s position</td>
<td>S</td>
<td>SUPVA</td>
<td>Reports (line) to</td>
<td>A002</td>
</tr>
</tbody>
</table>

The default relationships are read from the T77S0 table.

**Table 56: Default Relationships in Table T77S0**

<table>
<thead>
<tr>
<th>Group</th>
<th>Subgroup</th>
<th>Value</th>
<th>Value Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPREL</td>
<td>SPREL</td>
<td>A008</td>
<td>Holder</td>
</tr>
<tr>
<td>Group</td>
<td>Subgroup</td>
<td>Value</td>
<td>Value Description</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>-------</td>
<td>-------------------</td>
</tr>
<tr>
<td>PPREL</td>
<td>SOREL</td>
<td>A003</td>
<td>Belongs to</td>
</tr>
<tr>
<td>PPREL</td>
<td>CTREL</td>
<td>B007</td>
<td>Is described by</td>
</tr>
<tr>
<td>PPREL</td>
<td>KOSTA</td>
<td>A011</td>
<td>Cost center assignment</td>
</tr>
<tr>
<td>PPREL</td>
<td>SUPVA</td>
<td>A002</td>
<td>Reports (line) to</td>
</tr>
</tbody>
</table>

But you can also use other relationships instead. In this case, the relationship names and IDs would differ from the default names and IDs listed above.

### 7.4.1.1 Specifics of Reporting Lines

Things you should pay attention to when replicating reporting lines from Employee Central.

Look at the following specifics of reporting lines (that is, employee-manager/employee-supervisor assignments):

- A prerequisite for the reporting line replication is that the managers themselves have been replicated to the SAP ERP HCM system and have a valid position assignment.
- Employee Central and SAP ERP HCM use different approaches for assigning supervisors (managers) to employees.
  - In Employee Central, a supervisor (manager) is assigned to an employee in the employee’s Job Information. The supervisor that is assigned to the employee’s department or position is only a default and can differ from employee to employee. Therefore, supervisor assignments in departments and positions aren’t considered for the replication.
  - In SAP ERP HCM, managers are determined by the leading (chief) position of an organizational unit. All employees assigned to one organizational unit derive the holder of the leading position as manager.
- Organizational assignment replication from Employee Central to SAP ERP HCM by default creates a direct relation between the position of a manager and the position of the managed employee in SAP ERP HCM. The two positions are linked with the Reports (line) to / Is line supervisor of (A/B 002) relationship in the Relationships (1001) infotype.
- The SAP ERP HCM concept of leading or chief positions isn’t supported by default.
  - You can use generic replication of organizational objects to replicate custom chief positions and the chief position relation from Employee Central. For more information, see Chief Positions in Organizational Data Integration Between Employee Central and SAP ERP HCM in the guide Replicating Organizational Objects from Employee Central to SAP ERP HCM.
  - You can implement the Enhancements for Adapting Employee Organizational Assignment (EX_SFIOM_ADAPT_EE_ORG_ASSGNMNT) Business Add-In (BAdI) to create new and update existing relations between the organizational unit of the employee and the custom chief position. In your BAdI implementation, you can create Manages... (A012) relationships between departments, divisions, or business units and chief positions that are replicated as custom fields from Employee Central. A corresponding sample implementation is available for this BAdI. Find the BAdI in the Customizing structure. Go to Customizing for Personnel Management and choose Integration with SuccessFactors Employee Central > Business Integration Builder > Business Add-Ins (BAdIs) > Data.
If your workflows in the SAP ERP HCM system are based on the standard function modules for role resolution, they’re not affected by the reporting line replication. In the first iteration, they always try to get the directly linked positions. Only in case that there are no directly linked positions, the leading positions are considered. If you have custom-specific coding in place, make sure to check if your coding supports this approach. If not, use the function module `SWX_GET_MANAGER` in SAP ERP HCM as a source for further information.

### 7.4.1.2 Manager Determination in the SAP ERP HCM System

Look at how the personnel number of an employee’s manager is determined in the SAP ERP HCM system.

#### How the SAP ERP HCM System Determines an Employee's Manager

The SAP ERP HCM system uses the associated employee information that is transferred from Employee Central to determine the personnel number of the employee’s manager unambiguously.

#### What Happens If a Manager's Data Isn't Replicated to the Same SAP ERP HCM System as the Employee's Data

#### Example

Let’s say an employee is located in Germany. Their manager is based in the US. You replicate the data of Germany-based employees to a specific SAP ERP HCM system (target system 1) and the data of US employees to another SAP ERP HCM system (target system 2). This means that the employee’s manager isn’t replicated to the system that holds the employee’s data (target system 1).

Using the associated employee information transferred from Employee Central, the SAP ERP HCM system filters out manager assignments if the assigned managers don’t exist in the SAP ERP HCM system. Meaning, it doesn’t create the employee-manager relationship in the system that holds the employee’s data (target system 1 in the example). All of the employee’s other relationships, such as job, position, or organizational unit assignments, are created in this system nevertheless.

To check which countries/regions are valid, the SAP ERP HCM system uses the information you’ve entered in Customizing for Personnel Management, under Integration with SuccessFactors Employee Central ➤ Other Integration Settings ➤ Replicating Data from Employee Central to SAP ERP ➤ Country Filtering ➤ Restrict Employee Master Data Replication to Certain Countries. Make sure that the correct country/region or countries/regions are specified here.
You can use the Enhancements for Adapting Employee Organizational Assignment Request (EX_SFIOM_ADAPT_EE_ORG_ASS_REQ) BAdI to define a customer-specific processing of employee-manager assignments contained in the replication request. This is useful if you don't want to just remove these manager assignments, but handle them in a specific way. Find the BAdI in the Customizing structure.

Go to Customizing for Personnel Management and choose > Integration with SuccessFactors Employee Central > Business Integration Builder > Business Add-Ins (BAdIs) > Data Transfer from Employee Central > BAdI: Enhancements for Adapting Employee Organizational Assignment Request.

7.4.1.3 Specifics of Cost Center Assignments

Some things to pay attention to when you replicate cost center assignments from Employee Central.

Synchronizing the Mapping of Cost Center Keys Across the Replication Processes

The replication of employee master data, organizational objects, and organizational assignments from Employee Central must use the same logic to determine the cost center. The organizational assignment replication uses a default logic that works out of the box. If you need to map the cost center for employee master data and organizational object replication, you must make the following settings to ensure that the same logic is used:

1. In the transformation template group you use for the replication of employee master data, map the Cost Center Employee Central field to the SAP ERP HCM field Cost Center (KOSTL) in the Organizational Assignment (0001) infotype.
2. In the transformation template group you use for the replication of organizational objects, map the Cost Center Employee Central field in the transformation template for Position. Map it to the SAP ERP HCM field ID of Related Object (SOBID) in the Relationships (1001) infotype, with the Master Cost Center (A011) subtype.
3. Add a value mapping entity to both field mappings that has the Cost Center Keys from Mapping Table value mapping type. This value mapping type ensures that the data replication uses the standard logic for determining cost centers.

The sample content we provide contains a COSTCENTER_WS value mapping entity with the right value mapping type. You can copy the sample value mapping and then use the copied value mapping entity for your field mapping. If you create your own value mapping entity, ensure that it uses the Cost Center Keys from Mapping Table value mapping type.
Recommendation: Use Concatenation of 4-Character Controlling Area Keys with 10-Character Cost Center Keys

To ensure a correct handling of cost center keys in the replication, we recommend that you use cost center keys in Employee Central that are concatenated from the 4-character controlling area key and the 10-character cost center key used in SAP ERP HCM. You can have the controlling area and the cost center key concatenated by migrating the cost centers from SAP ERP HCM to Employee Central. The replication of cost centers from Employee Central to SAP ERP HCM then cuts the concatenated string, using 4 characters as the controlling area key and 10 characters as the cost center key.

If you make these settings, the assignment of cost centers in the replication doesn’t require the cost center keys to be entered in the mapping tables. However, keys that don’t fulfill these requirements must be entered in one of the following tables:

- `ODFIN_MAP_KOSTL` (software component `ODTFINCC`)
- `PAOCFEC_KMAPCOSC` (software component `PA_SE_IN`)

### Note
We recommend that you use the `PAOCFEC_KMAPCOSC` table rather than the `ODFIN_MAP_KOSTL` table. To define the key mapping for cost centers in the `PAOCFEC_KMAPCOSC` table, go to Customizing for Personnel Management and choose: Integration with SuccessFactors Employee Central > Other Integration Settings > Replicating Data from Employee Central to SAP ERP > Key Mapping of Organizational Terms > Assign Cost Center Keys.

To enable the concatenation of controlling area and cost center keys, turn on the use of the external cost center ID for the migration as well as the replication processes you use. The exact name of the parameter is different in the different versions.

### Example
In the Replicate Cost Centers from SAP ERP or SAP S4HANA to SAP SuccessFactors Employee Central integration flow for SAP Cloud Integration, the parameter is called `USE_EXTERNAL_COST_CENTER`.

In the Define Parameters for Employee Master Data and Org. Assignment Query Customizing activity, the parameter is called Use External Cost Center ID.

### Standard Logic for Determining Cost Centers

The replication of cost center assignments from Employee Central uses the following standard logic:

1. The SAP ERP HCM system first checks whether a mapping is defined for the key transferred from Employee Central in the `ODFIN_MAP_KOSTL` table. If it doesn’t find a mapping there, it checks the `PAOCFEC_KMAPCOSC` table. If a mapping is defined in one of these tables, SAP ERP HCM uses the key from this mapping when posting the cost center assignment.

2. If no mapping is defined in the mapping tables, the replication checks whether the concatenated string transferred from Employee Central is 14 characters long. If this is the case and the first 4 characters are a valid controlling area key, it cuts off the first 4 characters and uses them as the controlling area key. The rest of the string is used as the cost center key.
3. If no mapping is defined in the mapping tables and the cost center key being transferred is longer than 14 characters, the replication of the cost center assignment fails.

Related Information

Configuring the Integration Flow for Cost Center Replication
Configuring the Parameters for the Employee Master Data and Organizational Assignment Query [page 231]

7.4.2 Key Mapping

Find out what key mapping is used by organizational assignment replication.

Organizational Object Key Mapping

Organizational assignment replication relies on that the keys of the objects used for assignments are mapped between Employee Central and SAP ERP HCM.

For most objects, the key mapping is stored in the SFOM_KMAP_OSI table in SAP ERP HCM. This key mapping is created whenever an organizational object is replicated to SAP ERP HCM. You can also maintain the key mapping table manually.

For more information, see Key Mapping in Replicating Organizational Objects from Employee Central to SAP ERP HCM.

Cost Center Key Mapping

The mapping of cost center keys is stored in the following tables:

- ODFIN_MAP_KOSTL (software component ODTFINCC)
- PAOCFEC_KMAPCOSC (software component PA_SE_IN)

To map cost center keys, go to Customizing for Personnel Management then choose Integration with SuccessFactors Employee Central \ Integration with SuccessFactors Employee Central \ Other Integration Settings \ Replicating Data from Employee Central to SAP ERP \ Key Mapping of Organizational Terms \ Assign Cost Center Keys.

Company Code Key Mapping

The Company Code Key Mapping (PAOCFEC_KMAPCOMC) table maps Employee Central company code keys to the company code keys in the SAP ERP HCM system. Mapping entries are required if company keys in...
Employee Central are longer than 4 characters. To map company keys, go to Customizing for Personnel Management and choose Integration with SuccessFactors Employee Central Other Integration Settings Replicating Data from Employee Central to SAP ERP Key Mapping of Organizational Terms Assign Company Code Keys.

7.4.3 Replication Scenarios Depending on Position Management Enablement in Employee Central

Depending on whether Position Management is enabled or disabled in Employee Central, the handling of positions and employee-position assignments in SAP ERP HCM differs.

Position Management Is Disabled in Employee Central

This means that no employee-position assignment is provided by Employee Central. The SAP ERP HCM system, however, needs a position to reflect the organizational assignments of the employee. Therefore, the SAP ERP HCM system proceeds as follows:

- If no employee-position assignment exists, a new position and a new position assignment are created.
- If an appropriate employee-position assignment exists, this position assignment is reused.
  Appropriate means:
  - The employee mustn’t be assigned to multiple different positions in overlapping time slices.
  - The employee must be assigned to the position during the complete assignment period.
  - The position mustn’t be shared by several employees.
  - The position itself must be valid during the complete assignment period.
  - The position mustn’t be mapped to an Employee Central position (which would mean that it was replicated from Employee Central).

If these conditions aren’t fulfilled, the position assignment isn’t considered to be appropriate. Therefore, the existing employee-position assignment is delimited. A new position and a new employee-position assignment are created.

i Note

If the SAP ERP HCM system needs to create a position, it creates a new record of the Object (1000) infotype and fills in the following infotype fields:

- Plan Version (PLVAR)
- Start Date (BEGDA)
- End Date (ENDDA)
- Object Type (OTYPE)
- Object ID (OBJID)
- Infotype (INFTY)
- Planning Status (ISTAT)
- Language Key (LANGU)
- Object Abbreviation (SHORT)
Position Management Is Enabled in Employee Central

This means that in principle an employee-position assignment is provided by Employee Central and reused in the SAP ERP HCM system. But since the Position field isn’t a mandatory field in Employee Central, there can be cases in which no employee-position assignment exists. These cases are handled as described in the section Position Management Is Disabled in Employee Central.

If an employee-position assignment is provided by Employee Central, the SAP ERP HCM system checks if the following conditions are fulfilled:

- The position itself must have been replicated from Employee Central so that it’s available in the key mapping table (SFIOM_KMAP_OSI) in the SAP ERP HCM system.
- The position must be valid during the complete assignment period.

If these conditions are fulfilled, the SAP ERP HCM system proceeds as follows:

- If no employee-position assignment exists in the SAP ERP HCM system, a new assignment is created.
- If the employee-position assignment isn’t valid during the complete assignment period, the existing assignment is cut or deleted and a new assignment is created.
- Further assignments of an employee to other positions are cut or deleted.

The SAP ERP HCM system also makes the following changes, depending on whether the position is a shared position or not:

Position Isn’t Shared

- Existing associations of positions to organizational units, jobs, cost centers, and managers are deleted or cut at the full transmission start date (FTSD) if they have changes after the FTSD. New associations are created after the FTSD.
- If the employee is also a manager and their position is changed in Employee Central, all assignments of employees’ positions to the manager’s position are adapted accordingly.

Position Is Shared

- Existing associations of positions to organizational units, jobs, cost centers, and managers aren’t deleted or cut at full transmission start date. If needed, the associations are extended. This is because the organizational unit, job, cost center, and manager assignments of other employees who share the same position can be longer. The period in which the organizational unit, job, cost center, and manager are associated to the position needs to be long enough to incorporate the periods of the organizational unit, job, cost center, and manager assignments of all position incumbents who share this position.
- If the association of a position to an organizational unit, job, cost center, or manager is changed during this period, the changed association replaces the existing association.
- If the employee is also a manager and their position is changed in Employee Central, the assignments of employees’ positions to the manager’s position aren’t adapted.
Caution

We strongly recommend that you disable manual assignment of organizational information (such as departments, divisions, or job classifications) in Job Information. Instead, enable automatic propagation of this information from Position Management to Job Information. Otherwise, contradicting information might be replicated to SAP ERP HCM, such as in this example:

- Position POS17 is vacant in Employee Central and associated to department DEP17 in Position Management.
- Now, an employee’s Job Information is updated: The employee is assigned to position POS17, but to department DEP20.

Depending on which information is replicated first, position POS17 might be related to the organizational unit corresponding to DEP17 in SAP ERP HCM. But then this data record would be overwritten, and POS17 would be assigned to another organizational unit, which corresponds to department DEP20. Or the other way round.

7.4.4 Replication of Shared Positions from Employee Central

Configure Employee Central to replicate shared positions (also known as mass positions) and employee assignments to shared positions to the SAP ERP HCM system.

SAP ERP HCM requires that all employees who share a position belong to the same organizational unit and have the same manager, the same job, and the same cost center assigned. The settings we describe make sure that shared positions replicated from Employee Central meet this condition.

Caution

Assigning more than 10 employees to a shared position can reduce the system performance when processing the replicated employees in the SAP ERP HCM system.

1. Enabling Shared Positions in Employee Central [page 220]
   Enable shared positions in Employee Central, to be able to replicate them to the SAP ERP HCM system.

