SAP SuccessFactors ♡

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

THE BEST RUN **SAP**

Content

1 Introduction to Employee Master Data and Organizational Assignment Replication

Learn how to implement the replication of employee master data and employee organizational assignments from SAP SuccessFactors Employee Central to your SAP ERP HCM system.

This document explains how to use the SFSF EC INTEGRATION (PA_SE_IN) add-on (product SAP SuccessFactors Employee Central Integration to SAP Business Suite) to replicate employee master data together with employee organizational assignments from Employee Central to your SAP ERP HCM system.

Is this the Latest Integration Version?

This document describes the standard integration we provide for the replication of employee master data and employee organizational assignments from Employee Central to SAP ERP HCM. The integration is based on the Business Integration Builder (BIB). If you start a new integration project, this is the correct integration version for you. This document replaces all older versions of the implementation guide for replicating employee master data or employee organizational assignments from SAP ERP HCM.

For Which Deployment Option Is this Integration Intended?

The integration we describe in this document supports the *Core Hybrid* deployment option. *Core Hybrid* 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. For more information about the *Core Hybrid* deployment option, refer to Integrating SAP ERP HCM with Employee Central Using the Core Hybrid Deployment Option.

> ⚠ Caution
>
> The SFSF EC INTEGRATION (PA_SE_IN) add-on (product SAP SuccessFactors Employee Central Integration to SAP Business Suite) can be used to integrate the cloud HR solution provided by SAP (such as SAP SuccessFactors) with ERP applications provided by SAP, such as SAP S/4HANA (on-premise edition or SAP S/4HANA Cloud Private Edition) or 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.
>
> For more information about the maintenance of the SFSF EC INTEGRATION add-on, refer to SAP Note 3250816 .

Related Information

Replication Process for Employee Master Data and Organizational Assignments [page 255]

1.1 Before Starting: Am I reading the right documentation?

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

This document 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 document 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.

Read the following information to learn how to set up and use the products or modules involved in the integration.

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Product / Module	Where to Find Information
Employee Central	https://help.sap.com/docs/SAP_SUCCESSFACTORS_EMPLOYEE_CENTRAL > *Implement*
SAP ERP HCM	For platform information: https://help.sap.com/docs/SAP_NETWEAVER > *ABAP Platform*
	For information about SAP ERP in general: https://help.sap.com/docs/SAP_ERP
	For specific information about SAP ERP HCM: https://help.sap.com/docs/ERP_HCM
Middleware	https://help.sap.com/docs/CLOUD_INTEGRATION

> ⓘ Note
>
> For information about data purge, refer to the following sections in the SAP SuccessFactors guide *Implementing and Managing Data Protection and Privacy*:
>
> - Purge of Employee Central Data Replicated to the Enterprise Resource Planning (ERP) System
> - Purge of Data Related to Data Replication to Employee Central in the Enterprise Resource Planning (ERP) System

1.2   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 following experts are typically involved in the process:

Expert	What the Expert Does
SAP SuccessFactors consultant	- Is the main point of contact for the entire implementation and integration process. - Ensures that all required system settings for Employee Central are done. - Works closely with the SAP ERP HCM team, to ensure successful data replication.
Middleware consultant	Provides support on setting up the middleware.

Expert	What the Expert Does
SAP ERP HCM consultant	• Is the main point of contact for the configuration of SAP ERP HCM according to the needs of the customer. • Works closely with the SAP SuccessFactors consultant to ensure successful data replication.

1.3 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

1.4 Country/Region-Specific Information

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

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

Country/Region	More Info
Brazil	Replication of Country/Region-Specific Employee Master Data [page 195]
India	Replication of Employee Master Data for India [page 200]
Germany	Replication of Employee Master Data for Germany [page 204]
New Zealand	Replication of Employee Master Data for New Zealand [page 205]
Austria	Replication of Employee Master Data for Austria [page 206]
Italy	Replication of Employee Master Data for Italy [page 207]
France	Replication of Employee Master Data for France [page 209]
Venezuela	Replication of Employee Master Data for Venezuela [page 211]

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Country/Region	More Info
Chile	Replication of Employee Master Data for Chile [page 213]
Canada	Replication of Employee Master Data for Canada [page 215]
USA	Replication of Employee Master Data for USA [page 216]

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2 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 14]
>   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 19]
>   Why we recommend installing the latest support package of the integration add-on in your SAP ERP HCM system.

Deciding on the Full Transmission Start Date [page 19]
>   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 28]
>   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 36]
>   Make these settings in your SAP ERP HCM system so that employee master data (including employee organizational assignments) can be transferred from Employee Central.

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2.1 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, refer to Employee Central Overview.

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?

   Required Software Component Versions and Support Packages

Component	Required Software Component Version
SAP NetWeaver	SAP_BASIS with one of the following versions: • 700 with SP27 or a higher SP • 701 with SP12 or a higher SP • 702 with SP08 or a higher SP

Component	Required Software Component Version

SAP ERP HCM	The following software component versions are required in your system:
	
	• SAP_APPL
	  `SAP_APPL` 600 SP15 or a higher version/SP
	
	• SAP_HR
	  The required minimum is one of the following versions:
	    • `SAP_HR` 600 SP59
	    • `SAP_HR` 604 SP25
	    • `SAP_HR` 608 (initial delivery version, no SP required)
	  The minimum version ensures that the integration works, but you most probably need to implement additional SAP Notes. Which SAP Notes are required depends on the exact SP level available in your system. 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:
	    • `SAP_HR` 600 SPC7 (127)
	    • `SAP_HR` 604 SP93
	    • `SAP_HR` 608 SP21
	
	• EA-HR
	  The required minimum is one of the following versions:
	    • `EA-HR` 600 SP59
	    • `EA-HR` 602 SP38
	    • `EA-HR` 603 SP33
	    • `EA-HR` 604 SP25
	    • `EA-HR` 605 SP02
	    • `EA-HR` 606 (initial delivery version, no SP required)
	    • `EA-HR` 607 (initial delivery version, no SP required)
	    • `EA-HR` 608 (initial delivery version, no SP required)
	  The minimum version ensures that the integration works, but you most probably need to implement additional SAP Notes. Which SAP Notes are required depends on the exact SP level available in your system. 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

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Component	Required Software Component Version
	• `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 SP35

> ⓘ **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, refer to SFSF EC INTEGRATION 1210 ☁ in the Software Download Center. You can access the Software Download Center from SAP for Me ☁ by choosing *Systems and Provisioning*.

> ⚠ **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 add-on with the software component `PA_SE_IN` 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 ☁ (*Problems within non-Unicode systems and landscape*) and the customer letter attached to this SAP Note
> - SAP Note 1322715 ☁ (*Unicode FAQs*)
> - SAP Knowledge Base Article (KBA) 2033243 ☁ (*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 SAP for Me at https://me.sap.com/home ☁. 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:

   Required SAP Notes

SAP Note Number	Title	Issue Corrected by the SAP Note	Correction Will Be Contained in Support Package	More Info
1487337 ☁	*Downporting the class CL_ABAP_DYN_PRG*	Contains various quality improvement measures for dynamic programming.	none	

SAP Note Number	Title	Issue Corrected by the SAP Note	Correction Will Be Contained in Support Package	More Info
1043195	*Configuration of Web service runtime*	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.	none	

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:

Minimum SAP_BASIS Support Package Level for Input Validation

Software Component Version	Required Minimum SP
700	28
701	13
702	13
710	16
711	11
720	08
730	08
731	05

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:

Minimum SAP_BASIS Support Package Level for New Infotype Framework

Software Component Version	Required Minimum SP
700	36
701	21

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Software Component Version	Required Minimum SP
702	20
710	23
711	18
730	18
731	22
740	19
750	11
751	05
752	01

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

Minimum SAP_HRRXX Support Package Level for New Infotype Framework

Software Component Version	Required Minimum SP
600	F3
604	B9
608	47

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:

Minimum SAP_HR Support Package Level

Software Component Version	Required Minimum SP
604	113 or B31
608	41

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2.2 How to Keep Your Systems in Sync

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

2.3 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.

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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.

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2.3.1 What Is the Full Transmission Start Date?

Find out what the full transmission start date is and which effects it has on data replication from Employee Central to SAP ERP HCM.

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 are provided. Only records that are valid on or after the FTSD are extracted from Employee Central. Processing in SAP ERP HCM updates the records of all corresponding infotypes only if their validity begins at or after the FTSD.

The choice of the specific FTSD has consequences for existing data in SAP ERP HCM. 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.

Let's look at some examples. The examples refer to the data transferred for an organizational object. But what we show from the examples applies to all types of data included in the replication and any SAP ERP HCM infotype that is updated accordingly.

Example 1: FTSD in Second Record, Today's Date in Third Record

Let's assume name of a department in your company has changed over time. Your FTSD is May 1, 2021.

Example 1

In this example, the second and third records are transferred. The second record is considered starting from the full transmission start date. The first record isn't included in the replication because it ends before the full transmission start date.

Records Considered in SAP ERP HCM

First Record	Second Record
May 1, 2021 – April 30, 2022	May 1, 2022 – December 31, 9999
Department name: US Sales	Department name: Sales USA

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Example: FTSD in First Record, Today's Date in Third Record

Let's assume the name of a department in your company has changed over time. Your FTSD is January 1, 2021.
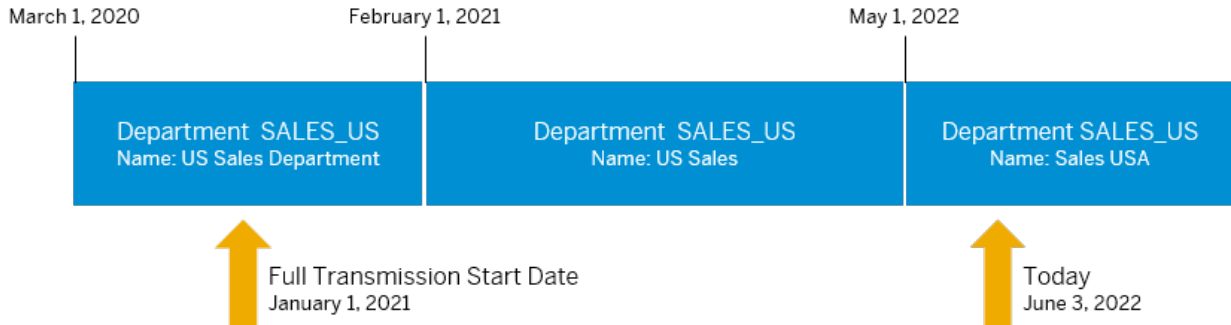
Example 2

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

Records Considered in SAP ERP HCM

First Record	Second Record	Third Record
January 1, 2021 – January 31, 2021	February 1, 2021 – April 30, 2022	May 1, 2022 – December 31, 9999
Department name: US Sales Department	Department name: US Sales	Department name: Sales USA

2.3.2 Recommendations for Choosing a Full Transmission Start Date

We have some recommendations for you when you choose the full transmission start date (FTSD) for your integration project.

Use the Latest Possible Date

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.

Use the Same FTSD for Employee Data and Organizational Objects

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

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FTSD Must Be After Retroactive Accounting Limit

Make sure that the FTSD is on the same date or after the date defined for the retroactive accounting limit in SAP ERP HCM.

When determining the retroactive accounting limit for payroll, the SAP ERP HCM system takes the following dates into account and uses the latest (that is, the most recent) of these dates:

- The date that is stored for the employee in the *Earliest Personal Retroactive Accounting Date* (PRDAT) field in the *Payroll Status*(0003) infotype. PRDAT defines the date up to which master and time data changes are allowed for the employee and up to which the system carries out retroactive accounting.
- The earliest period for which retroactive accounting can be run in general (as specified for the payroll area).
- The employee's hire date.

For more information, see Known Issue: Organizational Assignment Change Extends Too Far Into the Past.

Don't Change Employee Central Data That's Affected by the Replication Before the 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.

Required Activities When Moving the FTSD

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.

FTSD and Retention Times

If you use the validation against the effective end date filter provided by the CompoundEmployee API, 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.

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> ⇥ Remember
>
> Using the validation against the effective end date filter means that you didn't select the *Use Purge Status Overview* checkbox when configuring the parameters for the employee master data and organizational assignment query.

Related Information

[Configuring the Parameters for the Employee Master Data and Organizational Assignment Query \[page 256\]](#)

2.3.3 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 SAP ERP HCM system to store employee master data to using Employee Central country/region by country/region.

> ⓘ 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.
> - Replication of employee master data for US-based employees starts on January 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.

2.3.4 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 are provided for this assignment. Only records that are valid on or after this

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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.

> ⓘ **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:
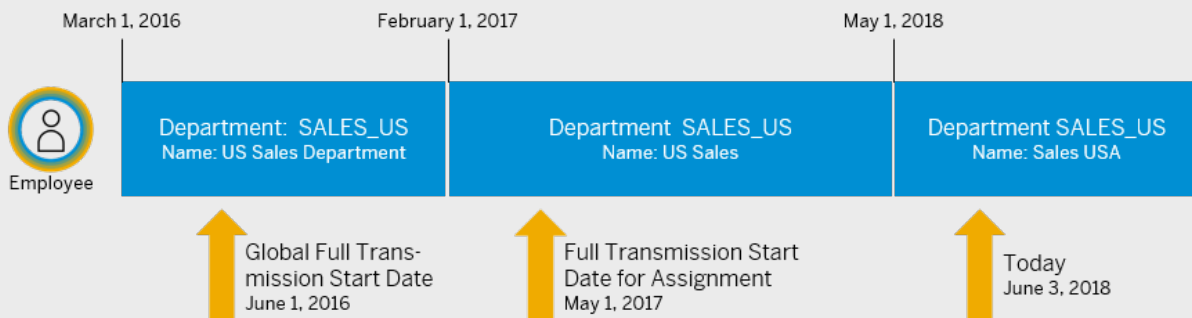
> ⁂ **Example**
>
>
>
> Example: Global FTSD in First Record, FTSD for Assignment in Second Record, Today's Date in Third Record
>
> In this example, all three records are transferred, but only the second and the third record are considered in SAP ERP HCM for this assignment. The second record is considered starting from the assignment-specific full transmission start date. The first record isn't considered for this assignment because it is before the assignment-specific full transmission start date.
>
> Data Records Considered in SAP ERP HCM for Specific Assignment
>
> | Data Record | Data Record |
> | --- | --- |
> | May 1, 2017 – April 30, 2018 | May 1, 2018 – December 31, 9999 |
> | Department name: US Sales | Department name: Sales USA |

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2.3.5 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.

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Related Information

2.4 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.

Permissions Required for SAP SuccessFactors API Access [page 28]
  Data replication between SAP SuccessFactors Employee Central and the SAP ERP HCM system requires administrator and user permissions for SAP SuccessFactors APIs.

Granting Permissions for Employee Master Data and Organizational Assignment Replication [page 31]
  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.

Granting Permissions in SAP ERP HCM to Analyze and Troubleshoot Employee Master Data Replication from Employee Central [page 33]
  Grant the necessary permissions to a user who is to analyze the replication of employee master data and employee organizational assignments from Employee Central and troubleshoot it if necessary.

2.4.1 Permissions Required for SAP SuccessFactors API Access

Data replication between SAP SuccessFactors Employee Central and the SAP ERP HCM system requires administrator and user permissions for SAP SuccessFactors APIs.

The permissions listed here grant users and administrators access to the SAP SuccessFactors OData API and SFAPI. SFAPI access includes access to `CompoundEmployee` API.

Who's This Permission For?	Permission Location	Permission Name
User	*General User Permission*	*SFAPI User Login*
Administrator	*Employee Central API*	*Employee Central Foundation SOAP API*

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Who's This Permission For?	Permission Location	Permission Name
Administrator	*Employee Central 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 administrator 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, refer to 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.
Administrator	*Employee Central API*	*Employee Central Compound Employee API (restricted segment access)* ⓘ **Note** With this permission, you can further restrict either the *Employee Central HRIS SOAP API permission* or the *Employee Central Compound Employee API (restricted access)* permission. The *Employee Central Compound Employee API (restricted segment access)* permission allows the user with this role to access `CompoundEmployee` segments according to the configuration setup only. For more information, refer to Granting Permissions for Segment Access to the CompoundEmployee API in the *Employee Central Compound Employee API* guide.
Administrator	*Employee Central API*	*Employee Central Foundation OData API (read-only)*
Administrator	*Employee Central API*	*Employee Central HRIS OData API (read-only)*

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Who's This Permission For?	Permission Location	Permission Name
Administrator	*Employee Central API*	*Employee Central Foundation OData API (editable)*
Administrator	*Employee Central API*	*Employee Central HRIS OData API (editable)*
Administrator	*Metadata Framework*	*Admin access to MDF OData API*

> ⓘ **Note**
>
> This permission is required for snapshot pagination. Snapshot pagination is used in all integration flows that perform an OData query. This applies to the following integration flows:
>
> - *Replicate Organizational Objects from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA*
> - *Replicate Time Off Data from SAP SuccessFactors Employee Central to SAP ERP*
> - *Replicate Time Sheet Data from SAP SuccessFactors Employee Central to SAP ERP*

Related Information

[What Are Role-Based Permissions?](#)

2.4.2 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, refer to 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_WEBSERVICES`)
  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

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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.

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2.4.3 Granting Permissions in SAP ERP HCM to Analyze and Troubleshoot Employee Master Data Replication from Employee Central

Grant the necessary permissions to a user who is to analyze the replication of employee master data and employee organizational assignments from Employee Central and troubleshoot it if necessary.

Context

We provide the following template role for the analysis user: *Employee Master Data and Org Assignment Replication from EC - Analysis User* (`SAP_HR_ECPAO_BIB_ANALYSIS`). This role authorizes the user to carry out the following tasks:

Task	Required Permissions
Identifying employee records that cause an exceptional error in data replication from Employee Central	Transaction `ECPAO_IN_EE_ID`
Temporarily excluding employee records that cause an exceptional error from data processing in SAP ERP HCM	Transaction `ECPAO_IN_QUAR`
Using the application log to analyze errors	Transaction `SLG1` Log object `ECPAO_IN` with subobject `GEN`
Viewing the payload and tracking the status of web service messages using the Message Monitor	Transaction `SRT_MONI` ⓘ **Note** You need to add the web service namespace `http://sap.com/xi/PASEIN` and the web service interface `EmployeeMasterDataAndOrgAssignmentBundleReplicationRequest_In` manually to your copy of the template role.
Viewing runtime errors	Transaction `ST22` Authorization object `S_DEVELOP` with object type `ST22`
Updating the *Employees Temporarily Excluded from Productive Processing* (`ECPAO_IN_QUAR`) view	*Display* and *Change* authorizations for table `ECPAO_IN_QUAR`

Procedure

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

   For more information about the role administration tools in the SAP ERP HCM system, refer to User and Role Administration of Application Server ABAP in the SAP NetWeaver documentation.

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2. Copy the template role `SAP_HR_ECPAO_BIB_ANALYSIS` to the customer namespace.

3. To grant the Message Monitor permission to the user, add the authorization object `S_SRT_MONI` with the following values in your copied role:

Option	Description
Activity (ACTVT)	03, 29
Interface Name (WSM_IFNAME)	EmployeeMasterDataAndOrgAssignmentBundle
Interface Namespace (WSM_IFNS)	http://sap.com/xi/PASEIN

> ⓘ Note
>
> The *Role Maintenance* transaction truncates the interface name after 40 characters.

4. Adjust the other permissions to suit your requirements.

5. Assign the copied role to the user who analyzes and troubleshoots the replication of employee master data and organizational assignments from Employee Central.

Related Information

Temporary Exclusion of Employees from Data Processing in SAP ERP HCM [page 316]

2.5 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 in Employee Central [page 35]
Create a *Replication Target System* object to define the system for which the Employee Central Data Replication Monitor is to monitor the replication of employee master data (including employee organizational assignments) to SAP ERP HCM.

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2.5.1 Creating the Replication Target System Object in Employee Central

Create a *Replication Target System* object to define the system for which the Employee Central Data Replication Monitor is to monitor the replication of employee master data (including employee organizational assignments) to SAP ERP HCM.

Procedure

1. Sign in to SAP SuccessFactors Employee Central.
2. Go to the Admin Center and choose the *Manage Data* tool.
3. Choose *Replication Target System* from the *Create New* dropdown.
4. Enter a string to uniquely identify your replication target system in the *External Code* field. The maximum length is 60 characters.
5. Choose *Yes* for *Relevant for ERP Integration*.
6. Define an external name.
7. Choose *No* for *Relevant for Payroll Integration*.
8. **Optional:** Enter an amount in the *Replication Time Offset in Minutes* field.

   You can enter the number of minutes to delay the resending of data if the payroll area is locked or in the correction phase. If you leave this field blank, the default time to resend is 60 minutes.
9. Save your new object.

Results

Your replication target system is available for use in the Data Replication Monitor.

Next Steps

Use the external code of your *Replication Target System* object also in the SAP ERP HCM system, when configuring the parameters for the employee master data and organizational assignment query.

Related Information

Configuring the Parameters for the Employee Master Data and Organizational Assignment Query [page 256]

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2.6　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 38]
> 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 39]
> 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 41]
> 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.

2.6.1　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.

   a. In the IMG structure, open ▶ *SAP Customizing Implementation Guide* ❯ *Personnel Management* ❯ *Personnel Administration* ❯ *Customizing Procedures* ❯ *Infotypes* ❯ *Infotypes in Detached Infotype Framework* ❯ *Use Decoupled and Not Decoupled IT Framework* ❯.

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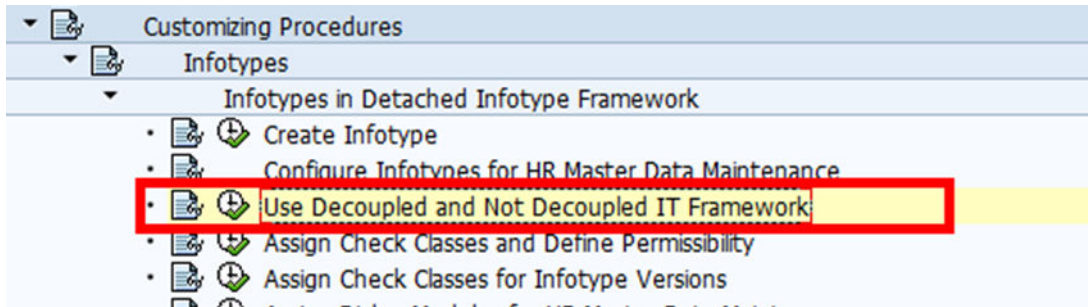
Customizing Activity: Use Decoupled and Not Decoupled IT Framework

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

CCURE PC_UI Switch

For more information see SAP Note 2126886 .

> ⓘ Note
>
> 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*.

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2.6.2 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**.

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2.6.3 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*.

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Here's a graphical overview of the options:
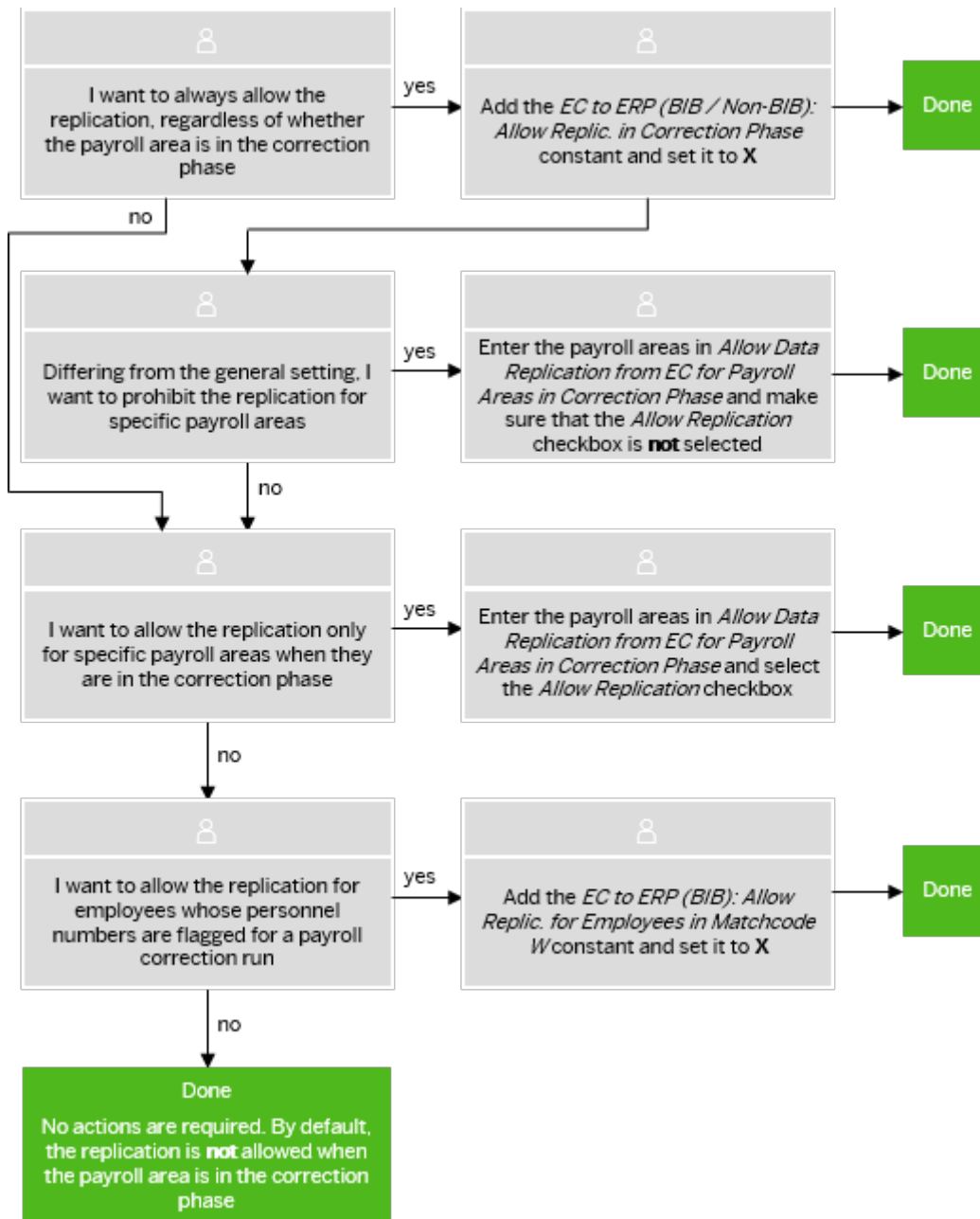
Allowing Data Replication for Payroll Areas in Correction Phase

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.

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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

2.6.4 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*.

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> ⓘ **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, refer to 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* refer to 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. 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 44]
Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the
Middleware [page 111]

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3 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.

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3.1 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 41]

3.2 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 are 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 230]

3.3 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_EOAXT`
- `SFIOM_RPRQ_JOBRS`

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- `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

3.4 Use of Integration Between Organizational Management and Personnel Administration (PA/PD Integration) in Data Replication from Employee Central

You can use integration between Organizational Management (OM) and Personnel Administration (PA), also called PA/PD integration, in your SAP ERP HCM system to synchronize organizational data between Organizational Management and Personnel Administration.

PA/PD integration synchronizes organizational data, such as position, job, organizational unit, or cost center, between the *Relationships* (1001) infotype in Organizational Management and the *Organizational Assignment* (0001) infotype in Personnel Administration.

The *Relationships* infotype stores the relationships between the employee and the position (P – S) and all other position relationships, such as position to organizational unit (S – O), position to job (S – C), or position to cost center (S – K), for Organizational Management.

The *Organizational Assignment* infotype stores the assigned position, job, organizational unit, and cost center of the employee for Personnel Administration.

The *Relationships* infotype is updated either by the replication of organizational assignments or by the replication of organizational objects from Employee Central. Replication of organizational assignments always creates the relationships between the employee and the position. If you configure your SAP ERP HCM system to exclude position relations from the organizational assignment replication, you can replicate the organizational objects together with their associations from Employee Central. If you make this setting, the other position relationships are created by the organizational object replication. Otherwise, the replication of organizational assignments creates these relationships.

The *Organizational Assignment* infotype is updated either by PA/PD integration or – if PA/PD integration isn't enabled – by the replication of employee master data from Employee Central.

3.4.1 What Happens in Data Replication Depending on Whether PA/PD Integration Is Enabled or Not

Data replication from Employee Central behaves differently depending on whether the integration between Organizational Management and Personnel Administration (PA/PD integration) is enabled or disabled in your SAP ERP HCM system.

