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# Workforce Availability Replication

## Beta Version

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# 1 Workforce Availability Service

Workforce Availability is an employee's availability that is computed in terms of working hours per day.

With this integration service, resource management capability in SAP Project and Resource Management can check the availability of employees based on their work schedules, holiday calendars, substitutions, shifts, and leave planning that they have maintained in SAP SuccessFactors. This integration thus helps the planning of projects and tasks.

## Use

The absence hours of a workforce person are calculated based on the status of the workforce person absences, as explained in the table below:

Status	Workforce Person Availability Calculation
Approved	<i>Approved</i> absence. This will impact the availability calculation.
Pending Approval	This status indicates the <i>In Process</i> absences of a workforce person, but does not impact the absence hours calculations until the absences have been approved.
Pending Cancellation	This status indicates the <i>Approved</i> absences cancelled by a workforce person. This impacts the absence hours calculations.

Absence Hours = Approved Hours + Pending Cancellation

Once the employee's availability information has been calculated by the time management application of SAP SuccessFactors, the calculated information can be retrieved via an OData V2 API. Using the integration flow as a middleware, the data can be replicated from an SAP SuccessFactors application to other SAP solutions such as SAP Project and Resource Management. An integration flow creates an `API GET` request to retrieve the employee's availability information from the SAP SuccessFactors application. The data subsequently provided by the integration flow can then be consumed by the resource management capability.

## 1.1 Replicating Workforce Availability Data from SAP SuccessFactors

With this integration service, resource management capability in SAP Project and Resource Management can check the availability of employees based on their work schedules, holiday calendars, substitutions, shifts, and

leave planning that they have maintained in SAP SuccessFactors. This integration thus helps the planning of projects and tasks.

#### Note

This service should be used only for the integration between SAP SuccessFactors and the resource management capability in SAP Project and Resource Management.

## Prerequisites

In order to integrate resource management and SAP SuccessFactors' workforce availability solution, make sure the following prerequisites are met:

- Enable workforce availability solution in SAP SuccessFactors: [Workforce Availability](#).
- Configure the integration flow for the workforce availability: [Configuring Workforce Availability Integration Flow \[page 5\]](#).
- Ensure that resource management is fully configured and set up for workforce availability before the replication from SAP SuccessFactors starts, to avoid any impact to the initial data load.
- Ensure that the master data for workforce person is fully replicated before running the integration flow for workforce availability replication. You must also make sure that the workforce person has not reached end of business in resource management. For more information, see [Replicating Workforce Person Data](#).

## Workforce Availability Data Processing in Resource Management

The standard integration between SAP SuccessFactors and resource management is orchestrated by the integration flow on SAP Cloud Integration. The integration flow triggers the SAP SuccessFactors OData service and forwards the received availability data to resource management. You must make sure that the `workforcePerson` has been replicated to resource management.

Once the replicated data has been received and validated, the employee's availability information is updated into resource management and the corresponding replication status can be checked in the integration flow.

## Limitations with Availability Data Replication

- The SAP SuccessFactors `workforce Availability Service` API is under restricted release and does not support proper pagination and delta handling (when called with last modified date).

#### Example

In case of temporary work schedule changes, proper pagination and delta handling is not supported.

- Due to technical limitations, only 250 records of the `workforce Availability Service` API are processed per request and to ensure there is no data missing, the count is fetched first. Then, the integration flow reads all records in a loop using skip and top.

- It is recommended to schedule the integration flow on a daily basis, so that the actual data replication happens once a day to handle delta changes. As a prerequisite for the integration flow schedule, make sure to follow the below sequencing of jobs:
  - Workforce person replication job
  - SAP SuccessFactors availability replication job
  - Workforce availability integration flow

## 1.2 Configuring Workforce Availability Integration Flow

### Context

Configure the Workforce Availability integration flow using the Cloud Integration Web UI to replicate the availability data from SAP SuccessFactors to the resource management capability in SAP Project and Resource Management

### Procedure

1. Log on to SAP Cloud Integration Web UI as a developer.
2. Select *Design* (beneath *Discover*) from the top-level menu on the left.
3. Search for the integration package ID *SAPSuccessFactorsWorkforceAvailabilityIntegrationwithResourceManagement*. Select this integration package and the package content list appears.
4. Choose *Artifacts*. All artifacts are listed below. There are four artifacts in this integration package.