2. Enabling Propagation of Position Assignments to Job Information of the Incumbents [page 220]
   Make sure that position assignments are propagated from Position Management to the Job Information of the position incumbents.

3. Preventing Overstaffing of Shared Positions [page 222]
   Prevent shared positions from being overstaffed by assigning to many employees.

4. Configuring FTE Limit for Shared Positions [page 223]
   Implement an FTE limit for positions to specify how many employees may be assigned to the same position.

5. Disabling Manual Org Assignments in Job Information If Shared Position is Assigned [page 224]
   Disable manual assignment of departments, divisions, business units, job classifications, and cost centers in Job Information if a shared position is assigned.
7.4.4.1 Enabling Shared Positions in Employee Central

Enable shared positions in Employee Central, to be able to replicate them to the SAP ERP HCM system.

Procedure

1. Go to the Admin Center, choose the Configure Object Definitions tool, and select the object definition of the Position object.
2. Change the visibility of the multipleIncumbentsAllowed field to Editable. This specifies that more than one employee may be assigned to the position.
   - If you want to set positions by default as shared positions, you can use an onInit rule on the position object that sets the multipleIncumbentsAllowed field to True.
3. Change the visibility of the positionControlled field to Editable. This allows you to define the FTE limit which mustn’t be exceeded by the assigned position incumbents.

Task overview: Replication of Shared Positions from Employee Central [page 219]

Next task: Enabling Propagation of Position Assignments to Job Information of the Incumbents [page 220]

7.4.4.2 Enabling Propagation of Position Assignments to Job Information of the Incumbents

Make sure that position assignments are propagated from Position Management to the Job Information of the position incumbents.

Procedure

1. Create a propagation rule.
   a. Go to the Admin Center and choose the Configure Business Rules tool.
   b. Create a rule such as Pos2Job based on an appropriate scenario such as Synchronize Position Changes to Incumbents.
      - If no suitable scenario is available, create a basic rule for the Job Information base object.
   c. To use the rule for all positions, add this If condition:
      
      Position is not equal to Null

   d. To use the rule for shared positions only, add the following If conditions using the and operator:
      
      Position is not equal to Null
      and
**Mass Position is equal to Yes**

In the *Then* statement, make the following entries:

- **Set Division to be equal to Position.Division**
- **Set Department to be equal to Position.Department**
- **Set Business Unit to be equal to Position.Business Unit**
- **Set Job Classification to be equal to Position.Job Classification**
- **Set Cost Center to be equal to Position.Cost Center**

2. Enable synchronization with Job Information if the *Position* object changes.
   a. Go to the Admin Center and choose the *Position Management Settings* tool.
   b. Choose the *Synchronization* tab and make the following settings:
      - Set the *Position Organizational Chart Synchronization* field to *Automatic*.
      - In the *Event Reason for Assigning Employees to New Manager* field, choose *Data Change (DATACHG)*.
      - In the *Rule for Synchronizing Position to Job Information* field, enter the name of your propagation rule (for example, *Pos2Job*).

3. Enable propagation of changes being made to position assignments in Job Information.
   a. Log on to Provisioning of the relevant instance and download the current Succession Data Model configuration by choosing *Import/Export Data Model* in the *Succession Management* section.
   b. Open the XML file in a suitable editor and make the following changes:
      1. Go to: **HRIS element: jobInfo** ➤ **HRIS section: positionInfoList** ➤ **HRIS field: Position**
      2. Add your propagation rule (for example, *Pos2Job*) below the last `<label>` entry, as shown in this example:

```
<hris-field id="position" visibility="both">
  <label>Position</label>
  <label xml:lang="da-DK">Stilling</label>
  <label xml:lang="de-DE">Planstelle</label>
  <label xml:lang="en-GB">Position</label>
  <label xml:lang="es-ED">Puesto</label>
  <label xml:lang="fr-FR">Poste</label>
  <label xml:lang="en-US">Position</label>
  <trigger-rule event="onChange" rule="Pos2Job"/>
</hris-field>
```

Save your changes and re-upload the changed Succession Data Model configuration.

僮, Sample Code

→ Remember

As a customer, you don’t have access to Provisioning. To complete tasks in Provisioning, contact your implementation partner. If you’re no longer working with an implementation partner, contact Product Support.

**Task overview:** Replication of Shared Positions from Employee Central [page 219]
7.4.4.3 Preventing Overstaffing of Shared Positions

Prevent shared positions from being overstaffed by assigning to many employees.

Procedure

1. Create a position control rule.
   a. Go to the Admin Center and choose the Configure Business Rules tool.
   b. Create a basic rule such as SetPosCntrToYes for the Position base object.
   c. Add this if condition:

   Mass Position is equal to Yes

   d. In the Then statement, make this entry:

   Set Subject to Position Control to be equal to Yes

2. Trigger the position control rule whenever the Position object is saved or changed.
   a. Go to the Admin Center and choose the Configure Object Definitions tool.
   b. Add your position control rule (for example SetPosCntrToYes) in the generic object definition of the Position object as shown in this example:

   Example

   ```
   saveRules
   ○ SetPosCntrToYes (SetPosCntrToYes)
   ```

Task overview: Replication of Shared Positions from Employee Central [page 219]

Previous task: Enabling Propagation of Position Assignments to Job Information of the Incumbents [page 220]

Next task: Configuring FTE Limit for Shared Positions [page 223]
7.4.4.4 Configuring FTE Limit for Shared Positions

Implement an FTE limit for positions to specify how many employees may be assigned to the same position.

Context

The FTE limit ensures that no more than the specified number of employees (for example, no more than 10 FTE) can be assigned to the position.

⚠️ Caution

Assigning more than 10 employees to a shared position can reduce the system performance when processing the replicated employees in the SAP ERP HCM system.

Procedure

1. Create an FTE message definition.
   a. Go to the Admin Center and choose the Manage Data tool.
   b. Create a message definition such as CheckFTE and configure it as shown in this example:

   ❗️ Example
   
   text: FTE greater than 10 is not allowed
   
   externalCode: CheckFTE
   
   externalName: CheckFTE
   
   status: Active

2. Create an FTE rule.
   a. Go to the Admin Center and choose the Configure Business Rules tool.
   b. Create a basic rule such as CheckFTE for the Position base object.
   c. Add the following If conditions using the and operator:

      Mass Positions is equal to Boolean Yes
      
      and
      
      FTE > Decimal 10

      In the Then statement, make this entry:

      Raise Message – Message: CheckFTE – Severity: Error – Associate Message To: FTE

3. Trigger the FTE rule whenever the Position object is saved or changed.
   a. Go to the Admin Center and choose the Configure Object Definitions tool.
   b. Add your FTE rule (for example CheckFTE) in the generic object definition of the Position object as shown in this example:
7.4.4.5 Disabling Manual Org Assignments in Job Information If Shared Position is Assigned

Disable manual assignment of departments, divisions, business units, job classifications, and cost centers in Job Information if a shared position is assigned.

Procedure

1. Create a visibility rule.
   a. Go to the Admin Center and choose the Configure Business Rules tool.
   b. Create a basic rule such as SetOrgAssignmReadOnlyForMassPos for the Job Information Model object.
   c. Add the following If conditions using the and operator:
      ```
      Position.Value is not equal to Null
      and
      Position.Value.Mass Position is equal to Boolean Yes
      ```
      In the Then statement, make the following entries:
      ```
      Set Department.Visibility to equal to Text view
      Set Division.Visibility to equal to Text view
      Set Business Unit.Visibility to equal to Text view
      Set Job Classification.Visibility to equal to Text view
      Set Cost Center.Visibility to equal to Text view
      ```

2. Enable propagation of changes being made to position assignments in Job Information.
   a. Log on to Provisioning of the relevant instance.
Remember

As a customer, you don’t have access to Provisioning. To complete tasks in Provisioning, contact your implementation partner. If you’re no longer working with an implementation partner, contact Product Support.

b. Download the current Succession Data Model configuration and open the XML file in a suitable editor.

c. Make the following changes:

1. Go to: [HRIS element: jobInfo] ➤ [HRIS section: positionInfoList] ➤ [HRIS field: Position]
2. Add your visibility rule (for example, SetOrgAssignmReadOnlyForMassPos) below the last <label> entry, as shown in this example:

   ![Sample Code]

   ```xml
   <hris-field id="position" visibility="both">
     <label>Position</label>
     <label xml:lang="da-DK">Stilling</label>
     <label xml:lang="de-DE">Planstelle</label>
     <label xml:lang="en-GB">Position</label>
     <label xml:lang="es-ED">Puesto</label>
     <label xml:lang="fr-FR">Poste</label>
     <label xml:lang="en-US">Position</label>
     <trigger-rule event="onChange" rule="Pos2Job"/>
     <trigger-rule event="onChange" rule="SetOrgAssignmReadOnlyForMassPos"/>
   </hris-field>
   ```

d. Save your changes and re-upload the changed Succession Data Model configuration.

Task overview: Replication of Shared Positions from Employee Central [page 219]

Previous task: Configuring FTE Limit for Shared Positions [page 223]

7.5 Extensibility of Organizational Assignment Replication

See how you can enhance organizational assignment replication from Employee Central.

Enhancing Organizational Assignments Replicated from Employee Central [page 226]

Here’s how to adapt the default organizational assignments written to the SAP ERP HCM system if you have specific requirements such as adding content from custom fields.

Replicating Matrix Manager Assignments [page 227]

Use a sample implementation of the Enhancements for Adapting Employee Organization Assignment (EX_SFIOM_ADAPT_EE_ORG_ASSIGNMN) Business Add-In (BAdI) to set up the replication of matrix manager assignments from the Job Relationships block in Employee Central to the SAP ERP HCM system.
7.5.1 Enhancing Organizational Assignments Replicated from Employee Central

Here’s how to adapt the default organizational assignments written to the SAP ERP HCM system if you have specific requirements such as adding content from custom fields.

Context

You can either change the organizational assignments as such, or change organizational assignment requests before they’re processed in the SAP ERP HCM system.

⚠️ Caution

The BAdI methods must not execute any database operations (such as Insert, Cut, or Delete) on the relationships affected by organizational assignment replication (such as employee-position or position-job).

Changing Organizational Assignments

You can change organizational assignments replicated from Employee Central in the SAP ERP HCM system, before they’re written to the database.

💡 Example

You could add a custom staffing percentage, which you transfer from a corresponding custom field in Employee Central, to the employee-position relation in the SAP ERP HCM system. You could also create a new employee relation to an assembly line, which you transfer from a corresponding custom field in Employee Central.

In detail, you can ...

- ... change the standard relationships of positions to positions, cost centers, organizational units, and jobs. For example, you can use another relationship than Belongs to (A003) for assigning positions to organizational units.
- ... change the content of objects. For example, you can replace the standard cost center ID with a country/region-specific cost center ID.
- ... prevent relations from being created. For example, if you use the chief position concept in SAP ERP HCM, you might want to stop position-position relations from being created. To do so, you can delete the corresponding relations from the table that is contained in the changing parameter of this method.
- ... create relationships to objects assigned in the employee’s Job Relation, such as an assembly line, which aren’t supported by the standard replication of organizational assignments from Employee Central to SAP ERP HCM.
- ... ignore existing relations between employees and positions when replicating organizational assignments from Employee Central to SAP ERP HCM. This is relevant if employees have SAP ERP HCM positions assigned in addition to their Employee Central position assignment. By default, the SAP ERP HCM positions are deleted or delimited when the new employee-position relation from Employee Central is transferred to the SAP ERP HCM system, since employees usually only have one position assigned. If you don’t want to change the additional position assignments in the SAP ERP HCM system, you can delete the corresponding relations from the table that is contained in the changing parameter of this method.
... adapt non-key fields (such as the weighting percentage) of employee-position relations when replicating organizational assignments from Employee Central to SAP ERP HCM.

**Changing Organizational Assignment Requests**

You can change organizational assignment requests before they're processed in the SAP ERP HCM system. You can change or delete organizational assignments in the request to create different organizational assignments or no assignments at all. You can also change or delete job relationships.

**Example**

You could use this BAdI to define a customer-specific processing of employee-manager assignments contained in the replication request if the assigned managers don't exist in this specific SAP ERP HCM system. By default the SAP ERP HCM filters out manager assignments if the assigned managers don't exist in the SAP ERP HCM system. For example, because they're located in a different country/region than the employee and this country/region's data isn't replicated to SAP ERP HCM. If you don't want to just remove these manager assignments, but handle them in a specific way, you can do so using this BAdI.

**Procedure**

1. To change organizational assignments, implement the *Enhancements for Adapting Employee Organizational Assignment* (EX_SFIOM_ADAPT_EE_ORG_ASSGNMNT) BAdI.

   Some example implementation classes, such as the *Example Implementation for Matrix Manager* (CL_SFIOM_MATRIX_MANAGER_IMPL) class, are provided for this BAdI.

2. To change organizational assignment requests, implement the *Enhancements for Adapting Employee Organizational Assignment Request* (EX_SFIOM_ADAPT_EE_ORG_ASS_REQ) Business Add-In (BAdI).

### 7.5.2 Replicating Matrix Manager Assignments

Use a sample implementation of the *Enhancements for Adapting Employee Organization Assignment* (EX_SFIOM_ADAPT_EE_ORG_ASSGNMNT) Business Add-In (BAdI) to set up the replication of matrix manager assignments from the *Job Relationships* block in Employee Central to the SAP ERP HCM system.

**Procedure**

1. Enhance the SAP ERP HCM system.
   a. Create an implementation of the *Enhancements for Adapting Employee Organization Assignment* BAdI.
   b. In your BAdI implementation, carry out these steps:
      ○ Create a class attribute that references the sample implementation (that is, the CL_SFIOM_MATRIX_MANAGER_IMPL implementation example class).
○ Call the SET_MATRIX_MANAGER_RELAT_TYPE method of the sample implementation to define the
direction and type of the relationship from the employee’s position to the matrix manager’s
position.
○ Call the CREATE_OBJECT_RELATION method of the sample implementation to create and update
matrix manager relations.

2. Create the matrix manager relation in Employee Central.
   a. Add a job relationship in the employee’s employment information. To do so, choose Take Action
      Change Job and Compensation Info, then select Job Relationships.
   b. Select the Matrix Manager relationship type and enter the manager name.
8 Queries for Replication of Employee Master Data and Organizational Assignments from Employee Central

Look at how the SAP ERP HCM system triggers queries to request employee master data and organizational assignments from Employee Central.

Replication Process for Employee Master Data and Organizational Assignments [page 230]
- View a graphical overview and a step-by-step description of the process that replicates employee master data and organizational assignments from Employee Central to SAP ERP HCM on an ongoing basis.

Configuring the Parameters for the Employee Master Data and Organizational Assignment Query [page 231]
- Define the settings to be used in the query that is triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

Configuring the Query Program for Employee Master Data and Organizational Assignment Replication [page 235]
- Define the selection criteria for the program that queries employee master data and organizational assignments from Employee Central.

Scheduling the Employee Master Data and Organizational Assignment Query as a Regular Background Job [page 237]
- Trigger queries to request employee master data and organizational assignments from Employee Central on a regular basis.

Statuses of Employee Master Data and Organizational Assignment Queries [page 239]
- Get an overview of the different statuses queries can have that are triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

Types of Employee Master Data and Organizational Assignment Queries [page 240]
- Get an overview of the different types of queries that are triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

Administration of Employee Master Data and Organizational Assignment Queries [page 241]
- See what information is stored in the administration tables for queries being triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

Resetting Employee Master Data and Organizational Assignment Queries [page 242]
- In some cases it is necessary to reset the status of employee master data and organizational assignment queries, so that the next scheduled query can run. You can also delete queries selectively.

Deleting Employee Master Data and Organizational Assignment Queries [page 243]
- Delete queries with the type Employee-Specific Query and the statuses Successful or Failed regularly, to clean up the query administration tables and minimize the number of records in these tables.

Defining Exceptions for Compound Employee API Query [page 244]
- Here’s how you define the exceptions for Compound Employee API query.
8.1 Replication Process for Employee Master Data and Organizational Assignments

View a graphical overview and a step-by-step description of the process that replicates employee master data and organizational assignments from Employee Central to SAP ERP HCM on an ongoing basis.

The process for replication of employee master data and employee organizational assignments from Employee Central has steps in three systems interacting with each other: Your on-premise Enterprise Resource Planning system, SAP ERP HCM, the cloud-based middleware, and SAP SuccessFactors Employee Central.