PA/PD Integration Is Enabled

If PA/PD integration is enabled, the *Relationships* (1001) infotype in Organizational Management and the *Organizational Assignment* (0001) 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* (PLANS), *Job* (STELL), *Organizational Unit* (ORGEH), and *Cost Center* (KOSTL). These 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 the 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 enabled, don't map the Organizational Management fields *Position*, *Job*, *Organizational Unit*, and *Cost Center* in the transformation template group that 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.

PA/PD Integration Is Not Enabled

If PA/PD integration is disabled, the employee (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. There is no technical link between Personnel Administration and Organizational Management tables.

If PA/PD integration is disabled, the organizational data fields *Position* (`PLANS`), *Job* (`STELL`), *Organizational Unit* (`ORGEH`), and *Cost Center* (`KOSTL`) in the *Organizational Assignment* infotype are updated by the employee master data replication under the following conditions:

- You've created the elements of the organizational structure, for example, in the Personnel Administration customizing tables. For more information, refer to Customizing for Personnel Management under

  ▶ *Personnel Administration* ❭ *Organizational Data* ❭ *Organizational Assignment* ❭ *Organizational Plan* ❭ *Define Organizational Units* ❭, *Define Jobs*, *Define Jobs and Job Types*, and *Define Positions*.
- You've mapped the organizational data fields in the transformation template group that you use for employee master data replication.

3.4.2 Enabling Integration Between Organizational Management and Personnel Administration in SAP ERP HCM

Set a `T77S0` switch to enable integration between Organizational Management and Personnel Administration (PA/PD integration) in your SAP ERP HCM system.

Context

You can enable PA/PD integration for all employees. You can also restrict PA/PD integration to subsets of employees using the *Control: Integration of Personnel Planning and Master Data Management* (`PLOGI`) feature.

Procedure

1. Go to customizing for Personnel Management and choose ▶ *Organizational Management* ❭ *Integration* ❭ *Integration with Personnel Administration* ❭ *Set up Integration with Personnel Administration* ❭.

2. Choose *Basic Settings*.

3. Choose *New Entries* and enter the following data:

Change View T77S0

Group	Sem.Abbr.	Value Abbr.	Description
PLOGI	ORGA	X	Enter a user-defined description, such as: **Integration Switch: Organizational Assignment**

4. Save your entry and go back.

5. **Optional:** Choose *Participate in Integration* to maintain the PLOGI feature.

6. Save and transport your entries.

3.5 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.

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3.5.1 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 SAP ERP HCM 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 Payroll system belong to which Financials vendor and which employment in Employee Central.

For more information, refer to Assignment ID in *Implementing Employee Central Core*.

> ⓘ 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 [page 51]
    If you plan to integrate Employee Central with SAP S/4HANA (on-premise edition or SAP S/4HANA Cloud Private Edition) or SAP ERP, 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 [page 52]
    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.

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

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

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

If you plan to integrate Employee Central with SAP S/4HANA (on-premise edition or SAP S/4HANA Cloud Private Edition) or SAP ERP, 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 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 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 HCM* 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 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, refer to Creating the Employment Settings Configuration Object.

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- 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 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 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 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 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 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 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.

3.5.1.2 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:
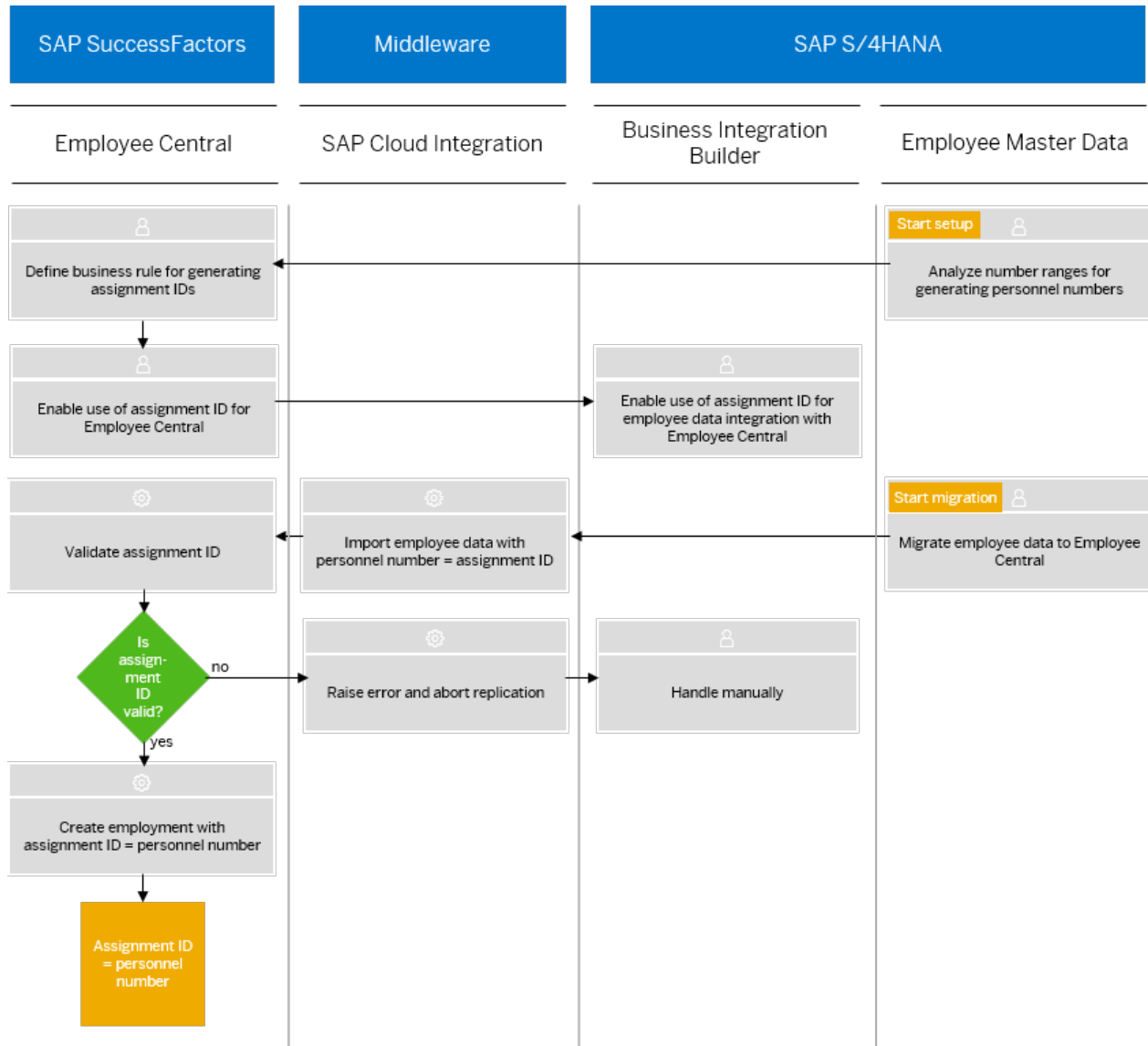
Setting Up and Migrating Assignment ID for Employee Central Integration With SAP ERP HCM

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).

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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.

3.5.1.3   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.

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Context

Here's an overview of the initial load process:
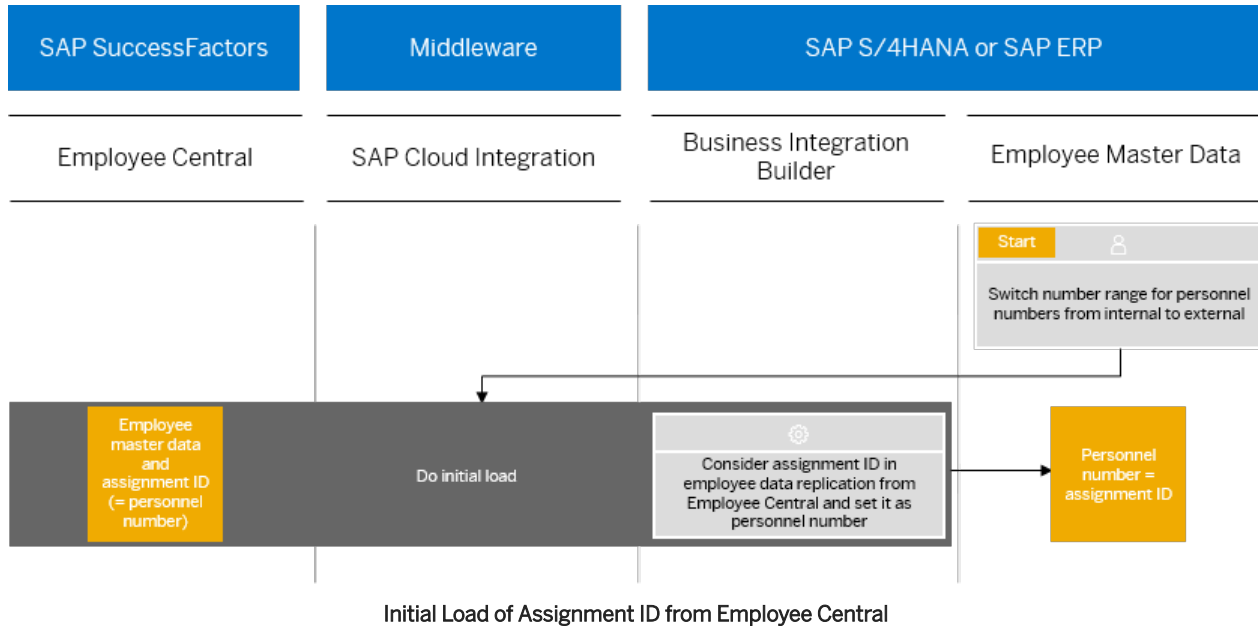
Initial Load of Assignment ID from Employee Central

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.

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3.5.1.4 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:
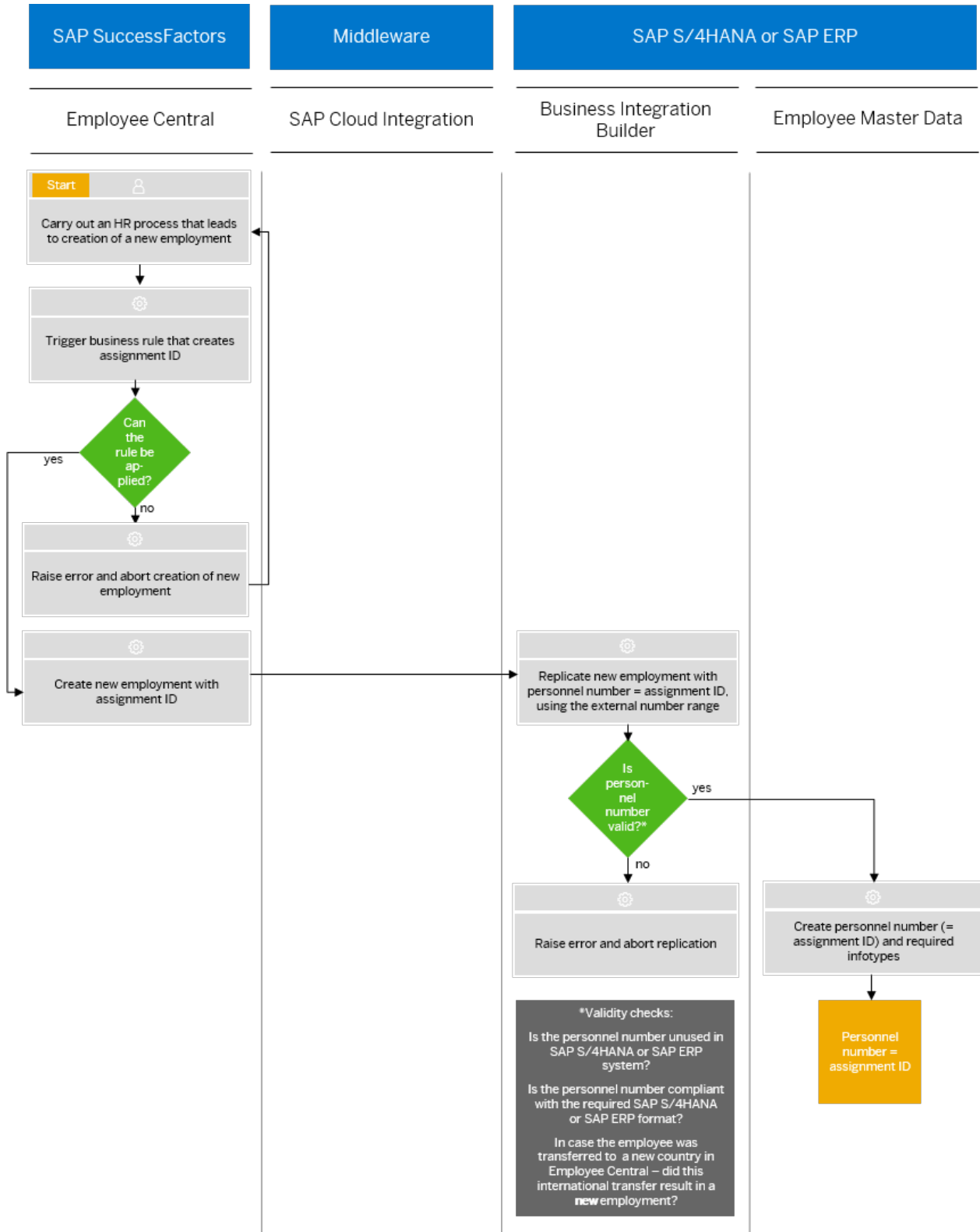
Replicating Assignment ID from Employee Central

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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.

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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.

3.5.2 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 a change of legal entity within one employment is not tolerated if this change means that the employee moves to another country/region. In such a case, 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 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 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*.

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3.6 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.

3.6.1 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).

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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.

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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.

3.6.2 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 63]
  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 64]
  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 65]
  Look at some sample scenarios, in which two events 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 67]
  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 68]
  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 69]
  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 70]
  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 72]

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.

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.

3.6.2.1 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).

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Related Information

3.6.2.2 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.

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3.6.2.3 Typical Situations When Multiple Event Reasons Are Replicated on the Same Day

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

Scenario 1

Mapping of Event Reaons to Action Types

The event reason *Rehire* (REHREH) from Employee Central is mapped to the action type *Reentry into Company* in SAP ERP HCM.

The event reason *Data Change* (DATACHG) is mapped to the action type *Organizational Reassignment*.

Configuration in SAP ERP HCM

For action type *Reentry into Company*, the STAT2 status indicator is set to **3**.

For action type *Organizational Reassignment*, the status indicators STAT1, STAT2, and STAT3 are **not** set.

Result

- The *Reentry into Company* action is stored in the *Actions* and the *Additional Actions* infotypes.
- The *Organizational Reassignment* action is stored only in the *Additional Actions* infotype.

Scenario 2

Mapping of Event Reaons to Action Types

The event reason *Salary Increase* (PAYMER) from Employee Central is mapped to the action type *Change in Pay* in SAP ERP HCM.

The event reason *Data Change / Job Title Update* (JOBTITLE) is mapped to the action type *Corrected Entry*.

Configuration in SAP ERP HCM

For both action types *Change in Pay* and *Corrected Entry*, the status indicators STAT1, STAT2, or STAT3 are **not** set.

For action type *Change in Pay*, both the *Update IT 0000* and *Update IT 0302* checkboxes are selected.

For action type *Corrected Entry*, only the *Update IT 0302* checkbox is selected.

Result

- The *Change in Pay* action is stored in the *Actions* and the *Additional Actions* infotypes.
- The *Corrected Entry* action is stored only in the *Additional Actions* infotype.

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Scenario 3

Mapping of Event Reaons to Action Types

The event reason *Data Change* (DATACHG) from Employee Central is mapped to the action type *Organizational Reassignment* in SAP ERP HCM.

The event reason *Salary Increase* (PAYMER) is mapped to the action type *Change in Pay*.

Configuration in SAP ERP HCM

For both action types *Organizational Reassignment* and *Change in Pay*, the status indicators STAT1, STAT2, or STAT3 are **not** set.

For both action types, both the *Update IT 0000* and *Update IT 0302* checkboxes are selected.

For action type *Organizational Reassignment*, the sequence number 7 is stored in the *Priority* (ORDNR) field.

For action type *Change in Pay*, the sequence number 3 is stored in the *Priority* field.

Result

- The *Organizational Reassignment* action is stored in the *Actions* and the *Additional Actions* infotypes.
- The *Change in Pay* action is stored only in the *Additional Actions* infotype.

Scenario 4

Mapping of Event Reasons to Action Types

The event reason *Termination - Other* (TEROTH) from Employee Central is mapped to the action type *Termination* in SAP ERP HCM. The event reason *Rehire* (REHREH) is mapped to the action type *Reentry into Company*.

Configuration in SAP ERP HCM

For action type *Termination*, the STAT2 status indicator is set to **3**.

For action type *Reentry into Company*, the STAT2 status indicator is set to **0**.

This means that 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

3.6.2.4 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 \[page 70\]](#)
[Example: Configuring Action Sequence for Consecutive Global Assignments \[page 73\]](#)

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3.6.2.5 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.

Related Information

3.6.2.6 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.

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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

3.6.2.7 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 68]
Ignoring Actions If the Assigned Feature Leads to an Error [page 67]

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3.6.2.8 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.

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Related Information

3.6.2.9 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.

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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

3.6.3 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

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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.

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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.

> ⓘ 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.

3.7　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-Shows* ❯ 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 77]
　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 78]
　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 79]
　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 79]
　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 80]
　See how the processing of employee organizational assignments in SAP ERP HCM reacts to replication of no-shows from Employee Central.

3.7.1 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, refer to Reporting No-Show New Hires or Rehires.

Procedure

1. Make sure that the SAP Note 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.

6. 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* ▶.

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.

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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. 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

3.7.2 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.

3.7.3 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).

3.7.4 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 record 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.

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3.7.5 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 record 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.

3.8 Creating New Personnel Numbers in SAP ERP HCM for National Transfer Using the Same Employment Record in Employee Central

You can create a new personnel number when an employee has been transferred within a country/region using the same employment record in Employee Central and this change is replicated to the SAP ERP HCM system.

As a rule, the SAP ERP HCM system doesn't create a new personnel number if an employee changes to a new company code in the same country/region, but retains the existing personnel number. With this feature, you can deviate from this rule and assign the employee a different personnel number when they change to a new company code even if their country/region stays the same.

> ⚠ Caution
>
> Only use this feature if you are in the following situation:
>
> *   You've used the version of the SF EC INTEGRATION (PA_SE_IN) add-on that is not based on the Business Integration Builder (BIB) and now want to enable the BIB-based version.
>
> *   You've created new personnel numbers when employees are assigned to a different company code in the same country/region within the same employment record in the non-BIB-based version.
>
> *   Your business processes rely on continuing to use this approach.
>
> If you are not in this situation, we do **not** recommend using this feature. Instead, we recommend that you always create a new employment record in Employee Central if you want a new personnel number to be created in SAP ERP HCM.
>
> Creating a new personnel number in the SAP ERP HCM system when an employee is transferred within a country/region using the same employment record in Employee Central contradicts the SAP One Domain Model. If you use integrations that are based on the SAP One Domain Model, such as the SAP Master Data Integration service, the use of this feature will cause issues. Because integrations based on the SAP One

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> Domain Model require a one-to-one relationship between employment in Employee Central and personnel number in the SAP ERP HCM system. For more information, refer to SAP One Domain Model.

If you use this feature, you can define exceptions where still the same personnel number is to be used if the employee is assigned to a different company code within the same country grouping. To do so, you make customizing settings or implement a Business Add-In (BAdI).

Enabling Creation of New Personnel Numbers in SAP ERP HCM for National Transfer Using the Same Employment Record in Employee Central [page 81]
> Set a constant in the Business Integration Builder (BIB) to enable creation of a new personnel number when an employee has been transferred within a country/region using the same employment record in Employee Central and this change is replicated to the SAP ERP HCM system.

Making Customizing Settings to Define Exceptions When Creating New Personnel Numbers for National Transfer in Same Employment [page 82]
> Make customizing settings to define exceptional cases in which no new personnel number is created for certain company code changes inSAP ERP HCM when an employee has been transferred within a country/region using the same employment record in Employee Central.

Implementing Business Add-In to Define Exceptions When Creating New Personnel Numbers for National Transfer in Same Employment [page 84]
> Implement a Business Add-In (BAdI) to define exceptional cases in which no new personnel number is created for certain company code changes in SAP ERP HCM when an employee has been transferred within a country/region using the same employment record in Employee Central.

3.8.1 Enabling Creation of New Personnel Numbers in SAP ERP HCM for National Transfer Using the Same Employment Record in Employee Central

Set a constant in the Business Integration Builder (BIB) to enable creation of a new personnel number when an employee has been transferred within a country/region using the same employment record in Employee Central and this change is replicated to the SAP ERP HCM system.

Context

> ⚠ Caution
>
> Only use this feature if you are in the following situation:
>
> - You've used the version of the SF EC INTEGRATION (PA_SE_IN) add-on that is not based on the Business Integration Builder (BIB) and now want to enable the BIB-based version.
> - You've created new personnel numbers when employees are assigned to a different company code in the same country/region within the same employment record in the non-BIB-based version.
> - Your business processes rely on continuing to use this approach.

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> If you are not in this situation, we do **not** recommend using this feature. Instead, we recommend that you always create a new employment record in Employee Central if you want a new personnel number to be created in SAP ERP HCM.
>
> Creating a new personnel number in the SAP ERP HCM system when an employee is transferred within a country/region using the same employment record in Employee Central contradicts the SAP One Domain Model. If you use integrations that are based on the SAP One Domain Model, such as the SAP Master Data Integration service, the use of this feature will cause issues. Because integrations based on the SAP One Domain Model require a one-to-one relationship between employment in Employee Central and personnel number in the SAP ERP HCM system. For more information, refer to SAP One Domain Model.

Procedure

1. Go to Customizing of the Business Integration Builder and choose ▶ *Basic Settings* ❯ *Maintain the Constant Values* ❯.
2. Choose *New Entries* and select the *EC to ERP (BIB): New PERNR for Ntl. Transfer in Same Employm* constant.
3. Enter **x** in the *Constant Value* field.

Next Steps

Ensure that the *Company Code* field of the *Organizational Assignment* (0001) infotype is mapped to the corresponding Employee Central field. Only then can the SAP ERP HCM system determine the company code at the start of processing based on the data provided by Employee Central and use it in further processing.

3.8.2 Making Customizing Settings to Define Exceptions When Creating New Personnel Numbers for National Transfer in Same Employment

Make customizing settings to define exceptional cases in which no new personnel number is created for certain company code changes inSAP ERP HCM when an employee has been transferred within a country/region using the same employment record in Employee Central.

Prerequisites

The constant *EC to ERP (BIB): New PERNR for Ntl. Transfer in Same Employm* must be enabled. Only make the settings described here if the use case enabled by this constant applies to you.

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Context

Make the settings described here if your general approach is to create a new personnel number in the SAP ERP HCM system when an employee has been transferred within a country/region using the same employment record in Employee Central. But you want to define exceptions in which no new personnel number is to be created.

As an alternative to making the settings described here, you can implement the Business Add-In (BAdI) `ECPAO_IN_COMPANY_CODE_GROUP`. If you implement this BAdI, the settings described here are **not** considered.

Procedure

1. Go to Customizing of the Business Integration Builder and choose ▶ *Employee Data Integration* ❯ *Creating New Personnel Numbers for National Transfer with Same Employment* ❯ *Define Groups of Company Codes for National Transfer with Same Pers. Number* ❯.
2. Choose *New Entries*.
3. Enter an ID for each company code group that you want to create.

   The ID must consist of digits and can have a maximum length of 4 digits.
4. Enter a description for each company code group.

   The description is created in your log-on language and can have a maximum of 60 characters.

   You enter the ID `1001` and the description `USA North` for a company code group. You enter `1002` and `USA South` for another company code group.
5. Go to the next activity, *Define Groups of Company Codes for National Transfer with Same Pers. Number*.

   Perform the following steps for all existing company codes in your system that you want to assign to a company code group. Assigning company codes to a group means that a personnel number that exists for one of the company codes is to be reused in the SAP ERP HCM system when an employee has been transferred within a country/region using the same employment record in Employee Central. If no personnel number exists yet, the same new personnel number is created for all company codes within the group.

   For all company codes that you don't assign to a group, a new personnel number is created for the employee, based on the setting you made with the constant *EC to ERP (BIB): New PERNR for Ntl. Transfer in Same Employm*
6. Choose *New Entries*.
7. Select a company code that you want to assign to a company code group.
8. Enter the ID of a company code group that you've defined in the previous step.

Results

The SAP ERP HCM system first checks whether there's already a personnel number for the new company code within the same Employee Central employment record. Then it checks whether the company code is assigned to a company code group and whether there's already a personnel number for one of the company codes. If a personnel number exists already, the system uses this personnel number.

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Example

Let's say you want to create new personnel numbers when an employee has been transferred within a country/region using the same employment record in Employee Central in general. That's why you've enabled the constant *EC to ERP (BIB): New PERNR for Ntl. Transfer in Same Employm* But you want to define an exception for the USA. The same personnel number is to be reused for most of the company code changes within the same employment record for the USA. You've created the company code group 1001. The company codes US01, US02, US03, US04, and US05 exist in your system for the USA. You assign US01, US02, US03, and US04 to the group 1001. You don't assign the company code US05.

An employee has been transferred within the USA using the same employment record in Employee Central. The employee has a personnel number in SAP ERP HCM for the company code US01. When the company code of the employee changes from US01 to US02, the personnel number stays the same. But when the company code of the employee changes from US01 to US05, the employee gets a new personnel number.

Related Information

3.8.3 Implementing Business Add-In to Define Exceptions When Creating New Personnel Numbers for National Transfer in Same Employment

Implement a Business Add-In (BAdI) to define exceptional cases in which no new personnel number is created for certain company code changes in SAP ERP HCM when an employee has been transferred within a country/region using the same employment record in Employee Central.

Prerequisites

The constant *EC to ERP (BIB): New PERNR for Ntl. Transfer in Same Employm* must be enabled. Only implement this BAdI if the use case enabled by this constant applies to you.

Context

Implement the BAdI *Grouping Company Codes for National Transfer with Same Personnel Number* (`ECPAO_IN_COMPANY_CODE_GROUP`) if your general approach is to create a new personnel number in the SAP ERP HCM system when an employee has been transferred within a country/region using the same employment record in Employee Central. But you want to define exceptions in which no new personnel number is to be created.

As an alternative to implementing this BAdI, you can also make customizing settings to define groups of company codes and assign company codes to these groups.

Procedure

1. Go to Customizing of the Business Integration Builder and choose ▌▶ *Employee Data Integration* ❯ *Creating New Personnel Numbers for National Transfer with Same Employment* ❯ *BAdI: Grouping Company Codes for National Transfer with Same Pers. Number* ❯ .
2. Enter a name and description for your implementation and confirm that you want to created it.
3. Refer to the BAdI and method documentation in the SAP ERP HCM system for details about how to implement it.

Related Information

[Enabling Creation of New Personnel Numbers in SAP ERP HCM for National Transfer Using the Same Employment Record in Employee Central \[page 81\]](#)

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4 Middleware Setup for Employee Master Data and Organizational Assignment Replication

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.

> ⓘ Note
>
> For more information about which versions of the middleware content provided for this integration are still supported and which have been deprecated, refer to 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 87]
>   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 89]
>   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 89]
>   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 114]
>   Use the monitoring features of SAP Cloud Integration to check whether any issues occurred in your middleware processes.

Resetting Queries [page 115]
>   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.

Reporting Middleware Issues [page 115]
>   Report a case if you have issues that you can't solve using the monitoring in SAP Cloud Integration, providing information about the process run.