Artifact Type	Artifact Name
Integration Flow	Replicate Workforce Availability to Resource Management
Integration Flow	Replicate Workforce Availability to Resource Management – Scope Mode
Integration Flow	Subprocess – Transfer Workforce Availability Records
Script Collection	Scripts for Replication of Workforce Availability Data


5. Choose *Deploy* in the *Actions* menu to adapt the configuration for the script collection *Scripts for Replication of Workforce Availability Data*. The *Confirmation* screen is displayed.
6. Choose *Configure* in the *Actions* menu to adapt the configuration for the integration flow *Subprocess – Transfer Workforce Availability Records*.
7. On the *Configure “Subprocess – Transfer Workforce Availability Records”* screen, choose the *Sender* tab and fill in the following fields.

Field Name	Value	Comment
<i>Connection: Address</i>	/transferWorkforceAvailabilityRecords	Keep default

8. Choose the *Receiver* tab and select *Resource Management* for *Receiver*, *HCIOData* for *Adapter Type*, then fill in the following fields.

Field Name	Value	Comment
<i>Connection: Address</i>	Enter the URL to the resource management OData service for availability replication.	To procure the API URL for the resource management OData service for availability replication, you can follow the steps similar to setting up the API access. For example: enter a URL in the format <code>http://{hostname}/WorkforceAvailabilityService</code>
<i>Connection: Authentication</i>	Select the authentication type for resource management.	To set up the authentication for resource management, you can follow the steps similar to setting up the API access. For more details see, <a href="#">Set Up the API Access</a>
<i>Connection: Credential Name</i>	Enter the security material created for resource management.	
<i>Connection: Private Key Alias</i>	Enter the credential created for resource management (in case of <i>Client Certificate</i> as <i>Authentication</i> mechanism)	
<i>Processing: Custom Query Options</i>	Enter custom query parameters, if needed	

9. Select *SuccessFactors* for *Receiver*, *HTTP* for *Adapter Type*, then fill in the following fields.

Field Name	Value	Comment
<i>Connection: SFHostName</i>	Enter the base URL of your SAP SuccessFactors system using the <code>https://</code> syntax.	For example: <code>https://apidemo1.successfactors.com</code> .
<i>Connection: Authentication</i>	Enter the authentication type for SAP SuccessFactors.	For details, see <a href="#">3043427</a> 
<i>Connection: Credential Name</i>	Enter security material created for SAP SuccessFactors.	

10. Choose *Save*.  
The *Messages* screen is displayed. Errors or warning in this integration flow can be ignored by choosing *Close*.
11. Choose *Deploy*.

The *Confirmation* screen is displayed.

12. On the *Confirmation* screen, choose *Yes*.

After validation, the *Deployment* screen is closed.

13. Choose *OK*.

14. Choose *Configure* in the *Actions* menu to adapt the configuration for the integration flow *Replicate Workforce Availability to Resource Management*.

15. Choose the *Timer tab*, *StartEvent\_4* for *Timer* and fill in the following fields.

Field Name	Value	Comment
<i>Schedule to Recur</i>	check	Choose and configure the desired timer frequency

16. Choose the *Receiver* tab and select *Subprocess* for *Receiver*, *ProcessDirect* for *Adapter Type*, then fill in the following fields.

Field Name	Value	Comment
<i>Connection: Address</i>	/transferWorkforceAvailabilityRecords	Keep the same value, as in step 7.