Here’s how this process runs:

1. The query program in the SAP ERP HCM system, `Create and Execute Employee Master Data and Org. Assignment Query` (ECPAO_EE_ORG_REPL_QUERY), reads the parameters you have defined in Customizing and calls the outbound web service `getEmployeeMasterDataAndOrgAssignmentBundleReplicationQuery`. It also updates the query administration tables.
2. The outbound web service sends the query to the middleware.
3. The middleware requests the corresponding data from Employee Central using the `CompoundEmployee Api`.
4. The middleware calls the inbound web service `EmployeeMasterDataAndOrgAssignmentBundleReplicationRequest` in the SAP ERP HCM system to send the data it has received from Employee Central in packages to SAP ERP HCM.
5. The inbound web service triggers processing of the employee master data transferred from Employee Central in the SAP ERP HCM system and stores the organizational assignment requests in the staging area. Once the last package transferred by the middleware has been processed in SAP ERP HCM, the...
6. While processing the employee master data and storing the organizational assignment requests in the staging area, the SAP ERP HCM system reads the key mapping to map Employee Central keys with SAP ERP HCM keys. It also reads the Customizing settings you have made in the Business Integration Builder.

7. Once the employee master data has been processed, the SAP ERP HCM system creates or updates corresponding infotype records in Personnel Administration and updates the application log.

8. Once the database update program registered on the SAP_SFIOM_EE_ORGAS_RPPQ.CREATED event has run, the SAP ERP HCM system creates or updates corresponding infotype records in Organizational Management and updates the application log.

9. The processing of employee master data and organizational assignments triggers the outbound web service EmployeeMasterDataReplicationConfirmation to tell Employee Central whether data transfer was successful or not.

10. The outbound web service passes over the corresponding success or error confirmation to the middleware.

11. The middleware updates the Employee Central Data Replication Monitor.

### 8.2 Configuring the Parameters for the Employee Master Data and Organizational Assignment Query

Define the settings to be used in the query that is triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

#### Prerequisites

You’ve set up the transformation template group that you want to use for replication of employee master data and employee organizational assignments.

#### Context

Make at least one entry for the transformation template group you’re using in this integration. The Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program determines from the template group what configuration it is to use.

---

**Note**

Before making the respective setting, be sure to read the field help (F1 help) that is available for each field in the Customizing activity.
Procedure

1. Go to Customizing for Personnel Management and choose \[ Integration with SuccessFactors Employee Central \ Business Integration Builder \ Employee Data Integration \ Define Parameters for Employee Master Data and Org. Assignment Query \.

2. **Mandatory:** Select your transformation template group.

3. **Optional:** Restrict the replication to employees who have a job in a specific company (legal entity), as specified in their Job Information in Employee Central. You can specify companies in different ways:
   - In the Settings for EE Master Data and Org. Assign. Query step, you enter them in the Company column, separated by commas, with or without blanks in between. The length of this field is restricted to 255 characters. To enter more companies, go to the Additional Companies substep of the view cluster.
   - In the Additional Companies substep, you can list your companies one by one.
   - You can also specify companies in both steps. Duplicates are removed by the query.

4. **Optional:** Restrict the replication to employees who have a job in a specific country/region (company territory code), as specified in their Job Information in Employee Central. You can specify countries/regions in different ways:
   - In the Settings for EE Master Data and Org. Assign. Query step, you enter them in the Country column, separated by commas, with or without blanks in between. The length of this field is restricted to 255 characters. To enter more countries, go to the Additional Countries substep of the view cluster.
   - In the Additional Countries substep, you can list your countries/regions one by one.
   - You can also specify countries/regions in both steps. Duplicates are removed by the query.

5. **Optional:** Specify that the query is to transfer only employments whose company and country/region assignment matches the company and country/region filters you defined in the previous steps.
   Employees can have multiple employments because their country/region or company assignment changed. If you select this parameter, only the employments that are relevant for the company or companies and country/region or countries/regions you specified are considered in data replication.
   - If you select this parameter, also the following blocks in the People Profile are filtered based on the country/region or countries/regions you specified:
     - Global Information within the Personal Information block
     - National ID Information
     - Global Information and National ID Information within the Dependents block
   If you specified a company or companies, the country/region of the company is used to determine the relevant information. Only the information that’s relevant for the applicable country/region or countries/regions is considered.

**Example**

Let’s say you replicate only data that’s relevant for Germany to a specific target system. That is, you entered the company territory code for Germany in step 4. Your full transmission start date (FTSD) is January 1, 2020. An employee moved from Germany to the US on February 1, 2020. That is, in the period after FTSD, this employee has two employments, the previous one in Germany and the current one in the US.

If you select the Matching Employments Only parameter, only the employment for Germany is replicated. The current, US employment is not. If the employee has US-specific and Germany-specific
information stored in **Global Information** and **National ID Information**, only the Germany-specific information is considered.

If you don’t select this checkbox, both employments and all data that’s stored in **Global Information** and **National ID Information** are replicated.

---

### i Note

The filtering for matching employments only works if you create new employments when transferring employees between companies and countries/regions.

---

6. **Optional:** Restrict the replication to employees who have a job of a specific employee class (as specified in their Job Information in Employee Central).

7. **Mandatory:** Decide for which group of your workforce (employees, contingent workforce) data is to be replicated.

8. **Optional:** Include organizational assignments into the replication.

9. **Optional:** Prevent replication of organizational assignments for employees with specific employment statuses.

---

### i Note

Make sure that you filter out time slices when an employee is inactive in Employee Central by listing all relevant employment statuses, such as *Terminated*. What exactly the statuses are called depends on how you’ve set up your picklists in Employee Central. For more information, see [Picklist Configuration for Employee Status and Job Relationship Type](#) in the guide *Implementing Employee Central Core*.

Else, if an organizational assignment time slice is being transferred in which the employee is inactive, organizational assignment replication fails, showing the error message **Employee is inactive in ERP; replicate active employee from EC**.

This error message either means that an employee is active in Employee Central, but not (yet) active in SAP ERP HCM (for example, because the employee was rehired in Employee Central, but this information hasn’t been transferred to SAP ERP HCM yet). In this case, the error will be gone after the next run of employee master data replication.

However, the error message is also shown when the employee is actually inactive in Employee Central and their data should no longer be transferred to SAP ERP HCM – but the organizational assignment replication process still tries to transfer this data. To prevent the error from happening in the latter case, filter out any time slices in which employees are inactive.

---

10. **Mandatory:** Specify the replication target system.

Enter the external code of the **Replication Target System** object that you created in Employee Central, to define to which SAP ERP HCM system employee master data (including employee organizational assignments) is replicated.

---

### i Note

Make sure that you use the same code here and in the **Replication Target System** object in Employee Central.

---

11. **Optional:** Decide whether you want to replicate the key from the **External Object ID** field of the cost center in Employee Central when transferring cost center to the SAP ERP HCM system.
Replicating the external object ID makes sense if you replicate the cost centers themselves from SAP ERP HCM to Employee Central and have set the Use External Cost Center ID parameter of the cost center integration flow to True. Because then the External Object ID field of the cost center in Employee Central is filled with the cost center key from SAP ERP HCM. In this case, we recommend that you also select this checkbox so that organizational assignment replication also uses the SAP ERP HCM key.

Alternatively, you can replicate the key from the Code field of the cost center in Employee Central when replicating cost center assignments.

12. Optional: Enable replication of multiple job events per day.

Let’s say you change the data of an employee in Employee Central using the Return from Leave event reason. On the same day, you change the same employee’s data again using the Job Re-Classification event reason. If you don’t select the Multiple Job Events per Day checkbox, only the latest change (the job reclassification) is transferred to the SAP ERP HCM system. If you select this checkbox, both changes are transferred.

13. Optional: Enable replication of multiple compensation events per day.

Replication of multiple compensation events on the same day is currently available for Brazil.

Let’s say you award a Brazil-based employee equipment allowance in Employee Central. Later on the same day, you grant a spot bonus to the same employee. You use different event reasons for the updates. If you don’t select the Multiple Compensation Events per Day checkbox, only the latest change (the spot bonus) is transferred to the SAP ERP HCM system. If you select this checkbox, both changes are transferred.

14. Optional: Configure the validation options for the replication of employee data purge.

You can enable the use of purge status overview information when replicating employee master data that’s affected by a data purge.

- If you select the Use Purge Status Overview checkbox, the SAP ERP HCM system uses the DRTMPurgeStatusOverview segment of the CompoundEmployee API. This segment provides detailed purge dates.
- If you don’t select this checkbox, the SAP ERP HCM system continues to evaluate the validation against the effective end date filter provided by the CompoundEmployee API.

For more information, see the Related Information.

15. Optional: Enable notifications being created for the Employee Central Data Replication Monitor.

16. Optional: Disable confirmations being created for the Employee Central Data Replication Monitor.

---

i Note

Only turn off confirmations in exceptional situations. For example, if you are in the process of setting up replication between Employee Central and the SAP ERP HCM system and want to have a look at mapping issues first, without checking whether replication was successful or not.

If you turn off confirmations, make sure that the notifications are also turned off (meaning, the Notification checkbox must not be selected). Otherwise, the replication requests remain in status In Process because the status Successful or Failed is never set.

If you turn off confirmations, the Create and Execute Employee Master Data and Org. Assignment Query program doesn’t create queries of the Data Replication Monitor Query type.
Next Steps

Enter the transformation template group for which you defined the parameters on the selection screen of the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program.

Related Information

Specifics of Cost Center Assignments [page 214]
Creating the Replication Target System Object [page 35]
Creating a Transformation Template Group for Employee Data [page 132]
Configuring Validation Options for the Replication of Employee Data Purge [page 285]

8.3 Configuring the Query Program for Employee Master Data and Organizational Assignment Replication

Define the selection criteria for the program that queries employee master data and organizational assignments from Employee Central.

Prerequisites

You’ve defined the parameters in the Define Parameters for Employee Master Data and Org. Assignment Query Customizing activity. This Customizing activity stores a configuration per transformation template group, which the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program is to use.

If you want the program to also query employee organizational assignments, set the Replicate Organizational Assignment parameter to x. When this parameter is set, the program also requests transfer of the employees’ organizational assignments (such as employee-department or employee-job classification assignments), plus information about all associated employees entered in the employee’s Job Information, such as the employee’s supervisor/manager, from Employee Central.

Context

The Create and Execute Employee Master Data and Org. Assignment Query program creates queries in SAP ERP HCM and sends them to Employee Central, to replicate employee master data (and, if applicable, organizational assignments) from Employee Central.
Procedure

1. Select the transformation template group.
   The query runs for all employees specified by the selection criteria, based on the selected transformation template group and based on the configuration stored for this template group. Which data is queried from Employee Central depends on which transformation templates are contained in the template group. The earliest transfer date of the transformation template group defines which full transmission start date (FTSD) is used for the data replication.

2. Restrict the selection to specific employees or a specific date if you want to query a specific set of data only.
   - You can restrict the selection to a specific employee or specific employees.
     To improve the performance, you can only select a maximum number of 500 employees at a time.
     Restricting the selection to specific employees triggers a full load for the employees in question.
     Meaning, all data is transferred (as specified by the transformation template group), independent of when the data was last modified.
   - You can restrict the selection to employees whose master data (or organizational assignments if applicable) was changed after a specific date.
     The change date must not be more than three months in the past and must be before the last modified date. If you enter a change date, the last modified date is reset to this change date.

3. Decide whether you want to turn on extended logging.
   - You can enable payload logging to transfer extended information to the process log in the middleware.
     **Caution**
     For data protection reasons, enable the extended log for troubleshooting purposes only. Make sure to disable the extended log again afterwards.
     If you enable the extended log, the complete message payload containing all data that is to be transferred is stored in the log. Make sure that you configure permissions in a way that only authorized persons can view the payload in the log. Also ensure that you’re compliant with the data protection and privacy regulations so that your data gets the highest level of protection.
   - You can transfer extended information to the Verbose log (for employee master data).

4. Run the program in the test mode if you want to make sure that your selection criteria have the desired effect.

Results

If you don’t restrict the selection to specific employees or a specific date, a full load is carried out when the program is run for the first time in the productive mode. After the first data extraction, the time stamp of the query is stored as the last modified date and the program switches over to delta replication. That is, the next query uses the last modified date as a lower limit. Only records that have a newer time stamp are considered as changed and are replicated.

With each productive run, the program updates the following administration tables:

- Administration of Employee Master Data and Org Assign. Query (ECPAO_QRY_ADM)
This table stores an entry for each run of the program, that is, for each query.

- **Selection Parameters for EE Master Data and Org. Ass. Query** (ECPAO_QRY_ADMDT)
  This table stores the parameters you entered on the selection screen of the program.

**Next Steps**

Schedule the program to be run regularly in the background.

Messages triggered by the program are written to the standard application log. If errors occur, use the application log along with the other monitoring tools to analyze them.

If the processing of the query couldn’t be finished, reset the query status using the **Reset Query Administration Table** (ECPAO_RESET_QRY_ADM) transaction.

**Related Information**

- Monitoring of Employee Master Data and Organizational Assignment Replication [page 254]
- Deciding on the Full Transmission Start Date [page 23]

**8.4 Scheduling the Employee Master Data and Organizational Assignment Query as a Regular Background Job**

Trigger queries to request employee master data and organizational assignments from Employee Central on a regular basis.

**Prerequisites**

You have defined a suitable variant or several variants for the **Create and Execute Employee Master Data and Org. Assignment Query** (ECPAO_EE_ORG_REPL_QUERY) program.

**Context**

You can define and schedule background jobs in two ways:

- Directly from the **Define Background Job** (SM36) transaction. This is best for users already familiar with background job scheduling.
• Using the Job Scheduling Wizard. This is best for users unfamiliar with SAP background job scheduling. To use the Job Scheduling Wizard, choose Job Wizard in the Define Background Job transaction.

Carry out the following steps for each variant:

**Procedure**

1. Go to the Define Background Job (SM36) transaction.
2. Decide on a name for the job you are defining and enter it in the Job Name field.
3. Select the job’s priority in the Job Class field:
   ○ High priority: class A
   ○ Medium priority: class B
   ○ Low priority: class C
4. In the Target Server field, indicate whether to use system load balancing. For the system to use system load balancing to automatically select the most efficient application server to use at the moment, leave this field empty. To use a particular application server to run the job, enter a specific target server.
5. If spool requests generated by this job are to be sent to someone as e-mail, specify the e-mail address. To do so, choose Spool List Recipient.
6. Define when the job is to start. To do so, choose Start Condition > Date/Time. Enter a suitable date and time and select the Periodic Job checkbox.
7. Define the job’s steps by choosing Step > ABAP Program. Specify the variant to be used (see above).
8. Save the fully defined job to submit it to the background processing system.
9. Release the job so that it can run.

**Next Steps**

When you need to modify, reschedule, or otherwise manipulate a job after you’ve scheduled it the first time, you’ll manage jobs from the Simple Job Selection (SM37) or Extended Job Selection (SM37C) transactions.
8.5 Statuses of Employee Master Data and Organizational Assignment Queries

Get an overview of the different statuses queries can have that are triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

**Statuses of Queries Triggered by the Employee Master Data Query Program**

<table>
<thead>
<tr>
<th>Status</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sent</strong></td>
<td>The query was triggered by the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program and sent to the middleware, but data replication hasn’t started yet. If the query remains in the Sent status, you can resend it after a five-minutes timeout has passed. You can also set the status manually to Failed using the Reset Query Administration Table (ECPAO_RESET_QRY_ADM) transaction.</td>
</tr>
</tbody>
</table>
| **In Process** | The query was accepted by the middleware, which for its part started to request data from Employee Central. A query that remains in the status In Process for a longer period of time has an issue. It didn’t transfer any data, for example, because the middleware wasn’t able to send a confirmation. In this case, you have the following options to trigger the next query run:  
  - Set the status manually to Failed. To reset the status, use the Reset Query Administration Table transaction. Then wait for the next run if you’ve scheduled the query program to be run regularly in the background. Or trigger the query program manually again.  
  - Just wait three days. If the query remains in the status In Process for three days, it is treated as if the status was set to Failed. The next run is triggered automatically if you’ve scheduled the query program to be run regularly in the background. You can also trigger it manually. |
| **Successful** | The requested data was transferred from Employee Central. The middleware has sent a corresponding success confirmation. |
| **Failed** | An error occurred during data replication. The middleware has sent a corresponding error confirmation. |

**Related Information**

Processing and Statuses of Replication Requests [page 208]
8.6 Types of Employee Master Data and Organizational Assignment Queries

Get an overview of the different types of queries that are triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

Types of Queries Triggered by the Employee Master Data Query Program

<table>
<thead>
<tr>
<th>Type</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Modified Query</td>
<td>The query requests the following data:</td>
</tr>
<tr>
<td></td>
<td>• All employee master data that corresponds to your selection criteria and was changed after the last modified date. The last modified date is the time stamp of the last query that was created by the <strong>Create and Execute Employee Master Data and Org. Assignment Query</strong> program with the same template group.</td>
</tr>
<tr>
<td></td>
<td>• Master data of all employees who are flagged for rescheduling in the Employee Central Data Replication Monitor. Administrators can flag employees manually for rescheduling. For some errors, such as the payroll area or the employee being locked, rescheduling also happens automatically. For more information, refer to <strong>Reprocessing Employee Data Replication</strong> in the <strong>Employee Central Data Replication Monitor</strong> administration guide.</td>
</tr>
<tr>
<td></td>
<td>The program triggers this type of query when neither specific employees nor a change date were entered on the selection screen.</td>
</tr>
<tr>
<td>Employee-Specific Query</td>
<td>The query requests data for specific employees, whose IDs you entered on the selection screen of the <strong>Create and Execute Employee Master Data and Org. Assignment Query</strong> program.</td>
</tr>
</tbody>
</table>
8.7 Administration of Employee Master Data and Organizational Assignment Queries

See what information is stored in the administration tables for queries being triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central.