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4.1 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.
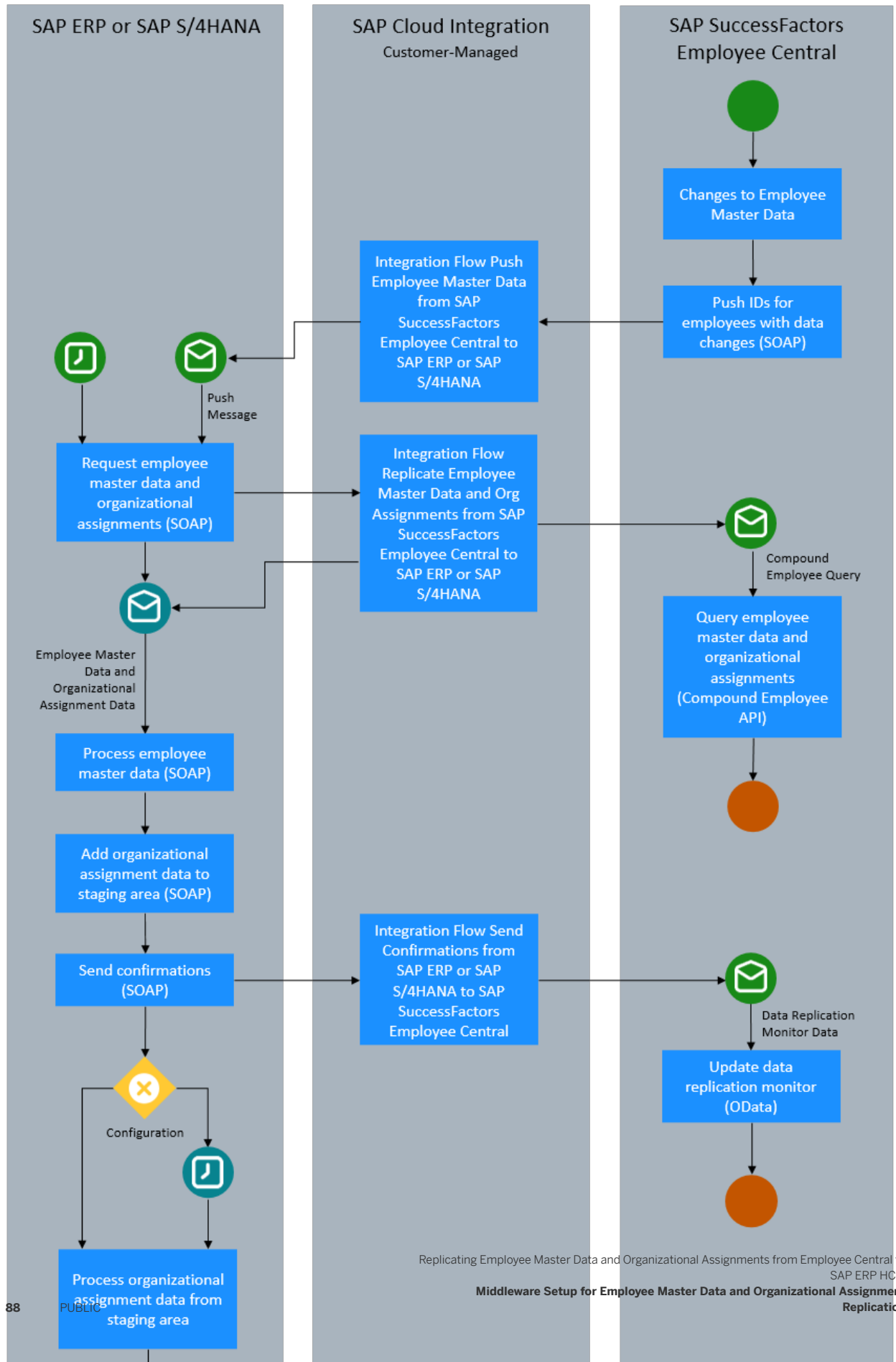
Replication of employee master data and organizational assignments from Employee Central uses the following integration packages and integration flows:

Integration Package	Contained Integration Flows
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, refer to Replicating Organizational Objects from Employee Central to SAP ERP HCM.
SAP ERP or SAP S/4HANA Integration with SAP SuccessFactors Employee Central: Confirmation v2	*Send Confirmations from SAP ERP or SAP S4HANA to SAP SuccessFactors Employee Central*
SAP SuccessFactors Employee Central Integration with SAP ERP or SAP S/4HANA: Push Notification	*Push Employee Master Data from SAP SuccessFactors Employee Central to SAP ERP or SAP S4HANA*

Here's a graphical overview of how the integration flows work and how the systems interact with each other.

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SAP ERP or SAP S/4HANA

SAP Cloud Integration
Customer-Managed

SAP SuccessFactors Employee Central

Changes to Employee Master Data

Integration Flow Push Employee Master Data from SAP SuccessFactors Employee Central to SAP ERP or SAP S/4HANA

Push IDs for employees with data changes (SOAP)

Push Message

Request employee master data and organizational assignments (SOAP)

Integration Flow Replicate Employee Master Data and Org Assignments from SAP SuccessFactors Employee Central to SAP ERP or SAP S/4HANA

Compound Employee Query

Query employee master data and organizational assignments (Compound Employee API)

Employee Master Data and Organizational Assignment Data

Process employee master data (SOAP)

Add organizational assignment data to staging area (SOAP)

Send confirmations (SOAP)

Integration Flow Send Confirmations from SAP ERP or SAP S/4HANA to SAP SuccessFactors Employee Central

Data Replication Monitor Data

Update data replication monitor (OData)

Configuration

Process organizational assignment data from staging area

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4.2 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.

4.3 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.

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4.3.1 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.

2. Add the root certificate from SAP ERP HCM in the *Keystore* in your SAP Cloud Integration tenant, for connections initiated by SAP Cloud Integration to the SAP ERP HCM system.

   For more information, refer to:

   - Creating PSEs and Maintaining the PSE Infrastructure and Exporting the AS ABAP's Public-Key Certificate for the SAP ERP HCM system
   - Uploading a Certificate for SAP Cloud Integration

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.

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Next task: Configuring Credentials for Communication Between SAP Cloud Integration and the Integrated Systems [page 91]

4.3.2 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.

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Procedure

1. Go to the SAP Cloud Integration Web UI and choose *Operations View* from the top-level menu on the left.
2. Choose ▶ *Manage Security* ❭ *Security Material* ❭.
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:

     Credentials Artifact with Type SuccessFactors

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:

   Credentials Artifact with Type User Credentials for SAP ERP HCM

Field Name	User Action and Values
Name	Enter any name.
Type	Select *User Credentials*.
User	Enter the name of the SAP ERP HCM integration user.
Password	Enter the password of the SAP ERP HCM integration user.

Next Steps

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

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4.3.3 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 93]
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 95]
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 96]
Determine the endpoint URL for Employee Central that you need to enter in the middleware.

4.3.3.1 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.

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Endpoint URL in the SAP ERP HCM System

Procedure

1. Go to the `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, refer to 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* refer to 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.

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4.3.3.2 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.
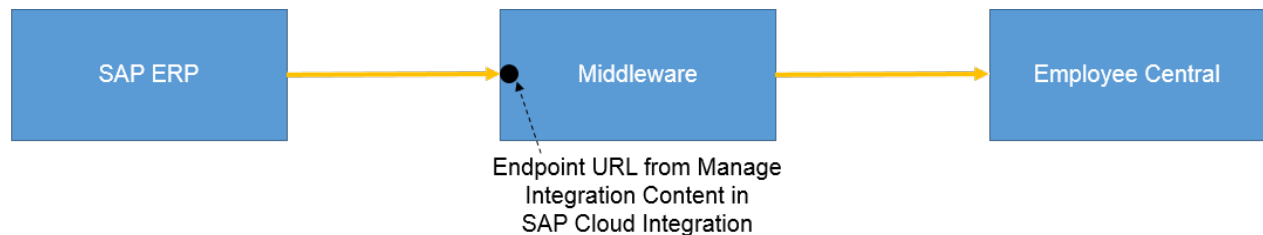
Example: Endpoint URL in the Middleware Addressed by SAP ERP HCM

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>`.

   > ⓘ 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`
   >
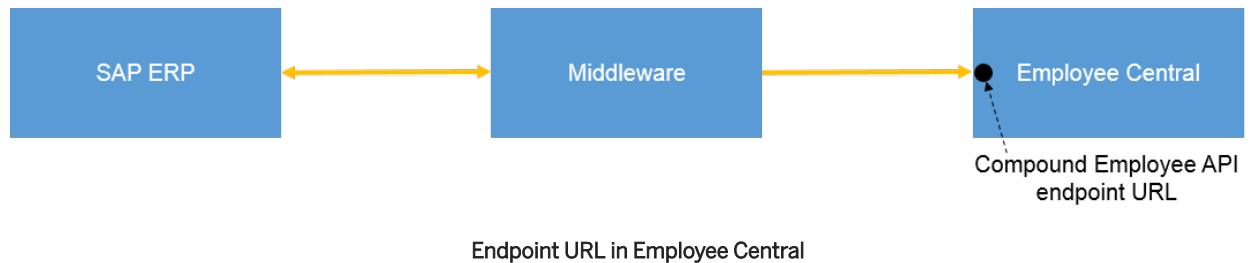   > To get the complete endpoint URL, configure and deploy the integration flow first, then copy the URL from *Manage Integration Content*.

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4.3.3.3 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

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.

4.3.4 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.

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Next task: Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 98]

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4.3.5 Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication

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:

   ERP_Query Sender Configuration

Field	What to Enter
Sender	Choose *ERP_Query*.
Adapter Type	Choose *SOAP* (no other entries are possible). For more information, refer to SOAP (SOAP 1.x) Adapter.
Address	Enter a suffix, such as `/EC_to_ERP_Master_Data_And_Org_Query`, 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 `/EC_to_ERP_Master_Data_And_Org_Query` here, the URL is: `https://<runtime URL of your SAP Cloud Integration environment>/cxf/EC_to_ERP_Master_Data_And_Org_Query.`

Field	What to Enter
Authorization	Choose either *User Role* or *Client Certificate*. ⓘ **Note** 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), Neo Environment.

2. Configure the *Employee_Central* receiver, which is used by the middleware to request the queried data from Employee Central:

Employee_Central Receiver Configuration

Field	What to Enter
Receiver	Choose *Employee_Central*.
Adapter Type	Choose *SuccessFactors* (no other entries are possible). For more information, refer to SuccessFactors SOAP Adapter.
Address	Choose *Select* to add the base URL of your SAP SuccessFactors system, depending on your data center. ⚠ **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.
Authentication	Choose either *Basic* or *OAuth2 SAML Bearer Assertion*.

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Field	What to Enter
Credential Name	If you've selected *Basic* for *Authentication*: Enter the name of the credentials artifact with the type *SuccessFactors* that you created before.
	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.
Page Size	We recommend that you enter **400** to replicate master data and organizational assignments of 400 employees at a time. Only change this value if you're facing issues.
	> ⓘ Note If this integration flow keeps terminating with a timeout error, you can reduce the page size and increase the timeout value so that the middleware processes less data in more time.
Timeout (in min)	Use the default value. Only change this value if you're facing issues. In that case, try a higher number.

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:

ERP_Response Receiver Configuration

Field	What to Enter
Receiver	Choose *ERP_Response*.
Adapter Type	Choose *SOAP* (no other entries are possible).
	For more information, refer to SOAP (SAP RM) Adapter.
Address	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 `https://`.
	If you use SAP Cloud Connector, the URL must start with `http://`. For more information about using SAP Cloud Connector, refer to Outbound: SAP Cloud Connector.
Proxy Type	If you don't use SAP Cloud Connector, choose *Internet*.
	If you use SAP Cloud Connector, choose *On-Premise*.

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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.

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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.

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Previous task: Copying the Integration Package to Your Workspace [page 96]

Next task: Configuring the Integration Flow for Confirmation [page 102]

Related Information

How to Find the Endpoint URLs [page 93]

4.3.6 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:

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SAP_ERP Sender Configuration

Field	What to Enter
Sender	Choose *SAP_ERP*.
Adapter Type	Choose *SOAP* (no other entries are possible). For more information, refer to SOAP (SAP RM) Adapter.
Address	Enter a suffix, such as **/ ERP_to_EC_EmployeeMasterDataReplicationC onfirmation**, 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_EmployeeMasterDataReplicationC onfirmation** here, the URL is: `https://<runtime URL of your SAP Cloud Integration environment>/cxf/ ERP_to_EC_EmployeeMasterDataReplicationC onfirmation.`
Authorization	Choose either *User Role* or *Client Certificate*. ⓘ Note 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), Neo Environment.

2. Configure the receiver, *SFSF_EC*, which is used by the middleware to update the Employee Central Data Replication Monitor:

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SFSF_EC Receiver Configuration

Field	What to Enter
Receiver	Choose *SFSF_EC*.
Adapter Type	Choose *SuccessFactors* (no other entries are possible). For more information, refer to SuccessFactors OData V2 Adapter.
Address	Choose *Select* to add the base URL of your SAP SuccessFactors system, depending on your data center. ⚠ **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.
Authentication	Choose either *Basic* or *OAuth2 SAML Bearer Assertion*.
Credential Name	If you've selected *Basic* for *Authentication*: Enter the name of the credentials artifact with the type *SuccessFactors* that you created before. 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.
Timeout (in min)	Use the default value. Only change this value if you're facing issues. In that case, try a higher number.

3. Configure the process parameter:

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Process Parameter

Field	What to Enter
ENABLE_PAYLOAD_LOGGING	Enter **true** 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 **false** again if you no longer need the extended log.

> ⚠ Caution
>
> For data protection reasons, enable the extended log for troubleshooting purposes only. Make sure that you 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.

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Previous task: Configuring the Integration Flow for Employee Master Data and Organizational Assignment Replication [page 98]

Next task: Configuring the Integration Flow for Employee Push Replication [page 106]

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Related Information

4.3.7 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, *EC_Push_Event*, which is used by Employee Central to send the push notification to the middleware:

EC_Push_Event Sender Configuration

Field	What to Enter
Sender	Choose *EC_Push_Event*.
Adapter Type	Choose *HTTPS* (no other entries are possible).
	For more information, refer to HTTPS Sender Adapter.

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Field	What to Enter
Address	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*. > ⓘ Note > > If you choose *User Role*, the SAP ERP HCM administrator must select the *User ID / Password* authentication option when enabling the corresponding SAP ERP HCM inbound web service. Also, the SAP SuccessFactors administrator must select *Basic Authentication* in the Integration Center when configuring Employee Central for push replication. > > If you choose *Client Certificate* here, the SAP ERP HCM administrator must select the *X.509 SSL Client Certificate* authentication option when enabling the corresponding inbound web service. Also, the SAP SuccessFactors administrator must select *Certificate Based Authentication* when configuring Employee Central for push replication.
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), Neo Environment.

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

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SAP_ERP Receiver Configuration

Field	What to Enter
Receiver	Choose *SAP_ERP*.
Adapter Type	Choose *SOAP* (no other entries are possible). For more information, refer to SOAP (SAP RM) Adapter.
Address	Enter the endpoint URL of the SAP ERP HCM inbound web service for push replication. If you don't use SAP Cloud Connector, the URL must start with `https://`. If you use SAP Cloud Connector, the URL must start with `http://`. For more information about using SAP Cloud Connector, refer to Outbound: SAP Cloud Connector.
Proxy Type	If you don't use SAP Cloud Connector, choose *Internet*. If you use SAP Cloud Connector, choose *On-Premise*.
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 symbolic name of the credentials artifact with the type *User Credentials* that you created before. For more information, refer to Basic Authentication.

Field	What to Enter
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.

3. Configure the process parameters:

Process Parameters

Field	What to Enter
ENABLE_PAYLOAD_LOGGING	Enter `true` 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 `false` again if you no longer need the extended log.

> ⚠ Caution
>
> For data protection reasons, enable the extended log for troubleshooting purposes only. Make sure that you 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

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Field	What to Enter
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.
	⁂ Example Specify `\D\d+` if your user IDs look like this: I123456, D1, S123. Specify `\d+` if your user IDs look like this: 1, 123, 123456.
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 89]

Previous task: Configuring the Integration Flow for Confirmation [page 102]

Next task: Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the Middleware [page 111]

Related Information

Push Replication of Employee Master Data and Organizational Assignments from Employee Central [page 271]
How to Find the Endpoint URLs [page 93]
Configuring Employee Central for Push Replication [page 273]

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4.3.8 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.

   > ⓘ 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:

   * `CO_ECPAOX_EE_MD_ORGAS_BNDL_QRY` for the query

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- `CO_PAOCF_EC_EMPLOYEE_MASTER_DA` for the confirmation

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, the SAP Cloud Integration administrator must choose *User Role* when configuring authorizations for the ERP sender in the corresponding integration flow.
>
> If you select the *X.509 SSL Client Certificate* authentication option, there are different options depending on whether you use SAP Cloud Integration in the Cloud Foundry or the Neo environment:
>
> - In the Cloud Foundry environment, the SAP Cloud Integration administrator must choose *Client Certificate* when configuring authorizations for the ERP sender in the integration flow.
> - In the Neo environment, the SAP Cloud Integration administrator can choose *Client Certificate* or *User Role* when configuring authorizations for the ERP sender in the integration flow. If the administrator selects the *User Role* authorization, a certificate-to-user mapping is required in addition. For more information, refer to Setting Up Inbound HTTP Connections (with Certificate-to-User Mapping), Neo Environment.

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.

Transport Settings

Setting	What to Enter
URL access path settings	
URL components	Select this radio button.
Protocol	Select *HTTPS*.
Host	Enter the `<runtime URL of your SAP Cloud Integration environment>` part of the URL that you've copied in the first step.
Port	Enter the port number of your SAP Cloud Integration environment. If you haven't set up a specific port, enter **443** (the default port for HTTPS).

Setting	What to Enter

Path	Enter the `/cxf/<sender address>` part of the URL you've copied, such as:
	• `/cxf/`
	`EC_to_ERP_Master_Data_And_Org_Query`
	for the query
	• `/cxf/`
	`ERP_to_EC_EmployeeMasterDataReplicati`
	`onConfirmation` for the confirmation

Logon language	Select *Language of User Context*.
Proxy settings	
Name of proxy host	If you use a proxy, enter `proxy`. If not, leave this field empty.
Port number of proxy host	If you use a proxy, enter the port number, such as `8080`. If not, leave this field empty.
User name for proxy access	If applicable, enter your proxy user
Password of proxy user	If applicable, enter the password of your proxy user
Transport binding settings	
Make local call	Select *No Call in Local System*.
Transport binding type	Select *SOAP 1.1*.
Maximum wait for WS consumer	Select *0*.
Optimized XML transfer	Select *None*.
Compress HTTP message	Select *Inactive*.
Compress response	Select *True*.

8. Configure the SOAP protocol.

Protocol Configuration

Setting	What to Enter
Reliable messaging protocol	Select *SAP RM*
Message ID protocol	Select *Suppress ID Transfer*
Data transfer scope	Select *Enhanced Data Transfer*
Transfer protocol	Select *Transfer via SOAP Header*

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

> ⓘ **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 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 89]

Previous task: Configuring the Integration Flow for Employee Push Replication [page 106]

Related Information

Web Services Used for Employee Master Data and Organizational Assignment Replication [page 44]
Finding the URL for Communication from SAP ERP HCM or Employee Central to the Middleware [page 95]
Enabling the SAP ERP HCM Inbound Web Services to Set Up the Connection from the Middleware to SAP ERP HCM [page 41]

4.4 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.

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4.5 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 267]

4.6 Reporting Middleware Issues

Report a case if you have issues that you can't solve using the monitoring in SAP Cloud Integration, providing information about the process run.

Context

If you face an issue with your SAP Cloud Integration-based integration scenario and want to report a case, make sure that the failed process run was carried out with the extended logging option activated.

> ⚠ Caution
>
> For data protection reasons, enable the extended log for troubleshooting purposes only. Make sure that you 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

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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

Procedure

1. Go to the *Create Employee Queries* (ECPAO_EE_ORG_QUERY) transaction in your SAP ERP HCM system.
2. Select the *Enable Payload Logging* or the *Enable Verbose Logging* checkbox.

   > ⓘ Note
   >
   > Verbose logging is available for the replication of employee master data only.

3. Run the integration.
4. Go to Create a Support Case 🔗 and report a case for the LOD-SF-INT-CPI component.
5. Add the log ID from the payload to the case so that the support team can find the log easily.

Next Steps

For the required information that you should add in your case, refer to the SAP Knowledge Base Article (KBA) 2763716 🔗.

5 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.

5.1 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.

Parent topic: Replicating Employee Master Data [page 117]

Related Information

5.1.1 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* ▶:

Display IMG

| ▽ ▣ ⊓ | Existing BC Sets | ✂ BC Sets for Activity | ✂ Activated BC Sets for Activity | ℹ Release Notes |

Structure

- ▾ 📄 Personnel Management
  - ▸ SAP HCM Interview Assistant (Mobile App)
  - ▸ Integration Add-On for SAP ERP HCM and SuccessFactors BizX
  - ▾ Integration with SuccessFactors Employee Central
    - ▾ Business Integration Builder
      - ▾ Basic Settings
        - • 📄 ✅ Specify Employee Central Instance ID
        - • 📄 ✅ Switch Off Talent Hybrid Integration for Employee Data
        - • 📄 ✅ Maintain the Constant Values
          - ▾ Import Metadata from Employee Central
            - • 📄 ✅ Import Metadata for Web Service-Based Data Transfer from Employee Central
            - • 📄 ✅ Import Metadata for File-Based Data Transfer from Employee Central
            - • 📄 ✅ Transport Imported Metadata and Check Metadata for File-Based Data Transfer
          - ▾ Define Value Mapping
            - • 📄 ✅ Import Picklists from Employee Central
            - • 📄 ✅ Define Value Mapping Entities
            - • 📄 ✅ Define Value Mapping Details
            - • 📄 ✅ Define Value Mapping Details Depending on Employee's Country Grouping
          - ▾ Organizational Data Integration
            - • 📄 ✅ Define If You Use Specific Processing for Organizational Objects
            - • 📄 ✅ Restrict Relations Created When Replicating Organizational Assignments
            - • 📄 ✅ Map Languages from Employee Central and ERP
            - • 📄 ✅ Define Organizational Data Settings for Employee Central Instance
            - • 📄 ✅ Define Organizational Object Types for Integration
            - • 📄 ✅ Define Organizational Object Types Whose IDs Are to Be Synchronized with EC
            - • 📄 ✅ Define Additional Employee Central Entities for Organizational Data
            - • 📄 ✅ Define Field Mapping for Organizational Data
            - • 📄 ✅ Define Filters for Organizational Object Replication
      - ▸ Employee Data Integration
      - ▾ Business Add-Ins (BAdIs)
        - ▾ Data Transfer to Employee Central
          - • 📄 ✅ BAdI: Validity Periods for Data Replication to EC
          - • 📄 ✅ BAdI: Mapping of User ID, Person ID, Username, and Object ID
          - • 📄 ✅ BAdI: Mapping of EC and ERP Data for Data Replication to EC
          - • 📄 ✅ BAdI: Change of Mapping Result for Data Replication to EC

Overview of Customizing Structure

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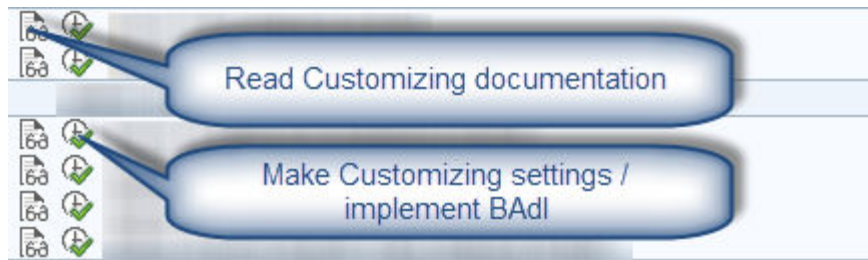
Details of Customizing Structure

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

5.1.2 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 the Business Integration Builder and choose ▶ *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.

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Procedure

1. Go to Customizing for the Business Integration Builder and choose ▐▷ *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:

Option	Description
Blank	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.
1	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.
2	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.

Related Information

[Enabling Use of New Infotype Framework for Integration Between Organizational Management and Personnel Administration (PA/PD Integration) [page 224]](#)

5.1.3 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.

5.1.4 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.

> ⓘ 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.

> ⓘ 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.
>
> | Bank Details | | |
> |---|---|---|
> | Bank details type | Main bank | |
> | Payee | Test | |
> | Postal code / city | | |
> | Bank Country | Russian Fed. | |
> | Bank Key | 044525225 | Russan fed bank |
> | Bank Account Number | 30301810000006000001 | |
> | IBAN | | |
> | Bank control key | 30 | |
> | Payment method | P | Payment Order |
> | Purpose | | |
> | Payment currency | RUB | |

Sample Mapping
Infotype 0009 (Bank details) – Source WS_14 (PaymentInformationDetailV3) and WS_14_country

Country Specific Value Conversion for Account Number (field no. 18) mapped to BANKN

Country Grouping	Description	SeqNo	ConversionRule	Parameter1	Parameter2	EC field	Comment
33	Russia	1	Replace using patterns with string/EC field	(.{2})(.*)	$2		Extract the characters starting from the 3rd position

Generic Value Conversion for the *unused field nn* (see field Pay Sequence above) mapped to BKONT

Country Grouping	Description	SeqNo	ConversionRule	Parameter1	Parameter2	EC field	Comment
33	Russia	1	Replace using patterns with string/EC field	empty	empty	18	Replaces the unused field with the field Account Number (no. 18)
33	Russia	2	Replace using patterns with string/EC field	(.{2})(.*)	$1		Extract the first two characters; Since BKONT contains 2 characters only, this rule could also be omitted

5.1.5 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 Using File Upload [page 126]
    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 128]
    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 132]
    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 134]
    Country-specific value mapping details actually map SAP ERP HCM values to the corresponding Employee Central values, depending on the country version.

5.1.5.1 Import Picklists and Picklist Values from Employee Central Using File Upload

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*.

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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

Picklist Template	
EC Instance	☑
EC Picklist File	C:\ECPicklistData.csv
EC Locale	en_US

Reference Picklists
☐ Reference Picklist Tables

Action Type
☑ Test Run
⦿ Update Picklist
◯ Delete Picklist

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.

8. **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 125]

Related Information

Defining Value Mapping Entities [page 128]
Defining Value Mapping Details [page 132]
Defining Value Mapping Details Depending on Employee's Country Grouping [page 134]

5.1.5.2   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.

Copy Sample Value Mapping in V_ECPAO_VALUENTY

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

You can also create country-specific value mapping entries and create a new value mapping entity in the *Define Field Mapping for Employee Data* Customizing activity (view cluster `VC_ECPAO_MAP`). In this Customizing activity, go to *Primary Mapping* ❯ *Details* and choose *Create Value Mapping Entity* or *Define Ctry. Spec. Value Mapping Entries*.

Create Value Mapping Entity/Define Country-Specific Value Mapping Entries from Primary Mapping in VC_ECPAO_MAP

You'll get a list of all standard entities provided for the integration, which you can adjust to your needs.

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Change View "Value Mapping Entity": Overview

New Entries 📋 🖺 ↩ 🖹 🖹 🖹 Copy Sample Value Mapping   Show Sample Value Mapping

EC Instance   SBS_MODEL

Value Mapping Entity

Value Mapping Entity	Description	Value Mapping Type	EC Picklist ID
ADDRESS_TYPE	ADDRESS_TYPE	Picklist - Option ID ▼	248
ADDRESS_TYPE_CSV		Picklist - Label ▼	
ADDRESS_TYPE_WS		Picklist - Option ID ▼	
ASSIGNMENT_TYPE_CSV		Picklist - Label ▼	
ASSIGN_TYPE	Assignment type	Picklist - Option ID ▼	299
ASSIGN_TYPE_CSV	Assignment type	Picklist - Label ▼	
Assign_type	Assignment type	Picklist - Option ID ▼	
BANK_COUNTRY	BANK_COUNTRY	Picklist - Label ▼	
BUSINESS_UNIT_WS		Organizational Obje… ▼	
BUSSINESSUNIT	Bussinessunit	Organizational Obje… ▼	
COMPANY	Company code	Foundation Object K… ▼	
COMPANY_CODE_CSV		Foundation Object K… ▼	
COST_CENTER	Cost Center	Foundation Object K… ▼	
COST_CENTER_CSV		Foundation Object K… ▼	
COUNTRY_CODE_CSV		Picklist - Label ▼	
COUNTRY_CODE_WS	Country code	Picklist - Option ID ▼	
COUNTRY_CSV	Country	Picklist - Label ▼	
COUNTRY_WS	Country	Picklist - Option ID ▼	
CURRENCY_CSV		Picklist - Label ▼	
CURRENCY_WS	Currency	Picklist - Option ID ▼	
Company CSV	Company CSV	Picklist - Label ▼	

Copied Standard Value Mapping Entities

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, Divisons 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.

Choose Picklist for Value Mapping Entity

Picklist Assigned to 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.

