SAP SuccessFactors

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Using the Integration Center

THE BEST RUN SAP

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1 Integration Center

The Integration Center allows you to build, run, schedule, and monitor simple integrations. It simplifies the most common export and import use cases and you can build integrations quickly and easily through a guided workflow. You can utilize the available predefined templates for building integrations, and you can also create your own templates for the same.

Integration Center supports both file and Web Service-based outbound integrations. For file-based integrations, Integration Center supports *CSV*, *TXT*, *XML*, and *EDI/Stacked* formats. For Web Service-based outbound integrations, Integration Center supports *SOAP* and *REST* outbound integrations. Additionally, Integration Center supports CSV-based inbound integrations.

To access Integration Center, go to *Admin Center* and enter *Integration Center* in the *Tool Search* field. In *Integration Center*, you can build customized file extracts with any data using the SAP SuccessFactors OData APIs catalog.

> Example
>
> You can use the Integration Center to immediately run or schedule a job to export a provider-specific OData object to SFTP, based on defined filter conditions and applying a provider-defined output order and file format. For more information on ODATA, you can refer *OData API Programmer's Guide*, *OData API Reference Guide* and *Employee Central OData API Reference Guide*.

> Note
>
> Continuous Performance Management only uses OData v4 APIs, and the Integration Center currently does not support OData v4 APIs. Please use SAP Cloud Integration - SuccessFactors OData v4 Receiver Adapter (Learning Management Only) or Business Accelerator Hub - SAP SuccessFactors to build integrations using OData v4 APIs with the available packages.

The files generated in the Integration Center are directed to a configured SFTP server location. They are fully ready to be imported to the external provider system that needs synchronized data with SAP SuccessFactors applications.

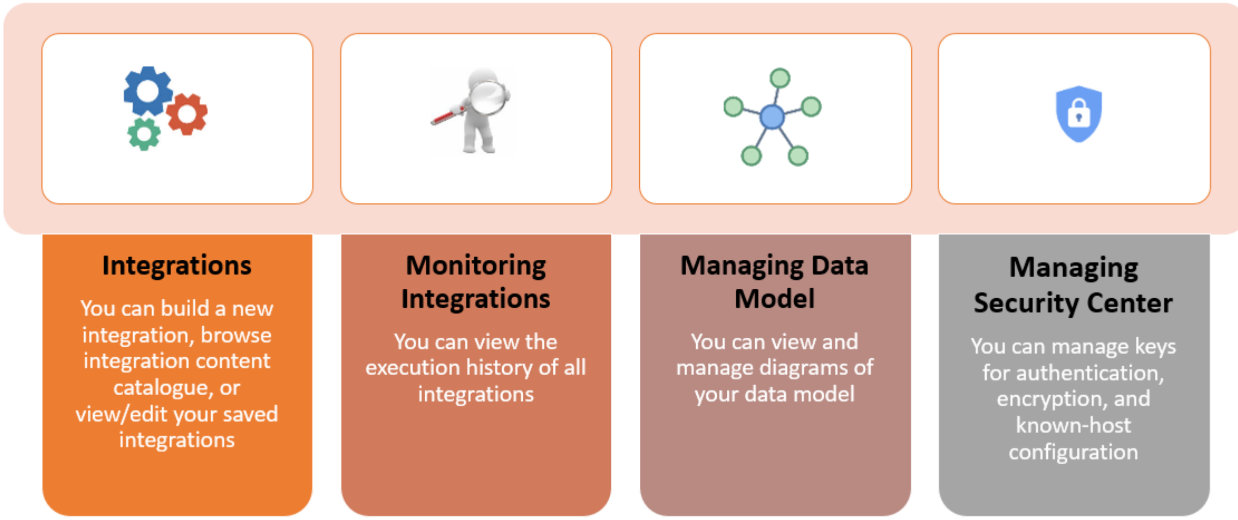
Integration Center as a package

Integration Center is part of the SAP SuccessFactors HCM suite package and works even without Employee Central.

We support building integrations with ODATA APIs for the following modules:

- Employee Central
- Recruiting
- Performance Management
- Goals
- Succession

Here's an overview of Integration Center.


Integrations
You can build a new integration, browse integration content catalogue, or view/edit your saved integrations
Monitoring Integrations
You can view the execution history of all integrations
Managing Data Model
You can view and manage diagrams of your data model
Managing Security Center
You can manage keys for authentication, encryption, and known-host configuration

2 Role-based Permissions for Integration Center

Assign the role-based permissions necessary for all administrators so they can build, run, schedule, and monitor simple integrations.

For setting up integrations, it is very important to identify the user groups you want to provide access to, and then accordingly enable the required role-based permissions for each group.

To find the role-based permissions for Integration Center, refer to the List of Role-Based Permissions.

> Note
>
> If you try to access *Integration Center* without the relevant permissions enabled, you will see the following message on the screen: *The user does not have the required permissions to access Integration Center*.

Related Information

What are Role-Based Permissions?

3 Creating Outbound Integrations

You can build integration using different tools, such as Integration Catalog, Integration Center, and Data Model Navigator.

Building Integrations Using Different Tools

You can build integrations using different tools that are available as part of SAP SuccessFactors applications:

- Using built-in templates available from Integration Catalog
- Integration Center
- Data Model Navigator

> ⓘ Note
>
> You can no longer create and schedule jobs from provisioning. Integrations jobs can be created or scheduled only using *Integration Center* (from *Admin Center* > *Integration Center*).

3.1 Importing Integrations from the Integration Catalog

You can build integrations from templates available in SAP Business Accelerator Hub.

Procedure

1. Go to *Integration Center* > *My Integrations*.
2. Choose *Browse Catalog*.
3. Choose *SAP SuccessFactors* from the *Explore* menu.
4. Choose *Packages* under *Integrations*.
5. Search for the integration package you want to download or choose one from the provided list.
6. Download the integration package.
7. Go to *Integration Center* > *Create* > *Import an Integration Definition*.
8. Browse and upload the integration package you downloaded.

Next Steps

Edit, schedule, and run the integration as required.

Related Information

Creating Outbound Integrations Using Integration Center [page 8]

3.2 Creating Outbound Integrations Using Integration Center

Context

Through a guided workflow, you can create an integration from a starting entity and add data from other entities by navigating via data model relationships to fields from these related entities. The following procedure describes how to create a new integration from a starting entity.