Query Administration Table

The Administration of Employee Master Data and Org Assign. Query (ECPAO_QRY_ADM) table stores an entry for each query being triggered by the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program.

Table 57: Information Stored By Query

<table>
<thead>
<tr>
<th>Type of Information</th>
<th>More Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique ID of the query</td>
<td>Each new query triggered by the program gets a new ID.</td>
</tr>
<tr>
<td>ID of the transformation template group</td>
<td>You enter the template group on the program selection screen</td>
</tr>
<tr>
<td>Query type</td>
<td></td>
</tr>
<tr>
<td>Query status</td>
<td></td>
</tr>
<tr>
<td>Last modified date</td>
<td>This is the time stamp of the last query that was created by this program with the same selection variant.</td>
</tr>
<tr>
<td>Next last modified date</td>
<td>This is the time stamp of the data transfer from Employee Central. This time stamp is used as the last modified date for the next query.</td>
</tr>
</tbody>
</table>

**Note**

Last modified date and next last modified date are only used by queries of the Last Modified Query type.

<table>
<thead>
<tr>
<th>User</th>
<th>The name of the user who ran the query program manually or scheduled it to be run in the background</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time stamp of the last program run</td>
<td>The time when the program was executed manually or has last run in the background</td>
</tr>
<tr>
<td>Time stamp of the query status</td>
<td>The time when the query status was set</td>
</tr>
</tbody>
</table>

Query Selection Parameters Table

The Selection Parameters for EE Master Data and Org. Ass. Query (ECPAO_QRY_ADMDT) table stores the parameters you entered on the selection screen of the Create and Execute Employee Master Data and Org. Assignment Query program. For example, the employee IDs or the change date you specified (if applicable), or whether the Enable Payload Logging checkbox was selected.
8.8 Resetting Employee Master Data and Organizational Assignment Queries

In some cases it is necessary to reset the status of employee master data and organizational assignment queries, so that the next scheduled query can run. You can also delete queries selectively.

**Context**

Set the query status manually to *Failed* if a query sent by the *Create and Execute Employee Master Data and Org. Assignment Query* (ECPAO_EE_ORG_REPL_QUERY) program remains in the *Sent* or *In Process* status for a longer period of time.

Resetting the status is necessary since the next query cannot be created before the current query has one of the statuses *Successful* or *Failed*. A query remains in the *Sent* status if it doesn’t reach the middleware, for example, due to configuration issues. It remains in the *In Process* status if data can’t be transferred from Employee Central. If the query remains in the *Sent* status, it can be resent after a five-minutes timeout has passed.

→ **Tip**

*Created On* shows when the query was initiated. *Status Set On* shows when the status of the query was set. For successful queries, the difference between these two time stamps tells you how long the replication took. Here’s an example:

**Table 58: Example: Query Runtime**

<table>
<thead>
<tr>
<th>Query Type</th>
<th>Query Status</th>
<th>Status Set On</th>
<th>Created On</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Modified Query</td>
<td>Successful</td>
<td>2017.04.27 07:25:38</td>
<td>2017.04.27 07:23:30</td>
</tr>
</tbody>
</table>

This query ran for 2 minutes and 35 seconds.

You can also delete single queries completely.

→ **Tip**

To mass-delete queries with the type *Employee-Specific Query* and one of the statuses *Successful* or *Failed*, use the *Delete Queries from Admin Tables for EE Master Data and Org Assignment* (ECPAO_DEL_EE_ORG_QRY_ADM) program.

**Procedure**

1. Go to the *Reset Query Administration Table* (ECPAO_RESET_QRY_ADM) transaction in your SAP ERP HCM.
2. To reset the status, select an entry with the *Sent* or *In Process* status and choose *Set Status to Failed*. 
You can't reset the status of queries that already have the status *Successful* or *Failed*.

Since the queries are triggered and administered by the SAP ERP HCM system, you can't use the middleware to reset the query status.

3. To delete queries, select one ore more entries and choose *Delete Query*.

**Note**

In productive system environments, you should only delete queries of the *Employee-Specific Query* type and only if they have one of the statuses *Successful* or *Failed*. If you delete other types of queries, the last modified date is removed. This means that the next query will trigger a full load (if you don't enter a change date in the *Select Employees with Data Changes After* section).

### 8.9 Deleting Employee Master Data and Organizational Assignment Queries

Delete queries with the type *Employee-Specific Query* and the statuses *Successful* or *Failed* regularly, to clean up the query administration tables and minimize the number of records in these tables.

**Context**

Using the *Delete Queries from Admin Tables for EE Master Data and Org Assignment* (*ECPAO_DEL_EE_ORG_QRY_ADM*) program, you can mass-delete queries that were sent by the *Create and Execute Employee Master Data and Org. Assignment Query* (*ECPAO_EE_ORG_REPL_QUERY*) program. The *ECPAO_DEL_EE_ORG_QRY_ADM* program deletes entries from the following tables:

- *Administration of Employee Master Data and Org Assign. Query* (*ECPAO_QRY_ADM*)
- *Selection Parameters for EE Master Data and Org. Ass. Query* (*ECPAO_QRY_ADMDT*)

You cannot delete queries with the types *Last Modified Query* or *Data Replication Monitor Query* or with one of the statuses *Sent* or *In Process* using the *ECPAO_DEL_EE_ORG_QRY_ADM* program. If you need to delete such queries, go to the *Reset Query Administration Table* (*ECPAO_RESET_QRY_ADM*) transaction.

**Procedure**

1. Schedule the *Delete Queries from Admin Tables for EE Master Data and Org Assignment* (*ECPAO_DEL_EE_ORG_QRY_ADM*) program to be run regularly in the background.

2. On the selection screen of the program, make the following settings:
○ **Transformation Template Group**: To delete queries sent for a specific transformation template group, select the template group. To delete all queries that have the status you select and were sent before the date you specify, leave this field empty.

○ **Query Status**: The default is to delete all queries with the statuses **Successful** and **Failed**. You can also choose to delete either only **Successful** or only **Failed** queries.

○ **Delete Before Date**: Specify a date up to which queries are to be deleted. The default is today’s date. The specified date is not included.

  ☛ **Example**

  If you enter June 1, entries created on May 31 or earlier are included. Entries created on June 1 are not included.

○ **Test Mode**: Select this checkbox to run the program in a test mode.

### Results

If you run it in the test mode, the program displays statistical information and lists the entries to be deleted.

If you deselect the **Test Mode** checkbox, the program displays statistical information and deletes the entries from the tables **ECPAO_QRY_ADM** and **ECPAO_QRY_ADMDT** that suit your selection criteria.

### 8.10 Defining Exceptions for Compound Employee API Query

Here’s how you define the exceptions for Compound Employee API query.

### Context

To define the parameters, go to Customizing for Personnel Management and choose **Integration with SuccessFactors Employee Central > Business Integration Builder > Employee Data Integration > Define Exceptions for Compound Employee API Query**.

ие **Note**

Before making the respective setting, be sure to read the field help (F1 help) that is available for each field in this Customizing activity.
**Procedure**

1. Choose the EC Entity for which you want to maintain the exceptions.
2. Enter the Compound Employee API structure name.

   This activity will be required for custom EC entities that are created for custom MDF objects configured in Employee Central which have a parent-child relationship. For the child EC entity, maintain an exception using this feature with the CE API segment name of the parent EC entity in the field for CE API Segment.
Use push replication to have data replication triggered immediately, regardless of when the next regular replication is scheduled.

Usually replication runs regularly. That is, the SAP ERP HCM system triggers replication in the time intervals you’ve scheduled. But for certain job events it makes sense to have data replication triggered immediately. For these job events, you can use push replication. Preconfigured content for push replication is available for the job events Hire, Rehire, and Termination. Using this preconfigured content, you can replicate data immediately to SAP ERP HCM whenever a new employee is hired or when an employee is rehired or terminated in Employee Central, without having to wait for the next regular replication run.

**Note**
Since regular replication is based on the last modified date, employees whose data was pushed to SAP ERP HCM will be picked up again in the next replication run. But the data isn’t posted to the database again, unless it was changed between push and regular replication.

To use push replication, you need to set up Employee Central and SAP ERP HCM accordingly and deploy the **SAP SuccessFactors Employee Central Integration with SAP ERP or SAP S/4HANA: Push Notification** integration package in the middleware.

**Note**
As of Q3 2017, push replication is set up using Intelligent Services Center and Integration Center in Employee Central. This also means that the middleware now uses the Representational State Transfer (REST) technology. Previously, the **Event Notification Subscription** tool in Employee Central and the Simple Object Access Protocol (SOAP) technology in the middleware were used for push replication. That’s why you need to change your setup in case you already had configured push replication before Q3 2017.

**Push Replication Process [page 247]**
View a graphical overview and a step-by-step description of the process that pushes employee master data and organizational assignments from Employee Central to SAP ERP HCM.

**Configuring Employee Central for Push Replication [page 249]**
Configure Employee Central to enable push replication so that you can have employee master data and organizational assignment replication to the SAP ERP HCM system triggered immediately.

**Configuring SAP ERP HCM for Push Replication [page 252]**
Set up SAP ERP HCM to enable push replication so that you can have employee master data and organizational assignment replication from Employee Central triggered immediately.
9.1 Push Replication Process

View a graphical overview and a step-by-step description of the process that pushes employee master data and organizational assignments from Employee Central to SAP ERP HCM.

The process for pushing employee master data and org assignment replication from Employee Central has steps in three systems interacting with each other: Your on-prem Enterprise Resource Planning system, SAP ERP HCM, the cloud-based middleware, and SAP SuccessFactors Employee Central.

Here's how this process runs:

1. Employee Central sends a push notification to the middleware, using the event bus and the Intelligent Services Center.

![Figure 59: Push Replication Process for Employee Master Data and Organizational Assignments](image)
2. The middleware calls the inbound web service EmployeeMasterDataAndOrgAssignmentPush Notification in the SAP ERP HCM system to pass over the push notification from Employee Central. The service contains the list of employees for which an immediate data transfer is requested (that is, a list of user IDs or external person IDs). It also contains the transformation template group to be used in SAP ERP HCM.

3. The inbound web service processes the push notification and triggers the query program in the SAP ERP HCM system, Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY).

4. The query program reads the parameters you have defined in Customizing for the corresponding transformation template group and calls the outbound web service getEmployeeMasterDataAndOrgAssignmentBundleReplicationQuery to retrieve the data of the pushed employees. It also updates the query administration tables. The next process steps are the same as for the regular replication process. We’ve outlined them here – for the detailed steps see the regular replication process.

5. The outbound web service sends the query to the middleware.

6. The middleware requests the corresponding data from Employee Central using the Compound Employee API.

7. The middleware calls the inbound web service EmployeeMasterDataAndOrgAssignmentBundleReplicationRequest in the SAP ERP HCM system to pass over the data it has received from Employee Central.

8. The inbound web service triggers processing of the employee master data and organizational assignments transferred from Employee Central in the SAP ERP HCM system.

9. The processing of employee master data and organizational assignments triggers the outbound web service EmployeeMasterDataReplicationConfirmation to tell Employee Central whether data transfer was successful or not.

10. The outbound web service passes over the corresponding success or error confirmation to the middleware.

11. The middleware updates the Employee Central Data Replication Monitor.

**Related Information**

- Replication Process for Employee Master Data and Organizational Assignments [page 230]
- Configuring the Integration Flow for Employee Push Replication [page 99]
9.2 Configuring Employee Central for Push Replication

Configure Employee Central to enable push replication so that you can have employee master data and organizational assignment replication to the SAP ERP HCM system triggered immediately.

Context

To enable push replication from Employee Central, you need to set up a flow with a suitable flow rule for an event (such as Hire or Rehire) in the Intelligent Services Center. The flow is an integration from the Integration Center assigned. The flow is triggered depending on the conditions defined in the flow rule and in turn triggers the integration. The integration hands the user ID of the affected employee over to the push process in the middleware. The push process triggers a replication query for this employee.

Note

You can deploy the push integration flow multiple times in the middleware, using different transformation template groups for different groups of employees. If you deploy it multiple times, each instance of the push process in the middleware needs a separate flow with a suitable flow rule and integration. Each integration needs to address a different URL in the middleware.

Each event being triggered in Employee Central can push information for only one employee to SAP ERP HCM. For example, when two employees are hired at the same time, a separate event needs to be triggered for each employee. You can’t fire only one event, thus pushing the data of both employees together to SAP ERP HCM.

We explain the setup using the Hire, Rehire, and Terminate events and the Job Information block in the People Profile as an example. But you can also set up push replication for any other event and based on any other People Profile block if you want to have immediate data replication triggered by this specific event.

Procedure

1. Make sure that Intelligent Services are enabled. If they aren’t, use Upgrade Center to enable them.

   For more information, see Enabling Intelligent Services and Retrieving SuccessStore Rules with Upgrade Center in the Setting Up Intelligent Services guide. Find this guide in SAP Help Portal, on the SAP SuccessFactors Platform page.

2. Import the Intelligent Services rules from Success Store.

   a. In Employee Central, go to Admin Center and choose the Import and Export Data tool.
   b. Select the action Import Data.
   c. Choose Success Store.
   d. In the Package Name column, find Intelligent Service Rules and select the radio button.
   e. Choose Import.

   For more information, see Enabling Intelligent Services and Retrieving SuccessStore Rules using Upgrade Center.
3. Assign the imported Intelligent Services rules to Job Information.
   a. Go back to Admin Center and choose the Manage Business Configuration tool.
   b. Choose Job Information and scroll down to Trigger Rules.
   c. Assign the rules by entering the following information:

<table>
<thead>
<tr>
<th>Rule</th>
<th>Event Type</th>
<th>Base Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event Hire (Event_Hire)</td>
<td>onPostSave</td>
<td>Job Information Model</td>
</tr>
<tr>
<td>Event Terminate (Event_Terminate)</td>
<td>onPostSave</td>
<td>Job Information Model</td>
</tr>
<tr>
<td>Event Rehire (Event_Rehire)</td>
<td>onPostSave</td>
<td>Job Information Model</td>
</tr>
</tbody>
</table>

   **Note**
   The Intelligent Services rules you imported from Success Store are meant for the Hire, Rehire, and Terminate events. You can also set up rules for other events.

4. Determine the URL or URLs that Employee Central addresses in the middleware.
   a. Go to the Go to Manage Integration Content in SAP Cloud Integration.
   b. Copy the URL shown in the Endpoints section.

   For more information, refer to Managing Integration Content.

   The URL looks like this: https://<runtime URL of your SAP Cloud Integration environment>/http/<sender address>

   **Note**
   The sender address part is the suffix you enter in the Address field of the sender in SAP Cloud Integration when setting up the push integration flow. For example: /push_notification. To get the complete endpoint URL, configure and deploy the integration flow first, then copy the URL from Manage Integration Content.

   c. If you deploy the push integration flow multiple times, make sure that the sender address is unique for each instance. For example:

   - https://<...>.com/http/push_notification_US
   - https://<...>.com/http/push_notification_DE

5. Create a flow in the Intelligent Services Center.
   a. Go to Admin Center and choose the Intelligent Services Center tool.
   b. Select the event that is to trigger push replication. For example, Employee Hire (by publisher Employee Central).
   c. Choose New Flow to create a flow for the event.
   d. Set up a flow rule for your flow.