SAP ERP HCM Value Help Assigned to Value Mapping Entity

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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:

Related Information

5.1.5.3 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`).
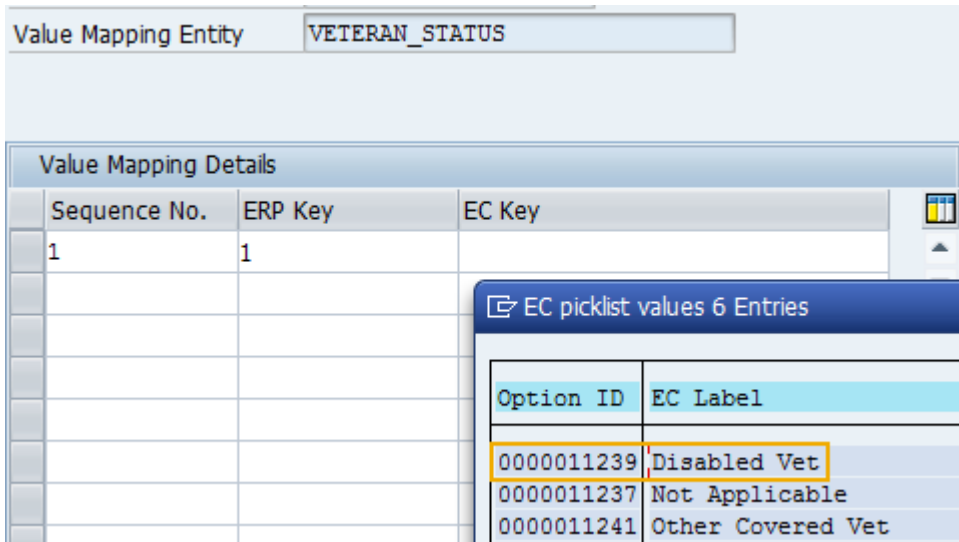2. Map SAP ERP HCM keys and the corresponding Employee Central keys.

   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.

Choose SAP ERP HCM Key for Value Mapping

Choose Employee Central Key for Value Mapping

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 125]

Related Information

Import Picklists and Picklist Values from Employee Central Using File Upload [page 126]
Defining Value Mapping Entities [page 128]
Defining Value Mapping Details Depending on Employee's Country Grouping [page 134]

5.1.5.4 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.

Value Mapping Depending on Employee's Country Grouping

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 125]

Related Information

Import Picklists and Picklist Values from Employee Central Using File Upload [page 126]
Defining Value Mapping Entities [page 128]
Defining Value Mapping Details [page 132]

5.1.6 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.

> ⓘ Note
>
> If you have a custom entity with parent-child relationship and when you map the data only from the child entity to infotype, the replication may not work as expected. Make sure to map atleast one field from parent entity in the BIB field mapping (*Define Field Mapping for Employee Data* Customizing step) along with fields of child entity.

Display View "Employee Central Entity for Employee Data": Details

EC Entity	WS_2	Biographical Info Template for Web Service

Basic Settings

Entity Name in EC	PerPerson
Comm. Channel	Web Service Transfer
☐ Multiple Use	☐ Effective Dated
☐ Is Generic Object	
Inherit Metadata	

Standard EC Fields

Object ID in EC	
Start Date in EC	startDate
End Date in EC	endDate

CE API Segment	person

Integration to EC

Upsert Sequence	20
Dependent Entity	
Country Version	

Deletion Supported

☐ Deletion Permitted	
HRIS Element ID	

Infotype-Specific Settings

Required Infotype	0002
Special Mapping Infotype	

Specific Mapping

Processing Mode	
Processing Infotype	
OBJID Field	
Repet.Struct.	

Details of an Employee Central 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.

> ⓘ 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 entites 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.

> ⓘ 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).

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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.

5.1.7 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.

> ⓘ 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

> ⓘ 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.

5.1.8 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.

Procedure

1. Go to Customizing for the Business Integration Builder and choose ▌▶ *Employee Data Integration* ❯ *Define Field Mapping for Employee Data* ❯ *Transformation Template Group* ▌.
2. Choose *New Entries*.
3. Enter a name and description for the transformation template group.
4. Assign it to the Employee Central instance defined in the *Specify Employee Central Instance ID* Customizing activity.

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> ⓘ Note
>
> You will be able to modify or choose the Employee Central instance only when you are creating a new transformation template group.

5. Choose the replication direction *ERP to EC/EC to ERP* from the drop-down list box depending on the scenario you are running.

6. Choose one of these communication channels for the transformation template group:

   - *CSV File-Based Transfer*
     Choose this communication channel if you want to use the transformation template group for the CSV file-based data extraction.

   - *Web Service Transfer*
     Choose this communication channel if you want to use the transformation template group to transfer data using a Web service call.

7. Select the sample content that you want to use for your transformation template group. We provide sample content for different use cases.

8. **Optional:** Define an earliest transfer date.

9. **Optional:** 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 SAP ERP HCM to Employee Central. 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.

10. Define if the transformation template group is available for delta replication.

> ⓘ Note
>
> You can only use transformation template groups with the *Web Service Transfer* communication channel for delta replication. To make sure that the delta replication works, use a transformation template group with the *Web Service Transfer* communication channel **and** for which the *Enable for Delta Replication* checkbox is selected. There can only be one transformation template group for which the *Enable for Delta Replication* checkbox is selected.

Results

You are now ready to define templates for your transformation template group.

5.1.9 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* ▶ *Buiness Integration Builder* ▶ *Employee Data Integration* ▶ *Define Field Mapping for Employee Data* ▶.

Transformation Templates Assigned to a Transformation Template Group

Details of an Transformation Template

> ⓘ Note
>
> 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,

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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.

5.1.10 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.

> ⓘ **Note**
>
> 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 143]
    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 146]
    If you need an additional field mapping, for example for country/region-specific fields, define a secondary mapping.

Defining the Subtype Field Mapping [page 150]
    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 150]
    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.

5.1.10.1 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 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.
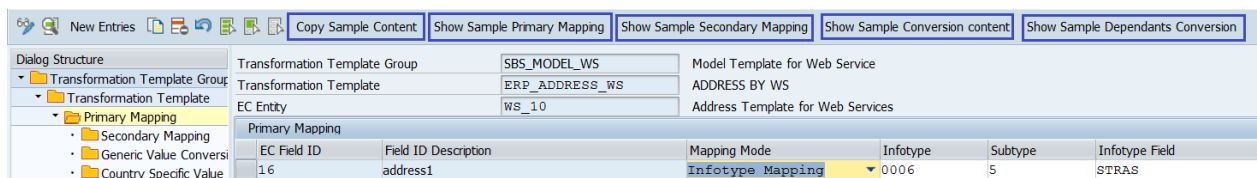
Sample Content Options in Primary Mapping View

Choose *Show Sample Primary Mapping* to check which sample content is available.

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	EC Field	EC Field Name	Mapping Mode	Infotype	Subtype	Field name	Evaluatio...	Linking Field	Is Req Field	Value Mapping Entity
	17	address1	Infotype Mapping ▼	0006	1	STRAS		LAND1	✓	
	18	address2	Infotype Mapping ▼	0006	1			LAND1	☐	
	19	address20	Infotype Mapping ▼	0006	1			LAND1	☐	
	20	address3	Infotype Mapping ▼	0006	1			LAND1	☐	
	21	address4	Infotype Mapping ▼	0006	1			LAND1	☐	
	22	address5	Infotype Mapping ▼	0006	1			LAND1	☐	
	23	address6	Infotype Mapping ▼	0006	1			LAND1	☐	

Sample Content for Addresses Template

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.

> ⓘ **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.
3. 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*.
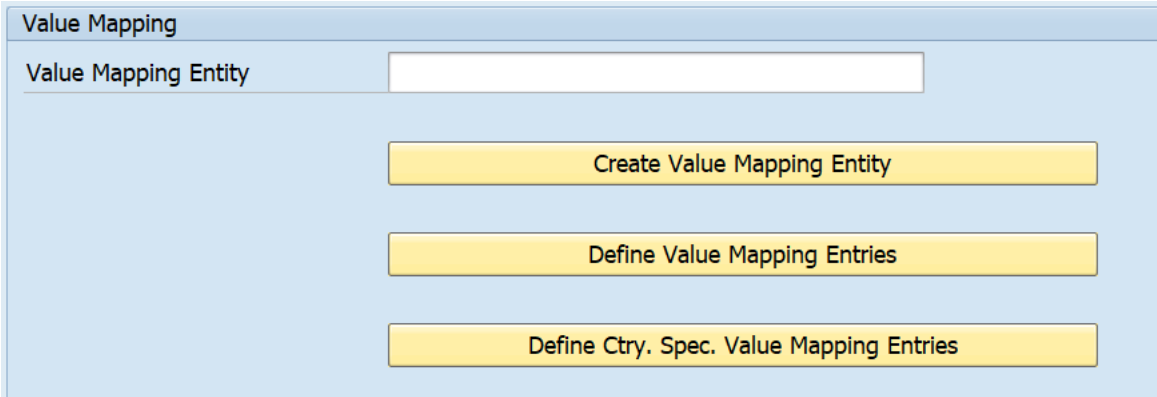
> ⚠ **Caution**
>
> If the *EC Field Has Picklist* flag is set for the Employee Central field that you have imported to SAP ERP HCM in the *Import Metadata from Employee Central* Customizing step, you need to assign a value mapping entity. Otherwise the corresponding infotype field will be filled with wrong data.

> ⓘ **Note**
>
> You can define the value mappings for this entity directly from here by choosing *Define Value Mapping Entries*.
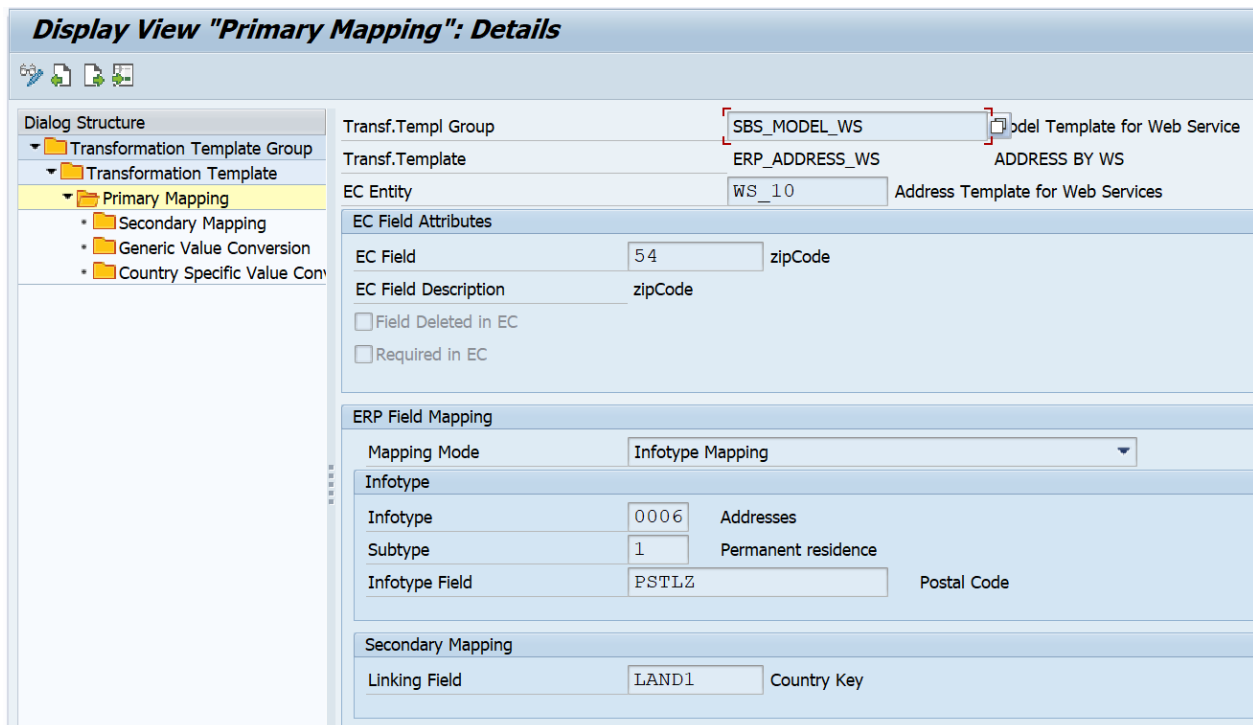
Define Value Mapping Entries Pushbutton

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.

Primary Mapping Example: Address Type Field

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Task overview:

Related Information

5.1.10.2 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
- Russia
- Saudi Arabia
- Singapore
- South Korea
- Spain
- Sweden
- Switzerland
- United Kingdom
- United States of America
- Venezuela

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.
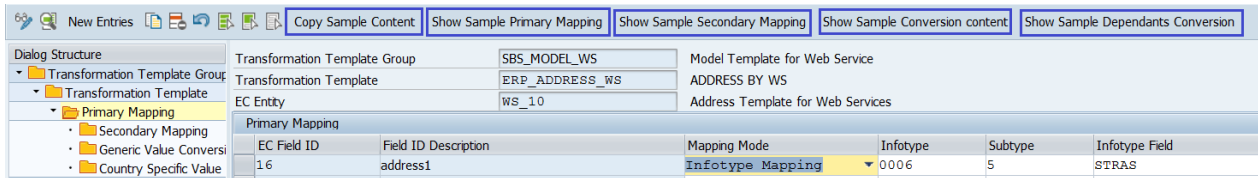
Sample Content Options in Primary Mapping View

Choose *Show Sample Secondary Mapping* in the *Primary Mapping* view to check which sample content is available.

Display View "Standard Secondary Mapping Entries": Overview

EC Entity ID	Address Template for Web Services
Version ID	Version 101

Standard Secondary Mapping Entries

EC Field	EC Field Name	Country	Infotype	Subtype	Field name	Value Map
17	address1	CL	0006	1	NAME2	
17	address1	CN	0006	1	LOCAT	
17	address1	FR	0006	1	HSNMR	
17	address1	HK	0006	1	LOCAT	
17	address1	JP	0006	1	ORT01	
17	address1	KR	0006	1	ORT01	
17	address1	NL	0006	1	LOCAT	
17	address1	NZ	0006	1	NAME2	
17	address1	SA	0006	1	NAME2	
18	address2	AR	0006	1	HSNMR	
18	address2	AU	0006	1	HSNMR	
18	address2	BR	0006	1	HSNMR	
18	address2	CA	0006	1	LOCAT	
18	address2	CH	0006	1	LOCAT	
18	address2	CL	0006	1	STRAS	
18	address2	CN	0006	1	STRAS	
18	address2	CO	0006	1	LOCAT	
18	address2	DE	0006	1	STRAS	
18	address2	ES	0006	1	HSNMR	
18	address2	FI	0006	1	HSNMR	
18	address2	FR	0006	1	STRAS	
18	address2	GB	0006	1	LOCAT	
18	address2	HK	0006	1	STRAS	

Sample Secondary Mapping for Address Field

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.

Linking Field Country Key

Defining Secondary Mapping for Linking Field Country Key

2. You can use the *Country Grouping* (`MOLGA`) field.

Defining Secondary Mapping for Country Grouping Field

Task overview: Defining Field Mapping for Employee Data [page 142]

Related Information

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5.1.10.3 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 adressType 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 142]

Related Information

Defining the Primary Field Mapping for Employee Data [page 143]
If Needed, Define a Secondary Field Mapping [page 146]
How to Use the Sample Content for Employee Data [page 150]

5.1.10.4 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.

> ⓘ 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, on the *Implement* tab in the *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.

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_WScustom 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 142]

Related Information

Defining the Primary Field Mapping for Employee Data [page 143]
If Needed, Define a Secondary Field Mapping [page 146]
Defining the Subtype Field Mapping [page 150]

5.1.11 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.

5.1.12 Formatting the Employee Central Fields by Value Conversion

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

Before you replicate the data to SAP ERP HCM system, you might have to format the Employee Central field in a transformation template group to a valid SAP ERP HCM value. Value conversion enables you to format the value of the SAP ERP HCM 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.

> ⓘ Note
>
> There are standard value conversion rules provided by SAP. Currently only country-specific value conversion content is provided by SAP.

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:

Field	Description
Country Grouping	Value of Employee Central linking Field (required only in case of country-specific value conversion)
Seq No	Sequence number for multiple actions, order of actions is based on this number
CONV_RULE	Supported value conversion rules
PARAMETER_1	Parameter 1 for rule (function of parameter depends on rule selected)
PARAMETER_2	Parameter 2 for rule (function of parameter depends on rule selected)
PARAMETER_EC_FLD	Parameter for Employee Central field ID
DIRECTION	*ERP-EC*/*EC-ERP* indicator

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.

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> ⓘ **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**
>
> | Employee Central Field Value | Sequence number | Operation | Parameter 1 | Parameter 2 | Result |
> |---|---|---|---|---|---|
> | Test | 1 | Replace using patterns with string/ Employee Central field | (.*) | _$1 | _Test |

> ⓘ **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 Employee Central field values would be transferred to Infotype field.

Operations supported for value conversion:

Arithmetic Operations - Multiplication with a Number

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
Value to be multiplied with.	Nil	Nil	Multiply with a constant value.

Replace Using Patterns with String/Employee Central Field

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
Pattern (any standard Regular expression)	Constant string	Employee Central field Id	Replace the characters in Employee Central field value matching the pattern entered in parameter 2 with the constant string or the value of another Employee Central field

⚙ Example

Employee Central Field Value	Sequence Number	Operation	Parameter 1	Parameter 2	Result
First_Middle-Surname	1	Replace using patterns with string/ Employee Central field	_	/	First/Middle-Surname
	2	Replace using patterns with string/ Employee Central field	-	\	First/Middle\Surname
	3	Replace using patterns with string/ Employee Central field	Middle	<nbsp>	First/ \Surname

→ **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/Employee Central Field

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
String/Character to be used as separator	Constant String	Employee Central field Id	Concatenate the Employee Central field value with the constant string/Employee Central field in parameter3 by suffixing the Employee Central field separated by the characters in parameter 2

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✤ Example

Employee Central Field Value	Sequence Number	Operation	Parameter 1	Parameter 2	Parameter for Field	Result
ABCD	1	Append with string/Employee Central field		1234		ABCD1234
	2	Append with string/Employee Central field	-	Test		ABCD1234-Test
	3	Append with string/Employee Central field	/		10	ABCD1234-Test/string1

Adjust string to length

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
Length to be adjusted to	Filler characters to be used in case the Employee Central value length is less than the parameter1	Nil	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.

✤ Example

Employee Central Field Value	Sequence Number	Operation	Parameter 1	Parameter 2	Result
ABCD	1	Adjust string to length	10	X	ABCDXXXXXX

Prepend with string/Employee Central field

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
String/Character to be used as separator	Constant String	Employee Central field Id	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 parameter 2.

> ⚙ Example
>
> | Employee Central Field Value | Sequence Number | Operation | Parameter 1 | Parameter 2 | Result |
> |---|---|---|---|---|---|
> | ABCD | 1 | Prepend with string/Employee Central field | - | Test | Test-ABCD |

Replace with string/Employee Central field

Parameter 1	Parameter 2	Parameter for Employee Central field	Description
Nil	Constant string	Employee Central field Id	Replace the Employee Central field string value irrespective of the content with the constant string or the value of another Employee Central field.

> ⚙ Example
>
> | Employee Central Field Value | Sequence number | Operation | Parameter 1 | Parameter 2 | Result |
> |---|---|---|---|---|---|
> | ABCD | 1 | Replace with Constant/Employee CentralField | | Test | Test |

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Split before string/character

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
String/character to be used for splitting	Nil	Nil	Split at the first occurrence of the string/character in parameter1 and return the substring before parameter1.

Split after string/character

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
String/character to be used for splitting	Nil	Nil	Split at the first occurrence of the string/character in parameter1 and return the substring after parameter1.

Edit using pattern

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
Mask	Nil	Nil	Simple insertion of characters/strings at specific positions of Employee Central field string Eg:- AAABBBCCC, to convert this into a string like – AAA-BBB/CCC, mask can be given as : ___-___/___ Each underscore represents a character of the incoming string and final output string will have the additional characters given in mask .

⚙ Example

Employee Central Field Value	Sequence Number	Operation	Parameter 1	Parameter 2	Result
AABBCCDD	1	Edit using pattern	__:__/__+__		AA:BB/CC+DD

Check and Replace

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
String value to be compared with	String value to be used for replacement	ID of the Employee Central field to be used for comparison	Replaces the value of an Employee Central field with a constant string based on the value of another field under the same Employee Central entity.

⚙ Example

Employee Central Field Value	Sequence Number	Operation	Parameter 1	Parameter 2	Parameter for Employee Central Field	Result
ABCD	1	Check and Replace	X	TEST	10	TEST

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> ⓘ **Note**
>
> Check and Replace operation is supported only when you replicate the data to SAP ERP HCM.

Check and Remove

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
String to be compared with	Not valid	Employee Central field id of the field to be used for comparison	Remove the Employee Central payload records during replication which are not valid for a transformation template based on a condition.

> ⁘ **Example**
>
> | Employee Central Field Value | Sequence Number | Operation | Parameter 1 | Parameter 2 | Parameter for Employee Central Field | Result |
> |---|---|---|---|---|---|---|
> | TEST | 1 | Check and remove | X | | 10 | Payload record removed if the Employee Central field 10 value is **X**. |

> ⓘ **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.

Map target SAP ERP HCM field based on Employee Central value

Parameter 1	Parameter 2	Parameter for Employee Central Field	Description
Source Employee Central field.	Target SAP ERP HCM field.	ID of the Employee Central field to be used for mapping.	Map the target SAP ERP HCM field based on the Employee Central value.

> ⓘ **Note**
>
> Map target SAP ERP HCM field based on Employee Central value operation is supported only when you replicate the data to SAP ERP HCM. And this conversion rule is applicable only for infotype 0580.

Sample scenario with multiple operations

> 🍀 Example
>
> | Employee Central Field Value | Sequence number | Operation | Parameter 1 | Parameter 2 | Parameter for Employee Central Field | Result |
> |---|---|---|---|---|---|---|
> | AA-BB/CC Test_string | 1 | Split before string/character | \<nbsp\> | | | AA-BB/CC |
> | | 2 | Replace using patterns with string/Employee Central field | /CC$ | | | AA-BB |
> | | 3 | Append with string/Employee Central field | + | | 10 | AA-BB+string1

 ⓘ Note

 Assuming that the value for the Employee Central field is **string1**. |
> | | 4 | Prepend with string/Employee Central field | / | Constant | | Constant/AA-BB+string1 |

5.1.13 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 (Define Field Mapping for Employee Data customizing activity) for some or all subtypes of this infotype.

Prerequisites

Define the field mapping for the transformation template using `VC_ECPAO_MAP` view cluster.

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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).

   a. Select the transformation template group and transformation template.

   b. 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).

   a. Select the transformation template group and transformation template.

   b. 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).

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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 Infty* and *Ctry Clone Infty* 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.

5.1.14 Filtering of Infotype and Subtype for Employee Central

You can define the infotypes and subtype that should be ignored during the replication process at the country grouping level based on the workforce. If you are replicating an employee without setting the infotypes and subtypes, 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/region.

   > ⓘ Note
   >
   > Wildcard (*) characters are supported for both country grouping and subtype. If you enter the wildcard character *, no subtypes or countries/regions are 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 workforce category.

   This category defines the group of workforce to be ignored. Replication of employee master data from Employee Central supports the workforce types employee and contingent worker.

   > ⓘ Note
   >
   > The V_ECPAO_IT_FILT table acts as a negative list of infotypes that are ignored during the replication process. Any infotypes and subtypes that are entered in this list are ignored during the replication process based on the country grouping and workforce category.

5.1.15 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.

5.1.16 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**.

   > → Tip
   >
   > *All Applications* runs checks in all your applications.

   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.

   > → Tip
   >
   > To understand what a check does, right click the *Check ID*. The system then displays some information on the check.
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.

5.1.16.1 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.

5.1.16.2 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.

5.1.16.3 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.

5.1.16.4 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*

5.1.16.5 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*.

5.1.16.6 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*.

5.1.16.7 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*.

5.1.16.8 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.

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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*.

5.1.16.9 Check Results

After you run checks in the check tool, it returns the results of the checks so that you can resolve the issues found.

The results of a check are displayed in the *Result* column. If you run the checks multiple times to see how you're resolving issues, you can select a previous result from the *History* dropdown list.

> ⓘ Note
>
> To display the *History* dropdown list, click a check. On the details screen that opens on the right side of the page, expand the header. The *History* dropdown list is directly below the check title.

Possible Results of Check Tool

Result	Action
No issues found	If the tool can't find issues, you see a green check mark in the *Result* column.
Issues found	If the tool finds issues, it reports the number of issues and a yellow warning icon or a red alarm icon. • The yellow icon indicates a low severity issue. The system proposes a solution. • The red icon indicates a high severity issue. You must take action, which could include creating a support ticket.
Pending migrations	If the tool finds pending migrations that need to be completed by the user, you can see a yellow warning icon or a red alarm icon in the *Status* column on the *Migration* tab.
Completed	If the tool finds no issues with migration, or the migration has already been completed, you see a green check mark in the *Status* column on the *Migration* tab.

> ⓘ Note
>
> • Select the *Export Results* button to download the check results. Ensure you run the check before exporting the check results. If not you can view only the first 100 check results.
> • The downloaded check result table can display a maximum number of 10,000 rows.

5.1.17 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.

5.1.18 Replicating Rehired Contingent Workers from Employee Central

Make settings to enable the replication of contingent workers to the SAP ERP HCM system that have been rehired in Employee Central.

Context

Employee Central uses the following events for contingent worker:

- *Start Contingent Worker* (SCWK) for hiring and rehiring
- *End Contingent Worker* (ECWK) for termination

In SAP ERP HCM, action types are defined in Customizing for Personnel Administration, in the *Set Up Personnel Actions* customizing activity (table `T529A`). For hiring action types, *Function character for action* (`FUNCH`) is set to *Initial hiring* (1) or *Initial hiring and transfer of data from Recruitment* (7). For rehiring action types, *Function character for action* is set to *Other actions* (0).

You can't map the *Start Contingent Worker* event to two different action types. That's why the SAP ERP HCM system converts all hiring actions that are carried out after the first termination of a contingent worker into rehiring actions. To do so, the system uses the action type stored for the *Fallback Action Type Rehire for Country/Region* constant in Customizing for the Business Integration Builder. If no action type is stored for this constant, the system uses the action type stored for the *EC to ERP (BIB): Fallback Action Type for Rehire* constant. If no action type is stored for this constant either, the system uses the action type *Reentry into company* (12).

Procedure

1. Map *Start Contingent Worker* (SCWK) to a hiring action type. Don't map *Start Contingent Worker* to a rehiring action type.
2. Map *End Contingent Worker* (ECWK) to a termination action type, that is, an action type for which *Employment* (`STAT2`) is set to *Inactive* (0).
3. Ensure that a fallback action type for rehire or the default rehire action type is available in your SAP ERP HCM system.

Option	Description
Use country/region-specific fallback action type	Go to Customizing for the Business Integration Builder and choose ▌ *Basic Settings* ❯ *Maintain Constant Values Based on Country/Region* ❯. Enter the action type for the *Fallback Action Type Rehire for Country/Region* constant.
Use global fallback action type	Go to Customizing for the Business Integration Builder and choose ▌ *Basic Settings* ❯ *Maintain the Constant Values* ❯. Enter the action type for the *EC to ERP (BIB): Fallback Action Type for Rehire* constant.
Use default rehire action type	Go to Customizing for Personnel Administration and choose ▌ *Customizing Procedures* ❯ *Actions* ❯ *Set Up Personnel Actions* ❯. Ensure that *Reentry into company* is available. Don't store an action type for the *Fallback Action Type Rehire for Country/Region* or *EC to ERP (BIB): Fallback Action Type for Rehire* constant.

Results

Let's say the following events are replicated from Employee Central:

1. *Start Contingent Worker*
2. *End Contingent Worker*
3. *Start Contingent Worker*

For the first *Start Contingent Worker* event, the SAP ERP HCM system uses the hiring action type that you've mapped in the first step. Because the second *Start Contingent Worker* event occurs after the *End Contingent*

Worker event, SAP ERP HCM uses a rehire action type for it. Either the action type stored for the *Fallback Action Type Rehire for Country/Region* constant or the action type stored for the *EC to ERP (BIB): Fallback Action Type for Rehire* constant. If no action type is defined for either of the two constants, the system uses the default rehire action type *Reentry into company*. If the default rehire action type isn't available, SAP ERP HCM raises an error.

5.2   Mapping Types

Take a look at the different mapping types that you can use in SAP ERP HCM to enable replication of employee master data from Employee Central.

How Repetitive Structure Mapping Works [page 174]
> 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 174]
> Repetitive structure mapping is used for the *Date* (0041) infotype, which has a repetitive structure.

How Date Type Mapping Works [page 179]
> The *Date Specifications* (0041) infotype can't use a straightforward field mapping, but has special requirements.

How Time Constraint 3 Mapping Works [page 181]
> 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 185]
> 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.

Replicating Multiple EC Entity to Different Subtypes of an Infotype [page 188]
> Replicate data from different EC entities which can have different processing modes mapped to the same infotype different subtypes.