Procedure

1. Go to *Admin Center* > *Integration Center*

   You are directed to the Integration Center Landing Page.
2. Choose *My Integrations* from the Landing Page.
3. Go to *+Create* menu and select any of the following integration types:
   - *Scheduled Simple File Output Integration*
   - *Scheduled EDI/Stacked File Output Integration*
   - *Scheduled XML File Output Integration*
   - *Scheduled CSV Input Integration*
   - *More Integration Types*

     > Note
     >
     > For most integrations, *More Integration Types* is used. You can create outbound integrations using different Trigger Type, Source Type, Destination Type, and Format.
   - *Import an Integration Definition*
4. From the *Integration Center Entity Search* page, enter in the starting entity you want to use for your integration. You can either choose from the recommended starting entities or choose from the following different options in any order to find your entity information:
   - Enter an entity name in the *Search for Entities by Entity Name* field.
   - Enter an entity name in the *Search for Entities by Field Name* field.
   - Select tags to filter your entity search.

   > Note
   >
   > You can add more fields later if required.

5. Choose *Select*.
6. Set general Options [page 16] for the integration and choose *Next*.
7. Configure Fields [page 19]for the integration and choose *Next*.
8. Go to Filter and Sort [page 44] to filter on a specific set of data.
9. Go to Destination Settings [page 51] to define the end point or server settings for the destination of the integration.
10. In the Schedule [page 76]tab you can provide the frequency, start and end dates.
11. Go to Review and Run [page 80] to check the details and save the integration. Choose *Run Now* to run the integration immediately or choose *Set Schedule* to run at a specific scheduled time.

Next Steps

As a example, you can refer to Creating Outbound Integration with Attachment Format type [page 9], which gives you the detailed steps to create an attachment and to download attachments to a SFTP location.

3.2.1 Creating an Outbound Integration with Attachment as the Format for an Integration Type

Steps to create an Attachment outbound integration and to download attachments to a SFTP location.

Context

Let us consider an example where you want to extract resume or job applications.

> Note
>
> Integration Center supports extracting maximum of 5000 attachments. For anything beyond, the integration is stopped and a warning message is displayed in the execution manager: "You have exceeded the maximum attachment limit of 5000 records. Please apply relevant filters to extract attachments."

The following procedure describes how to create a new integration with attachment format type.

Procedure

1. Go to *Admin Center* > *Integration Center*.
2. From *Integration Center* landing Page, select *My Integrations*.
3. From the *Integration Center* > *My Integrations* page, choose *+ Create* > *More Integration Types*.

4. From the *Choose Integration Type* page, select the following:
    1. Trigger type as *Scheduled*.
    2. Source Type as *SuccessFactors*.
    3. Destination Type as *SFTP*.
    4. Format as *Attachment*
5. Select *Create*.

    When you select *Create* button, you are directed to the *Integration Center - Create a New Scheduled ATTACHMENT File Output Integration* page.
6. Select the *Starting Entity*.

    Let us consider an example of selecting the Starting entity as *Candidate* and fetching the resume.

    > **Note**
    >
    > To be compliant with data privacy laws, you cannot use attachment or photo as the starting entity. You must use the navigation properties to access any attachment.
7. Enter the integration name and select *Configure Fields* tab.

    Detailed information of each field is explained below:

UI fields	Description
Starting Entity	Indicates the starting entity selected while creating an integration. For example, Candidate.
Associate Content	Used to associate the field which contains the content in a particular entity, for example, **Photo** in Photo entity or **File content** in Attachment entity. When you click *Associate Content* button, the *Find Field* dialog opens up. Let us consider an example of selecting the Navigation from Candidate as **Resume** and the **File content** field in Resume entity. You can attach multiple records from any starting entity which supports 1:M relationship with another entity of type attachment. Make sure every attachment has a unique file name. Use *Calculated File Names* to generate unique file name.
Associate Content type	Used to associate the content type in a particular entity, for example, **Mime Type** in case of Attachment entity.
Content Preview	Used to preview the content. You can view multiple attachments using the forward and backward navigation buttons. Let us consider an example where a candidate CGrant has 2 attachments, **CGrant resume** and **Cgrant photo** and another candidate ghill has 3 attachments, **ghill resume**, **ghill photo** and **ghill personal details**. Once the mapping is done for the corresponding 1:M attachment entity, you can preview the content. In this case,

UI fields	Description
	you can preview the first attachment (**CGrant resume**) of the candidate CGrant. Click next (forward navigation) to preview the next attachment (**CGrant photo**) of the first candidate CGrant. Once all the attachment of the first candidate are covered, click next to preview the first attachment (**ghill resume**) of the second candidate, ghill and so on. Click back (backward navigation) to preview the previous attachment. In this case you can preview **Cgrant photo** of the candidate CGrant.
Content Type	Indicates the content along with the type, for example, application/ms-word or photo/jpeg.
Download Content	Used to download the content. In case of 1:M navigation, the attachment which is displayed in content preview can be downloaded. To download the next attachment use the backward or forward navigation buttons. Make sure to specify the extension of the file. If the extension is not specified, then the file will be downloaded in base 64 decoded format.
Record Index	Indicates the number for each candidate. For example, the records index for all the attachments of the candidate CGrant will be 1 and the records index for all the attachments of the candidate ghill will be 2.
Default Content type	Indicates the content type selected by default, for example, image/jpeg.
Content Length	Indicates the size of the attachment content.

8. Go to Filter and Sort [page 44] Page if you want to filter for any specific Candidates.
9. Go to Destination Settings [page 52] page to enter the SFTP details. Use *Calculated File Names* to generate unique file names per attachment.

   Let us consider an example of creating a file name for *Carla Grant* user. In the *New Calculated Field Name* popup, select *Field Value =* and associate the *Operand* as *Candidate Id*, by selecting *Associate Field* > *Entity Tree View* > *Candidate Id*. Select the *Operator* as *Concatenate/Append* from the dropdown and enter the *Operand* as _. Again select the *Operator* as *Concatenate/Append* from the dropdown and enter the *Associated Field* as *FileName*, by selecting *Associate Field* > *Entity Tree View* > *JobsApplied* > *Resume* > *FileName*. You can see the *Calculated Value* as *1_CarlaGrant.doc*, where *1* is the *Candidate Id* and *CarlaGrant.doc* is the file name. Click *Ok*.
10. Schedule the integration (if needed) and provide the frequency, start and End dates. Refer Scheduling your Integration [page 76] for more information.
11. Go to Review and Run [page 80] and check the details. Save the integration and click *Run Now* to run immediately. Save and click *Set Schedule* to run at a specific scheduled time.

Next Steps

Go to the specified folder in SFTP location after the job is complete to see the attachment. You can see the job completion status by clicking the refresh button beside *Last Run time* field.