   The flow rule defines that depending on a specific attribute from the employee’s Job Information, such as the employee’s country/region assignment (= Legal Entity), a specific instance of the push process is triggered in the middleware. You can use or copy an existing flow rule, or create a new one.
To assign an integration to your flow, choose Integration (under Activities, in the Custom Activities section).

To create a new integration, choose Create.

You can also assign an existing integration if you’ve created a suitable one already.

If you create a new integration, choose destination type REST and format XML for it. When you’re done, you’re redirected to Integration Center.

6. Set up your new integration in Integration Center.
   a. Go to the Options step and enter the following information:

      Table 60: Options
      |
      | In this field... | Enter this information... |
      | Integration Name | Enter any name. |
      | Description | Enter any description. |

   b. Go to the Configure Fields step and make the following settings:

      ○ Select the ROOT element, which is shown by default, and choose Add Child Element. In XML Element Name, enter userId.
      ○ Switch to the Field Mapping View and drag User ID from the Job Information section to the userId element in the Destination Fields section to map these elements.

   c. Go to the Destination Settings step and enter the following information:

      Table 61: Destination Settings
      |
      | In this field... | Enter this information... |
      | Connection Name | Enter any name. |
      | REST API URL | Enter the URL you put together and saved in step 4. |
      | Authentication Type | Select Basic Authentication. |
      | User Name | Enter the user ID of your SAP Cloud Integration user. |
      | Password | Enter the password of your SAP Cloud Integration user. |
      | HTTP Method | Select POST. |
      | Payload Format | Select XML. |

   d. Save your integration.

7. If you deploy the push integration flow multiple times in the middleware, repeat steps 4–6 for each process instance.
9.3 Configuring SAP ERP HCM for Push Replication

Set up SAP ERP HCM to enable push replication so that you can have employee master data and organizational assignment replication from Employee Central triggered immediately.

Context

For pushing employee master data and organizational assignment replication from Employee Central, you need at least one transformation template group in SAP ERP HCM, which you enter as a parameter in the middleware process. You can use the template group you’re also using for the regular data replication. Or you create a separate template group for push replication. You can also create multiple template groups for different groups of employees, for example, based on their country/region assignment. In this case, you deploy the middleware process multiple times and specify each template group in one of the process instances.

Procedure

1. Go to Customizing for Personnel Management and choose Integration with SuccessFactors Employee Central ➤ Business Integration Builder ➤ Employee Data Integration ➤ Define Field Mapping for Employee Data.
2. Check whether you want to use an existing template group for push replication. If not, create one or more template groups.
3. For each template group you create, add transformation templates that correspond to the data you want to transfer using push replication. For example, an Employment Info template for the EmpEmployment Employee Central entity.
4. For each template, define the field mappings as required. For example, if you use different template groups for different groups of employees, based on their country/region assignment, map the required country/region-specific fields.

Next Steps

The user who triggers push replication needs to have the authorization to change the Administration of Employee Master Data and Org Assign. Query (ECPAO_QRY_ADM) table. Add this authorization to the role you’re
using in the `Role Maintenance` (PFCG) transaction. For more information, see `Role Administration` in the SAP NetWeaver documentation.
10 Monitoring of Employee Master Data and Organizational Assignment Replication

You can use various tools in SAP ERP HCM, the middleware, and Employee Central to monitor employee master data and organizational assignment replication.

Logging and Monitoring in SAP ERP HCM [page 254]
Take a look at logging in the SAP ERP HCM system and the tools you can use to monitor employee master data and organizational assignment replication from Employee Central.

Monitoring in the Middleware [page 269]
Take a look at the tools you can use to monitor employee master data and organizational assignment replication in the middleware.

Logging and Monitoring in Employee Central [page 269]
Take a look at logging in Employee Central and the tools you can use to monitor employee master data and organizational assignment replication to the SAP ERP HCM system.

10.1 Logging and Monitoring in SAP ERP HCM

Take a look at logging in the SAP ERP HCM system and the tools you can use to monitor employee master data and organizational assignment replication from Employee Central.

Analyzing the Application Log [page 255]
Using the application log you can analyze the incoming messages for employee master data and organizational assignment replication from Employee Central in your SAP ERP HCM system.

Analyzing SOAP Messages with Web Service Utilities [page 255]
Use Web Service Utilities to monitor incoming SOAP messages in the SAP ERP HCM system.

Verbose Logging [page 256]
Business Integration Builder provides you an option to enable logging at an additional more detailed level known as Verbose logging.

Simulation Mode [page 258]
Simulation mode enables you to perform a preview testing of replication to check for any possible errors before you perform an actual replication.

Replication Request Monitor for Organizational Data Replication [page 260]
Using the Replication Request Monitor, you can access the staging area for organizational data in SAP ERP HCM to check statuses, analyze errors, or process requests manually.

Using the Replication Request Viewer for Organizational Assignment Replication [page 268]
Using the Replication Request Viewer, you can access the staging area for organizational assignments in SAP ERP HCM to check statuses or process requests manually.

Analyzing the Inventory Report [page 268]
This report queries all the success and error scenarios when you extract the employee data or organizational data from SAP SuccessFactors Employee Central (EC) to SAP ERP HCM system. This
will help you to troubleshoot any issues, which can occur when you import the data using web service transfer.

### 10.1.1 Analyzing the Application Log

Using the application log you can analyze the incoming messages for employee master data and organizational assignment replication from Employee Central in your SAP ERP HCM system.

**Context**

Messages triggered by the *Create and Execute Employee Master Data and Org. Assignment Query* (ECPAO_EE_ORG_REPL_QUERY) program are written to the standard application log. Here’s how to check these messages:

**Procedure**

1. Go to the *Analyze Application Log* (SLG1) transaction.
2. Enter the ECPAO_IN object and one of the following subobjects:
   - GEN for generic messages
   - EE for employee master data
   - VERBOSE for the Verbose message log
3. Make additional selections as suits your requirements and choose *Execute*.

### 10.1.2 Analyzing SOAP Messages with Web Service Utilities

Use Web Service Utilities to monitor incoming SOAP messages in the SAP ERP HCM system.

**Context**

Web Service Utilities (transaction SRTUTIL) in SAP ERP HCM offers an *Error Log* and a *Message Monitor* tool, which you can use, for example, to analyze errors in incoming SOAP messages or check the content of messages.

*Note*

For more information about the tool, see *Web Service Logging and Tracing* in the SAP NetWeaver documentation.
Depending on your system configuration, the SRTUTIL transaction might not be available. If it’s not, use the Integration Engine: Monitoring (SXMB_MON1) transaction instead.

**Procedure**

1. Choose **Error Log** to see information about all errors happening during the processing in the SOAP runtime.
2. Double-click an error message to see more details.
3. Choose **Original XML** to display the error message in the XML format.
4. Go back and choose **Message Monitor** to get an overview of all received messages along with their content.
5. Select the messages you want to see.
   - You can, for example, specify the execution time in the Timestamp From and Timestamp To fields on the Standard Selection tab.
   - You can also filter for messages related to a specific interface by entering the interface in the Interface Name field for the receiver.
   - Or you filter for messages with a specific message ID.
6. Double-click a message to see the content that was transferred from Employee Central.
7. Choose **Original XML** to display the content in the XML format.

**10.1.3 Verbose Logging**

Business Integration Builder provides you an option to enable logging at an additional more detailed level known as Verbose logging.

Verbose logging can be enabled in the query report program while scheduling or executing this report in the front end.

**iNote**

This option is meant only for testing purpose and is not supposed to be enabled for mass replications. Internally the number of employees that can be replicated together with verbose logging enabled is limited at 50.
The main log cannot be switched off and gives you a high-level overview and the errors that could have occurred while processing an employee. The verbose log does not show any error logs for an employee as it is designed to show an overview of the internal sequence of how an employee details are processed. The verbose logs can be checked for an employee in SLG1 by using the external employee ID.

<table>
<thead>
<tr>
<th>Message Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Template group</td>
<td>Shows the template group that was used for the employee while parsing and processing the employee.</td>
</tr>
<tr>
<td>Message Type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cut-off date</td>
<td>Shows the cut-off date used from the template group</td>
</tr>
<tr>
<td>Basic infotype processing</td>
<td>Shows the important fields from IT0000 and IT0001, which are required for actions and PERNR resolution from EC employee object. The important fields include MASSN, WERKS, PERSG, PERSK, MOLGA etc.</td>
</tr>
<tr>
<td>Infotype records based on time segments</td>
<td>Shows the infotypes processed based on the valid ERP time segments that will be saved when the employee is successfully replicated in the ERP.</td>
</tr>
</tbody>
</table>
| ERP Field level details              | • Shows the ERP field level details, which will be grouped based on the infotype.  
• Shows the EC entity details, from which the data is picked.  
• Shows the EC field from which value for this ERP field is mapped.  
• Shows the value from EC payload before any processing is done.  
• Shows the value mapping entity used for this mapping.  
• Shows the value after value conversion/value mapping.  
• Shows the existing database value for the field for the corresponding time period.  
• Shows the default values used for the infotype fields. |

These additional level of logging helps you to easily find out the value conversions and value mappings that happened at the field level. It can give an insight into what might have been missed or possibly gone wrong while an employee is replicated.

10.1.4 Simulation Mode

Simulation mode enables you to perform a preview testing of replication to check for any possible errors before you perform an actual replication.

When you run the replication process with the simulation mode enabled the entire replication logic would run except saving the employee data to the database. As this is an exact simulation of the entire business logic all the validations are performed and if any errors are there, it will be shown in the SLG1 transaction log. If there are no errors, then you can proceed with the replication process, as you know that there would not be any infotype level processing errors. This feature can be enabled in the query report while scheduling or while executing the replication process in front end.
The main SLG1 log will indicate that the replication process was executed with simulation mode. There will not be any difference in verbose log compared to the actual replication.
10.1.5 Replication Request Monitor for Organizational Data Replication

Using the Replication Request Monitor, you can access the staging area for organizational data in SAP ERP HCM to check statuses, analyze errors, or process requests manually.

The Replication Request Monitor (SFIUI_A_REPL_REQ_MONITOR) is a Web Dynpro application that allows you to check replication requests for organizational objects and organizational assignments in all details, analyze error message issued by the replication from Employee Central, and process replication requests manually.

The SFIUI_A_REPL_REQ_MONITOR Web Dynpro application is assigned to the role menu of the SAP_HR_SFIOM_PROCESSING role in SAP ERP HCM. You can also add it to the SAP SuccessFactors user interface using the Configure Custom Navigation admin tool in Employee Central. This tool allows you to add hyperlinks to various locations in the SAP SuccessFactors UI, enabling users to navigate from that location to the specified URL. The URL you need to add is: <protocol><host name>/sap/bc/webdynpro/sap/sfiui_a_repl_req_monitor.

For more information about the tool, see the Custom Navigation Links administration guide. Find the most current version of this guide at http://help.sap.com/hr_foundation.

Selecting Replication Requests for Monitoring [page 261]
Select the replication requests that you want to check in the Replication Request Monitor by time frame, ID, or status.

Sorting and Filtering to Show Replication Requests You’re Interested In [page 262]
Adjust the results list in the Replication Request Monitor so that only the requests you want to monitor right now are shown.

Creating a Personalized View for the Results List [page 262]
Adjust the results list in the Replication Request Monitor according to your personal preferences, for example, to remove columns you’re not interested in.

Viewing Time Slices, Job Information, and Messages for a Replication Request [page 263]
Review time slices contained in a request for organizational object replication or Job Information assignments contained in a request for organizational assignment replication, to find out what data was replicated. And check whether any messages occurred.

Viewing Mapped Object IDs, Message IDs, and Other Technical Details for a Replication Request [page 264]
Review details about a replication request in the Replication Request Monitor, such as what Employee Central and SAP ERP HCM IDs are mapped, what full transmission start date and transformation template are used, and so on.

Exporting the Results List [page 265]
Export the results list from the Replication Request Monitor to work on it offline or share it with someone else.

Processing Replication Requests Manually to Directly Store Updates in SAP ERP HCM [page 266]
Post selected requests from the Replication Request Monitor manually on the database if you want to store the contained updates immediately, without waiting for the next scheduled run of the database update program.

Example: Checking Why the Parent Division Is Missing for a Department [page 267]
Go through this example to see how you can use the Replication Request Monitor when a replication request wasn’t successful because the associated object is missing.
10.1.5.1 Selecting Replication Requests for Monitoring

Select the replication requests that you want to check in the Replication Request Monitor by time frame, ID, or status.

**Procedure**

1. Select a time frame. By default requests are shown for the past week. Available time frames are:
   - Past hour
   - Past 24 hours
   - Past week
   - Past 4 weeks
   - All

2. Select a status or multiple statuses. By default, failed, open, and pending requests are shown. To select multiple statuses, choose (Advanced Options). Available statuses are:
   - 01 = Open
   - 02 = Pending
   - 03 = Successful
   - 04 = Failed
   - 05 = Outdated
   - 06 = Redundant

3. Select organizational objects by object type or ID or select organizational assignments by employee ID or personnel number.

4. Choose Apply.

**Results**

All replication requests that match your selection criteria are shown in the results list on the Organizational Object Replication tab or the Organizational Assignment Replication tab.

**Next Steps**

Next, adjust the results list so that only the requests you want to monitor right now are shown.
10.1.5.2 Sorting and Filtering to Show Replication Requests You're Interested In

Adjust the results list in the Replication Request Monitor so that only the requests you want to monitor right now are shown.

**Prerequisites**

You’ve selected replication requests so that the results list is shown.

**Procedure**

1. Select the header of a column to sort the entries in ascending or descending order.
2. Select the column header again to filter for one of the entries or to define your own filter.

**Next Steps**

Next, personalize the results list according to your preferences, for example, to remove columns you’re not interested in.

10.1.5.3 Creating a Personalized View for the Results List

Adjust the results list in the Replication Request Monitor according to your personal preferences, for example, to remove columns you’re not interested in.

**Prerequisites**

You’ve selected replication requests so that the results list is shown.

**Procedure**

1. Choose (Open Settings Dialog) to personalize the results list. For example:
Add or remove columns
- Change the default order of columns
- Sort columns by default
- Filter columns by default
2. Save your settings as a personalized view to reuse them.

Next Steps

Next, check the time slices, job information, and messages for a replication request.

10.1.5.4 Viewing Time Slices, Job Information, and Messages for a Replication Request

Review time slices contained in a request for organizational object replication or job information assignments contained in a request for organizational assignment replication, to find out what data was replicated. And check whether any messages occurred.

Prerequisites

- You've selected replication requests so that the results list is shown.
- You've sorted, filtered, and personalized the results list if desired so that only the requests you want to monitor right now are shown.

Procedure

1. Choose Show Details for a replication request in the results list to view the data records (time slices) replicated for the selected object or the job information assignments for the selected employee, and also the message log.
   If an employee's master data wasn't replicated yet from Employee Central, no employee name is shown. In this case, searching for the employee name in the ERP Personnel Number field in the selection criteria doesn't produce any results either.
2. Choose Show Details for a time slice shown in the Details for <Organizational Object> section to view the fields and field values replicated from Employee Central to SAP ERP HCM.
   You're shown, for example, the external code, the title (in all languages included in the replication), or the parent object of an object replicated from Employee Central.
3. Choose Show Details for an assignment shown in the Job Information Assignments section to view the job info replicated from Employee Central and the corresponding fields in SAP ERP HCM.
You’re shown, for example, the supervisor, company, business unit, position, or job classification assigned in Employee Central and the corresponding manager, company code, organizational unit, position, or job assigned in SAP ERP HCM.

4. Choose Show Details for an assignment shown in the Additional Assignments section to view Job Relationship assignments, such as a matrix manager relation.

Additional Assignments is only displayed for employees that have additional Job Relationship assignments and only if you’ve enabled replication of associated employee information in the middleware (for organizational object replication) or the SAP ERP HCM system (for employee master data and organizational assignment replication).

5. If an error occurred, the related messages are shown.

The Message Log section shows the messages stored for the selected replication request in the Analyze Application Log (SLG1) transaction of the SAP ERP HCM system.

Next Steps

Next, view mapped object IDs, message IDs, and other technical details for a replication request.