How Start Date of Infotypes is Configured from Employee Central Entities [page 188]
> Learn how the start date can be determined from the Employee Central entities while replicating the data.

Parent topic: Replicating Employee Master Data [page 117]

Related Information

5.2.1 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 distibution items that are stored in an employee's infotype using the field mapping you have defined once.

5.2.2 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 (`P0041`), 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.

> ⚙ Example
>
> 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 Additional Employee Central Entities for Employee Data* 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`)

Repetitive Structure

The ECPAO_REPETITIVE_ST_IT0041 structure is assigned to the *Date Specification Custom MDF Object* Employee Central entity in the *Define Additional Employee Central Entities for Employee Data* Customizing step.

| EC Entity | 1_WS_DATE | Date Specification Custom MDF Object |

Basic Settings

| Entity Name in EC | cust_DateSpecification_Child |
| Comm. Channel | Web Service Transfer |

☑ Multiple Use   ☑ Effective Dated
☐ Is Generic Object

| Inherit Metadata | |

Standard EC Fields

Object ID in EC	externalCode
Start Date in EC	effectiveStartDate
End Date in EC	effectiveEndDate

| CE API Segment | cust_DateSpecification_Parent |

Integration to EC

Upsert Sequence	973
Dependent Entity	
Country Version	

Deletion Supported

☐ Deletion Permitted

| HRIS Element ID | |

Infotype-Specific Settings

| Required Infotype | |
| Special Mapping Infotype | |

Specific Mapping

Processing Mode	Repetitive Structure Mapping
Processing Infotype	0041
Processing Field	seqNumber
Repet.Struct.	ECPAO_REPETITIVE_ST_IT0041

Recurring Date Specification Custom MDF Object template

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*.

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Primary Mapping of Recurring Date Type Fields

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.

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Display View "Employee Central Entity for Employee Data": Details

EC Entity	WS_3	Employment Info Template for Web Service

Basic Settings

Entity Name in EC	EmpEmployment
Comm. Channel	Web Service Transfer
☐ Multiple Use	☐ Effective Dated
☐ Is Generic Object	
Inherit Metadata	

Standard EC Fields

Object ID in EC	
Start Date in EC	startDate
End Date in EC	endDate
CE API Segment	employment_information

Integration to EC

Upsert Sequence	40
Dependent Entity	
Country Version	

Deletion Supported

☐ Deletion Permitted	
HRIS Element ID	

Infotype-Specific Settings

Required Infotype	
Special Mapping Infotype	0041

Specific Mapping

Processing Mode	
Processing Infotype	
Processing Field	
Repet.Struct.	

Non-repetitive Employment Information

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 IT0041. 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 Employee Central. In this case, Date of Date type is replicated from the Employee Central side, so we are maintaining DAT01 in the Infotype field.

Primary Mapping for IT0041 with Date Type

Primay Mapping for IT0041 with Infotype Field

Start date and original start date is now available for mapping in the `VC_ECPAO_MAP` view cluster. If these field 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.

5.2.3 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.

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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.

Primary Mapping for Employment Details Template – Overview Screen

Primary Mapping for Employment Details Template – Details Screen

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

Transformation Template	ERP_EMPLOYMENT	EMPLOYMENT					
EC Field	22	professionalServiceDate					
Secondary Mapping							
Country grouping	Description	Infotype	Subtype	Infotype Field	Date Type	Value Mapping Entity	
10	USA	0041		DAT01	U2		
43	New Zealand	0041		DAT01	32		

Secondary Mapping for Employment Details Template

The mapping of date types is currently used for the *Employment Details* and *Job History* Employee Central entities.

You can specify a mapping between the employment details date fields and Job information date fields in Employee Central to infotype date specification (IT0041) date types. If dates are relevant for payroll, we recommend that you use corresponding job information date fields in Employee Central. In particular, we recommend using event-based job information date fields. For example, if event-based date job information fields are used, these are filled automatically by the Employee Central events. In Employee Central, this also saves a history of the data and hence ensures data consistency with historical IT0041 data in SAP ERP HCM system.

5.2.4 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:

Entities Supporting Time Constraint 3

SAP ERP HCM Infotype	Employee Central Entity
Bank Details (0009)	Payment Information Details
Additional Payments (0015)	Non-Recurring Pay Component
Additional Off-Cycle Payments (0267)	Non-Recurring Pay Component

SAP ERP HCM Infotype	Employee Central Entity
Additional Actions (0302)	Job History

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:
>
> An Employee's Bank Details in SAP ERP HCM
>
> | Start Date | End Date | Seq.No. | Payment Method | Amount | Currency | Standard Percentage | Type of Bank Details Record |
> |---|---|---|---|---|---|---|---|
> | January 1, 2016 | December 31, 9999 | 0 | Check | 0,00 | USD | 0,00 | Main Bank |
> | January 1, 2015 | December 31, 2015 | 0 | Check | 0,00 | USD | 0,00 | Main Bank |
> | January 1, 2016 | December 31, 9999 | 1 | Check | 0,00 | USD | 10,00 | Other Bank |
> | January 1, 2016 | December 31, 9999 | 0 | Bank Transfer | 1.500,00 | USD | 0,00 | Other Bank |
> | January 1, 2015 | December 31, 2015 | 1 | Check | 0,00 | USD | 10,00 | Other Bank |
> | January 1, 2015 | December 31, 2015 | 0 | Bank Transfer | 1.500,00 | USD | 0,00 | Other Bank |
> | January 1, 2016 | December 31, 9999 | 0 | Check | 0,00 | USD | 25,25 | Other Bank Details for Off-Cycle |
> | January 1, 2015 | December 31, 2015 | 0 | Check | 0,00 | USD | 25,25 | Other Bank Details for Off-Cycle |

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Overview Bank details

End Date	Payee	Payment method	Bank key	Name of bank	BDTy...
31.12.9999	Mrs	Check	US		0
31.12.2015	Mrs	Check	US		0
31.12.9999	Mrs	Check	US		1
31.12.9999	Mrs	Bank transfer (ACH PPD)	US	Bank of America	1
31.12.2015	Mrs	Check	US		1
31.12.2015	Mrs	Bank transfer (ACH PPD)	US	Bank of America	1
31.12.9999	Mrs	Check	US		6
31.12.2015	Mrs	Check	US		6

Pers. No. 10896
Personnel No 10896
EE group 1 Active
EE subgroup U3 Tariff pay
Choose 01.01.1800 To 31.12.9999 STy.

Pers.Assgn 99999999 00010896
Name Mrs
Personnel ar US01 United States Headquarter
Status Active

Find by
Person
· Collective search help
· Search Term
· Free search

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:

Example: Employee's Payment Information Details in Employee Central

And here's another example showing the records of the *Additional Payments* (0015) infotype:

Example: Employee's Additional Payments in SAP ERP HCM

Start Date	End Date	Seq.No.	Wage Type	Amount	Currency
July 31, 2015	July 31, 2015	0	M114	1.250,00	USD
July 31, 2015	July 31, 2015	0	M116	250,00	USD
January 15, 2015	January 15, 2015	0	M114	1.000,00	USD
January 15, 2015	January 15, 2015	1	M114	250,00	USD
January 15, 2015	January 15, 2015	2	M114	1.000,00	USD

Example: Employee's Additional Payments in SAP ERP HCM

This information is transferred to as shown here:

Employee Central

Example: Employee's Spot Bonuses in Employee Central

5.2.5 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 infoype:

- **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.

> **⚙ Example**
>
> 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 Additional* Employee Central *Entities for Employee Data* 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 Employee Central 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.

ECPAO_OBJPS_KMAP table

Fields	Description
PERNR	Personal Number
INFTY	Infotype
SUBTY	Subtype

Fields	Description
OBJPS	Object Identification
EXT_GEN_FLD_VAL	External value for generator field for OBJPS replication
INT_GEN_FLD_VAL	Internal value for generator field for OBJPS replication

5.2.5.1 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 HCM system is associated to.

ECPAO_EE_KMAP table

Fields	Description
PERNR	Personal Number
USER_ID	User ID
PERSON_ID	Employee ID
PERSON_ID_EXTERNAL	Third Party Employee ID
PERSON_GUID	Person GUID
EMPLOYMENT_ID	Employment ID

> ⓘ Note
>
> When the data replication from Employee Central is successful, then the employee key mapping table would be updated.

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5.2.6 Replicating Multiple EC Entity to Different Subtypes of an Infotype

Replicate data from different EC entities which can have different processing modes mapped to the same infotype different subtypes.

You can replicate data from different EC entities which can have different processing modes (no specific mappings) mapped to the same infotype different subtypes. And this enables you to process difference time constraints data at the sub-type level.

> ⚙ Example
>
> For example, you can replicate the data from the national ID portlet to infotype 0185 and also the data from work permit to infotype 0185 to a different subtype.

5.2.7 How Start Date of Infotypes is Configured from Employee Central Entities

Learn how the start date can be determined from the Employee Central entities while replicating the data.

The data to any infotype is always created with a start date. There are the following scenarios in which the start date can be configured based on the type of Employee Central entity that is mapped to an SAP ERP HCM infotype:

- The infotype data comes only from effective-dated entities.
- The infotype data comes only from the non-effective-dated entities.
- The infotype data comes from both effective-dated and non-effective-dated entities.

  Effective-Dated Employee Central Entity Mapped to an Infotype [page 189]
  > When the infotype data is mapped only from an effective-dated Employee Central entity, the start date will be determined based on the effective start date mapped in the BIB configuration of the Employee Central entity.

  Non-Effective-Dated Employee Central Entity Mapped to an Infotype [page 189]
  > You can configure the start date of infotypes generated from the non-effective dated Employee Central blocks. This function is supported for infotypes that are configured only from non-effective dated blocks.

  Non-Effective-Dated Employee Central Entity and Effective-Dated Employee Central Entity Mapped to an Infotype [page 191]
  > When an infotype is configured from both effective-dated and non-effective-dated Employee Central entities, the start date is determined based on the data from the Employee Central entity.

5.2.7.1 Effective-Dated Employee Central Entity Mapped to an Infotype

When the infotype data is mapped only from an effective-dated Employee Central entity, the start date will be determined based on the effective start date mapped in the BIB configuration of the Employee Central entity.

The start date is also determined based on the data change in the infotype when the data is mapped from different effective-dated Employee Central entities. If there is no change of data for an infotype, the time splits are merged.

5.2.7.2 Non-Effective-Dated Employee Central Entity Mapped to an Infotype

You can configure the start date of infotypes generated from the non-effective dated Employee Central blocks. This function is supported for infotypes that are configured only from non-effective dated blocks.

Default Option

Non-effective-dated blocks in Employee Central don't have a start date. When you define the non-effective-dated Employee Central entity in BIB (entity configuration in view V_ECPAO_ECTMPL), you don't specify a start date. The SAP ERP HCM system uses the default option in this case. 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 Employee Central entity to a custom Employee Central entity in customer namespace. You need to specify the string `C_LASTMODIF` for the *Start Date* field in the Employee Central entity configuration in BIB. 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 Employee Central is inserted from the last modified date and the history is retained. If deletion happens in Employee Central, no data for the Employee Central 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 Employee Central entity to a custom Employee Central entity in customer namespace. You need to specify the string `C_PAYRDATE` for the *Start Date* field in the Employee Central entity

configuration in BIB. With this option, insertion and changes is done from the payroll period start date. Deletion is effective in SAP 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.

> ⓘ **Note**
>
> Note: For infotype 0041 replication, if the start date of the non-effective-dated entity is maintained as C_PAYRDATE, if the payroll period start date is initial, and if you enable the constant *EC to ERP(BIB): Use last modified date in IT0041*, the replication takes the last modified date as the begin date of infotype 0041.

Start Date from Custom Date Field in Block

To use this option, copy the standard Employee Central entity to a custom Employee Central entity in customer namespace. In the *Start Date* field in the Employee Central entity configuration in BIB, enter the string custom date field name as appearing in SAP 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 Employee Central, existing records are deleted completely after the earliest transfer date.

> ⓘ **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 Employee Central 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 Employee Central 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.
> - If multiple records are maintained in a non-effective dated Employee Central entities, then a single record would be replicated.

5.2.7.3 Non-Effective-Dated Employee Central Entity and Effective-Dated Employee Central Entity Mapped to an Infotype

When an infotype is configured from both effective-dated and non-effective-dated Employee Central entities, the start date is determined based on the data from the Employee Central entity.

Effective-Dated and Non-Effective-Dated Entities or Only Effective-Dated Entities

If data is coming from Employee Central in both effective-dated and non-effective-dated entities or only from effective-dated entities, the start date is determined based on the effective start date mapped from the effective-dated Employee Central entity. The data from the non-effective-dated Employee Central entity is shared across all the splits in the infotype. Time splits are merged if there is no data change for a split in an infotype. In this scenario, the start date of the infotype is determined based on the start date rule maintained in the non-effective dated entity.

When an infotype is mapped from both effective-dated and non-effective-dated blocks, you can define any of the start date rules, but there's no option for retaining the history in any case.

> ⓘ Note
>
> Changes are always inserted after the earliest transfer date.

Non-Effective-Dated Entities

If data is coming from Employee Central only in a non-effective-dated entity, the start date of the infotype is determined based on the start date rule maintained in the non-effective-dated entity.

> ⓘ Note
>
> Changes are always inserted after the earliest transfer date.

Default Option

Non-effective-dated blocks in Employee Central don't have a start date. When you define the non-effective-dated Employee Central entity in BIB (entity configuration in view V_ECPAO_ECTMPL), you don't specify a start date. The SAP ERP HCM system uses the default option in this case. The default behavior is to insert the infotype records with the start date chosen from the hire date, last rehire date, and the earliest transfer date, whichever is the latest. The history is maintained based on this chosen date, meaning existing records up to this chosen date are retained. If an employee has hire and rehire data, the last rehire date is chosen (if it is not before the earliest transfer date)

and changes are effective from this date, delimiting and inserting new changes or deleting the infotype records. The validity of the last infotype record is set to 31.12.9999.

5.3   Business Add-Ins (BAdI)

Implement a Business Add-In (BAdI) if you need to enhance the replication of employee master data from Employee Central.

Context

> ⚠ Caution
>
> If you have to change infotype data after replication **do not** implement the BAdI : *Master Data, Infotype Database update logic* (`HRPAD00INFTYDB`). 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* ▶

> ⓘ Note
>
> There are certain validations that you need to be aware when you are using the BADI `ECPAO_IN_EXT_PROCESS_INFOTYPE`:
>
> - Start Date/End date of infotype cannot be empty.
> - Start Date and End date of infotype cannot be before the FTSD except for infotype 0709 where the start date is 01.01.1800.
> - End Date cannot be before than the Start Date.
>
> These validations would be applicable once you apply this note: 3189912 ⛴.

> ⓘ 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 SAP ERP HCM 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:

Related Information

5.4   Extensibility

Take a look at how you can enhance employee master data replication from Employee Central.

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:

Related Information

5.4.1 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 actitvites 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.

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

- 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.

5.5 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 196]
   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 200]
   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 204]
   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 205]
   Learn about specific configuration or process information about country New Zealand while replicating data from Employee Central to SAP ERP HCM system.

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Parent topic:

Related Information

5.5.1 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 197]
    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.

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

196   PUBLIC

Learn how localized biographical information is supported in the replication of data from Employee Central

Parent topic:

Related Information

5.5.1.1 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 Org. 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 196]

Related Information

Configuring the Localized Biographical Information for Country Brazil in the ERP System [page 198]

5.5.1.2 Configuring the Localized Biographical Information for Country Brazil in the ERP System

Learn how localized biographical information is supported in the replication of data from Employee Central

Prerequisites

Localized Biographical Information feature has to be enabled in the provisioning settings, succession data model (SDM) and country/region-specific succession data model (CSF SDM), and role-based permission settings in Employee Central.

Context

Employee Central now provides the option of maintaining the *Region of Birth* and *Place of Birth* data of an employee based on the localized requirement of the country and this data would be considered while replication of *Region of Birth* and *Place of Birth* fields to Infotype 0002 GBDEP and GBORT fields respectively. You can now enter or edit the input to *Region of Birth* and *Place of Birth* fields as a free text or picklist value under the *Country Specific Information* section in the *Biographical Information* portlet.

> ⓘ **Note**
>
> If a localized biographical information content is available for the country of the employment, then the country specific person node is mapped. Otherwise if no localized biographical information content is available for the country of the employment, then the data of the general biographical information is mapped.

Use case

Sample content is available for this use case:

Localized Biographical Information Template for Brazil for Web Service (WS_2_BRA)

Provides sample content for localized biographical information 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**
>
> The middleware exception is seen when the CE API segment "person_bra" is used. To eliminate the exception kindly add the standard entity (WS_2_BRA) and its CE API segment in the V_ECPAO_CEAPI_EX table.

Here is how to use the sample content provided in the *Define Field Mapping for Employee Data* Customizing activity:

Procedure

1. Create a transformation template group and select the sample content (Employee Data EC to ERP: Replication (EE_WS_3)). For more information on how to use the sample content, refer the *How to Use the Sample Content for Employee Data* topic in the related information section.

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.

Task overview: Replication of Employee Master Data for Brazil [page 196]

Related Information

Supporting Multiple Compensation Event at the Same Day [page 197]

5.5.2 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 200]
Learn how to replicate the master data related to income tax information from Employee Central to SAP ERP HCM system.

Supporting the Third Gender for India [page 204]
Learn about third gender support for the country India.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]
Replication of Employee Master Data for Germany [page 204]
Replication of Employee Master Data for New Zealand [page 205]
Replication of Employee Master Data for Austria [page 206]
Replication of Employee Master Data for Italy [page 207]
Replication of Employee Master Data for France [page 209]
Replication of Employee Master Data for Venezuela [page 211]
Replication of Employee Master Data for Chile [page 213]
Replication of Employee Master Data for Canada [page 215]
Replication of Employee Master Data for USA [page 216]
Replication of Employee Master Data for Argentina [page 217]

5.5.2.1 How to Use the Sample Content for Income Tax Declaration

Learn how to replicate the master data related to income tax information 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.

> ⓘ 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, on the *Implement* tab in the *Configuration* section.

> ⓘ Note
>
> For India specific infotypes, IT0581, IT0585, and IT0586 we have provided generic value conversion.
>
> 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.

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.

Use cases

Sample content is available for these use cases:

Previous Employment Tax Details - EC to ERP Replication Only (WS_PET_580)

Provides sample content for supporting the replication of IT0580 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
>
> In Employee Central, previous employment tax details which has multiple declaration types have to be mapped to different ERP target fields. Since the Employee Central field `itDeclInvestmentType` contains type of investment and no separate fields are present in Employee Central field for each investment type and its value store in Amount field. This field can not be mapped to *Primary Mapping* with Target ERP field. You need to use the value conversion rule *Map target ERP field based on EC field value* to map `itDeclInvestmentType` to a ERP field based on its value. i.e. Map amount field in the primary mapping and use conversion rule to map `itDeclInvestmentType`'s value to determine ERP field to map Amount value.

Map target ERP field based on EC field value conversion rule.

Parameter 1	Parameter 2	Parameter for Employee Central field	Description
Source EC field.	Target ERP field.	ID of the Employee Central field to be used for mapping.	Map the target ERP field based on the EC value.

> ⓘ Note
>
> Map target ERP field based on EC value operation is supported only when you replicate the data to SAP ERP HCM. And this conversion rule is applicable only for infotype 0580.

Restrictions:

- In Employee Central there is no separate field to maintain the value for the *Number of Tax Exemptions* field and the same has been given in the amount field which is of data type Currency. Hence to replicate the value in correct format, we have adjusted the value using the *Split before string/character* value conversion rule.
- Fields *Retrenchment Exemption*, *Total Employer PF and Pension Contr*, and *Employer Superannuation Contribution* are present in the system. However, these fields are not present in Employee Central yet. Hence mapping for the same is not provided in the sample content.

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.

> ⓘ Note
>
> 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. After you copy the sample

content, you need to map the field ItDecInvestmentType to the infotype field *METRO* and value mapping as *METRO_TYPE_WS* for the IT0581 replication.

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.

ⓘ Note

The EC field investment type is mapped to two different ERP target fields SBS01 and SBD01 (Combination of Subsection and division) will uniquely identify a contribution type under Section 80 deductions (IT0585). To support this, you should create two transformation templates by mapping investment type as SBS01 in the first template and SBD01 in the second template. After you copy the sample content, you need to map the field `ItDecInvestmentType` to the Repetitive field SBD01 and value mapping as *INVEST_SUBTYPE_WS* for the IT0585 replication.

You will have to create separate transformation template to support declaration types ACTUAL and PROPOSAL. We have provided sample content to support the ACTUAL declaration type. To support the PROPOSAL type, for the infotypes 0585 and 0586, you need to copy the sample content for WS_80_585 and change the mapping for the field *Amount* and *Submission Type*. For the field Amount, you need to set the Mapping Mode as Infotype Mapping and set the Repetitive Field as PCN01 and then create a value conversion rule for PROPOSAL. For the Submission Type, you need to update the value conversion rule to PROPOSAL. for Parameter 1

Due to some restriction the standard value mapping entity *INVESTMENT_SUBTYPE_WS* is only available for the new customer. Existing customer should create the mapping for *INVESTMENT_SUBTYPE_WS* manually.

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.

ⓘ Note

You will have to create separate transformation template to support declaration types ACTUAL and PROPOSAL. We have provided sample content to support the ACTUAL declaration type. To support the PROPOSAL type, for the infotypes 0586, you need to copy the sample content for WS_80_586 and change the mapping for the field *Amount* and *Submission Type*. For the field Amount, you need to set the Mapping Mode as Infotype Mapping and set the Repetitive Field as PCN01 and then create a value conversion rule for PROPOSAL. For the Submission Type, you need to update the value conversion rule to PROPOSAL. for Parameter 1. And now copy the sample content for WS_80C_586 and change the mapping for the field *Amount* and *Submission Type*. For the field Amount, you need to set the Mapping Mode as Infotype Mapping and set the Repetitive Field as PIN01 and then update the value conversion rule for PROPOSAL. For the Submission Type, you need to create the value conversion rule for PROPOSAL.

Parent topic:

Related Information

5.5.2.2 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:

Related Information

5.5.3 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.

Learn about third gender support for the country Germany.

Parent topic:

Related Information

5.5.3.1   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.

Parent topic: Replication of Employee Master Data for Germany [page 204]

5.5.4 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.

Supporting the Third Gender for New Zealand [page 206]
     Learn about third gender support for the country New Zealand.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]

5.5.4.1 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.

Parent topic: Replication of Employee Master Data for New Zealand [page 205]

5.5.5 Replication of Employee Master Data for Austria

Learn about specific configuration or process information about country Austria while replicating data from Employee Central to SAP ERP HCM system.

Supporting the Third Gender for Austria [page 207]
Learn about third gender support for the country Austria.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]

5.5.5.1   Supporting the Third Gender for Austria

Learn about third gender support for the country Austria.

Third gender is now supported for the country Austria based on the new Austria law. Hence Employee Central now supports a new country-specific gender field and corresponding country-specific picklists for Austria 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 Austria [page 206]

5.5.6 Replication of Employee Master Data for Italy

Learn about specific configuration or process information about country Italy while replicating data from Employee Central to SAP ERP HCM system.

Configuring the Localized Biographical Information for Country Italy in the ERP System [page 208]
Learn how localized biographical information is supported in the replication of data from Employee Central

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]

5.5.6.1 Configuring the Localized Biographical Information for Country Italy in the ERP System

Learn how localized biographical information is supported in the replication of data from Employee Central

Prerequisites

Localized Biographical Information feature has to be enabled in the provisioning settings, succession data model (SDM) and country/region-specific succession data model (CSF SDM), and role-based permission settings in Employee Central.

Context

Employee Central now provides the option of maintaining the *Region of Birth* and *Place of Birth* data of an employee based on the localized requirement of the country and this data would be considered while replication of *Region of Birth* and *Place of Birth* fields to Infotype 0002 GBDEP and GBORT fields respectively. You can now enter or edit the input to *Region of Birth* and *Place of Birth* fields as a free text or picklist value under the *Country Specific Information* section in the *Biographical Information* portlet.

> ⓘ Note
>
> If a localized biographical information content is available for the country of the employment, then the country specific person node is mapped. Otherwise if no localized biographical information content is available for the country of the employment, then the data of the general biographical information is mapped.
>
> If an employee of an Italian company was born outside Italy, "EE" shall be selected from the picklist of *Region of Birth*, and the original country of birth for this employee shall be inputted into *Place of Birth*.

Use case

Sample content is available for this use case:

Localized Biographical Information Template for Italy for Web Service (WS_2_ITA)

Provides sample content for localized biographical information 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
>
> The middleware exception is seen when the CE API segment "person_ita" is used. To eliminate the exception kindly add the standard entity (WS_2_ITA) and its CE API segment in the V_ECPAO_CEAPI_EX table.

Here is how to use the sample content provided in the *Define Field Mapping for Employee Data* Customizing activity:

Procedure

1. Create a transformation template group and select the sample content (Employee Data EC to ERP: Replication (EE_WS_3)). For more information on how to use the sample content, refer the *How to Use the Sample Content for Employee Data* topic in the related information section.
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.

Task overview: Replication of Employee Master Data for Italy [page 207]

5.5.7 Replication of Employee Master Data for France

Learn about specific configuration or process information about country France while replicating data from Employee Central to SAP ERP HCM system.

Configuring the Localized Biographical Information for Country France in the ERP System [page 210]
Learn how localized biographical information is supported in the replication of data from Employee Central

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]
Replication of Employee Master Data for India [page 200]

5.5.7.1 Configuring the Localized Biographical Information for Country France in the ERP System

Learn how localized biographical information is supported in the replication of data from Employee Central

Prerequisites

Localized Biographical Information feature has to be enabled in the provisioning settings, succession data model (SDM) and country/region-specific succession data model (CSF SDM), and role-based permission settings in Employee Central.

Context

Employee Central now provides the option of maintaining the *Region of Birth* and *Place of Birth* data of an employee based on the localized requirement of the country and this data would be considered while replication of *Region of Birth* and *Place of Birth* fields to Infotype 0002 GBDEP and GBORT fields respectively. You can now enter or edit the input to *Region of Birth* and *Place of Birth* fields as a free text or picklist value under the *Country Specific Information* section in the *Biographical Information* portlet.

> ⓘ Note
>
> If a localized biographical information content is available for the country of the employment, then the country specific person node is mapped. Otherwise if no localized biographical information content is available for the country of the employment, then the data of the general biographical information is mapped.

Use case

Sample content is available for this use case:

Localized Biographical Information Template for France for Web Service (WS_2_FRA)

Provides sample content for localized biographical information 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
>
> The middleware exception is seen when the CE API segment "person_fra" is used. To eliminate the exception kindly add the standard entity (WS_2_FRA) and its CE API segment in the V_ECPAO_CEAPI_EX table.

Here is how to use the sample content provided in the *Define Field Mapping for Employee Data* Customizing activity:

Procedure

1. Create a transformation template group and select the sample content (Employee Data EC to ERP: Replication (EE_WS_3)). For more information on how to use the sample content, refer the *How to Use the Sample Content for Employee Data* topic in the related information section.
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.

Task overview: Replication of Employee Master Data for France [page 209]

5.5.8 Replication of Employee Master Data for Venezuela

Learn about specific configuration or process information about country Venezuela while replicating data from Employee Central to SAP ERP HCM system.

> Configuring the Localized Biographical Information for Country Venezuela in the ERP System [page 212]
> Learn how localized biographical information is supported in the replication of data from Employee Central

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]
Replication of Employee Master Data for India [page 200]
Replication of Employee Master Data for Germany [page 204]
Replication of Employee Master Data for New Zealand [page 205]

5.5.8.1 Configuring the Localized Biographical Information for Country Venezuela in the ERP System

Learn how localized biographical information is supported in the replication of data from Employee Central

Prerequisites

Localized Biographical Information feature has to be enabled in the provisioning settings, succession data model (SDM) and country/region-specific succession data model (CSF SDM), and role-based permission settings in Employee Central.

Context

Employee Central now provides the option of maintaining the *Region of Birth* and *Place of Birth* data of an employee based on the localized requirement of the country and this data would be considered while replication of *Region of Birth* and *Place of Birth* fields to Infotype 0002 GBDEP and GBORT fields respectively. You can now enter or edit the input to *Region of Birth* and *Place of Birth* fields as a free text or picklist value under the *Country Specific Information* section in the *Biographical Information* portlet.

> ⓘ Note
>
> If a localized biographical information content is available for the country of the employment, then the country specific person node is mapped. Otherwise if no localized biographical information content is available for the country of the employment, then the data of the general biographical information is mapped.