Once the job is completed a hyperlink is displayed which takes you to the Execution Manager showing the details of the Integration. Refer Monitoring an Integration [page 130] for more information.

3.2.2 Outbound Integration Types

You can create outbound integrations using different trigger, source, and destination types using different formats.

Outbound Integration Types

Integration Type	Available Options
Trigger Type	Your available options when you select the *Trigger Type* • None selected • Scheduled • Intelligent Services • *Application/UI* **Note** For most integrations, the *Scheduled Trigger Type* is used. You can create Intelligent Services integrations using Integration Center and Intelligent Services Center
Source Type	There are at least three different source types that are dependent on which *Trigger Type* you choose: • None selected • SAP SuccessFactors • SFTP

Integration Type	Available Options
Destination Type	*Destination Type* options vary on what has been selected as your *Trigger Type* and *Source Type* • None selected • REST • SOAP • SFTP • SAP SuccessFactors **Note** See Related Links section at the end of this topic for more information.
Format	The available *Format* types vary depending on trigger, source, and destination types selected: • *None selected* • *Simple Delimited* • *EDI/Stacked Delimited* • *XML* • *OData v2* • *CSV* • *Simple Fixed Field Width* • *EDI/Stacked Fixed Width* • *JSON*

Related Information

More Information About How Source Type and Formats are Dependent upon Trigger Types:

Available Options for More Integration Types [page 14]

3.2.2.1 Available Options for More Integration Types

You can create all integrations using the *More Integration Types* option from the *+Create* menu that utilizes the *Choose integration Type* dialog box where you can use different source, destination, and formats based on the selected *Trigger Type*.

Available Source, Destination, and Formats Based off Selected Trigger Types

Trigger Type	Available Source Types	Available Destination Types	Available Formats
Scheduled	*SuccessFactors*	*SFTP*	• *CSV* • *True CSV* • *Simple Delimited* • *Simple Fixed Field Width* • *EDI/Stacked Delimited* • *EDI/Stacked Fixed Width* • *JSON* • *XML* • *Attachment*
Scheduled	*SuccessFactors*	*REST*	• *JSON* • *XML*
Scheduled	*SuccessFactors*	*SuccessFactors*	*OData v2*
Scheduled	*SuccessFactors*	*SOAP*	*XML*
Scheduled	*SFTP*	*SuccessFactors*	*CSV*
Intelligent Services	*SuccessFactors*	*SFTP*	• *CSV* • *True CSV* • *Simple Delimited* • *Simple Fixed Field Width* • *EDI/Stacked Delimited* • *EDI/Stacked Fixed Width* • *JSON* • *XML*
Intelligent Services	*SuccessFactors*	*REST*	• *JSON* • *XML*
Intelligent Services	*SuccessFactors*	*SuccessFactors*	*OData v2*

Trigger Type	Available Source Types	Available Destination Types	Available Formats
Intelligent Services	*SuccessFactors*	*SOAP*	*XML* **Note** Integration Center does not allow you to create any new Intelligent Services integration with the same entity as the source and the destination. For example, create a new Intelligent Service integration having *Change in Manager* event. This event is raised after a Job Information changes for a user who has been assigned a new Manager. In the *Configure Fields* tab, you can see that the *Destination Fields* are empty. Click on the *Add Entity (+)* symbol and search for *Job information (empjob)*. The *Job information (empjob)* entity is not available in the *Destination Fields*. This avoids the infinite loops in situations where no trigger rules were defined for some of the events. An error occurs if you upload an Integration Definition file having the same entity as both the target and the source of an Intelligent Services integration.

Trigger Type	Available Source Types	Available Destination Types	Available Formats
Application / UI	*SuccessFactors*	*SFTP*	• *CSV* • *True CSV* • *Simple Delimited* • *Simple Fixed Field Width* • *EDI/Stacked Delimited* • *EDI/Stacked Fixed Width* • *JSON* • *XML*
Application / UI	*SuccessFactors*	*REST*	• *JSON* • *XML*
Application / UI	*SuccessFactors*	*SuccessFactors*	*OData v2*
Application / UI	*SuccessFactors*	*SOAP*	*XML*

The trigger type, **Application/UI** supports background check verification for Recruiting integrations. The Application/UI integrations can't be scheduled or looked up using Intelligent Services Center Flows. If you create an integration using this trigger type then only one record (first record in query) is processed, after you click **Run Now** from the **Review and Run** page. For more information, refer the Enabling Background Checks with External Third-Party Vendors section in Recruiting Management guide.

1. For setting up the template in the Integration Center to support external background checks for Recruiting, refer Creating Integration Center Templates for External Background Checks.
2. For defining the elements and fields on the template, refer Defining the Integration Center Template for External Background Checks.
3. To associate your configured external background check vendor with the correct Integration Center template, refer Maintaining Vendor Integration Information for External Background Checks.

3.2.3 Options

The *Options* page is the first page where you set general options for the integration you are trying to create. The fields on this page vary based on the Integration Type you choose.

Read Access Logging (RAL)

You can log read access to sensitive data in outbound integrations by enabling *Read Access Logging* when you are configuring a new or existing integration.

For successful implementation of RAL, ensure that you have also enabled *Read Access Logging* at an instance-level. That is, you must toggle the *Read Access Logging* switch to *ON* from *Manage Audit Configuration* > *Read Audit*.

Read Access Logging (RAL) of Download Reason for South Korea

When the *Download Reason* is enabled in *Manage Audit Configuration* for a South Korean user, *Integration Center* will capture the *Download Reason* and provide the details in the *Read Access Logging* log when the configuration preview is downloaded.

Before being able to download the configuration preview, you will be prompted with a pop-up box asking you to enter your reason for downloading. You can fill this information with your reason in words. For example, "I am downloading for testing the integration.". This download reason will be used while logging Read Access Log and will be available in the Read Access Reports.

Related Information

Read Access Logging and Shared Users

3.2.3.1 Options for an XML File Output

For a XML File Output integration, on the *Options* page you receive the following fields.

Enter the following information as described in the *Description* column.

Field	Description
Integration Name	Either accept the name that is defaulted or change it to a name of your choice. This name is also used to name the job in the job scheduler.
Description	Enter a short description about the integration.
Destination Page Size	On creating a new **Scheduled XML File Output Integration** you get this option. It limits the number of records that will be included in a Batch-Paging element. When this number is exceeded a new Batch-file gets created. By default, the value of the *Destination Page Size* is set to 1. This option is applicable for XML and JSON formats configured with a Paging Node.