10.1.5.5 Viewing Mapped Object IDs, Message IDs, and Other Technical Details for a Replication Request

Review details about a replication request in the Replication Request Monitor, such as what Employee Central and SAP ERP HCM IDs are mapped, what full transmission start date and transformation template are used, and so on.

Prerequisites

You’ve chosen Show Details for a time slice shown in the Details for <Organizational Object> section or for an assignment shown in the Details for Employee (<Employee ID>) section.

Context

You can view the following detailed information for a replication request:

- The ID of the object replicated from Employee Central and the mapped object ID from the SAP ERP HCM system
- The ID of the employee replicated from Employee Central and the mapped personnel number from the SAP ERP HCM system
- The ID of the web service message used to replicate this specific object or employee
The status, creation date, and last change date of the replication request
- The unique ID of the replication request
- The full transmission start date (FTSD) used by the replication
- The transformation template group used in the replication
- Whether the generic, configuration-based or the object-specific processing of organizational objects was used in SAP ERP HCM
- Whether Enforce Update was set in employee master data replication
- Whether Is No-Show was set for a time slice

Procedure

Choose Show Technical Details at the bottom of the screen.

10.1.5.6 Exporting the Results List

Export the results list from the Replication Request Monitor to work on it offline or share it with someone else.

Prerequisites

- You've selected replication requests so that the results list is shown.
- You've sorted, filtered, and personalized the results list if desired so that only the requests you want to monitor right now are shown.

Procedure

Choose Export to Microsoft Excel to download the list.

Results

The export option downloads the plain list, without adding any details or links.
10.1.5.7 Processing Replication Requests Manually to Directly Store Updates in SAP ERP HCM

Post selected requests from the Replication Request Monitor manually on the database if you want to store the contained updates immediately, without waiting for the next scheduled run of the database update program.

Prerequisites

- You've selected replication requests so that the results list is shown.
- You've sorted, filtered, and personalized the results list if desired so that only the requests you want to monitor right now are shown.

Procedure

Select a request or multiple requests and choose Process Requests.

Results

The Replication Request Monitor runs the following database update programs directly, without asking for confirmation:

- Replicate Organizational Objects from EC to ERP Org. Mgmt (RH_SFIOM_PROC_ORG_STRUCT_RPRQ) for organizational object requests
- Replicate Employee Org. Assignments from EC to ERP Org. Mgmt (RH_SFIOM_PROC_EE_ORG_ASS_RPRQ) for organizational assignment requests

Processed replication requests disappear from the results list in the Replication Request Monitor.

Related Information

Scheduling the Database Update Program as a Regular Background Job [page 206]
10.1.5.8 Example: Checking Why the Parent Division Is Missing for a Department

Go through this example to see how you can use the Replication Request Monitor when a replication request wasn’t successful because the associated object is missing.

Procedure

1. Check which replication requests weren’t successful since yesterday.
   a. Go to the Selection Criteria section.
   b. Choose the selection period Last 24 Hours.
   c. Choose the statuses Failed and Pending.
   d. If needed, restrict the selection to the Employee Central object type you want to monitor, such as Department.
2. From the result list, show the details for a specific object, such as Department 2, to check which error occurred.
   You’re shown this error message: FODepartment DEP_2: Target object DIV_11 for relationship A002 does not exist
3. Check for the target object mentioned in the error message.
   a. Go back to the Selection Criteria section.
   b. Choose the selection period All.
   c. Restrict the selection to the target object ID, DIV_11.
   The Replication Request Monitor doesn’t show any result for your selection – apparently division Division 011 (DIV_011) wasn’t replicated yet.
4. Go to the Admin Center in SAP SuccessFactors, open the Manage Data admin tool, and check Department 2.
   Department 2 has associations to two divisions: Division 011 and Division 012
5. Trigger replication of organizational objects from Employee Central to SAP ERP HCM again.
6. Go back to the Replication Request Monitor, select the entry for Division 011, and choose Process Requests to post the result to the database.
7. Select the entry for Department 2 and choose Process Requests.
8. Check the details for Department 2 again – this time, no error is shown.
10.1.6 Using the Replication Request Viewer for Organizational Assignment Replication

Using the Replication Request Viewer, you can access the staging area for organizational assignments in SAP ERP HCM to check statuses or process requests manually.

**Context**

Replication requests for employee organizational assignments are stored in a staging area in the SAP ERP HCM system. To view the requests, go to the **Display Employee Org. Assignment Replication Requests** (SFIOM_VIEW_REQUESTS) transaction.

**Procedure**

1. Push [F9] to change the statuses to be shown. By default, replication requests with the status **Open**, **Pending**, or **Failed** are displayed.
2. Choose **Process Selected Requests** to trigger the database update manually for selected requests.
3. Choose **Application Log** to go to the **Analyze Application Log** (SLG1) transaction and check the messages issued for the selected replication requests.

10.1.7 Analyzing the Inventory Report

This report queries all the success and error scenarios when you extract the employee data or organizational data from SAP SuccessFactors Employee Central (EC) to SAP ERP HCM system. This will help you to troubleshoot any issues, which can occur when you import the data using web service transfer.

This report, **Analyze Inventory of Replicated Employee Data** (ECPAO_EMPL_INVENTORY_ALV) will provide you the detailed error message information about the replication status for each employee based on the infotype, subtype, and simulation mode. With the detailed error message, you can troubleshoot the failed import of employee data or organizational data from the Employee Central to SAP ERP HCM system.

Based on the type of selection criteria the replication status of an employee or an organizational object would be displayed in ALV format. The replication status shows both the success or failure scenario and the failure scenario would show the detailed error message. The report output displays the ECPAO_INVFT_INFTY and ECPAO_INVFT_ITMSG database table contents, which is updated during the employee extraction or the organizational data process.
10.2 Monitoring in the Middleware

Take a look at the tools you can use to monitor employee master data and organizational assignment replication in the middleware.

Monitoring in SAP Cloud Integration [page 269]
Use the monitoring features of SAP Cloud Integration to check whether any issues occurred in your middleware processes.

10.2.1 Monitoring in SAP Cloud Integration

Use the monitoring features of SAP Cloud Integration to check whether any issues occurred in your middleware processes.

SAP Cloud Integration provides a web-based monitoring UI that allows you to check the status of messages and integration content artifacts for a tenant cluster. For more information, see Monitoring.

Use the log ID that you find in the monitoring to find the log of a specific process that didn’t run successfully and to filter the log for detailed information.

10.3 Logging and Monitoring in Employee Central

Take a look at logging in Employee Central and the tools you can use to monitor employee master data and organizational assignment replication to the SAP ERP HCM system.

Employee Central Data Replication Monitor [page 269]
Employee Central provides an admin tool for monitoring data replication to the SAP ERP HCM system.

Analyzing API Calls with the SFAPI Audit Log [page 270]
Use the SFAPI Audit Log to monitor API calls to Employee Central.

10.3.1 Employee Central Data Replication Monitor

Employee Central provides an admin tool for monitoring data replication to the SAP ERP HCM system.

The integration processes update the status in the Employee Central Data Replication Monitor by sending notifications and confirmations. Use the Data Replication Monitor to check the replication status, view alerts, and analyze error messages related to data replication from Employee Central to SAP ERP HCM. For more information, refer to the Employee Central Data Replication Monitor administration guide.
10.3.2 Analyzing API Calls with the SFAPI Audit Log

Use the SFAPI Audit Log to monitor API calls to Employee Central.

Context

The Employee Central CompoundEmployee API used by this integration is an employee-specific version of the SOAP-based SAP SuccessFactors API (SFAPI). It’s provided specifically for extracting employee data (including organizational assignments) out of Employee Central. You can monitor the SFAPI using the SFAPI Audit Log.

The SFAPI Audit Log is intended to help with support and debugging of API usage. You can use it, for example, to share information with Product Support to help resolve API-related support issues. The tool allows you to download data from individual calls, which you could then send to Product Support.

For more information about the SFAPI Audit Log and how to access it, see Integration Tools in the SAP SuccessFactors HXM Suite SFAPI developer guide. Find the most current version of this guide in SAP Help Portal at https://help.sap.com/hr_foundation.

Procedure

1. Go to the Admin Center and choose the SFAPI Audit Log tool.

   The Audit Log page shows the last 10,000 API calls to this system.

2. Select the button under the SOAP or HTTP columns in the log table to view the payload information for each call.
You've set up combined employee master data and organizational assignment replication from Employee Central – now go through the follow-up steps.

Handling of Cutoff Date [page 272]
Cut-off date is set for a template group and during the replication process, the employee data will be changed based on the cut-off date that has been set.

Handling Time Constraint 3 for Infotype 0006 [page 272]
Infotype 0006 with Time Constraint 3 as subtype requires special mapping to be performed in the Infoporter tool.

Creating Custom MDF Objects [page 273]
Custom MDF objects created in Employee Central can also be replicated in addition to the standard entities delivered by SAP ERP HCM. A new EC entity needs to be created in SAP ERP HCM which can identify the custom MDF object in compound API XML.

Mapping One Employee Central Field to Two SAP ERP HCM Fields [page 276]
This chapter explains you on how you can map an Employee Central field to two SAP ERP HCM fields.

Mapping Infotype 0008 and 0014 from Recurring Payments [page 277]
You need to selectively map pay components under EC entity WS_12 to IT0008 and IT0014. This can achieve the requirement of filling one subset of the wage types under WS_12 in IT0008 and another subset in IT0014.

Mapping Infotype 0016 [page 278]
Sample content is updated to support the replication of infotype 0016 by enhancing the existing WS_4 and WS_3 entities.

Condition Based Filling of Amount or Percentage in Infotype 0008 [page 279]
You need to fill the amount (BET01) or percentage fields(ANZ01) of infotype 0008 based on the pay component type in Employee Central.

Supporting Foreign Address Replication [page 280]
You can now replicate foreign address that has a secondary infotype in the SAP ERP HCM system.

Performance Optimization of This Integration [page 281]
Here are some best practices to help you improve the performance of employee master data and organizational assignment replication from Employee Central.

Replicating Bank Information Infotype 0009 Subtype 1 considering the SAP ERP Payroll Period [page 283]
You can determine the start date based on the payroll periods only for bank information of type other bank.

Handling of Data Purge in the Replication [page 284]
Look at how the purge of data is handled in the replication from Employee Central to the SAP ERP HCM system.
11.1 Handling of Cutoff Date

Cut-off date is set for a template group and during the replication process, the employee data will be changed based on the cut-off date that has been set.

Cut-off date is the earliest date from which the changes are replicated to the SAP ERP HCM system. When the query report is run with a template group, the cut-off date of this template group will be used as the Full Transmission Start Date. This makes sure that the data records which are valid as of this date will be sent for replication from Employee Central. From Employee Central, the employee data records whose validity ends before this date will not be sent to the SAP ERP HCM system.

If the cut-off date intersects with an already existing infotype record, a time segment will be created. This time segment is created only if there is a change in the infotype record. Infotype records which end before the cut-off date are not affected. If the cut-off date is in-between the start date and the end date of an already existing record and if the Employee Central record corresponding to this infotype record has changed, the changes will be inserted only from the cut-off date. A new record starting from the cut-off date will be inserted with the new changes and the existing record will be delimited. If there is no changes, then the record will remain unaffected.

<table>
<thead>
<tr>
<th>Cut-off Date</th>
<th>01.01.2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record</td>
<td>01.01.2016</td>
</tr>
</tbody>
</table>

With change, record split at 01.04.2017 into two records

| 01.01.2016     | 31.12.2016 ( old data ) |
| 01.01.2017     | 31.12.9999 ( new data ) |

11.2 Handling Time Constraint 3 for Infotype 0006

Infotype 0006 with Time Constraint 3 as subtype requires special mapping to be performed in the Infoporter tool.

For Infotype 0006, you will have to perform additional mappings for successful replication of the data. At the Employee Central template level, you will have to configure the specific mapping as mentioned below.

- Processing mode: Time Constraint 3 Mapping
- Processing Infotype: 0006
- Processing Field: Sequence number

In addition you need to create a custom template for address info with the specific mapping details mentioned above. Here you can use the inherit metadata option to configure the EC fields in Infoporter tool.

If you are trying to map infotype 0006 for any other EC template, then that EC entity also should have the same specific mapping as mentioned above.
11.3 Creating Custom MDF Objects

Custom MDF objects created in Employee Central can also be replicated in addition to the standard entities delivered by SAP ERP HCM. A new EC entity needs to be created in SAP ERP HCM which can identify the custom MDF object in compound API XML.

Context

In the Define Employee Central Templates for Additional Employee Data Entities Customizing activity (view V_ECPAO_ECTMPL) you can also see the default entities defined by SAP ERP HCM.
To define custom Employee Central entities carry out the steps described below for each entity that you add.

**Note**
Define custom entities only for employee master data. Adding entities for transactional data (such as time-off (absence) data of employees) will lead to memory issues in the Compound Employee API.
Procedure

1. Define the basic settings.
   a. Enter a unique entity ID and a description. The ID has to be in the customer namespace, which means that it has to start with a number (0* - 9*). You can enter any description.
   b. Enter the entity name. You must use the exact name of the corresponding entity in Employee Central.
      To find out about the name for OData entities and generic objects, go to the Admin Center and choose the OData API Data Dictionary tool.
   c. Choose Web Service Transfer as the communication channel.
   d. If you want to be able to assign your Employee Central entity to several transformation templates, select the Multiple Use checkbox.
   e. Specify if the Employee Central entity is effective dated.
      
      **i Note**
      If you define a cutoff date for a transformation template group in the Define Field Mapping for Employee Data Customizing step, this date influences effective-dated and non-effective dated templates in different ways.
   f. If your entity should inherit the metadata that you upload for another Employee Central entity, specify the entity that is to be used as the metadata basis.
      
      **i Note**
      If you make an entry in this field for an Employee Central entity, you can't import metadata for this entity. You can only import metadata for the Employee Central entity that you've entered, meaning the entity from which the metadata is to be inherited.
   g. If the MDF object is effective dated specify the Employee Central field (such as effectiveStartDate) in which the start date is stored for the corresponding entity.
   h. If the MDF object is effective dated specify the Employee Central field (such as endDate) in which the end date is stored for the corresponding entity.
   i. Specify the CE API Segment. The XML node name in CE API XML which can uniquely identify the object.

2. Define infotype-specific settings.
   a. Specify the SAP ERP HCM infotype that is required for your Employee Central entity to be able to use it for a proper field mapping. The infotype you create a new transformation template and assign this to the newly created EC entity, entity to be able to use it for a proper field mapping. The infotype you specify in this field is used by the specify in this field is used by the SAP ERP HCM system to check if the necessary field mapping is defined.
      
      **Example**
      The Personal Data (0002) infotype is required for the Personal Information entity in Employee Central. You can’t transfer any data from SAP ERP HCM to this entity if you haven’t defined a mapping for any of the infotype fields.
   b. Only for Employee Central entities defined by SAP: An infotype can be specified that requires a special mapping (such as the Date Specifications (0041) infotype).
c. If you need a special processing for the Employee Central entity, specify the processing mode you need. The processing mode refers to the infotype you enter in the next step. The following processing modes are available:
   ○ Repetitive Structure Mapping
   ○ Object Identification Mapping
   ○ Only for Employee Central entities defined by SAP: Time Constraint 3 Mapping
d. Enter the SAP ERP HCM infotype for which a special processing is needed.
e. If you’ve selected the Object Identification Mapping processing mode, specify the object identification (OBJID) field for which a unique key needs to be generated.
f. If you’ve selected the Repetitive Structure Mapping processing mode, specify a structure that contains the fields for which you want to use the repetitive mapping.

3. Upload the metadata for this custom entity.
4. Create a new transformation template and assign this to the newly created EC entity. The infotype you specify in this field is used by the entity to be able to use it for a proper field mapping. In the view cluster under a transformation template, an Employee Central field can be mapped only to one SAP ERP HCM field, i.e. if a mapping is maintained for an Employee Central field either in primary or secondary mapping to an SAP ERP HCM field, the same Employee Central field cannot be used for creating a second mapping to another SAP ERP HCM field. In case there is a requirement to map an Employee Central field to two SAP ERP HCM fields, a simple technique using value conversion can be used to achieve the desired results. For example, if an Employee Central field1 is to be mapped to two SAP ERP HCM fields FIELD1 and FIELD2, this can be achieved by performing the following steps:

   1. Create a mapping between the Employee Central field and one of the two SAP ERP HCM fields in the normal way. In this case map field1 to FIELD1.
   2. Create a second mapping using any unused field that is available the Employee Central entity linked to the transformation template, to the second SAP ERP HCM field. This will act as a dummy mapping to pass the value of the Employee Central field in step1 to the second SAP ERP HCM field. In this case, say take another Employee Central unused field field10 and map this to FIELD2.
   3. Create a value conversion entry in the generic value conversion view for the mapping created in step 2 to replace the value of the second Employee Central field with the value of the actual Employee Central field.