Use case

Sample content is available for this use case:

Localized Biographical Information Template for Venezuela for Web Service (WS_2_VEN)

Provides sample content for localized biographical information 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**
>
> The middleware exception is seen when the CE API segment "person_ven" is used. To eliminate the exception kindly add the standard entity (WS_2_VEN) and its CE API segment in the V_ECPAO_CEAPI_EX table.

Here is how to use the sample content provided in the *Define Field Mapping for Employee Data* Customizing activity:

Procedure

1. Create a transformation template group and select the sample content (Employee Data EC to ERP: Replication (EE_WS_3)). For more information on how to use the sample content, refer the *How to Use the Sample Content for Employee Data* topic in the related information section.
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.

Task overview: Replication of Employee Master Data for Venezuela [page 211]

5.5.9 Replication of Employee Master Data for Chile

Learn about specific configuration or process information about country Chile while replicating data from Employee Central to SAP ERP HCM system.

Configuring the Localized Biographical Information for Country Chile in the ERP System [page 214]
Learn how localized biographical information is supported in the replication of data from Employee Central

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]
Replication of Employee Master Data for India [page 200]
Replication of Employee Master Data for Germany [page 204]
Replication of Employee Master Data for New Zealand [page 205]
Replication of Employee Master Data for Austria [page 206]
Replication of Employee Master Data for Italy [page 207]
Replication of Employee Master Data for France [page 209]

5.5.9.1 Configuring the Localized Biographical Information for Country Chile in the ERP System

Learn how localized biographical information is supported in the replication of data from Employee Central

Prerequisites

Localized Biographical Information feature has to be enabled in the provisioning settings, succession data model (SDM) and country/region-specific succession data model (CSF SDM), and role-based permission settings in Employee Central.

Context

Employee Central now provides the option of maintaining the *Region of Birth* and *Place of Birth* data of an employee based on the localized requirement of the country and this data would be considered while replication of *Region of Birth* and *Place of Birth* fields to Infotype 0002 GBDEP and GBORT fields respectively. You can now enter or edit the input to *Region of Birth* and *Place of Birth* fields as a free text or picklist value under the *Country Specific Information* section in the *Biographical Information* portlet.

> ⓘ Note
>
> If a localized biographical information content is available for the country of the employment, then the country specific person node is mapped. Otherwise if no localized biographical information content is available for the country of the employment, then the data of the general biographical information is mapped.

Use case

Sample content is available for this use case:

Localized Biographical Information Template for Chile for Web Service (WS_2_CHL)

Provides sample content for localized biographical information 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
>
> The middleware exception is seen when the CE API segment "person_chl" is used. To eliminate the exception kindly add the standard entity (WS_2_CHL) and its CE API segment in the V_ECPAO_CEAPI_EX table.

Here is how to use the sample content provided in the *Define Field Mapping for Employee Data* Customizing activity:

Procedure

1. Create a transformation template group and select the sample content (Employee Data EC to ERP: Replication (EE_WS_3)). For more information on how to use the sample content, refer the *How to Use the Sample Content for Employee Data* topic in the related information section.

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.

Task overview:

5.5.10 Replication of Employee Master Data for Canada

Learn about specific configuration or process information about country Canada while replicating data from Employee Central to SAP ERP HCM system.

Parent topic:

Related Information

5.5.10.1 Supporting the Third Gender for Canada

Learn about third gender support for the country Canada.

Third gender is now supported for the country Canada. Employee Central now supports a new country-specific gender field and corresponding country-specific picklists for Canada 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.

5.5.11 Replication of Employee Master Data for USA

Learn about specific configuration or process information about country USA while replicating data from Employee Central to SAP ERP HCM system.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]
Replication of Employee Master Data for India [page 200]
Replication of Employee Master Data for Germany [page 204]
Replication of Employee Master Data for New Zealand [page 205]
Replication of Employee Master Data for Austria [page 206]
Replication of Employee Master Data for Italy [page 207]
Replication of Employee Master Data for France [page 209]
Replication of Employee Master Data for Venezuela [page 211]
Replication of Employee Master Data for Chile [page 213]
Replication of Employee Master Data for Canada [page 215]
Replication of Employee Master Data for Argentina [page 217]

5.5.11.1 Supporting the Third Gender for USA

Learn about third gender support for the country USA.

Third gender is now supported for the country USA. Employee Central now supports a new country-specific gender field and corresponding country-specific picklists for USA 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.

5.5.12 Replication of Employee Master Data for Argentina

Learn about specific configuration or process information about country Argentina while replicating data from Employee Central to SAP ERP HCM system.

Parent topic: Replication of Country/Region-Specific Employee Master Data [page 195]

Related Information

Replication of Employee Master Data for Brazil [page 196]
Replication of Employee Master Data for India [page 200]
Replication of Employee Master Data for Germany [page 204]
Replication of Employee Master Data for New Zealand [page 205]
Replication of Employee Master Data for Austria [page 206]
Replication of Employee Master Data for Italy [page 207]
Replication of Employee Master Data for France [page 209]
Replication of Employee Master Data for Venezuela [page 211]
Replication of Employee Master Data for Chile [page 213]
Replication of Employee Master Data for Canada [page 215]
Replication of Employee Master Data for USA [page 216]

5.5.12.1 Supporting the Third Gender for Argentina

Learn about third gender support for the country Argentina.

Replicating the third gender is supported for Argentina. Employee Central supports country-specific gender field and corresponding country-specific picklists for Argentina and same can be replicated to SAP ERP HCM system. During the replication process, replication of the country-specific fields with picklist values are considered.

Employee Central supports the country-specific gender field in Personal Information/Global Information block. In the replication process, we support replicating the 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

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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 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.

6.1 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*.

6.2 Deciding Between Organizational Assignment Replication and Organizational Object Replication from Employee Central to Create Position Relationships in SAP ERP HCM

You can create relationships of employee positions to other objects (such as departments or job classifications) and to other positions (such as matrix manager positions) from different sources in Employee Central using different replication approaches.

You can configure position relationships in SAP ERP HCM to be created by the replication of organizational assignments and by the replication of organizational objects from Employee Central. Both options have their pros and cons. However, you must prevent the same position relationship from being created by both replications. That is, the settings you make for organizational assignment and for organizational object replication can complement each other, but must not duplicate each other.

Position relationships in SAP ERP HCM can originate either from Job Information or from Position Management in Employee Central.

- Using organizational assignment replication, you can create position relationships based on the employee's Job Information in Employee Central.
  If you want to use our sample content for organizational object replication, the appropriate sample content for this option is *Organizational Data EC to ERP: Job Info Relationships* (OM_WS_1).
- Using organizational object replication, you can create position relationships based on Position Management in Employee Central.
  The appropriate sample content for this option is *Organizational Data EC to ERP: Position Mgmt Relationships* (OM_WS_3).

> ⓘ Note
>
> There's also a "mixed" approach, which we don't recommend however. "Mixed" means: If a position is staffed in Employee Central), the position relationships are created based on Employee Central Job Information using the organizational assignment replication process. If a position is vacant, you replicate position relationships from Employee Central Position Management using the organizational object replication process. Don't use this "mixed" scenario if you've enabled replication of shared positions from Employee Central. It doesn't work for shared positions.
>
> The appropriate sample content for this "mixed" option is *Organizational Data EC to ERP: Job Info Relationships and Vacancies from Position Mgmt* (OM_WS_2).

Job relationships of positions in SAP ERP HCM (such as matrix manager relationships) can originate either from Job Relationships or from composite child objects in Employee Central.

- Using organizational assignment replication, you can create matrix relationships of positions based on the employee's Job Relationships in Employee Central.
- Using organizational object replication, you can create matrix relationships of positions based on the association of parent objects and composite child objects in Employee Central.

Here are some pros and cons of the options.

Replication Process	Advantages	Disadvantages	Further Considerations
Organizational assignments	You don't need to synchronize Job Information to Position Management in Employee Central because all employee and organizational data is replicated from Job Information.	Configuration is less flexible because you can't use secondary (conditional) mapping and generic value conversion when configuring transformation template groups. You must implement a Business Add-In (BAdI) to enhance the replication. For example, to fill additional fields such as the weighting percentage.	Relationships are delimited in the *Relationships* (1001) infotype when an employee leaves the assigned position or is terminated. This means that SAP ERP HCM doesn't consider the relationships of a position if the position doesn't have an incumbent in Employee Central.
Organizational objects	Configuration is more flexible because you can use secondary (conditional) mapping and generic value conversion when configuring transformation template groups.	You must synchronize Job Information to Position Management in Employee Central. For more information, refer to Defining "Job Information to Position" Synchronization. Configuring the organizational hierarchy and filling additional fields is more complex.	Relationships aren't delimited in the *Relationships* (1001) infotype when an employee leaves the assigned position or is terminated. This means that SAP ERP HCM retains the relationships of a position even if the position doesn't have an incumbent in Employee Central. Disable creation of the corresponding position relationship with organizational assignment replication if you create the relationship based on organizational object replication.

Related Information

6.3 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 222]
> 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 224]
> 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 226]
> 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.

Replicating Relations of Vacant and Staffed Positions from Different Sources in Employee Central [page 227]
> 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 228]
> 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 230]
> Here's how you can have the database update triggered in SAP ERP HCM when organizational assignment replication from Employee Central is finished.

6.3.1 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*

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Integration with SuccessFactors Employee Central ❭ *Other Integration Settings* ❭ *Replicating Data from SuccessFactors to SAP ERP* ❭ *Replicating Organizational Data* ❭ :
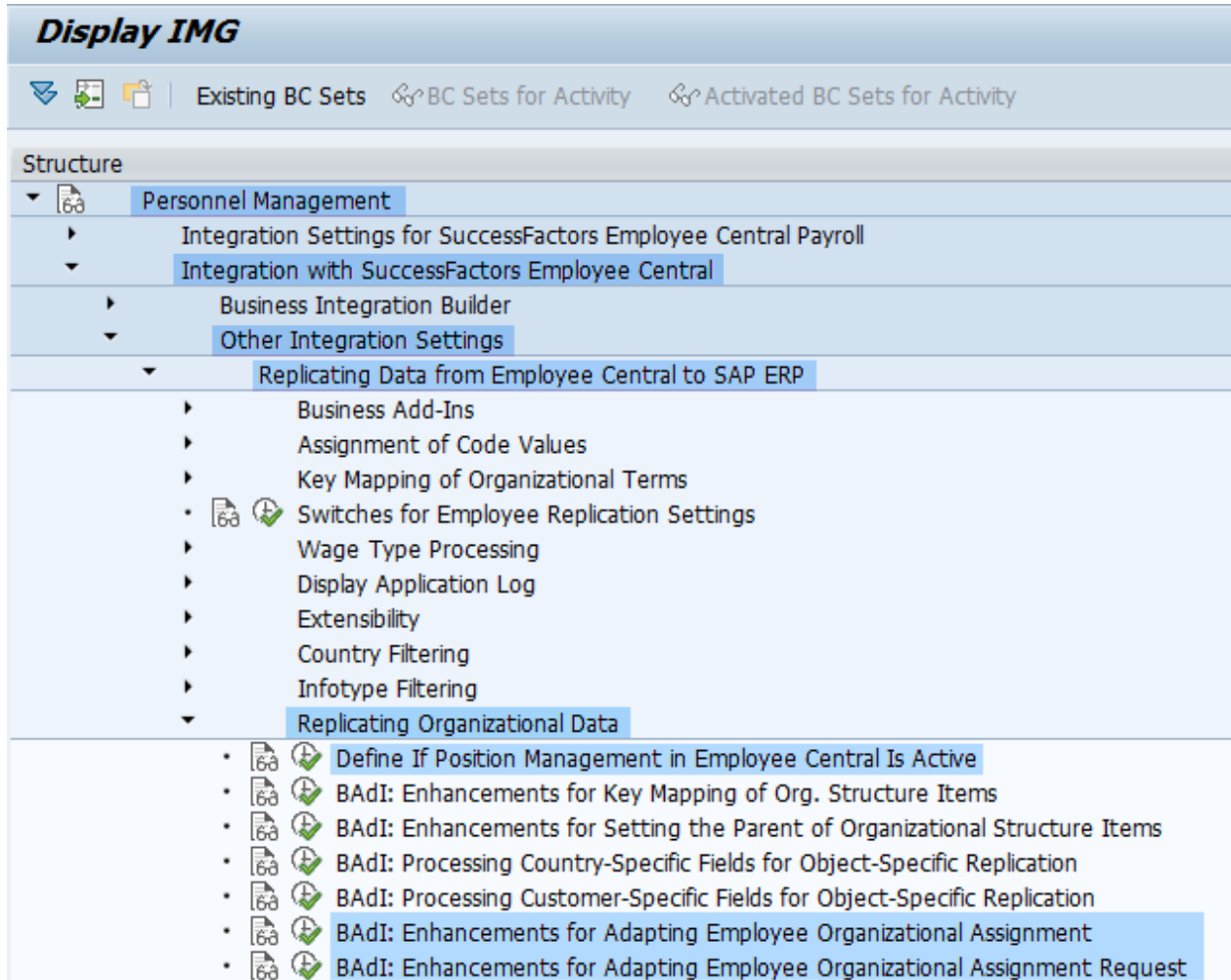
Overview of Customizing Structure

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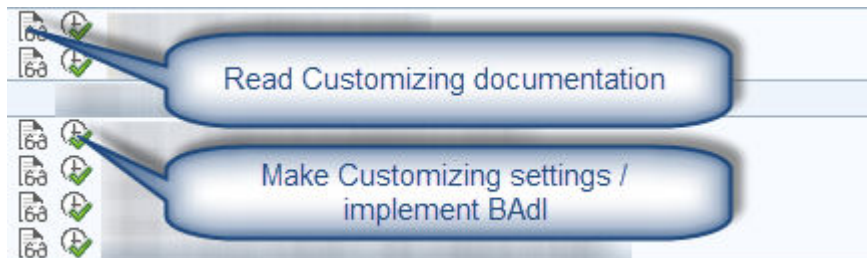
Details of Customizing Structure

The following Customizing activities are available for organizational assignments replication:

Customizing Activities for Organizational Assignments Replication

This Customizing activity ...	Includes this Customizing object ...	And is used for this purpose ...
Define If Position Management in Employee Central Is Active	View variant `V_T77S0_SFSFI_PMACT`	Set the `SFSFI PMACT` switch to specify if Position Management is enabled in your Employee Central instance
BAdI: Enhancements for Adapting Employee Organizational Assignment	BAdI definition `EX_SFIOM_ADAPT_EE_ORG_ASSGNMNT`	Adapt the standard organizational assignments replicated from Employee Central to the SAP ERP HCM system to suit your specific requirements.
BAdI: Enhancements for Adapting Employee Organizational Assignment Request	BAdI definition `EX_SFIOM_ADAPT_EE_ORG_ASS_REQ`	Adapt the standard organizational assignment requests used to replicate organizational assignments from Employee Central, before they're processed in the SAP ERP HCM system.

6.3.2 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.

> ⓘ 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.

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:

Change View T77S0

Group	Sem.Abbr.	Value Abbr.	Description
PLOGI	**NITF**	**X**	Enter a user-defined description, such as: **Update Infotype 0001 Using New Infotype Framework**

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 NITF** switch to **X**. Ensure that you use the classes provided for the new infotype framework in your BAdI implementations to prevent runtime errors.

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Related Information

6.3.3 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 have 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.

> ⓘ 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.

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6.3.4 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.

> ⓘ 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**.

6.3.5 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 Defining "Job Information to Position" Synchronization 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:

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Restrict Relations Created When Replicating Organizational Assignments

If you've set up organizational object replication to include this relation...	Set the value of this switch to X...
Position-Org Unit	`SFSFI OANSO`
Position-Job	`SFSFI OANSC`
Position-Manager Position	`SFSFI OANSS`
Position-Cost Center	`SFSFI OANSK`

6.3.5.1 Why Exclude Position Relationships from Organizational Assignment Replication

By default, relationships 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 relationships instead, disable replication of these relationships by organizational assignment replication so that the relationships are replicated from only one source.

You can replicate relationships of positions to other organizational objects in two ways from Employee Central:

- The default setting is that the position relationship to a specific object type is replicated from the employee's Job Information, using **organizational assignment** replication.
  Note that the relationship 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 relationship from organizational assignment replication. This relationship is always contained in organizational assignment replication, even if you disable replication of all other position relationships.
  By default, also the following relationships are contained in organizational assignment replication:
  - Position to organizational 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 relationships has one disadvantage though: SAP ERP HCM doesn't consider the relationships of a position if it doesn't have an incumbent. This means, if the position becomes vacant in Employee Central, the position relationships 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 relationships in the organizational object replication rather than in the organizational assignment replication process. Because then position relationships remain unchanged in SAP ERP HCM, regardless of whether the position has an incumbent or is vacant. If you include position relationships in the organizational object replication, disable replication of the corresponding relationships in the organizational assignment replication process.

> ⓘ Note
>
> Once you've disabled replication of some or all of the position relationships, organizational assignment replication not only stops creating new position relationships of this type in SAP ERP HCM. It also stops updating or delimiting existing relationships that it has created before.

6.3.6 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
   - 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_SFIOM_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.

6.4 Processing and Statuses of Replication Requests

Find out what statuses are used in the processing of replication requests for organizational assignments.

Status Flow of a Replication Request

Situation	Present Status	New Status	Note
A new request is stored in the staging area.		*Open*	
Processing is successful.	*Open*	*Successful*	
Processing isn't successful due to a temporary issue (such as the employee's manager hasn't been replicated yet).	*Open*	*Pending*	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.
Processing isn't successful due to a data or configuration issue (such as the employee has more than one position assigned or the employee's cost center couldn't be determined).	*Open*	*Failed*	
A request with the status *Pending* isn't processed within three days.	*Pending*	*Failed*	
There are replication requests that don't have the status *Successful* yet and a new request comes in for the same employee.	*Open*, *Pending*, or *Failed*	*Outdated*	

> → 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 \[page 264\]](#)
[Scheduling the Database Update Program as a Regular Background Job \[page 230\]](#)

6.5   Business Logic of Organizational Assignment Replication

Take a look at the business logic of organizational assignment replication from Employee Central.

6.5.1 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.

Example: Organizational Assignments in Employee Central Job Information

This employee has a position, business unit, cost center, manager, and job classification assignment, but no division and department assignment.

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:

Mapping of Organizational Assignment Types

Employee Central	SAP ERP HCM
Business unit assignment	Assignment to organizational unit (object type O)
Division assignment	
Department assignment	
Job classification assignment	Assignment to job (object type C)
Position assignment	Assignment to position (object type S)

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Employee Central	SAP ERP HCM
Cost center assignment	Assignment to cost center (object type K)
Reporting line	Assignment to manager's position (object type S)

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:
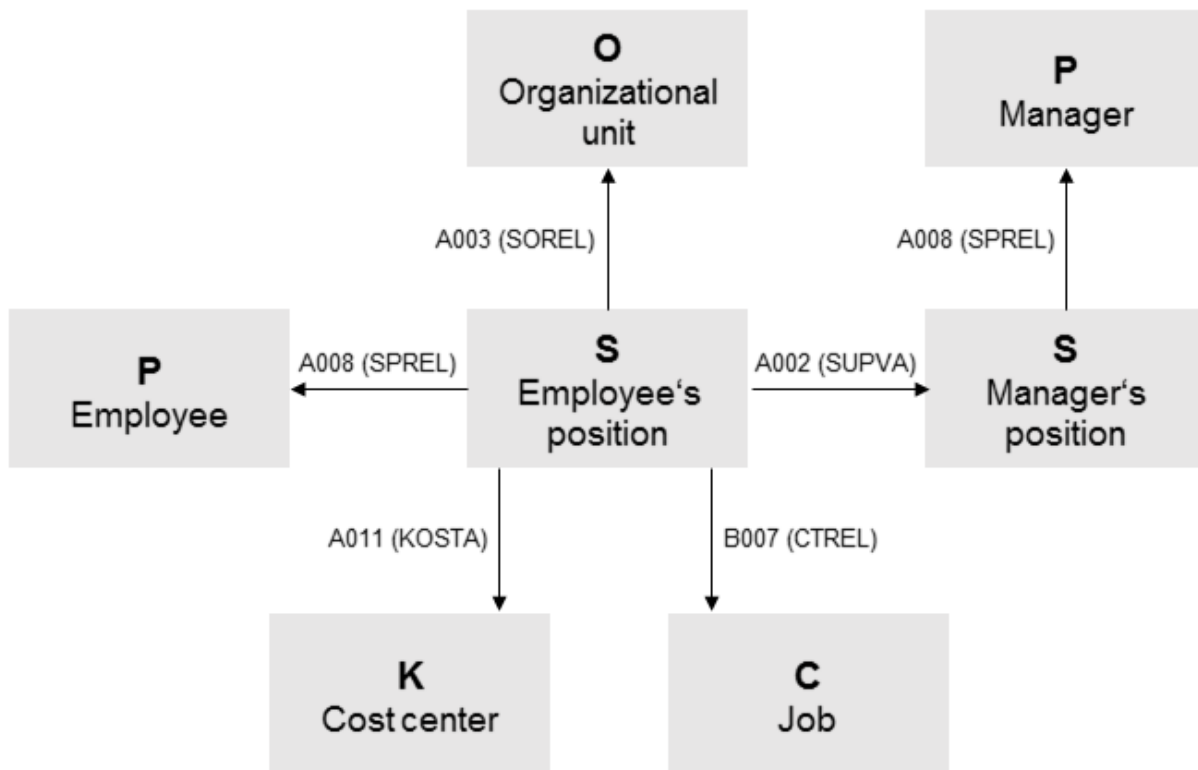
Position Relationships

Position Relationships

Object	Object Type	T77S0 Entry	Default Relationship Name	Default Relationship ID
Employee	P	SPREL	*Holder*	A008
Organizational unit	O	SOREL	*Belongs to*	A003
Job	C	CTREL	*Is described by*	B007
Cost center	K	KOSTA	*Cost center assignment*	A011
Manager's position	S	SUPVA	*Reports (line) to*	A002

The default relationships are read from the T77S0 table.

Default Relationships in Table T77S0

Group	Subgroup	Value	Value Description
PPREL	SPREL	A008	*Holder*
PPREL	SOREL	A003	*Belongs to*
PPREL	CTREL	B007	*Is described by*
PPREL	KOSTA	A011	*Cost center assignment*
PPREL	SUPVA	A002	*Reports (line) to*

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.

6.5.1.1 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-manger/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 Transfer from Employee Central* ❯ *BAdI: Enhancements for Adapting Employee Organizational Assignment* ❯ .

- 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.

6.5.1.2   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.

> **→ Tip**
>
> 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* ▶.

6.5.1.3   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 COST_CENTER_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 256]

6.5.2 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 `SFIOM_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 ost 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 Managementan 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* ◀.

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* ◀.

6.5.3 What SAP ERP HCM Does When Position Management Is Enabled in Employee Central

If you use Position Management in Employee Central and replicate positions and position assignments to SAP ERP HCM, the SAP ERP HCM system can reuse the position assignments from Employee Central with small changes.

If Position Management is enabled in Employee Central, an employee-position assignment is usually 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. If no position assignment is replicated, the system reacts in the same way as if Position Management was disabled in Employee Central.

If an employee-position assignment is provided by Employee Central, the SAP ERP HCM system checks whether the following conditions are fulfilled:

- The position object itself must have been replicated from Employee Central so that it's available in the key mapping table in the SAP ERP HCM system.
- The position object must be valid during the complete assignment period in SAP ERP HCM.

If these conditions are fulfilled, the SAP ERP HCM system proceeds as follows:

- If no employee-position assignment exists in SAP ERP HCM yet, the system creates a new assignment.
- If the employee-position assignment is not valid during the complete assignment period, SAP ERP HCM cuts or deletes the existing assignment and creates a new assignment.
- SAP ERP HCM also cuts or deletes further assignments of an employee to other positions.

The SAP ERP HCM system also makes the following changes, depending on whether the position is a shared position or not.

Position Is Not Shared

- SAP ERP HCM cuts or deletes existing position relationships at the full transmission start date (FTSD) if they have changes after the FTSD. New relationships are created after the FTSD.
- If the employee is also a manager and their position is changed in Employee Central, all assignments of employee positions to the manager positions are adapted accordingly.

Position Is Shared

- SAP ERP HCM doesn't cut or delete existing position relationships at full transmission start date. The system only extends the validity period of the relationship if necessary. 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 a position relationship is changed during the validity period, the changed relationship replaces the existing relationship.

- If the employee is also a manager and their position is changed in Employee Central, the assignments of employee positions to the manager position are not 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.

6.5.4 What SAP ERP HCM Does When Position Management Is Disabled in Employee Central

If you don't use Position Management in Employee Central and replicate positions and position assignments to SAP ERP HCM, the SAP ERP HCM system must react because it requires positions.

If Position Management is disabled in Employee Central, no employee-position assignment is provided by Employee Central in data replication. 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 in SAP ERP HCM, a new position and a new position assignment are created.
- If an appropriate employee-position assignment exists in SAP ERP HCM, the system reuses this position assignment.
  Appropriate means:
  - The employee must not 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 must not be shared by several employees.
  - The position itself must be valid during the complete assignment period.
  - The position must not be mapped to an Employee Central position (which would mean that it was replicated from Employee Central).
  Only when these conditions are fulfilled, the position assignment is considered to be appropriate. If they arent fulfilled, the SAP ERP HCM system delimits the existing employee-position assignment and creates a new position and a new employee-position assignment.

> ⓘ 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)
>   Is filled with the text **generated**
> - *Object Name* (STEXT)
>   Is filled with the text **Position generated for Pers.No. <PERNR>** (where <PERNR> is the employee's personnel number)
>
> Only one infotype record is created, in the logon language of the user who triggers data replication.

6.5.5 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 244]
   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 in Employee Central [page 245]
   Make sure that position assignments are propagated from Employee Central Position Management to the Job Information of the position incumbents.
3. Preventing Overstaffing of Shared Positions in Employee Central [page 247]
   Prevent shared positions in Employee Central from being overstaffed by assigning to many employees.
4. Configuring FTE Limit for Shared Positions in Employee Central [page 248]
   Implement an FTE limit for positions to specify how many employees may be assigned to the same position in Employee Central.

5.

   Prevent departments, divisions, business units, job classifications, and cost centers from being assigned manually in Job Information for employees who share a position in Employee Central.

6.5.5.1 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 and choose the *Configure Object Definitions* tool.
2. Select the object definition of the *Position* object.
3. Change the visibility of the *multipleIncumbentsAllowed* field to **Editable**.

   This setting 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**.
4. Change the visibility of the *positionControlled* field to **Editable**.

   This setting allows you to define the FTE limit which mustn't be exceeded by the assigned position incumbents.

Next Steps

In the next step, enable propagation of position assignments to Job Information of the position incumbents.

Task overview:

Next task:

6.5.5.2 Enabling Propagation of Position Assignments to Job Information of the Incumbents in Employee Central

Make sure that position assignments are propagated from Employee Central 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*.