3.2.3.2 Options for Simple File Output Integrations

When you create a *Scheduled Simple File Output Integration*, there are multiple different `.csv` output file types that have different configuration when you are in the *Options* tab.

Different Output Types

You can schedule *Scheduled Simple File Output Integration* in one of two ways:

- From Integration Center Landing Page, go to the *+ Create* menu and select *Scheduled Simple File Output Integration*.
- From Integration Center Landing Page, go to the *+ Create* menu and select *More Integration Types*. You can select the format you want from the *Choose Integration Type* dialog box.

Whether you are selecting from the *Options* page or from *Choose Integration Type*, are the available file outputs for *Scheduled Simple File Output Integration*:

- **CSV:** standard comma-separated value readable by Microsoft Excel and most text editors.

  > Note
  >
  > Integration Center always generates output files encoded as UTF-8 without BOM.

- **True CSV:** CSV file type that accommodate special characters such as carriage returns, new lines, double quotes, commas.

  > Note
  >
  > When you choose *True CSV* as your output file types for your Scheduled Simple File Output Integration, you can specify if you want to use or ignore double quotes for null values. There is a checkbox if you want to ignore double quotes for null values when you select True CSV as your output file type for your scheduled simple file output integration in the Options tab.

- **Simple Delimited:** uses delimited formatting that uses different characters to separate data values such as commas, tabs, and colons.
- **Simple Fixed Field Width:** the width of each field is determined by the maximum number of characters specified for that field.

3.2.3.3 Options for EDI/FIXED File Output

For a Scheduled EDI/Fixed File Output Integration, on the *Options* page you receive the following fields.

Field	Description
Integration Name	Either accept the name that is defaulted or change it to a name of your choice. This name is also used to name the job in the job scheduler.
Description	Enter a short description about the integration.

Output File Type	Choose one of the following file types:
	• EDI/Stacked Delimited
	Choose one from the following *File Delimiter*:
	  • Tab
	  • Pipe
	  • Comma
	  • Star
	  • Semicolon
	  • Colon
	  • Caret
	  • Tilde
	• EDI/Stacked Fixed Width
	The width of each field is determined by the maximum number of characters specified for the field. (You specify the maximum number of characters under *Configure Fields* tab by clicking the column header containing the field and choosing *More Field Options...*)

Line End Settings	You can chose this option to select the characters that you may want to use to terminate a line in the file. You can select one of the following options: 1. Carriage Return/New Line (\r\n) 2. New Line (\n) 3. Tilde (~) 4. Tilde and New Line (~\n)

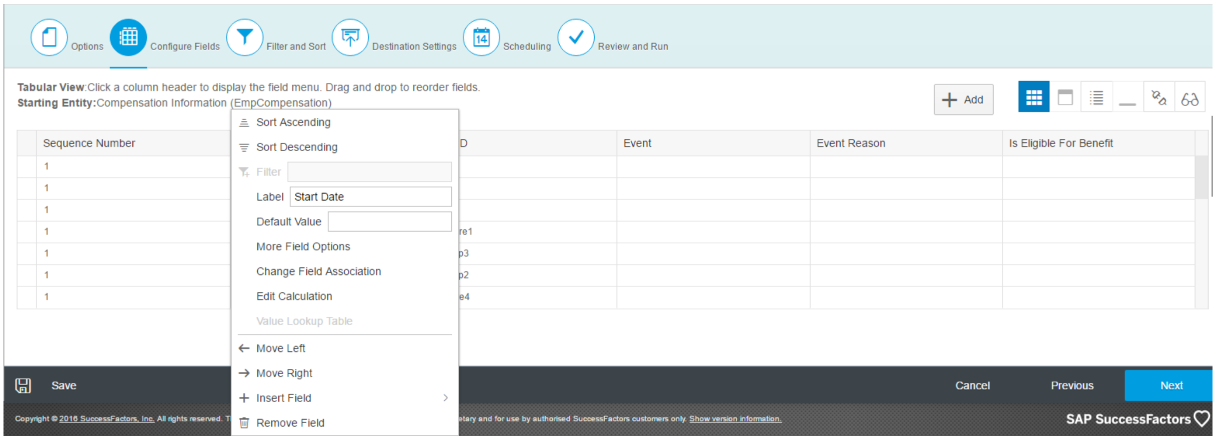
3.2.4 Using Configure Fields Tab

Procedure

1. On the *Configure Fields* page, edit the layout and field transformations for the integration output.

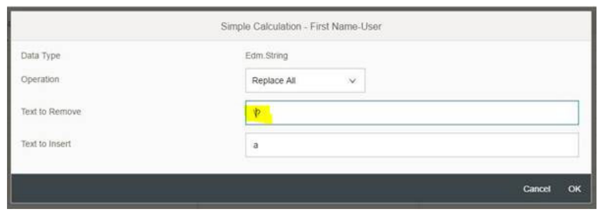
The fields are displayed in a table. To reorder the columns, use the *Move Right* or *Move Left* option.

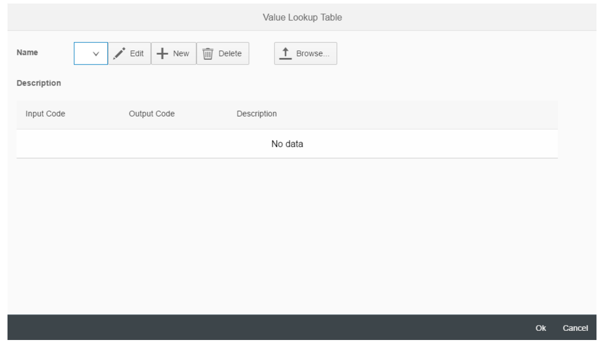
Clicking a column header gives you the following options.