Results

After performing the above steps, BiB will use the mappings maintained for this custom Employee Central entity to replicate the data.

11.4 Mapping One Employee Central Field to Two SAP ERP HCM Fields

This chapter explains you on how you can map an Employee Central field to two SAP ERP HCM fields.

In the view cluster under a transformation template, an Employee Central field can be mapped only to one SAP ERP HCM field, i.e. if a mapping is maintained for an Employee Central field either in primary or secondary mapping to an SAP ERP HCM field, the same Employee Central field cannot be used for creating a second mapping to another SAP ERP HCM field. In case there is a requirement to map an Employee Central field to two SAP ERP HCM fields, a simple technique using value conversion can be used to achieve the desired results. For example, if an Employee Central field1 is to be mapped to two SAP ERP HCM fields FIELD1 and FIELD2, this can be achieved by performing the following steps:

   1. Create a mapping between the Employee Central field and one of the two SAP ERP HCM fields in the normal way. In this case map field1 to FIELD1.
   2. Create a second mapping using any unused field that is available the Employee Central entity linked to the transformation template, to the second SAP ERP HCM field. This will act as a dummy mapping to pass the value of the Employee Central field in step1 to the second SAP ERP HCM field. In this case, say take another Employee Central unused field field10 and map this to FIELD2.
   3. Create a value conversion entry in the generic value conversion view for the mapping created in step 2 to replace the value of the second Employee Central field with the value of the actual Employee Central field.
Use conversion rule Replace with string/Employee Central field and in the Employee Central field parameter, choose the actual Employee Central field from F4 help. In this case, for the mapping between field10 and FIELD2, in generic value conversion view, create an entry using conversion rule Replace with string/Employee Central field and in the parameter for Employee Central field, choose the field field1. This will effectively replace the value of field10 with field1 value and this will then be used for this mapping.

This technique can be used to map one Employee Central field to more than one SAP ERP HCM field. In this way, one Employee Central field can be mapped to multiple SAP ERP HCM fields and for this, create as many dummy mappings as required, one for each SAP ERP HCM field and use value conversion for each dummy mapping. In case dummy Employee Central fields are not available, the metadata of the corresponding Employee Central entity can be edited in the view V_ECPAO_FLD to add a new Employee Central field manually specifically for creating dummy mapping.

11.5 Mapping Infotype 0008 and 0014 from Recurring Payments

You need to selectively map pay components under EC entity WS_12 to IT0008 and IT0014. This can achieve the requirement of filling one subset of the wage types under WS_12 in IT0008 and another subset in IT0014.

Context

The difference between IT0008 and IT0014 is that IT0008 is repetitive structured and the pay components are filled in those repetitive fields. For IT0014, the pay components form the subtypes.

Procedure

1. Create two transformation templates using WS_12 EC entity, one for the mappings for IT0008 and one for the mappings for IT0014. Create the required mapping entries for IT0008 and IT0014 under the two separate transformation templates.

2. For the mapping between EC field payComponent and LGA01 in the transformation template for IT0008, maintain value conversion entries to clear the value of payComponent for those pay components which should not be filled in IT0008. Use the conversion rule Check and Replace, in parameter for EC field, choose the EC field payComponent and in parameter 1 enter the pay component which needs to be filtered out for IT0008 and leave parameter 2 blank. Maintain similar value conversion entries for all the pay components that are to be filtered out for IT0008.
3. In the cloning view, for the transformation template created for IT0014, maintain only the subtypes which are valid for IT0014 and do not maintain the subtypes which are valid for IT0008. This will filter out the subtypes that are not intended to be filled in IT0014.

### 11.6 Mapping Infotype 0016

Sample content is updated to support the replication of infotype 0016 by enhancing the existing WS_4 and WS_3 entities.

Sample content for 13 countries/regions is now provided and most of the country specific IT0016 related fields are available in the job information block. Hence the same has been enhanced in the WS_4 entity.

Following is the list of countries/regions we currently support with BIB:

- Argentina
- Australia
- Brazil
- Canada
- Chile
- Colombia
- Italy
- Mexico
- Netherlands
- Saudi Arabia
- Singapore
- Great Britain
- United States

If you are a new customer who is configuring BIB for the first time, then you can copy the sample content by clicking Copy Sample Content button (In the Define Field Mapping for Employee Data Customizing step) which has the IT0016 related mapping. If you are an existing customer, then you can refer the mapping details in the Show Sample Primary Mapping and Show Sample Secondary Mapping or you can refer the sample content excel file. For more information on how to copy the sample content refer the related information section.
For Brazil, a mapping between Brazil-specific fields on the Brazil-specific personnel information entity to Brazil-specific fields in Infotype Contract Elements (IT0016) is needed. Since we do not provide sample content for country-specific personnel information entities, you need to configure your own Brazil-specific personnel information entity in Business Integration builder and the corresponding mapping by your own. You need to manually add these configurations. In the Brazil-specific Infotype 398, you need to map the Receiving Unemployment Insurance Benefit field in Employee Central to UNINS in ERP. For further information, refer to the sample content excel file that you have downloaded from SAP Help Portal.

Related Information

How to Use the Sample Content for Employee Data [page 143]
Sample Field and Value Mapping Worksheet (Downloadable Excel in .zip)

11.7 Condition Based Filling of Amount or Percentage in Infotype 0008

You need to fill the amount (BET01) or percentage fields(ANZ01) of infotype 0008 based on the pay component type in Employee Central.

Context

In Employee Central, certain pay components are defined as percentage based and some as amount based and when the data is send in CE API xml, both percentage and amount will be filled in the same EC field value. Infotype 0008 is a repetitive structured infotype and is filled from EC entity WS_12 which is also defined as loop structure based. The value from EC field value should first be mapped to BET01 and ANZ01 under the transformation template created for infotype 0008 using WS_12 EC entity. To achieve this, use dummy mapping as mentioned in Mapping One Employee Central Field to Two SAP ERP HCM Fields topic.

Procedure

1. For the first mapping, i.e. the mapping to BET01, create a new value conversion entry in the generic value conversion view using conversion rule Check and Replace. In parameter for EC field choose EC field payComponentType and in parameter1, enter ‘PERCENTAGE’ and leave parameter 2 blank.
2. For the second mapping, i.e. the dummy mapping to ANZ01, create a new value conversion entry in the generic value conversion view in addition to the one already created for dummy mapping. For this new entry, use the value conversion rule Check and Replace. in parameter for EC field choose EC field payComponentType and in parameter1, enter ‘AMOUNT’ and leave parameter 2 blank.

11.8 Supporting Foreign Address Replication

You can now replicate foreign address that has a secondary infotype in the SAP ERP HCM system.

Context

You can now maintain address of other country which is different from the current country of employment. In addition we are also supporting multiple foreign addresses with secondary infotypes. In the VC_ECPAO_MAP view cluster, you can map the foreign address in the primary mapping for the address transformation template.

i Note

Foreign address replication is supported only for effective dated entities which is mapped to time constraint 1 in ERP and only from standard address block from Employee Central.

Procedure

1. Choose the Transformation Template Group for which you want to map the foreign address.
2. Choose Address transformation template.
3. Choose Primary Mapping
4. In the primary mapping UI, choose the secondary address mapping from the Infotype selection screen.

Example

A South African employee is hired in Germany and maintaines his/her address for Germany as well as South Africa.
- 01.01.2014 – 31.12.2014 - Germany (PERNR1)
- 01.01.2015 – 31.12.9999 - South Africa (PERNR1)
11.9  Performance Optimization of This Integration

Here are some best practices to help you improve the performance of employee master data and organizational assignment replication from Employee Central.

Employee master data and organizational assignment replication is triggered by SAP ERP HCM. The SAP ERP HCM system initiates a process in the middleware that requests data from Employee Central and sends it back to SAP ERP HCM. Some recommendations for improving the performance of employee master data and organizational assignment replication are:

Parallelization

You could parallelize data replication by triggering the integration process multiple times from the SAP ERP HCM system and defining appropriate selection parameters to make sure that each of these process instances transfers a different set of data. But since the middleware sends the data asynchronously to SAP ERP HCM, rather the SAP ERP HCM system than the middleware is the limiting factor. This means, parallelization wouldn’t improve the performance significantly. That’s why we don’t recommend parallelizing employee master data and organizational assignment replication processes.

Package Size

We recommend that you use the default setting of 400 configured in the middleware. If you want to change the package size, we recommend that you don’t send very small packages since this generates numerous inbound calls to your SAP ERP HCM system. A large number of calls can interfere with the processing queue, thus impacting the performance.

Scheduling

We don’t recommend trying to achieve a real-time integration by using very short replication cycles (such as replicating every minute). If you need to replicate a specific employee immediately, use push replication.

If you use multiple Employee Central-SAP ERP HCM integrations, we recommend scheduling them with the same interval, but with different timelines to avoid multiple replication processes running at the same point in time.

Server-Side Paging

Employee master data and organizational assignment replication uses the CompoundEmployee API to request data from Employee Central. The API uses server-side paging to optimize the performance if large amounts of
data need to be read. That’s why we don’t recommend that you have server-side paging disabled in SAP SuccessFactors Provisioning.

→ Remember

As a customer, you don’t have access to Provisioning. To complete tasks in Provisioning, contact your implementation partner. If you’re no longer working with an implementation partner, contact Product Support.

Setup of the SAP ERP HCM System

We recommend that you use as few transformation template groups as possible. Combine as many infotypes as possible in one template group. This setup reduces the number of subsequent queries being sent by the SAP ERP HCM system.

Confirmation and Logging

You can disable confirmations being sent from SAP ERP HCM to Employee Central during initial load. You can turn them back on when initial load is finished and you switch to delta replication. To disable confirmations, go to Customizing for Personnel Management and choose [Integration with SuccessFactors Employee Central] > [Business Integration Builder] > [Employee Data Integration] > [Define Parameters for Employee Master Data and Org. Assignment Query]. Then select the [No Confirmation] checkbox. Even with confirmations being disabled, you can analyze errors occurring during initial load using the application log in the SAP ERP HCM system.

We recommend that you disable payload logging in the middleware. Only enable payload logging if an issue occurs in employee master data or organizational assignment replication, to be able to analyze the problem.

General Recommendations

Check your firewall and your proxy for restrictions regarding the maximum package size. If necessary, adjust the firewall and proxy settings or the package size of your integration accordingly.

Disable integration processes you no longer use.

Latest when switching from your development and test environment to your productive environment, disable any integrations that you’ve set up for development and test purposes. Only trigger them on demand.

Check whether an integration really needs to run around the clock. Maybe for some types of data it is sufficient to replicate only from time to time. You can increase the time interval for the affected processes to replicate this data less frequently.

If the integration runs into an error, stop the scheduler. It doesn’t make sense to continue a replication that constantly generates error messages. This just jams the logs and makes error analysis more difficult.
11.10 Replicating Bank Information Infoype 0009 Subtype 1 considering the SAP ERP Payroll Period

You can determine the start date based on the payroll periods only for bank information of type other bank.

The start date of the time slice is shifted to the beginning of the relevant payroll period and the end date is shifted to the end of the relevant payroll period.

You can enable EC to ERP(BIB): Consider Payroll period date for IT9 Subty 1 switch in the customizing activity Maintain the Constant Values in Business Integration Builder > Basic Settings to set the start date of the other bank record based on the payroll configurations in the ERP system.

When a newly hired employee is replicated initially, current payroll period will not be considered for adjusting the start date. In this case, start date will be the hire date or original payment information start date from EC, whichever is the latest.

- If the start date of the other bank details is in the middle of the current open payroll period then the start date is adjusted to the start date of the current payroll period.

- If the start date of the other bank details is in the middle of the current closed payroll period then the start date is adjusted to the start date of the next payroll period.
11.11 Handling of Data Purge in the Replication

Look at how the purge of data is handled in the replication from Employee Central to the SAP ERP HCM system.

Purging data in SAP ERP HCM is independent of purging data in Employee Central. Each system has its own business reasons for keeping or purging data, and retention times can differ in both systems. That’s why you decide for each system what data is to be purged.

**Example**

You might purge an employee’s address in Employee Central. But the address can still be required in SAP ERP HCM for specific processes such as payroll.

If you purge data in Employee Central, this information isn’t replicated to the SAP ERP HCM system automatically. If you want to purge the same data on the SAP ERP HCM side, you need to trigger this purge in addition.

The guiding principle is that unwanted data deletion in SAP ERP HCM must be prevented. That is, Employee Central and SAP ERP HCM aren’t kept in sync regarding data purge.

**Note**

Purging data isn’t the same as deleting data. While it’s often possible to "undelete" data and recover the deleted record, a data purge is permanent and the purged records are irrevocably removed.

Validation of Employee Data Purge in Data Replication from Employee Central [page 285]

When employee master data and employee organizational assignments are purged in Employee Central, the data replication to SAP ERP HCM validates the purge and reacts to it.

Purging Employee Master Data in SAP ERP HCM [page 290]

Purge employee master data in SAP ERP HCM with the default tools to remove data from your system and comply with data protection and privacy regulations.
11.11.1 Validation of Employee Data Purge in Data Replication from Employee Central

When employee master data and employee organizational assignments are purged in Employee Central, the data replication to SAP ERP HCM validates the purge and reacts to it.

The Employee Central CompoundEmployee API has two validation options for reacting to the purge of employee data in Employee Central:

- A purge status overview, which provides detailed purge information.
- Validation against the effective end date filter, which checks whether the full transmission start date (FTSD) is in a period for which data was purged.

Depending on which option you use in the CompoundEmployee API, you can configure SAP ERP HCM to consider the selected validation option. The SAP ERP HCM system then reacts accordingly when data is purged for an employee in Employee Central that’s included in the data replication to SAP ERP HCM.

**Note**

The option you select determines how the SAP ERP HCM reacts to a data purge in Employee Central. It doesn’t affect purging data from SAP ERP HCM itself. Purging data in SAP ERP HCM is independent of purging data in Employee Central. You decide for each system separately what data is to be purged.

11.11.1.1 Configuring Validation Options for the Replication of Employee Data Purge

Configure the SAP ERP HCM system to react to the purge of employee data in Employee Central.

**Prerequisites**

The validation option you use must be enabled in the CompoundEmployee API.
Context

You can use the **Use Purge Status Overview** query parameter in SAP ERP HCM to define whether the data replication from Employee Central is to use the purge status overview or the validation against the effective end date filter provided by the CompoundEmployee API. The difference between these two options is the following:

- **Enabling the Purge Status Overview**
  The DRTMPurgeStatusOverview segment of the CompoundEmployee API informs the SAP ERP HCM system about what data was purged and provides detailed purge dates. Using the DRTMPurgeStatusOverview segment enables the SAP ERP HCM system to validate the detailed purge dates and react accordingly. The replication is also able to handle the purge of a complete block (for example, the purge of all Address Information time slices) in Employee Central. You don’t need to adjust the full transmission start date (FTSD) defined for the replication of employee master data to prevent errors.
  The replication distinguishes the deletion of data in Employee Central from a data purge. If data is deleted in Employee Central, the same data is also deleted on the SAP ERP HCM side. If data is purged in Employee Central, the SAP ERP HCM system retains this data because each system is responsible for its own purge.

- **Enabling the Effective End Date Filter**
  The validation against the effective end date filter is carried out in the CompoundEmployee API. If you use this validation, the replication of employee master data can only react to the error messages raised by the CompoundEmployee API. The replication is able to handle the purge of selected time slices. But errors are raised by the API if data is purged in Employee Central that is after the FTSD. The replication fails for the employee in question. You need to adjust the FTSD to prevent errors. If a complete block of data is purged in Employee Central, the employee is no longer replicated. Rehiring a terminated employee with the same employment isn’t possible if their data was purged.