17. Choose the *More* tab and fill in the following fields.

In this tab, the filter values for reading the Workforce Availability records in SAP SuccessFactors need to be provided.

Field Name	Value	Comment
<i>companyCodes</i>	Enter company codes separated by commas.	For example: 1010, 1710
<i>employeeClasses</i>	Enter employee classes separated by commas.	For example: A_US, B_DE, C_JP
<i>employmentTypes</i>	Enter employment types separated by commas.	
<i>jobCodes</i>	Enter job codes separated by commas.	

18. Choose *Save*.

19. The *Messages* screen is displayed. Errors or warning in this integration flow can be ignored by choosing *Close*.

20. Choose *Deploy*.

The *Confirmation* screen is displayed.

21. On the *Confirmation* screen, choose *Yes*.

After validation, the *Deployment* screen is closed.

22. Choose *OK*.

23. Choose *Configure* in the *Actions* menu to adapt the configuration for the integration flow *Replicate Workforce Availability to Resource Management – Scope Mode*.

#### Note

This integration flow (steps 23-30) needs to be configured and deployed only for delivering the filtered records of Workforce Availability from SAP SuccessFactors on demand. It cannot be configured to run periodically. Use the *Replicate Workforce Availability to Resource Management* integration flow (steps 15-22) to run the replication periodically.

24. Choose the *Receiver* tab and select *Subprocess for Receiver, ProcessDirect* for *Adapter Type*, then fill in the following fields.

Field Name	Value	Comment
<i>Connection: Address</i>	/transferWorkforceAvailabilityRecords	Keep the same value, as in step 7.

25. Choose the *More* tab and fill in the following fields.

#### Note

In this tab, the filter values for reading the Workforce Availability records in SAP SuccessFactors need to be provided. You can provide either *jobCodes* or *workAssignments*.

Field Name	Value
<i>jobCodes</i>	Enter job codes separated by commas.
<i>workAssignments</i>	Enter work assignments separated by commas.

26. Choose *Save*.
27. The *Messages* screen is displayed. Errors or warning in this integration flow can be ignored by choosing *Close*.
28. Choose *Deploy*.
- The *Confirmation* screen is displayed.
29. On the *Confirmation* screen, choose *Yes*.
- After validation, the *Deployment* screen is closed.
30. Choose *OK*.

The Workforce Availability integration scenario is configured.

#### Additional Information

- When monitoring messages SAP Cloud Integration, if any errors happen during replication an attachment is displayed in the *Attachments* tab when the corresponding integration flow is selected.
- If an employee's availability replication is erroneous or missing, it is recommended to trigger the integration flow *Replicate Workforce Availability to Resource Management – Scope Mode* manually with the respective *workAssignments* value as the filter parameter.





- Supported filters for *Replicate Workforce Availability to Resource Management* are the combination of the parameters *companyCodes*, *employeeClasses*, *employment Types*, *jobCodes*.  
The *workAssignments* parameter in *Replicate Workforce Availability to Resource Management – Scope Mode* provides the availability data of an individual employee. Ensure to provide at least one filter parameter for *Replicate Workforce Availability to Resource Management – Scope Mode*, otherwise integration flow will fail. Use the filter parameter *workAssignments* alone and do not combine it with the *jobCodes* filter parameter.
- When the *Replicate Workforce Availability to Resource Management* integration flow is executed for the first time, the variable *recentSuccessfulExecutionTimestamp* is created based on the latest execution timestamp. All further executions of *Replicate Workforce Availability to Resource Management* will be in delta mode, that is, only the records changed after the recent successful execution will be replicated. Removing the *recentSuccessfulExecutionTimestamp* variable from *Manage Variables* will lead to execution of integration flow *Replicate Workforce Availability to Resource Management* in initial mode again.  
The *Replicate Workforce Availability to Resource Management – Scope Mode* integration flow is always executed in initial mode, that is, it does not take into account the *recentSuccessfulExecutionTimestamp* variable.

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