Options from Clicking the Column Header

Option	Description
Sort Ascending	If the field is sortable, sort the values in this single column from low to high. (Note that not all fields are sortable in the SAP SuccessFactors database.) This removes a sort from other columns.
Sort Descending	If the field is sortable, sort the values in this single column from high to low. (Note that not all fields are sortable in the SAP SuccessFactors database.) This removes a sort from other columns.
Filter	If the field is filterable (that is, filterable string or numeric type), specify a comma-delimited list of values with which to filter this column. (Note that not all fields are filterable in the SAP SuccessFactors database.) If any field in the record matches the filter criteria, the record is included in the output. To further restrict the results, you can filter multiple columns. If you have specified an advanced filter, you are prompted to remove it.
Label	Change to a field label of your choice.
Default Value	If no value is specified for a field, include this value in the output. For fixed-value fields, this value is always included as a fixed value.
More Field Options	See More Field Options [page 25].
Change Field Association	Open the Find Field Starting from <Entity> [page 31] window and change the associated field for this output field

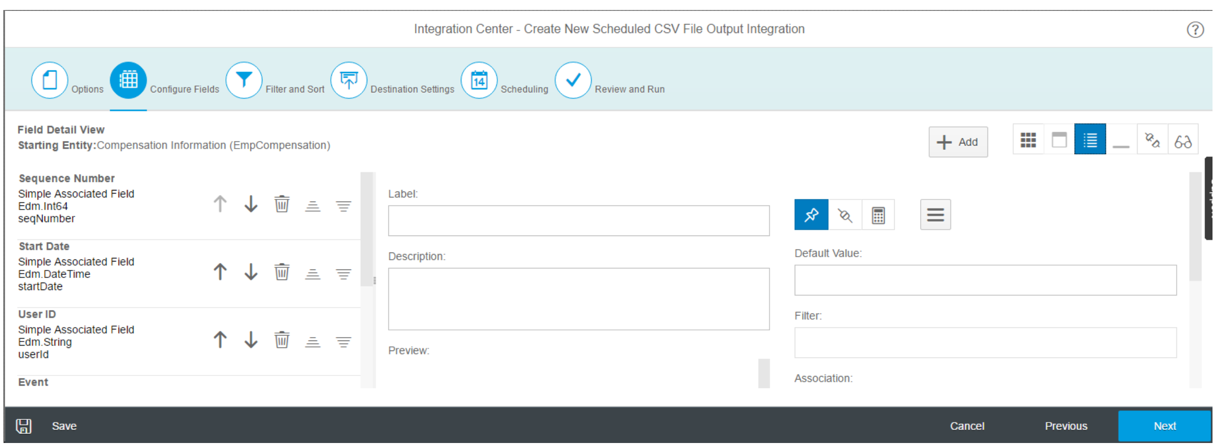
Option	Description
	or remove the association completely. The field is then a fixed-value field with no association.
Edit Simple Calculation	Edit the simple operations that can be performed on a simple associated field or fixed-value field. Different types of calculation are available for the following basic data types: text, numbers, dates. Common use cases include: • Removing all hyphens from a national insurance number or social security number • Transforming a user name to uppercase • Subtracting one day from the current date When using a *Replace All* or *Remove All* operation to replace or remove a special character, you must use \ (backslash) as an escape character before the special character. For example, in the string Integration, you want to replace ? with a. In the *Text to Remove* field, you must therefore enter \? as shown in the following screenshot.  Use Escape Character Before Special Characters in Replace All and Remove All Operations
Value Lookup Table	You can set up a translation table that maps a source field value to a destination value. This is suitable for mapping picklists that may be different for SAP SuccessFactors and the destination application. It supports both Numeric and String datatypes. However, entering dozens of values in the application is cumbersome. You can thus enter values (up to 300) via CSV upload file using the **Upload Sample CSV** button as shown in the following screenshot. Manually you can enter values up

<table>
<tr><th>Option</th><th>Description</th></tr>
<tr><td></td><td>to 1000.


ⓘ Note
An error message is displayed when you add a value lookup table of the same name or when you add an empty value lookup table, either by uploading (using the browse option) or by adding it in the application.</td></tr>
<tr><td>Insert Field</td><td>See Add Field [page 29].</td></tr>
</table>

2. To switch the table view to a Detail View, click the list view icon on the top of the page.

   This is handy for maintaining body fields with a list format. It is required for advanced headers and footers.

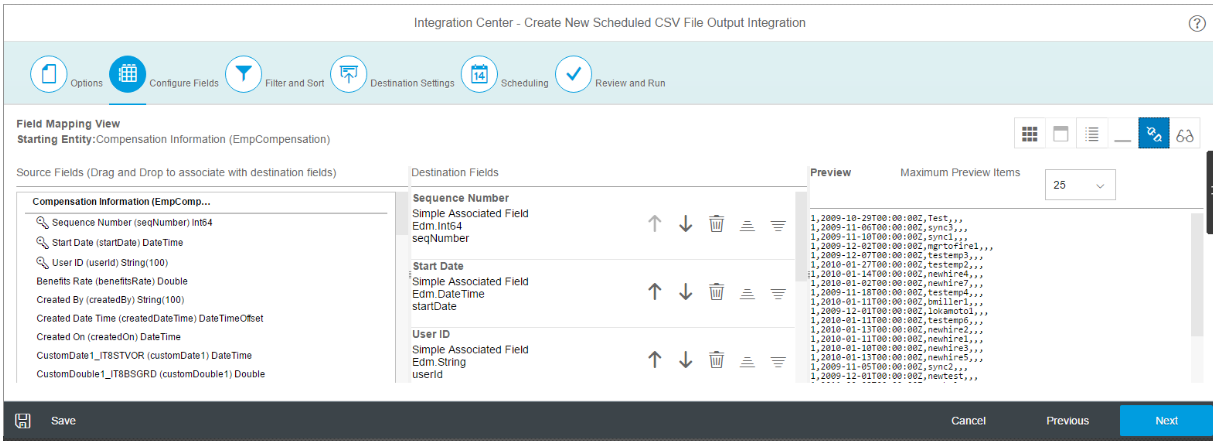


Detail View

> ⓘ Note
>
> You can use the Drag and Drop feature to reorder fields in the Detail View.

3. To switch the table view to a Field Mapping View, click the Mapping View icon on the top of the page. Initially you did this via column header using Change Field Association option, now to achieve the same you can click on the Mapping View icon and use the Drag and Drop feature to apply associations. This is helpful if you want to upload a sample CSV format and may want to change associations. This saves time and is less complex.

With the Drag and Drop feature, Flat fields can be mapped simply by dragging properties from the left side source fields and dropping them on right hand side destination fields.

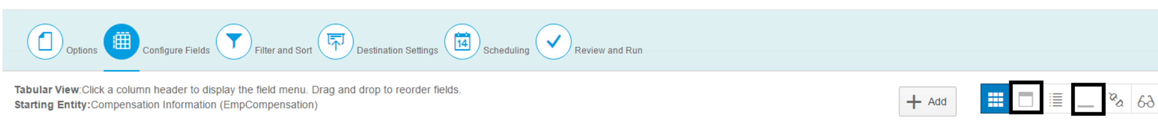


4. To add a field, choose Add... > Add Field.

   For more information, see Find Field Starting from <Entity> [page 31] and Add Field [page 29].