Procedure

1. Go to Customizing for Personnel Management and choose **Integration with SuccessFactors Employee Central > Business Integration Builder > Employee Data Integration > Define Parameters for Employee Master Data and Org. Assignment Query**.
2. Select the **Use Purge Status Overview** checkbox so that the SAP ERP HCM system uses the DRTMPurgeStatusOverview segment of the CompoundEmployee API.
3. Leave the **Use Purge Status Overview** checkbox empty if you want the SAP ERP HCM system to continue to evaluate the validation against the effective end date filter provided by the CompoundEmployee API.

Related Information

- Enabling Purge Status Overview
- Enabling Validation Against Effective End Date Filter
11.11.1.2 Use of the Purge Status Overview in the Replication of Data Purge

Learn more about what the SAP ERP HCM system does if you’ve enabled the use of the purge status overview in SAP ERP HCM.

What the Query Program Does

If you decide to use the purge status overview, the query program queries the purge status overview information instead of the effective end date filter. A DRTMPurgeStatusOverview segment is added to the payload when employee data was purged in Employee Central. The DRTMPurgeStatusOverview segment contains one or more DRTMPurgeStatus subsegments. Each of the DRTMPurgeStatus subsegments informs about what data was purged and provides detailed purge dates.

What Happens in Particular Situations

Let’s look at some specific situations, using the Address Information block in Employee Central as an example.

Purge of Individual Time Slices of a Specific Block

If the Address Information block is partially purged (that is, one or more Address Information time slices are purged, but at least one time slice remains), the remaining time slice is replicated. The DRTMPurgeStatusOverview segment is also added to the payload. It contains the DRTMPurgeStatus subsegment for Address Information. The DRTMPurgeStatus subsegment contains the highestBusinessPurgeDate field. This field holds the start date of the retention period set for Address Information in Employee Central. The infotype records that exist before the highestBusinessPurgeDate are retained in SAP ERP HCM to protect the data.

Purge of All Time Slices of a Specific Block

If the complete Address Information block is purged (that is, all Address Information time slices are purged, no time slice remains), the DRTMPurgeStatusOverview segment is added to the payload. It contains the DRTMPurgeStatus subsegment for Address Information. The DRTMPurgeStatus subsegment contains the highestBusinessPurgeDate and completePurgeDateTime fields. The completePurgeDateTime field holds the time stamp set in Employee Central when the complete Address Information block was purged. The infotype records that exist in SAP ERP HCM are all retained to protect the data.

Purge and Rehire

If the employee was terminated and is rehired after their data (including some or all Address Information time slices) was purged, the DRTMPurgeStatusOverview segment is added to the payload. It contains DRTMPurgeStatus subsegments for the purged data, such as Address Information. In each DRTMPurgeStatus subsegment, the rehiredAtDateTime field is set in addition to the other date field (either highestBusinessPurgeDate or completePurgeDateTime). The rehiredAtDateTime field holds the time stamp set in Employee Central when the employee was rehired. The rehire date to be used in SAP ERP
HCM for the infotypes is approximately determined from the data entered in Employee Central during the rehire process, to ensure that valid data is used in SAP ERP HCM. The infotypes in SAP ERP HCM are updated using this date as the start date.

**Purge of Organizational Assignments**

The same processing as for employee master data applies when an employee’s job relations (such as matrix manager or HR manager relationships) are purged in Employee Central.

The SAP ERP HCM adds the following information in the staging area:

- The *Date Before Which Data Was Purged in Employee Central* field is filled with the date from which job relationships are available for an employment in Employee Central and can be replicated. Before this date, no job relationship data exists for this employment because the data was purged. The SAP ERP HCM system stores one of the following dates in this field:
  - If the job relationship data was purged for a specific period: The start date of the retention period.
  - If all job relationship data was purged because the employee was terminated, and is then available again because the employee was rehired with the same employment: Either the start date of the retention period or the rehire date, depending on which one is the later date.

- The *Data Was Completely Purged in Employee Central* flag is set when all job relationships for a specific employment were purged in Employee Central because the employee was terminated. If this indicator is set, the *Date Before Which Data Was Purged in Employee Central* field is empty because there’s no date from which job relationship data is available for the replication.

**Related Information**

**Purge Status Overview**

**11.11.1.3 Use of the Effective End Date Filter in the Replication of Data Purge**

Find out how the SAP ERP HCM system reacts if you’ve enabled the validation against the effective end date filter for the Employee Central CompoundEmployee API.

**Retention Times**

When configuring retention times for employee data in Employee Central, consider the full transmission start date (FTSD) you’ve defined for employee master data and organizational data replication to SAP ERP HCM: The FTSD must be after the latest retention date of any entity that’s contained in data replication to SAP ERP HCM.
Data Purge for Active Employee

The CompoundEmployee API raises an error message if employee data was purged in Employee Central that is still needed for replication to SAP ERP HCM. When data is purged that is after the FTSD defined for employee master data and organizational assignment replication, data replication fails for the employee in question. Individual retention dates aren’t evaluated. It uses the highest date of all retention dates you’ve defined.

**i Note**

This error message is raised by the CompoundEmployee API only if at least support package 20 of the PA_SE_IN 100 software component version is installed in your SAP ERP HCM system. If you want to use the purge option in Employee Central, make sure that you first install SP20 in your SAP ERP HCM system.

Data Purge for Terminated Employee

If specific data such as the address or email of a terminated employee is completely purged when doing a partial purge in Employee Central, the CompoundEmployee API raises a different error message for this employee. If only one of the employee's employments is terminated (such as in a global or concurrent employment situation), the error message is raised for this employment.

**i Note**

This error message is raised by the CompoundEmployee API only if at least support package 21 of the PA_SE_IN 100 software component version is installed in your SAP ERP HCM system. If you want to use partial purge in Employee Central, make sure that you first install SP21 in your SAP ERP HCM system.

Employee master data replication to SAP ERP HCM reacts on this error message by ignoring the employee in question. That is, the employee's data is no longer replicated. From a replication point of view, the status is *Successful* in this case. That's why a success confirmation is sent for the employee. As a result, the Employee Central Data Replication Monitor shows the *Successful* status for employee master data and organizational assignment replication for this employee. If only one employment is terminated, the replication of employee master data and organizational assignments ignores this employment, but still transfers data for the other employment.

If you want to rehire such an employee in Employee Central, make sure that you create a new employment. Don’t use the Rehire event. You can’t use the Rehire event because the employee still has data in Employee Central and therefore will still be ignored by employee master data and organizational assignment replication. To ensure that the employee's data can be replicated, you must use a *New Hire* event.

Related Information

**Effective End Date Filter**
11.11.2 Purging Employee Master Data in SAP ERP HCM

Purge employee master data in SAP ERP HCM with the default tools to remove data from your system and comply with data protection and privacy regulations.

Procedure

1. Use the corresponding archiving objects in the Archive Administration (SARA) transaction to purge employee master data in SAP ERP HCM.
2. Use the program Destruction of Personnel Numbers in Live Systems (RPUDELPP) or the Delete Personal Data (PU00) transaction to purge selected personnel numbers and the related infotype records in productive systems.
3. Use the program Delete Personnel Numbers Completely (RPUDELPN) to purge selected personnel numbers and the related infotype records in test and other non-productive systems.

Related Information

Archiving and Destroying Personnel Administration Data (PA-PA)
Destruction of Personnel Numbers

11.11.2.1 Replication of Communication Data When the ERP Data Has Been Purged

Learn about how purging of data in SAP ERP HCM system impacts during the replication of communication data from Employee Central.

Communication data in Employee Central is non-effective dated and in ERP it is effective dated. Hence a partial purge in ERP needs to be considered. You can now replicate the updated or new communication data from Employee Central for an employee whose SAP ERP communication data was already purged.

The situation arises when an employee was rehired on a Employee Central employment but due to data retention rules in ERP, the communication data such as private email address information were purged. So in ERP, employee wasn’t fully purged but only the communication data stored in Infotype 0105 were purged. This is because the retention time is short for some private information such as email address information.

Considering the scenario where the employee communication data has been already purged in ERP, when you trigger the replication process:

- When the employee is in inactive status: The communication data is ignored.
- When the employee is in active status: The communication data is replicated, by considering the start date of the communication data as the latest of the start date from EC or the purge end date.
  - Start date, which is configured in Non-Effective dated EC entity.
11.11.3 Purge of Application Logs in SAP ERP HCM

Purge application logs in the SAP ERP HCM system that you no longer need.

What Data Can Be Purged

Data replication between Employee Central and SAP ERP HCM uses the following objects when writing messages to the application log:

- Combined employee master data and organizational assignments replication from Employee Central to SAP ERP HCM:
  - Object ECPAO_IN with subobjects:
    - GEN for generic messages
    - EE for employee master data
    - VERBOSE for the Verbose message log
- Employee master data replication from Employee Central to SAP ERP HCM:
  - Object PAOC_SFI_PA with subobject EE
- Organizational data or organizational objects replication from Employee Central to SAP ERP HCM:
  - Object PAOC_SFI_OM with subobjects:
    - REPL_REQ_PROCESSING for the log created by the replication to the SAP ERP HCM system
    - REPL_REQ_PROXY for the log created when processing the inbound message in SAP ERP HCM
- Employee time data replication from Employee Central to SAP ERP HCM:
  - Object PAOC_SFI_PA with subobject EE_TIME

How to Purge Data

Use the BC_SBAL archiving object in the Archive Administration (SARA) transaction to delete these application logs in SAP ERP HCM if you no longer need them. The archiving object calls the SBAL_ARCHIVE_DELETE program, which deletes the data from the archived logs from the original tables.

On the selection screen of the SBAL_ARCHIVE_DELETE program, enter the following data:

- **Object and Subobject**: Select all application log objects and subobjects whose logs you want to delete
- **From (Date/Time)**: To delete all logs, enter **18000101**
- **To (Date/Time)**: Enter the latest possible date, keeping in mind that only the logs written after that date will still be available in SAP ERP HCM

For more information, see Archiving Object BC_SBAL in the SAP NetWeaver documentation.
11.11.4 Purging Inventory Table Records

Use the Delete Inventory Entries report to purge details from the inventory table.

Context

By using the Delete Inventory Entries report ECPAO_TO_ERP_INVT_DELETE, you can purge the details from the inventory table which are no longer used or relevant. Cleanup of the inventory tables will ensure only the relevant records are stored in the table, which will improve the performance while processing data.

Procedure

1. Choose the Personnel Number, Action Type, Personnel area, Personal subarea, Employee group, or Employee subgroup for which you want to purge the data.

2. Choose the Time Period or the Retention Period. Based on the Time Period or the Retention Period, the records will be purged from the ECPAO_INVT_INFTY and ECPAO_INVT_ITMSG tables. Data which are before the purge date would be purged from the inventory tables.
12 Troubleshooting of Employee Master Data and Organizational Assignment Replication

Learn more about some known issues regarding employee master data and organizational assignment replication from Employee Central to SAP ERP HCM and how to troubleshoot them.

Invalid Parameter SECONDARY_RECORD-INFTY while Replicating Employees [page 293]
You are receiving the Invalid Parameter SECONDARY_RECORD-INFTY while replicating brazilian employees from SuccessFactors Employee Central to SAP ERP HCM.

Deleting an Incorrectly Created PERNR [page 294]
When an employee has been hired to an incorrect company and when you later correct the company the unwanted PERNR is and you want to delete the unused PERNR.

Changing the Hire Date of an Employee After Payroll Has Run in SAP ERP HCM [page 294]
Synchronize Employee Central with the SAP ERP HCM system to change the hire date of an employee after their data was replicated and the payroll run has been completed in SAP ERP HCM.

Troubleshooting of Organizational Assignment Replication [page 296]
If you need to troubleshoot organizational assignment replication from Employee Central, look at the separate document we provide, which lists some known issues for organizational data replication to the SAP ERP HCM system.

12.1 Invalid Parameter SECONDARY_RECORD-INFTY while Replicating Employees

You are receiving the Invalid Parameter SECONDARY_RECORD-INFTY while replicating brazilian employees from SuccessFactors Employee Central to SAP ERP HCM.

Context

This issue is caused due to the inconsistent behavior of IT0695 during the replication process.

Procedure

Refer to the 2622240 for more information on resolving this issue.
12.2 Deleting an Incorrectly Created PERNR

When an employee has been hired to an incorrect company and when you later correct the company the unwanted PERNR is and you want to delete the unused PERNR.

Context

When you hire an employee in a wrong company and later when you correct the company, an unwanted PERNR could remain in the ERP system due to the first wrong assignment to the company. This unwanted PERNR will no longer be in scope of replication of the employee and consequently you would receive a validation error. You will have to then manually delete the PERNR from the ERP system.

Procedure

1. Run the Delete Personnel Numbers Completely (RPUDELPN) program.
2. Specify the Personnel numbers, which you want to delete from the system.
3. Choose Detailed log checkbox if you want to capture the log information.
4. Choose Test checkbox if you want to perform a test action.

   i Note
   If you want to delete the PERNR permanently from the system, do not choose the Test checkbox.

12.3 Changing the Hire Date of an Employee After Payroll Has Run in SAP ERP HCM

Synchronize Employee Central with the SAP ERP HCM system to change the hire date of an employee after their data was replicated and the payroll run has been completed in SAP ERP HCM.

Context

You must manually adjust data in Employee Central if the following situation occurs:

You hire an employee in Employee Central, replicate the employee’s data to the SAP ERP HCM system, and run the payroll there. Then you realize the hire date wasn’t correct. You move it to either an earlier or a later date in Employee Central. You replicate the employee again. The SAP ERP HCM system shows the error message Personnel number was already accounted. Do not change entry date for the replication run.
In such a situation, you must move the hire date in Employee Central first, then move it in SAP ERP HCM, and finally synchronize Employee Central with the changes you made in SAP ERP HCM. This is an exception to the rule that Employee Central is the single source of record for the employee’s data. Usually, you make any changes in Employee Central and then run the replication to synchronize SAP ERP HCM with Employee Central. But in this exceptional case it’s the other way round.

In the SAP ERP HCM system, you can change the hire date of an employee, for example, in the Change HR Master Data (PA30) transaction. If payroll has already run for the employee, you must carry out additional steps to change the employee's hire date. Refer to the SAP Note 41523 to find out what to do depending on the situation. If you carry out these steps in the SAP ERP HCM system, however, the employee’s data in Employee Central is no longer in sync with the data in SAP ERP HCM. That’s why you must perform additional steps in Employee Central to synchronize the systems again.

Procedure

- If you move the actual hire date to a date that is before the date you originally entered, make the following additional changes:
  a. Go to your SAP ERP HCM system and carry out the steps described for case 2 in the SAP Note.
  b. Go to Employee Central and change the start dates of all affected blocks of data (such as Job Information, Compensation Information, or Personal Information) of the employee’s Hire time slice so that they reflect the new hire date.
- If you move the actual hire date to a date that is after the date you originally entered, make the following additional changes:
  a. Go to your SAP ERP HCM system and carry out the steps described for case 3 in the SAP Note.
  b. Go to Employee Central and create event reasons that correspond to the personnel action types you created in the SAP ERP HCM system:
     ○ An event reason for the incorrect hire date, to hire the employee as inactive on this date
     ○ An event reason for the corrected hire date, to set the employment status to Active on the actual hire date
  c. Go back to the SAP ERP HCM system and map each event reason to the corresponding action type.

Use the EVENT_REASON value mapping entity to do the mapping if you configured the replication based on the sample content we provide.

→ Recommendation

The sample content version EE_WS_3 contains a mapping of the eventReason field from Employee Central Job Information with the SAP ERP HCM field Action Type (MASSN). The mapping uses the EVENT_REASON value mapping entity. To map the event reasons you created in the previous step with the SAP ERP HCM action types, create value mapping details for the EVENT_REASON value mapping entity.

Next Steps

To check whether the systems are in sync again, you can run the Create and Execute Employee Master Data and Org. Assignment Query (ECPAO_EE_ORG_REPL_QUERY) program in the test mode, restricting the selection to
the employee whose hire date you changed. Then verify in the application log (SLG1 transaction) that the changes you made in Employee Central are sufficient. You possibly need to adjust the hire date for more blocks of data in Employee Central. Otherwise, the systems can be out of sync again after the next replication run because Employee Central is the source system of the employee’s data.

12.4 Troubleshooting of Organizational Assignment Replication

If you need to troubleshoot organizational assignment replication from Employee Central, look at the separate document we provide, which lists some known issues for organizational data replication to the SAP ERP HCM system.

For more information, see the following guide in SAP Help Portal: Managing, Monitoring, and Troubleshooting Organizational Data Replication from Employee Central to SAP ERP HCM
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