   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:

⟨·⟩ Sample Code

```
<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.

→ Remember

As a customer, you don't have access to Provisioning. To complete tasks in Provisioning, contact your implementation partner or Account Executive. For any non-implementation tasks, contact Product Support.

Next Steps

In the next step, prevent overstaffing of shared positions in Employee Central.

Task overview: Replication of Shared Positions from Employee Central [page 243]

Previous task: Enabling Shared Positions in Employee Central [page 244]

Next task: Preventing Overstaffing of Shared Positions in Employee Central [page 247]

Related Information

Rule Scenarios Available in Position Management

6.5.5.3 Preventing Overstaffing of Shared Positions in Employee Central

Prevent shared positions in Employee Central 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 rule such as *SetPosCntrToYes* for the *Position* 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)**

Next Steps

In the next step, configure an FTE limit for shared positions in Employee Central.

Task overview: Replication of Shared Positions from Employee Central [page 243]

Previous task: Enabling Propagation of Position Assignments to Job Information of the Incumbents in Employee Central [page 245]

Next task: Configuring FTE Limit for Shared Positions in Employee Central [page 248]

Related Information

Rule Scenarios Available in Position Management

6.5.5.4 Configuring FTE Limit for Shared Positions in Employee Central

Implement an FTE limit for positions to specify how many employees may be assigned to the same position in Employee Central.

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 rule such as *CheckFTE* using the *Get Incumbent By Position* rule function.
   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:

> ⁙ Example
>
> *saveRules*
>
> - **SetPosCntrToYes (SetPosCntrToYes)**
> - **CheckFTE (CheckFTE)**

Next Steps

In the next step, prevent manual organizational assignments in Job Information for employees who share a position in Employee Central.

Task overview: Replication of Shared Positions from Employee Central [page 243]

Previous task: Preventing Overstaffing of Shared Positions in Employee Central [page 247]

Next task: Preventing Manual Organizational Assignments in Job Information for Employees Who Share a Position in Employee Central [page 249]

Related Information

Rule Functions in Position Management

6.5.5.5 Preventing Manual Organizational Assignments in Job Information for Employees Who Share a Position in Employee Central

Prevent departments, divisions, business units, job classifications, and cost centers from being assigned manually in Job Information for employees who share a position in Employee Central.

Procedure

1. Create a visibility rule.

   a. Go to the Admin Center and choose the *Configure Business Rules* tool.

b. Create a rule such as *SetOrgAssgnmReadOnlyForMassPos* 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 or Account Executive. For any non-implementation tasks, 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, *SetOrgAssgnmReadOnlyForMassPos*) below the last *<label>* entry, as shown in this example:

> ⟨·⟩ Sample Code
>
> ```
> <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="SetOrgAssgnmReadOnlyForMassPos"/>
> </hris-field>
> ```

d. Save your changes and re-upload the changed Succession Data Model configuration.

Results

You have successfully set up shared positions in Employee Central and can now use them in integration with the SAP ERP HCM system.

Task overview:

Previous task:

Related Information

Rule Scenarios for Employee Central Core

6.6 Extensibility of Organizational Assignment Replication

See how you can enhance organizational assignment replication from Employee Central.

Enhancing Organizational Assignments Replicated from Employee Central [page 251]
> 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 253]
> 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.

6.6.1 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).

6.6.2 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.

7 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.

7.1 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 Enterprise Resource Planning system (SAP ERP HCM), the cloud-based middleware (SAP Cloud Integration), and the cloud HR system (SAP SuccessFactors Employee Central).
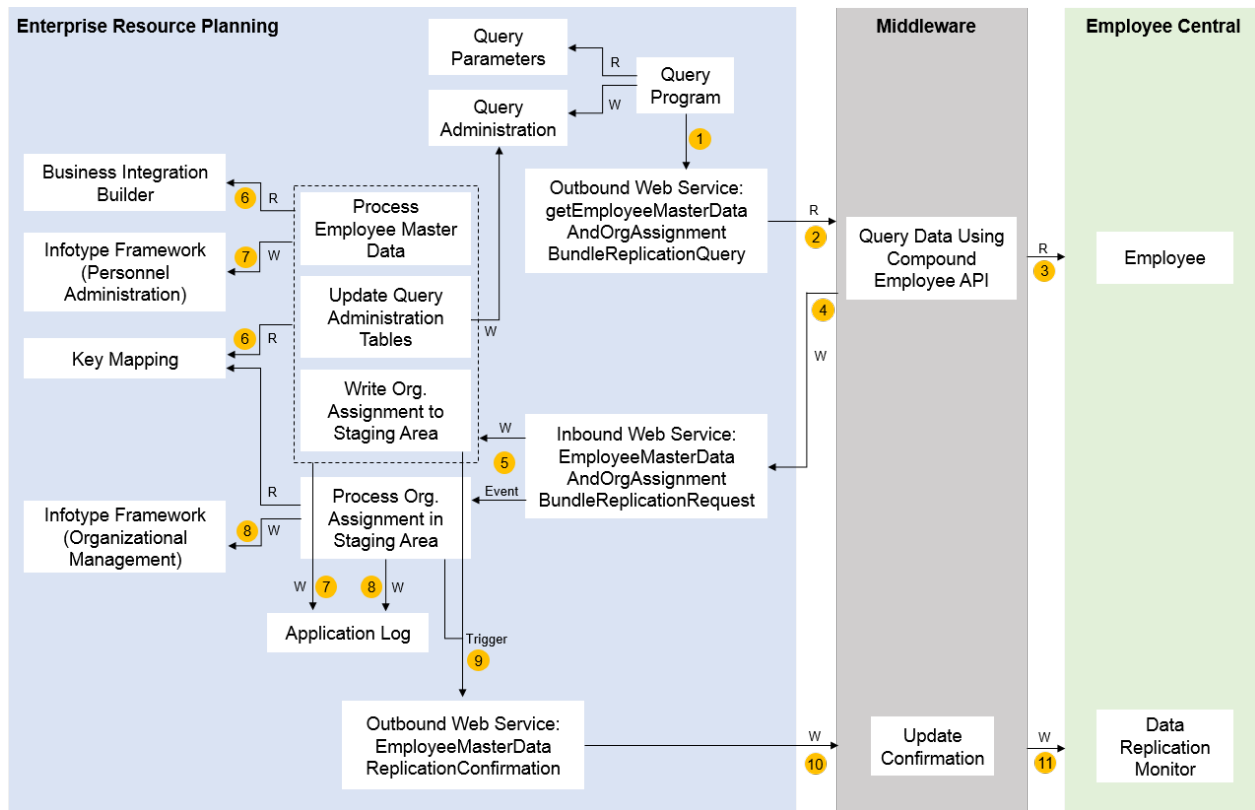
Employee Master Data and Organizational Assignments Replication Process

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

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last package transferred by the middleware has been processed in SAP ERP HCM, the middleware sends a final notification to SAP ERP HCM. The inbound web service then updates the query administration tables and triggers the `SAP_SFIOM_EE_ORGAS_RPPQ_CREATED` event.

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.

Related Information

7.2 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.

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> ⓘ **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 companies, 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

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> 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.

> ⓘ 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.

> ⓘ Note
>
> Make sure that you filter out records 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, refer to Picklist Configuration for Employee Status and Job Relationship Type in *Implementing Employee Central Core*. Otherwise, the replication of employee organizational assignments fails if an organizational assignment record is transferred in which the employee is 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 the system that is to be monitored by the Employee Central Data Replication Monitor.

> ⓘ 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.

     > → Remember
     >
     > If you grant the `CompoundEmployee` API user access only to defined segments, you must add the permission for the `DRTMPurgeStatusOverview` segment when you enable use of the purge status overview.

   - 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.

   > → Recommendation
   >
   > We recommend using the purge status overview because it provides detailed purge dates that the SAP ERP HCM system can react to. If you use the effective end date filter, the replication can only react to the error messages raised by the `CompoundEmployee` API. If you use this option, you may need to adjust the full transmission start date defined for employee master data replication to avoid errors.

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.

   > ⓘ 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.

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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 238]
Creating the Replication Target System Object in Employee Central [page 35]
Creating a Transformation Template Group for Employee Data [page 139]
Configuring Validation Options for the Replication of Employee Data Purge (SFSF EC INTEGRATION)

7.3 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.

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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.

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- *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

7.4 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.

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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.

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7.5 Statuses of Employee Master Data and Organizational Assignment Queries

Queries triggered by the SAP ERP HCM system to request employee master data and organizational assignments from Employee Central go through different statuses.

Statuses of Queries Triggered by the Employee Data Query Program

Status	Meaning
Sent	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.
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

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7.6 Types of Employee Master Data and Organizational Assignment Queries

The SAP ERP HCM system triggers different types of queries to request employee master data and organizational assignments from Employee Central.

Types of Queries Triggered by the Employee Data Query Program

Type	Meaning
Last Modified Query	The query requests the following data: • 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 *Create and Execute Employee Master Data and Org. Assignment Query* program with the same template group. • 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 Reprocessing Employee Data Replication in the *Employee Central Data Replication Monitor* administration guide. The program triggers this type of query when neither specific employees nor a change date were entered on the selection screen.
Employee-Specific Query	The query requests data for specific employees, whose IDs you entered on the selection screen of the *Create and Execute Employee Master Data and Org. Assignment Query* program.

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7.7 Administration of Employee Master Data and Organizational Assignment Queries

The administration tables store information for the queries 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 triggered by the *Create and Execute Employee Master Data and Org. Assignment Query* (`ECPAO_EE_ORG_REPL_QUERY`) program.

Information Stored Per Query

Type of Information	More Info
Unique ID of the query	Each new query triggered by the program gets a new ID.
ID of the transformation template group	You enter the template group on the program selection screen.
Query type	
Query status	
Last modified date	This is the time stamp of the last query that was created by this program with the same selection variant.
Next last modified date	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. ⓘ **Note** Last modified date and next last modified date are only used by queries of the *Last Modified Query* type.
User	Contains the name of the user who ran the query program manually or scheduled it to be run in the background.
Time stamp of the last program run	Shows the time when the program was run manually or has last run in the background.
Time stamp of the query status	Shows the time when the query status was set.
Message ID of the response package that has set the status of the query	Shows which of the response packages has set the query status. When the SAP ERP HCM system queries employee master data and organizational assignments from Employee Central, it receives the data from Employee Central in packages. Each package has a specific message ID. This field holds the ID of the package that has set the status of the query run to *In Process*, *Successful*, or *Failed*.

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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.

7.8 Resetting Employee Master Data and Organizational Assignment Queries

Reset the status of an employee master data and organizational assignment query if it cannot be completed in a longer period of time due to errors. The reset is necessary so that the next scheduled query can start.

Context

You can 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. Since the queries are triggered and administered by the SAP ERP HCM system, you can't use the middleware to reset the query status.

> → 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:
>
> Example: Query Runtime
>
> | Query Type | Query Status | Status Set On | Created On |
> | --- | --- | --- | --- |
> | Last Modified Query | Successful | 2017.04.27 07:25:38 | 2017.04.27 07:23:30 |
>
> This query ran for 2 minutes and 35 seconds.

You can also delete single queries completely.

> → Tip
>
> To bulk-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.

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Procedure

1. Go to the *Reset Query Administration Table* (`ECPAO_RESET_QRY_ADM`) transaction in your SAP ERP HCM system.

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*.

3. To delete queries, select one ore more entries and choose *Delete Query*.

   In productive system environments, delete only 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, unless you enter a change date in the *Select Employees with Data Changes After* section.

7.9 Deleting Employee Master Data and Organizational Assignment Queries

Delete queries with the type *Employee-Specific Query* and the statuses *Successful* or *Failed* regularly, to keep the number of records in the query administration tables small and remove unnecessary data from the database.

Context

Using the *Delete Queries from Admin Tables for EE Master Data and Org Assignment* (`ECPAO_DEL_EE_ORG_QRY_ADM`) program, you can bulk-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. Go to the *Delete Employee Queries* (`ECPAO_DEL_QRY_ADM`) transaction in your SAP ERP HCM system to run the program in dialog mode.

2. **Optional:** Select the template group to delete queries sent for this specific template group.

   To delete all queries that have the status you select and were sent before the date you specify, leave this field empty.

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3. **Optional:** Select the statuses for which you want to delete queries.

    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.

4. **Optional:** 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.The default is to delete all queries with the statuses

5. Select the *Test Mode* checkbox and perform a test run.
6. Check the list of queries that will be deleted according to your selection criteria.
7. Deselect the *Test Mode* checkbox and perform a productive run when you're satisfied with the result of the test run.

    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. Go to the *Define Job* (`SM36`) transaction in your SAP ERP HCM.
9. Schedule your variant of the program as a regular background job with the *Date/Time* start condition.
10. Select *Periodic Job* for the job to repeat.

    For more information, refer to Scheduling Background Jobs in the SAP NetWeaver documentation.

7.10 Defining Exceptions for Compound Employee API Query

Here's how you define the exceptions for Compound Employee API queries.

Context

This activity will be required for custom Employee Central entities that are created for custom MDF objects configured in Employee Central which have a parent-child relationship. For the child Employee Central entity, maintain an exception using this feature with the Compound Employee API segment name of the parent Employee Central entity in the field for Compound Employee API Segment.

For more information refer to the KBA note: 2807662 ☁.

> ⓘ 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.

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Procedure

1. 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* ▌.
2. Choose the Employee Central entity for which you want to maintain the exceptions.
3. Enter the name of the Compound Employee API segment.

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8 Push Replication of Employee Master Data and Organizational Assignments from Employee Central

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.

Push Replication Process [page 272]
: 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 273]
: 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 277]
: 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.

Related Information

Configuring the Integration Flow for Employee Push Replication [page 106]

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8.1 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.
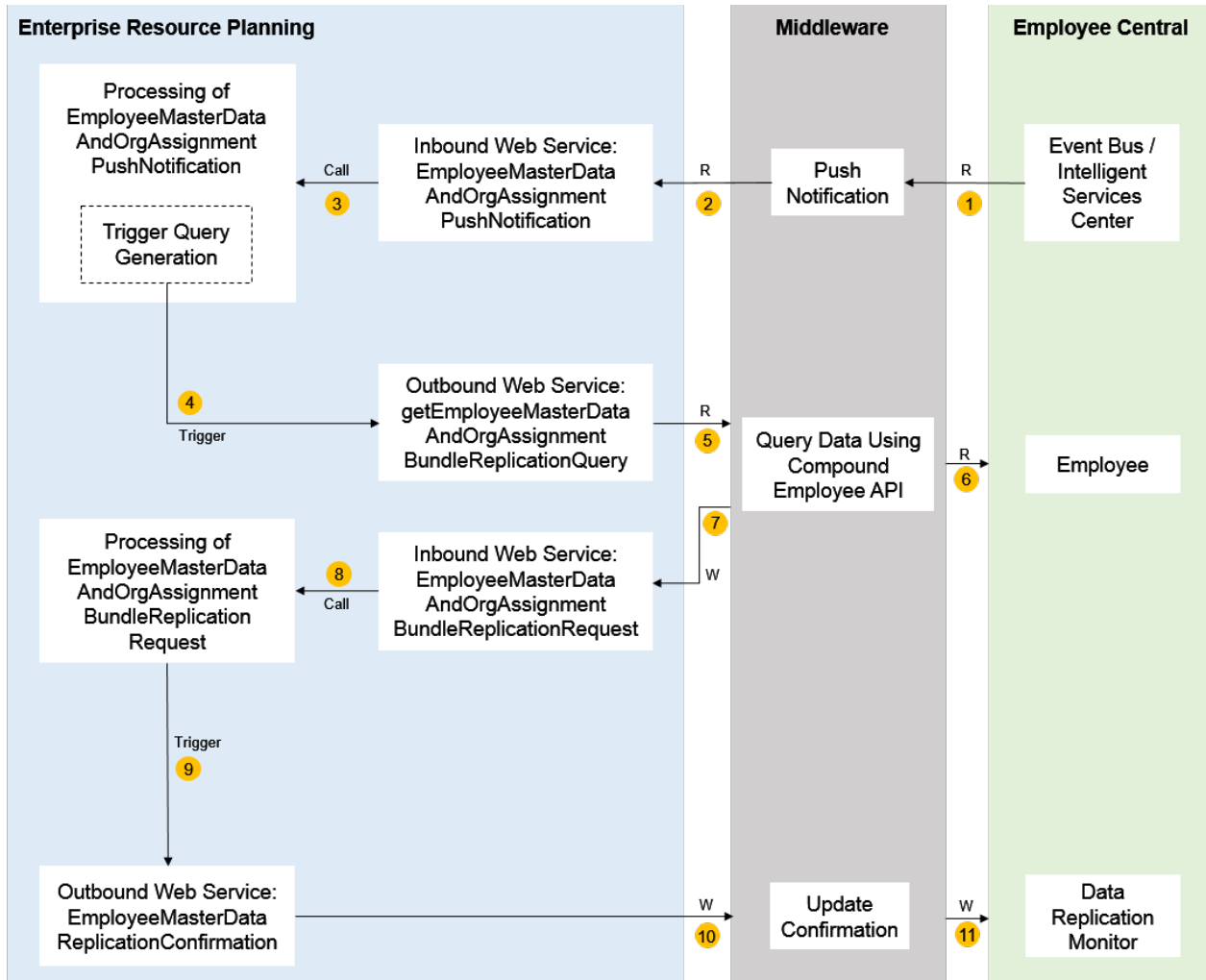
Push Replication Process for Employee Master Data and Organizational Assignments

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.
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 255]
Configuring the Integration Flow for Employee Push Replication [page 106]

8.2 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.

Prerequisites

Make sure that Intelligent Services are enabled. If they aren't, use Upgrade Center to enable them. For more information, refer to Enabling Intelligent Services and Retrieving SuccessStore Rules with Upgrade Center.

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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. Import the Intelligent Services rules from SuccessStore.
   a. In Employee Central, go to Admin Center and choose the *Import and Export Data* tool.
   b. Select the action *Import Data*.
   c. Choose *SuccessStore*.
   d. Find *Intelligent Services Rules* in the *Package Name* column and select the radio button.
   e. Choose *Import*.
2. 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:

Rule	Event Type	Base Object
Event Hire (Event_Hire)	onPostSave	Job Information Model
Event Terminate (Event_Terminate)	onPostSave	Job Information Model
Event Rehire (Event_Rehire)	onPostSave	Job Information Model

> ⓘ **Note**
>
> The Intelligent Services rules you imported from SuccessStore are meant for the *Hire*, *Rehire*, and *Terminate* events. You can also set up rules for other events.

3. Determine the URL that Employee Central addresses in the middleware.

   a. 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`

4. 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. Configure 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.

   e. To assign an integration to your flow, choose *Integration* (under *Activities*, in the *Custom Activities* section).

   f. 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.

5. Configure your new integration in Integration Center.

   a. Go to the *Options* step and enter the following information:

In this field...	Enter this information...
Integration Name	Enter any name.

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In this field...	Enter this information...
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* ▶ *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.

You don't need to make any settings, in the *Response Fields* and *Filter* steps.

c. Go to the *Destination Settings* step and enter the following information:

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* or *Certificate Based Authentication*.
	ⓘ Note If you select *Basic Authentication*, the SAP Cloud Integration administrator must choose *User Role* when configuring authorizations for the *EC_Push_Event* sender in the corresponding integration flow. If you select *Certificate Based Authentication*, the SAP Cloud Integration administrator must choose *Client Certificate* when configuring authorizations for the *EC_Push_Event* sender in the integration flow.
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*.

You don't need to make any settings in the other fields. In the *Review and Run* step, you don't need to make any settings either.

d. Save your integration.

6. If you deploy the push integration flow multiple times in the middleware, repeat steps 3 – 5 for each process instance.

Related Information

8.3 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 of the Business Integration Builder and choose ▶ *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, refer to Role Administration in the SAP NetWeaver documentation.

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Related Information

9 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.

9.1 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.

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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.

9.1.1 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*.

9.1.2 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_MONI) 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.

9.1.3 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.

ⓘ Note

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.

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Select Query Parameters

Transformation Template Group ☑ [   ]

Select Specific Employees

External Employee ID [   ] 🔲

Select Employees with Data Changes After

Change Date [   ]

Test and Logging

☐ Enable Payload Logging
☑ Enable Extended Verbose Logging (for Employee Master Data)
☐ Test Mode

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.

Log   Edit   Goto   System   Help

Display logs

Technical Information   ℹ️ Help

Date/Time/User	Nu...	External ID	Object text	Subobject Text	Transac...	Program	Mode	Log number
▶ 🔴 20.04.2017 08:27:05 GUNDALA	11	50023256	ECPAO_IN	EE		CL_PAOCF...	Dialog Pro...	0000000000004746301
▶ 🟩 20.04.2017 11:46:06 GUNDALA	4	50023256	ECPAO_IN	EE		CL_PAOCF...	Dialog Pro...	0000000000004747408
▶ 🟩 20.04.2017 11:46:06 GUNDALA	69	50023256	ECPAO_IN	VERBOSE		CL_PAOCF...	Dialog Pro...	0000000000004747409

Ty   Message Text
🟩 *** Employee ID 50023256 ***
🟩 Template Group: BIB_TEST_AKS_2
🟩 Cutoff Date: 01.05.2016
🟩 *** Time Segment: 01.01.2015 to 31.12.9999 *******************************
🟩 0000, MASSN, Templ JOB_INFO: Primary Mapping, New Value: HIRNEW, EC field: eventReason
🟩 0000, MASSN, Templ JOB_INFO: Value Mapping: New Value 01, Mapping Entity EVENT_REASON
🟩 0001, BUKRS, Templ JOB_INFO: Primary Mapping, New Value: US01, EC field: company
🟩 0001, PERSG, Templ JOB_INFO: Primary Mapping, New Value: M, EC field: employeeClass
🟩 0001, PERSG, Templ JOB_INFO: Value Mapping: New Value 1, Mapping Entity EMPLOYEE_CLASS_WS
🟩 0001, PERSK, Templ JOB_INFO: Primary Mapping, New Value: U3, EC field: employmentType
🟩 0001, WERKS, Templ JOB_INFO: Primary Mapping, New Value: US010001, EC field: location
🟩 *** Pernr 00022337 ***
🟩 *** Not time dependent ***
🟩 0002, GBDAT, Templ PERPERSON: Primary Mapping, New Value: 19830101, EC field: dateOfBirth
🟩 0002, GBLND, Templ PERPERSON: Primary Mapping, New Value: , EC field: countryOfBirth
🟩 0002, GBORT, Templ PERPERSON: Primary Mapping, New Value: , EC field: placeOfBirth
🟩 0002, NAME2, Templ PERPERSON: Primary Mapping, New Value: HCI, EC field: birthName
🟩 0002, PERID, Templ NATIONALID: Molga Mapping, New Value: 198-30-1012, EC field: nationalId
🟩 0002, PERID, Templ NATIONALID: Conversion: New Value 198301012 - Old value 198-30-1012
🟩 *** Time Segment: 01.05.2016 to 31.12.9999 *******************************
🟩 PA/PD Integration switched on. OM fields will be populated by OM.
🟩 0000, MASSN, Templ JOB_INFO: Primary Mapping, New Value: HIRNEW, EC field: eventReason
🟩 0000, MASSN, Templ JOB_INFO: Value Mapping: New Value 01, Mapping Entity EVENT_REASON
🟩 0001, ABKRS, Templ COMPENSATION: Primary Mapping, New Value: US, EC field: payGroup
🟩 0001, BTRTL, Templ JOB_INFO: Primary Mapping, New Value: US01, EC field: businessUnit
🟩 0001, BTRTL, Templ JOB_INFO: Value Mapping: New Value 0001, Mapping Entity DIVISION_WS

Verbose logging shows the following detailed messages:

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Message Type	Description
Template group	Shows the template group that was used for the employee while parsing and processing the employee.
Cut-off date	Shows the cut-off date used from the template group
Basic infotype processing	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.
Infotype records based on time segments	Shows the infotypes processed based on the valid ERP time segments that will be saved when the employee is successfully replicated in the ERP.
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.

9.1.4 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.

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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.

9.1.5 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, refer to Managing Custom Navigation Links.

Selecting Replication Requests for Monitoring [page 286]
> 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 287]
> 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 287]
> 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 Data Records, Job Information, and Messages for a Replication Request [page 288]
> Review data records 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 289]
> 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 290]
> 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 291]
> 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 292]
> 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.

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9.1.5.1 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.

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9.1.5.2 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.

9.1.5.3 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:

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- 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.

9.1.5.4 Viewing Data Records, Job Information, and Messages for a Replication Request

Review data records 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 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 record 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.

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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.

9.1.5.5   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 data record 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

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- 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 record

Procedure

Choose *Show Technical Details* at the bottom of the screen.

9.1.5.6 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* ❯ *Export to Microsoft Excel* ❯ to download the list.

Results

The export option downloads the plain list, without adding any details or links.

9.1.5.7 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_STRUC_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 230]

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9.1.5.8   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.

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9.1.6 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.

9.1.7 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_INVT_INFTY` and `ECPAO_INVT_ITMSG` database table contents, which is updated during the employee extraction or the organizational data process.

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9.2 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 294]
    Use the monitoring features of SAP Cloud Integration to check whether any issues occurred in your middleware processes.

9.2.1 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.

9.3 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 294]
    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 295]
    Use the SFAPI Audit Log to monitor API calls to Employee Central.

9.3.1 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.

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Related Information

Data Replication Monitor

9.3.2 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.

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.

Related Information

SFAPI Integration Tools

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10 You're done! What's Next?

You've set up combined employee master data and organizational assignment replication from Employee Central – now go through the follow-up steps.

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10.1 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.

Cut-off Date	01.01.2017	
Record	01.01.2016	31.12.9999

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)

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10.2 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.

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Display View "Employee Central Entity for Employee Data": Details

EC Entity   `WS_2`   Biographical Info Template for Web Service

Basic Settings

Entity Name in EC	PerPerson
Comm. Channel	Web Service Transfer
☐ Multiple Use	☐ Effective Dated
☐ Is Generic Object	
Inherit Metadata	

Standard EC Fields

Object ID in EC	
Start Date in EC	startDate
End Date in EC	endDate

CE API Segment	person

Integration to EC

Upsert Sequence	20
Dependent Entity	
Country Version	

Deletion Supported

☐ Deletion Permitted	
HRIS Element ID	

Infotype-Specific Settings

Required Infotype	0002
Special Mapping Infotype	

Specific Mapping

Processing Mode	
Processing Infotype	
OBJID Field	
Repet.Struct.	

Details of an Employee Central Entities

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.

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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.

      > ⓘ 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.

      > ⓘ 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 youCreate 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:

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- *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. entity to be able to use it for a proper field mapping. The infotype youCreate 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

5. Create the required mappings under this transformation template.

Results

After performing the above steps, BiB will use the mappings maintained for this custom Employee Central entity to replicate the data.

10.3 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 field field1 is to be mapped to two SAP ERP HCM fields FIELDI 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

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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.

10.4 Mapping Infotype 0008 and 0014 from Recurring Payments

To achieve the requirement of filling one subset of the wage types under Employee Central entity WS_12 in infotype Basic Pay (IT0008) and another subset in infotype Recurring Payments and Deductions (IT0014), you will need to selectively map pay components under Employee Central entity WS_12 to these infotypes.

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.

You can set the switch *EC to ERP (BIB): Consider highest decimal currency in IT0008* to **x**, to consider the highest decimal currency format to be replicated in IT0008 when wage types are maintained with multiple currency formats. The amount's decimal conversion will be based on the currency format with the highest decimal of all the compensation records coming from the Employee Central during the replication of the employee.

Procedure

1. Create two transformation templates using Employee Central entity WS_12, 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 Employee Central field *payComponent* and LGA01 (Wage Type) 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 Employee Central field, choose the Employee Central 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.

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Example

Sequence number	Operation	Parameter1	Parameter2	Parameter for EC field
1	Check and Replace	ABCD		

Note

Value ABCD is the payComponent value, which has to be filtered.

3. In the cloning view (`V_ECPAO_CLN_INTY`), 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.

10.5 Additional Splits in IT0008 based on IT0007 Data

Learn how the IT0008 fields BSGRD (Capacity Utilization Level) and DIVGV (Working Hours per Payroll Period) can be calculated based on the data in IT0007.

The IT0008 fields BSGRD (Capacity Utilization Level) and DIVGV (Working Hours per Payroll Period) can be calculated based on the data in IT0007 and additional split can be created in the infotype IT0008.

- The BSGRD (Capacity Utilization Level) in IT0008 is calculated based on the employment percentage from IT0007 and the work schedule rule.
- The DIVGV (Working Hours per Payroll Period) is calculated based on the working hours data from IT0007 and payroll frequency.

When the *EC to ERP: Allow Time Splits in IT8 Based on IT7* switch is enabled in the constants table, the integration will create additional split in IT0008 when there is a change in the calculated value of BSGRD and DIVGV based on the ERP configurations.

Note

When the *EC to ERP: Allow Time Splits in IT8 Based on IT7* switch is enabled in the constants table, the ERP configurations take preference and additional split in IT0008 will be created only when there is a change in the calculated value of BSGRD and DIVGV fields. If there is no additional splits getting added in IT8, then the EC mapping take preference.