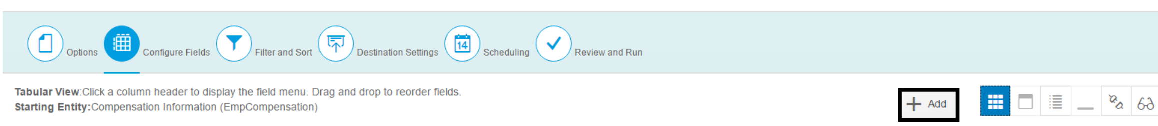
5. If you selected a advanced header type and/or footer type, you can include headers and/or footers in the integration output as follows. The most common header/footer items are fixed value fields with constants, fixed value fields with simple formatted date (for example, NOW, LASTRUNTIME), and record total (special calculation or fixed value).

   a. Click the header or footer icon at the top right of the page.



Header and Footer Icons

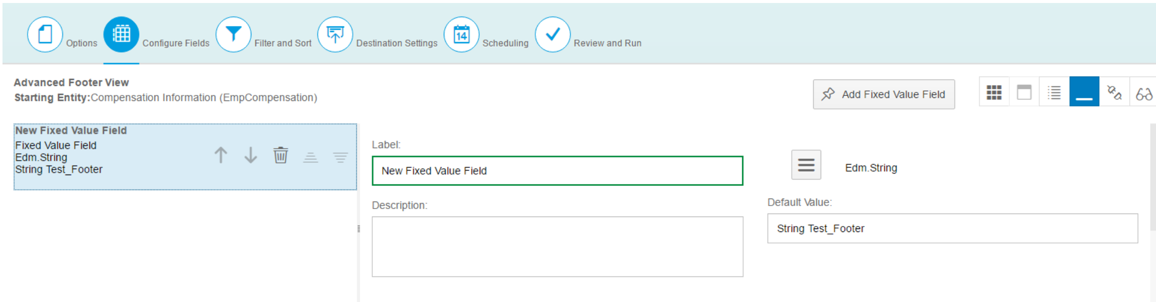
   b. Click *Add*



Click "Add"

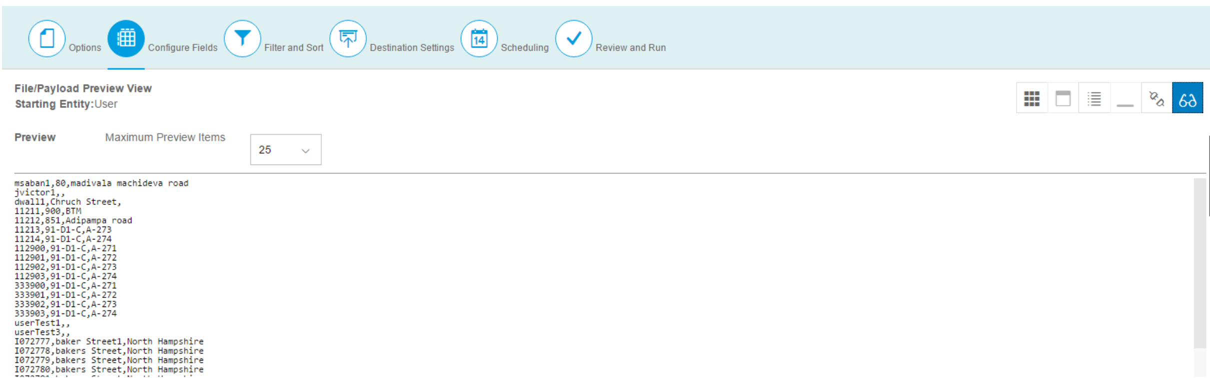
   c. In the *Field Options* dialog box, enter the information for the header or footer and click *OK*. To enter another field, click *Add* again.

      If you specify *Numeric* as the data type in the *Field Options* dialog box, you can use the *Format* field to specify the number format. For example, you can specify the number of decimal places, pad with leading zeros, and apply "," as the thousand separator.



Example of Advanced Footer

6. To display a preview of sample records of the output, click the preview icon at the top right of the page.



Preview Icon

If you previously specified fixed field length as the output file type on the *Options* page, the preview includes a handy ruler for checking the alignment of each field, as shown in the above figure.

In the *Save* menu, you can download the preview by choosing *Download Preview*. For more information, see Save Menu [page 86].

> ⓘ Note
>
> Integration Center displays the date time values in UTC timezone for all outbound integrations. Let us consider an example where the server timezone is UTC-4 and the datetime value of the *Start Date* field is *2018-01-20 23:59:59* UTC-4. Integration Center displays the datetime as *2018-01-21T03:59:59Z*, which is the value of the *Start Date* field in the UTC timezone.

7. Choose *Next*.

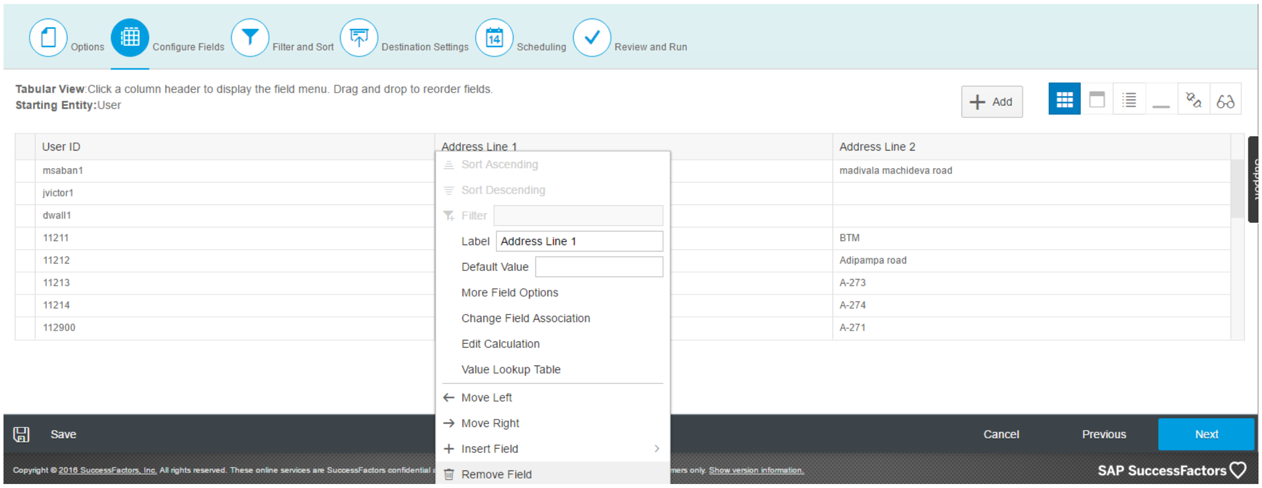
   The Filter and Sort [page 44] page appears.