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10.6 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 countires/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.

> ⓘ 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, on the *Implement* tab in the *Configuration* 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 futher 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 150]

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10.7 Enabling the Replication of the Delimited EC Host Address on Global Assignments

Learn how to replicate delimited host address from Employee Central to infotype 0006 and subtype 1 (to the global assignment's PERNR) in case of global assignment scenario.

If an employee has delimited his/her host address record in Employee Central as the global assignment end date and replicated to SAP ERP HCM/ SAP S/4HANA system, then the end date would be set as 31.12.9999 in the infotype 0006s (Addresses) record during the replication process.

In such scenario, you can now have infotype 0006s record delimited by enabling the `EC to ERP(BIB): Allow delimited host address for GA PERNR` switch in the *Maintain the Constant Values* customizing activity. This feature work only if the data sharing option is switched-off for the address in the `V_T582G` view.

> ⓘ Note
>
> - In the initial load in the previously mentioned scenario, the end date would be set to high date (31.12.9999) even with the switch been enabled. In the subsequent replication, the end date would be delimited and changed to delimited date as in Employee Central.
> - If data sharing is switched ON in `V_T582G` view for infotype 0006 (Addresses) and `EC to ERP(BIB): Allow delimited host address for GA PERNR` is OFF in the constants table. In such scenario, the replication process would fail due to the incorrect end date. For the initial load, i.e if the host address is maintained and deleted before the initial replication process, the replication process would be successful as the end date would be extended until 31.12.9999. The subsequent replication process would fail.

10.8 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.

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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.

10.9 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.

> ⓘ 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. Ch.oose 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)

10.10 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.

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→ Remember

As a customer, you don't have access to Provisioning. To complete tasks in Provisioning, contact your implementation partner or Account Executive. For any non-implementation tasks, 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 proxy for restrictions on the maximum package size. If necessary, adjust the firewall and proxy settings or the package size according to your integration.

Deactivate integration processes that you no longer use.

By the latest when you switch from your development and test environment to your production environment, disable all integrations that you have set up for development and testing purposes. Trigger them only on demand.

Check whether an integration really needs to run 24/7. For some data types it might be 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 an error occurs during the integration, stop the scheduler. It does not make sense to continue a replication that constantly generates error messages. Running the replication merely overloads the logs and makes error analysis more difficult.

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Related Information

10.11 Replicating Bank Information Infotype 0009

Learn how to replicate the bank information based on the payroll periods.

Determining the start date based on the payroll periods.

The start date of the data record 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.
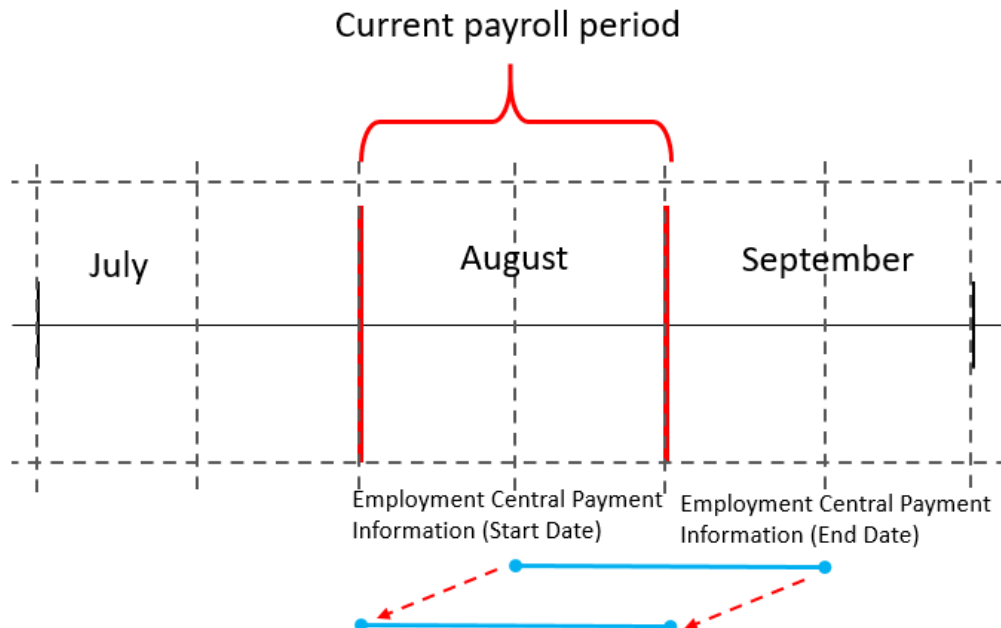
- If the start date of the other bank details is in the middle of the current closed payroll period then the start date is adjusted to the start date of the next payroll period.

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Current payroll period (closed)

June   July   August   September

Start Date   End Date

> **ⓘ Note**
>
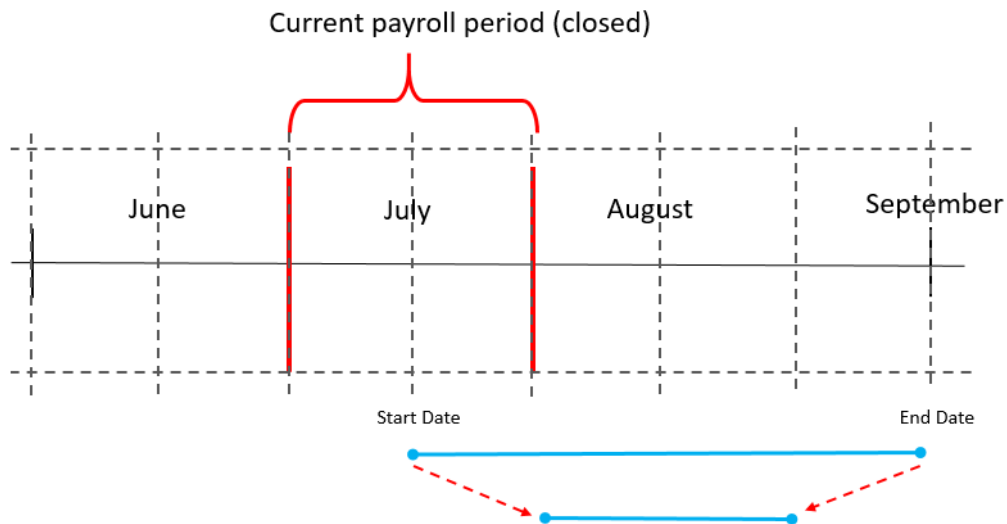> You can enable *EC to ERP(BIB): Consider Payroll period date for IT9* switch in the customizing activity *Maintain the Constant Values* in *Basic Settings* to set the start date of the infotype 9's all subtypes record except for subtype 0001 (other bank record) based on the payroll configurations in the ERP system.
>
> When you are replicating bank information based on the payroll period dates, then the main bank should be created from the hire date. In case if you are using other subtype than 0 as main bank in ERP you could maintain the subtype details by enabling the *EC to ERP(BIB): Main subtype of IT0009 (With payroll period)* switch in the customizing activity *Maintain the Constant Values* in ▶ *Business Integration Builder* ❯ *Basic Settings* ❯

10.12 Determination of Amount Field's Decimal during the Replication of Bank Information in Infotype 0009

Learn how to replicate the bank information based on the payment currency decimal determination for the amount.

When you are replicating the amount maintained from Employee Central, the decimal conversion of the amount is done based on the standard currency value maintained in the T500C table. You can find the decimal places from the TCRUX table for the currency. If no customizing is maintained then amount will only have 2 decimal points.

> **⚙ Example**
>
> In TCURX table, for currency EUR4 you have maintained 4 decimals and EUR currecny with 2 decimals, then how the amounts will be replicated to SAP ERP HCM.
>
> - If the amount is maintained as 12.3456 EUR4 in Employee Central and in SAP ERP HCM standard currency is maintained as EUR, then the amount will be replicated as 12.35 EUR in SAP ERP HCM. The payment currency in infotype 0009 will be EUR4 only.

- If the amount is maintained as 12.35 EUR in Employee Central and in SAP ERP HCM standard currency is EUR4, then the amount will be replicated as 12.3500 EUR4 in SAP ERP HCM. The payment currency in infotype 0009 will be EUR only.

10.13 Replicating Work Permit/Personal Documents Entity

Learn how the replication of work permit/personal documents entity with history data to Employee Central work.

You might have to replicate all the work permit information to ERP system with the start date as *Issue Date* and end date as *Expiry Date*. To enable you to replicate all information, the EC entity for work permit have to be configured in ERP with such mappings. This approach comes under start date rule custom date for non-effective dated start date rule determination. Since in this approach history retention is not possible, the EC entity in ERP have to be configured as effective dated for history retention in ERP.

For more information about the start date determination for non-effective dated portlets, refer to *How Start Date of Infotypes from Non-Effective Dated EC Entities is Configured*.

You must ensure that the *Issue Date* and *Expiry Date* is maintained in Employee Central for work permit information.

> ⓘ Note
>
> It's important to maintain the *Start Date in EC* and *End Date in EC* fields for the custom work permit entity if the entity is configured as effective dated. Otherwise during employee replication, an error message will be thrown.

If the ERP infotype to which the Employee Central work permit info is replicated is Time constraint 3, then the processing mode have to be selected as *Time Constraint 3 Mapping* in the custom entity and processing field can be kept as blank. BIB replication will internally determine the processing field value and process the infotype records as Time constraint 3.

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If you need to have any other fields as the start date and end dates (not Issue Date/Expiration Date) in ERP infotype, then suitable mapping with such date fields need to be maintained within the custom work permit entity in ERP. The effective dated flag will ensure that the history is retained.

10.14 Replicating BenefitsIntegrationRecurringInfo and BenefitsIntegrationOneTimeInfo Entity Values to IT0014 and IT0015

Learn how employee benefit recurring, one time info contributions and employer benefit contributions are replicated through the API segments.

In Employee Central, benefits contributions and deductions are provided in *BenefitsIntegrationRecurringInfo* and *BenefitsIntegrationOneTimeInfo* objects. These can be replicated to the SAP ERP HCM infotype *Recurring Payment/Deduction* (IT0014) and infotype *Additional Payments* (IT0015) using custom Employee Central entities in the BIB configuration. For more information on the BIB configuration steps, refer to the KBA 3307825 .

Related Information

[Introduction to Global Benefits](#)

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10.15 Replicating Employee Central Logon Username to Infotype 105, Subtype 0001

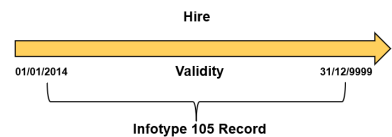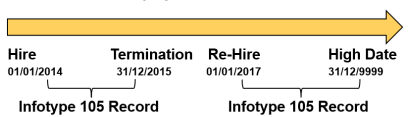You can now replicate Employee Central logon username to infotype 105 subtype 0001.

Prerequisites

The *EC to ERP: Replicate User Name to IT105 Subty 0001* constant should be enabled in the constants table to enable the replication of Employee Central logon username to the infotype 105 subtype 0001 field USRID. The username in Employee Central should not be changed once it is replicated to the ERP system.

Context

You can create new user details for the active period of the Personnel Number (PERNR) in all cases other than PERNR's having overlapping active period. At any point, if two PERNR's is having overlapping active periods, then the user data will be maintained for the first hire PERNR.

In case, the user name is changed in Employee Central and replicated then the data will be overwritten or a split will be created, if FTSD is changed later. In this case, the new BEGDA will be created based on the C_DEFAULT rule for the non effective dated template. The username field should be mapped only from identity_information entity (WS_ID_INFO). If WS_ID_INFO entity's fields are missing, then run the metadata report `ECPAO_ECTMPL_METADATA_WRITER` for entity WS_ID_INFO.

PERNR	Use Case	Outcome
Single PERNR	Single employment	One record for active employment is created.
	Rehire with previous employment	Two records for active period for the same PERNR will be created.

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PERNR	Use Case	Outcome
Multiple PERNR	**Rehire with new employment** **Re-Hire** **Rehire on different employment** Hire 01/01/2014 — Termination 31/12/2015 — Re-Hire 01/01/2017 New PERNR — High Date 31/12/9999 Infotype 105 Record Infotype 105 Record New PERNR is created during the re-hire process.	Two records for active employment are created. **⚙ Example** The employee is hired on 01.01.2014 and terminated on 31.12.2015 for the initial employment period. Then, he is hired with new employment on 01.01.2017. Infotype 0105 will have two records, one for time period 01.01.2014 - 31.12.2015 (initial employment) and the second record from 01.01.2017 to 31.12.9999 (Re-hire).
	Global transfer	Two records for both the employment are created. **⚙ Example** The employee is hired on 01.01.2020 and has a global transfer on 01.04.2020. Infotype 0105 will have two records, one for initial PERNR from 01.01.2020 to 31.03.2020 and the second record for global transfer PERNR from 01.04.2020 to 31.12.9999.
	Global assignment **Global Assignment** **New Employee** Hire 01/01/2014 — 31/12/2015 Employee goes for GA 01/01/2016 — 31/12/9999 PERNR 1 PERNR 2 Infotype 105 Record Infotype 105 Record	If its a non status changing action, one record for the home PERNR will be created. If the global assignment is a status changing action for infotype 0000, then an entry for global assignment PERNR is also created for infotype 105.
	Concurrent employment	One record for the earliest hired PERNR is created.
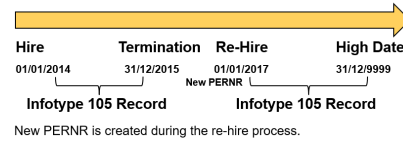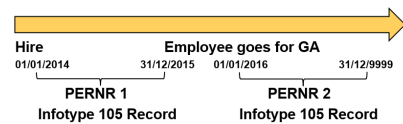
This enhancement is available from SP37 of PA_SE_IN.

10.16 Replication of Locked Wage Type Records in Infotype IT0015/IT0014

During the employee replication process if the wage type record(s) are locked in infotype 14 (Recurring Payments/Deductions) and 15 (Additional Payments), then duplicate records are created or ignored from further processing.

You can now enable the *EC to ERP(BIB): Allow repl of locked IT14, IT15 wage type records* switch in the constants table so that the records with wage type which are locked are considered for the replication process. This results in the creating the duplicate wage type records (depends on the data records and validity) during the replication process.

If the switch is not enabled, then the records will be ignored if locked wage type records are found in database during replication and a warning message is reported in the log file. This is only applicable for records which are post cutoff date. The processing of other wage type records and other infotype records will proceed in accordance with the standard procedure.

If you are not using the latest service pack, we then recommend you to install the latest service pack. You can also refer to this SAP note 3354280 Information published on SAP site to get the changes for this feature if you are using the older service pack.

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11 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.

Temporary Exclusion of Employees from Data Processing in SAP ERP HCM [page 316]
> When exceptional errors occur, you can suspend the processing of the data replicated for a specific employee from Employee Central to enable the data of the other employees replicated with the same package to be processed in SAP ERP HCM.

Invalid Parameter SECONDARY_RECORD-INFTY while Replicating Employees [page 321]
> 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 Personnel Number [page 321]
> Delete a personnel number that you don't need in the SAP ERP HCM system.

Changing the Hire Date of an Employee After Payroll Has Run in SAP ERP HCM [page 323]
> 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 324]
> 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.

11.1 Temporary Exclusion of Employees from Data Processing in SAP ERP HCM

When exceptional errors occur, you can suspend the processing of the data replicated for a specific employee from Employee Central to enable the data of the other employees replicated with the same package to be processed in SAP ERP HCM.

During the processing in SAP ERP HCM of employee data replicated from Employee Central, exceptional errors such as syntax errors, timeouts, or temporary runtime errors can occur in the SAP ERP HCM system that are caused by a single employee record. If such an exception occurs, the processing of the entire employee package is stopped. The data of all employees processed with this package cannot be updated in the corresponding SAP ERP HCM infotypes. You can exclude an individual employee for whom an exception occurred from the processing in SAP ERP HCM. The data of the other employees in the same package can then be processed and updated in the corresponding infotypes.

The first step is to identify the employee for whom the exception was raised. You can use the *Identify to Exclude from Processing* (`ECPAO_IN_EE_ID`) transaction to do so. Once you've identified the employee, you can add their person GUID to the *Employees Temporarily Excluded from Productive Processing* (`ECPAO_IN_QUAR`) view. You can perform this step directly from the *Identify to Exclude from Processing* transaction. Or you use the *Exclude Employees from Processing* (`ECPAO_IN_QUAR`) transaction instead.

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11.1.1 Identifying Employee for Whom an Exception Was Raised to Suspend Processing of Their Data

Find an employee for whom an exceptional error occurred in data replication from Employee Central, to temporarily suspend the processing of their data in SAP ERP HCM.

Prerequisites

You must have permission to access the `ECPAO_IN_EE_ID` transaction and to update the *Employees Temporarily Excluded from Productive Processing* (`ECPAO_IN_QUAR`) view. For the other activities within the `ECPAO_IN_EE_ID` transaction, you require additional permissions that allow for accessing the Message Monitor, using the Application Log, and viewing runtime errors. The basic permissions that you require are included in the template role that we provide for a user who is to analyze the replication and troubleshoot it if necessary: `SAP_HR_ECPAO_BIB_ANALYSIS`.

Context

With the *Identify to Exclude from Processing* (`ECPAO_IN_EE_ID`) transaction, you can find an employee for whom an exception was raised in data replication from Employee Central. You can add the employee's ID to the *Employees Temporarily Excluded from Productive Processing* (`ECPAO_IN_QUAR`) view directly from this program. Alternatively, you can use the *Exclude Employees from Processing* (`ECPAO_IN_QUAR`) transaction to do this.

You can also use the *Identify to Exclude from Processing* transaction to analyze what may have caused the error.

Procedure

1. Go to the *Identify to Exclude from Processing* (`ECPAO_IN_EE_ID`) transaction in your SAP ERP HCM system to run the *Identify Employee Records for Temporary Exclusion from Processing* (`ECPAO_IN_EE_IDENTIFICATION`) program.

   When called for the first time, the program shows the inbound messages (which correspond to packages of employee records) in which an exception occurred during the last day.

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> **ⓘ Note**
>
> The time stamps shown in the list are in Coordinated Universal Time (UTC).

2. Change the selection to view messages for more days or to view a specific inbound message.

3. Select one or more messages and choose *Identify EE with Error* to find the employee for whom the error occurred in the corresponding inbound message.

   When called for the first time, the program shows the external employee ID (= PersonIdExternal from Employee Central) that caused the error for the first inbound message.

4. Select one or more rows and choose *Exclude from Processing* to add the person GUID of the respective employees to the *Employees Temporarily Excluded from Productive Processing* view.

   When you try to process the replication request of an employee whose person GUID has been added to the *Employees Temporarily Excluded from Productive Processing* view, the request gets the status *Failed*. The application log displays a corresponding error message. The replication requests of the other employees in the same package can be processed as usual.

   > **ⓘ Note**
   >
   > When the program *Create and Execute Employee Master Data and Org. Assignment Query* (`ECPAO_EE_ORG_REPL_QUERY`) runs in the test mode, the employee is **not** excluded from the processing. In the test mode, the exception still stops the processing of the complete package.

5. Choose *Exclusion Table* to see which employees have already been added to the *Employees Temporarily Excluded from Productive Processing* view.

6. Analyze what may have caused the error.

   a. Select one inbound message and choose *Application Log* to view the error that caused the exception.

      You're shown the selection screen of the *Analyze Application Log* (`SLG1`) transaction first, with the log object `ECPAO_IN`, the subobject `GEN` and the time when the exception occurred preselected. Adjust the selection as required or choose *Execute* directly to view the application log entries.

   b. Select one inbound message and choose *Message Monitor* to view the content that was transferred from Employee Central.

      Double-click the message in the Message Monitor to view its content or choose *Original XML* to show the content in the XML format.

   c. Select one inbound message and choose *Runtime Error* to view the runtime error that caused the exception.

      Only exceptions that cannot be handled by the system cause a runtime error. If the exception can be handled, no runtime error is shown for the corresponding inbound message.

   > **→ Tip**
   >
   > You can also run an employee-specific query for the employee in question to find out more about what caused the exception and how to solve it.

7. Choose *Include in Processing* once the error is fixed, to remove the employee's person GUID from the *Employees Temporarily Excluded from Productive Processing* view and enable the processing of their data again.

Related Information

11.1.2 Suspending Data Processing in SAP ERP HCM for Employees for Whom an Exception Is Raised

Suspend the processing of the data replicated for a specific employee from Employee Central when an exceptional error occurred, to enable the data of the other employees replicated with the same package to be processed in SAP ERP HCM.

Prerequisites

You must have permission to access the `ECPAO_IN_QUAR` transaction. The permission is included in the template role that we provide for a user who is to analyze the replication and troubleshoot it if necessary: `SAP_HR_ECPAO_BIB_ANALYSIS`.

You've identified the employee for which the exception occurred. You can use the *Identify to Exclude from Processing* (`ECPAO_IN_EE_ID`) transaction to find the employee for whom the exception occurred.

> ⓘ Note
>
> You can also use the *Identify to Exclude from Processing* transaction as an alternative to the *Exclude Employees from Processing* transaction since it also allows you to temporarily exclude employees from processing.

Context

With the *Exclude Employees from Processing* (`ECPAO_IN_QUAR`) transaction, you can exclude an individual employee for whom an exceptional error occurred from processing in SAP ERP HCM. The other employees can be processed and their data can be updated in the corresponding infotypes.

Procedure

1. Go to the *Exclude Employees from Processing* (`ECPAO_IN_QUAR`) transaction in your SAP ERP HCM system to run the *Temporarily Exclude Employees from Processing of Replicated Data* (`ECPAO_MNTN_ECPAO_IN_QUAR`) program.

   The program calls the *Employees Temporarily Excluded from Productive Processing* (`ECPAO_IN_QUAR`) view.

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2. Choose *New Entries*.

3. Choose the value help (for example, by pressing the $\boxed{\texttt{F4}}$ key).

4. Search for the external employee ID from Employee Central.

5. Double-click the person GUID found to copy it to the view.

   We use the person GUID because it is unique.

6. Save your entries.

Results

When you try to process the replication request of an employee whose person GUID has been added to the *Employees Temporarily Excluded from Productive Processing* view, the request gets the status *Failed*. The application log displays a corresponding error message. The replication requests of the other employees in the same package can be processed as usual.

> ⓘ Note
>
> When the program *Create and Execute Employee Master Data and Org. Assignment Query* (`ECPAO_EE_ORG_REPL_QUERY`) runs in the test mode, the employee is **not** excluded from the processing. In the test mode, the exception still stops the processing of the complete package.

Next Steps

Analyze and fix the problem. You can, for example, run an employee-specific query for the employee in question to find out more about what caused the exception and how to solve it. After you've fixed the error, go to the `ECPAO_IN_QUAR` transaction again (or go to the `ECPAO_IN_EE_ID` transaction) and remove the employee's person GUID from the *Employees Temporarily Excluded from Productive Processing* view to enable the processing of their data again.

Related Information

Granting Permissions in SAP ERP HCM to Analyze and Troubleshoot Employee Master Data Replication from Employee Central [page 33]
Configuring the Query Program for Employee Master Data and Organizational Assignment Replication [page 260]

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320   PUBLIC   **Troubleshooting of Employee Master Data and Organizational Assignment Replication**

11.2 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.

11.3 Deleting an Incorrectly Created Personnel Number

Delete a personnel number that you don't need in the SAP ERP HCM system.

Context

In cases such as the following it may be necessary to manually delete a personnel number from the SAP ERP HCM system: You hire an employee in a wrong company in Employee Central and replicate their data to SAP ERP HCM. A personnel number (PERNR) is created in the SAP ERP HCM system that also has an incorrect company assignment. If you correct the company in Employee Central and replicate again, a new personnel number is created for the same employee again. As a result, a redundant personnel number remains in the system, which can lead to validation errors.

Procedure

1. In a test or other non-productive system, go to the *Delete Personnel Numbers Completely* (RPUDELPN) program.
2. Specify the personnel number that you want to delete from the system.
3. Select the *Detailed Log* checkbox if you want to capture the log information.
4. Select the *Test* checkbox if you want to perform a test run.

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5. Run the program.

6. In a productive system, go to the *Destruction of Personnel Numbers in Live Systems* (RPUDELPP) program.

7. Specify the personnel number that you want to delete from the system.

8. Select the activity you want to perform.

9. Select the *Test* checkbox if you want to perform a test run.

10. Run the program.

Results

The system calls the CL_IM_PAOCF_EC_DELPN implementation of the Business Add-In HRPAYXX_DELETE_PERNR. This BAdI implementation deletes the following replication-specific data, in addition to the data that the RPUDELPN or RPUDELPP program deletes by default.

Deleted Data	Data Deleted from Tables
Staging area for organizational assignment replication requests	SFIOM_RPRQ_EE, SFIOM_RPRQ_EOAXT, SFIOM_RPRQ_JOBRS, SFIOM_RPRQ_ORGAS, SFIOM_RPRQ_ASEEI
Employee key mapping	ECPAO_EE_KMAP, PAOCFEC_EEKEYMAP
Dependents key mapping	ECPAO_OBJPS_KMAP, PAOCFEC_KMAPDEPN
Reservation of personnel numbers (to retrain personnel numbers generated during a failed replication run for future replication runs)	ECPAO_PERNR_RES
Assignment-specific full transmission start date	PAOCFEC_PN_FTSD
Inventory of replicated employee data	ECPAO_INVT_INFTY, ECPAO_INVT_ITMSG

Next Steps

In a productive system, you can also use the *Delete Personal Data* (PU00) transaction.

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11.4 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 (*Change of entry date after successful payroll*) 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.

  > → Tip
  >
  > You can also find this information in SAP Note 3218660 (*Move entry date to the future after first payroll completed*).

  a. Go to your SAP ERP HCM system and carry out the steps described for case 2 in SAP Note 41523.
  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* record 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.

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a. Go to your SAP ERP HCM system and carry out the steps described for case 3 in SAP Note 41523 .

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.

11.5 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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Change History

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.

1H 2024 - Present

Type of Change	Description	More Info
None	We did not update this document.	

2H 2023 / PA_SE_IN SP36

Type of Change	Description	More Info
Changed	We have moved the Change History to the end of the guide.	Introduction to Employee Master Data and Organizational Assignment Replication [page 8]
Changed	Support package 36 of the PA_SE_IN software component is required in the SAP ERP HCM system.	Checking the Minimum Setup Required for Your Systems [page 14]
Changed	We've removed the following versions of the SAP_BASIS software component from the required components: • 710 with SP15 or a higher SP • 711 with SP10 or a higher SP • 730 with SP03 or a higher SP These versions are no longer supported. For more information, refer to SAP Note 1648480 .	Checking the Minimum Setup Required for Your Systems [page 14]

Type of Change	Description	More Info
New	You can now create a new personnel number when an employee has been transferred within a country/region using the same employment record in Employee Central and this change is replicated to the SAP ERP HCM system.	Creating New Personnel Numbers in SAP ERP HCM for National Transfer Using the Same Employment Record in Employee Central [page 80]

> ⚠ Caution
>
> Only use this feature if you are in the following situation:
>
> - You've used the version of the SF EC INTEGRATION (PA_SE_IN) add-on that is not based on the Business Integration Builder (BIB) and now want to enable the BIB-based version.
> - You've created new personnel numbers when employees are assigned to a different company code in the same country/region within the same employment record in the non-BIB-based version.
> - Your business processes rely on continuing to use this approach.
>
> If you are not in this situation, we do **not** recommend using this feature. Instead, we recommend that you always create a new employment record in Employee Central if you want a new personnel number to be created in SAP ERP HCM.
>
> Creating a new personnel number in the SAP ERP HCM system when an employee is transferred within a country/region using the same employment record in Employee Central contradicts the SAP One Domain Model. If you use integrations that are based on the SAP One Domain Model, such as the SAP Master Data Integration service, the use of this feature will cause issues. Because integrations based on the SAP One Do-

Type of Change	Description	More Info
	main Model require a one-to-one relationship between employment in Employee Central and personnel number in the SAP ERP HCM system. For more information, refer to SAP One Domain Model.	
Added	We've added the information that also certificate-based authentication is available when you configure the destination settings for push replication in the Integration Center in SAP SuccessFactors. This option has been around for some time. We had just failed to document that in this guide.	Configuring Employee Central for Push Replication [page 273] Configuring the Integration Flow for Employee Push Replication [page 106]
Added	In the configuration of the SAP ERP HCM outbound web services, we've added information about which settings are available in the corresponding integration flow for which authentication option, depending on whether you use SAP Cloud Integration in the Cloud Foundry or the Neo environment.	Enabling the SAP ERP HCM Outbound Web Services to Set Up the Connection from SAP ERP HCM to the Middleware [page 111]
New	We provide a new tool that helps you find an employee for whom an exceptional error occurred in data replication from Employee Central, to temporarily suspend the processing of their data in SAP ERP HCM.	Identifying Employee for Whom an Exception Was Raised to Suspend Processing of Their Data [page 317] Granting Permissions in SAP ERP HCM to Analyze and Troubleshoot Employee Master Data Replication from Employee Central [page 33]
New	You replicate the bank information based on the payment currency decimal determination for the amount.	Determination of Amount Field's Decimal during the Replication of Bank Information in Infotype 0009 [page 310]
New	You can now replicate delimited host address from Employee Central to infotype 0006 and subtype 1 (to the global assignment's PERNR) in case of global assignment scenario.	Enabling the Replication of the Delimited EC Host Address on Global Assignments [page 305]
New	You can now replicate data from different EC entities which can have different processing modes mapped to the same infotype.	Replicating Multiple EC Entity to Different Subtypes of an Infotype [page 188]

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