Related Information

Source Settings For Your Inbound Integration [page 121]
Add Field [page 29]
XML Output [page 36]

3.2.4.1 More Field Options

When creating or editing an integration, you can click a column header on the *Configure Fields* page to display the field menu.



Field Menu

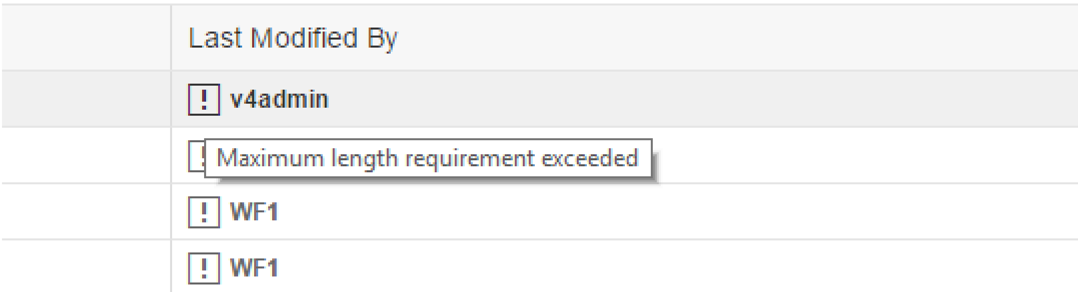
Choosing *More Field Options...* in the above field menu displays the following *Field Options* dialog box.

"Field Options" Dialog Box

Option	Description
Field Type	There are the following field types: • Simple associated field A field that is associated with a single SAP SuccessFactors field. You set this association using *Add Field* on the *Configure Fields* page and *Change Field Association* in the field menu shown above. You can convert a simple associated field to a fixed value field by choosing *Change Field Association* and then *Remove Association*. • Fixed value field A field that is not associated with a SAP SuccessFactors field. It allows you to specify constant value parameters such as NOW, which is the date and time that the integration runs, and RECORDCOUNT, which provides a 1-based index of the record. You can convert a fixed value field to a simple associated field by choosing *Change Field Association* and choosing a SAP SuccessFactors field. • Advanced calculation An advanced calculation that can be based on one or more SAP SuccessFactors fields. You cannot change an advanced calculation to any other field type. For more information, see Add Field [page 29] *Add Calculated Field*.
Label	This is for documentation purposes but it also represents the header value for an integration with a simple header type.
Description	A general field description that you can add for documentation purposes. It is also output when you choose *Export Integration Specification* in the Save menu [page 86].
Data Type	Date, number, string, or time. For simple associated fields, the data type is given by the associated SAP SuccessFactors field type.
Default Value	Value for an associated or calculated field if a null or blank value is returned from SAP SuccessFactors. It is also the value of a fixed value field.
Minimum Number of Characters	If the length of the resulting value is less than the minimum number of characters, a warning appears in the execution manager and it is excluded from the integration.

Option	Description
Maximum Number of Characters	If the length of the resulting value is greater than the maximum number of characters, a warning appears in the execution manager and it is excluded from the integration. If the output file type under *Options* is *Fixed Field Length*, the maximum number of characters that you specify here defines the width of each field. If you add a calculated field whose data type is *String* and specify *Truncate* as the operation, the number of characters is truncated to the number that you specify here.
Value Is Mandatory	If this checkbox is selected, an error is returned if no value is specified. This is effectively the same as minimum number of characters = 1.
Format	This field is applicable for Numeric, Date and Time data types. For Numeric fields, you can provide any one of the three formats provided in the drop down list, or any custom format. In addition, if no format is specified it takes 3 decimal places as the default value. For Date data type, there are some predefined formats in the drop down list. You can enter your own Date format as well. For example, you can enter **dd/MM/yyyy** as the date format, if you wish to display the date in this format. For Time data type, by default, the format is *hh:mm:ss a*, where *a* stands for AM/PM. You can either enter your own time format or select the following time formats from the dropdown: 1. hh:mm 2. hh:mm:ss 3. hh:mm:ss:SSS 4. HH:mm:ss 5. HH:mm:ss:SSS For example, if you enter the value as *11:00* and select the format as *hh:mm:ss*, then the value of that field will be displayed as *11:00:00* in the application.

An icon and a tooltip alerts you to records that will be rejected because, for example, they exceed the maximum length, or do not meet the minimum length, or do not contain a required value, etc as shown in the following screenshot.



Maximum Field Length error

3.2.4.2 Viewing Payload Errors

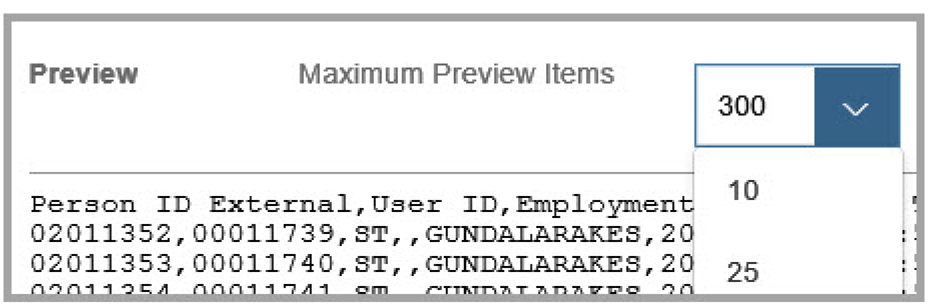
You can enter in the page number you want or use the backward or forward arrow to go from page to page for payload information errors in your integration.

File/Payload Preview Page

You can view your payload information from the *File/Payload Preview Page* for your integration. To access, open up your integration and select the *Configure Fields Tab*. From the *Configure Fields Tab*, find the *Switch to File/Payload Prevew View* icon.

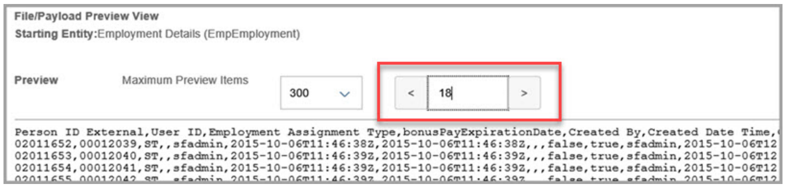
Maximum Preview Items and Pagination

You can limit the size of the records to preview by limiting how many records you want to view from the *Maximum Preview Items* menu located at the top of the page.



Maximum Preview Items Menu

The new pagination feature allows you to enter in the page number you want in the *Input Page Number* field going directly to the data record. You can use the backward and forward arrows in the *Input Page Number* field to browse records page to page.

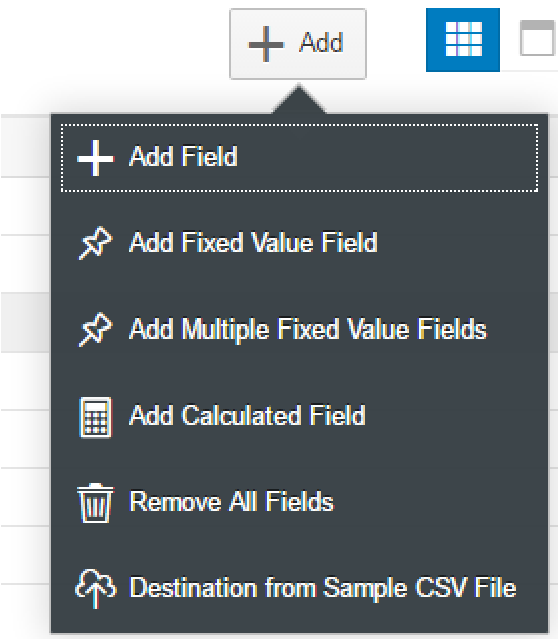


Screenshot of Input Page Number Field

> **Restriction**
>
> When you select to download for a specific preview page it is for the data for that page, but not the complete preview data.

3.2.4.3 Add Field

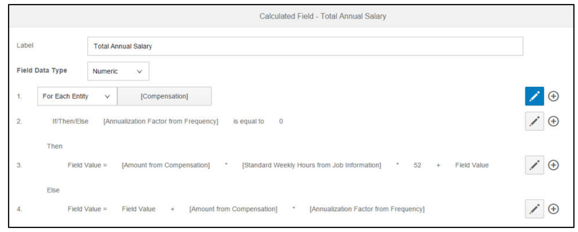
When creating or editing an integration, you can add fields on the *Configure Fields* page by choosing *Add...*. (You can also add fields by clicking a column header and choosing *Insert Field*.)



"Add..." Menu

Option	Description
Add Field	Search for and add a field in a new column at the far right of the table. Choosing this option opens the Find Field Starting from <Entity> [page 31] window. The first time you open this window, there may be a slight delay while the window initializes with the thousands of fields in the SAP

Option	Description
	SuccessFactors data model. The next time you open the window in the same session, it will open more quickly. See also Example: How to Query a Language-Specific Label for a Field Associated with a Picklist [page 35].
Add Fixed Value Field	Add a column that is always blank or that always contains the specified default value. In the *Field Options* dialog box, if you specify *Numeric* as the data type, you can use the *Format* field to specify the number format. For example, you can specify the number of decimal places, pad with leading zeros, and apply "," as the thousand separator.
Add Multiple Fixed Value Fields	Add multiple constant value fields at the rightmost position. Clicking on this button shows you the following screen.  In the *Number of Fields* textbox, specify the number of fields you want to insert.
Add Calculated Field	Create advanced calculated fields that can include calculations on one or more associated SAP SuccessFactors fields. A rich set of text, arithmetic, and date operations are supported, including iterating one:many entities and performing if/then/else conditional logic. Common use cases include: • Deriving a person's full name by appending given, middle, and last names • Adding up the values of all pay components to derive an employee's total annual compensation, taking into account hourly and annualized pay components (quarterly bonuses, weekly salary, etc.)

<table>
<tr><th>Option</th><th>Description</th></tr>
<tr><td></td><td>

- You also have an option to compare values of two associated fields using the if-else condition.

See also Creating Calculated Fields Using String Data [page 94].</td></tr>
<tr><td>Remove All Fields</td><td>Remove all fields in the integration.</td></tr>
<tr><td>Upload Sample CSV</td><td>Entering dozens of values via the Integration Center UI is cumbersome. You can thus upload a CSV file with any number of fields and associate each of the fields in the Field mapping View using the Upload Sample CSV button. In addition, you can manually enter values up to 1000.</td></tr>
</table>

Related Information

Find Field Starting from <Entity> [page 31]
Example: How to Query a Language-Specific Label for a Field Associated with a Picklist [page 35]
Creating Calculated Fields Using String Data [page 94]
Creating Outbound Integrations Using Integration Center [page 8]
Editing an Integration [page 125]

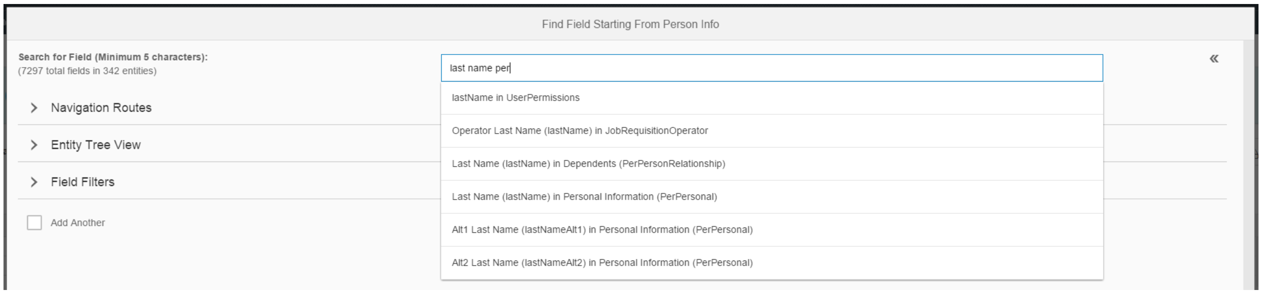
3.2.4.3.1 Find Field Starting from <Entity>

The SuccessFactors data model has hundreds of entities and thousands of fields. On the *Configure Fields* page, you choose ▶ *Add...* ▶ *Add Field* ◀ to associate an output field to a specific SuccessFactors field. You can also use it to find fields for which to filter records from the starting entity.

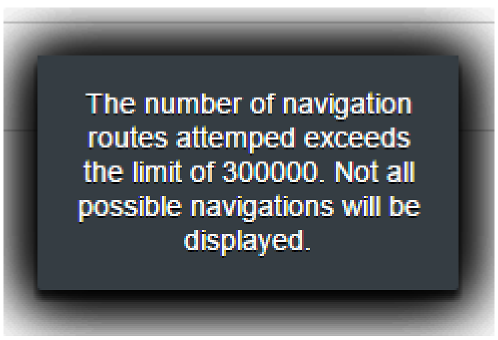
You most commonly use this feature to add a new field when creating or editing an integration.

Search for Field

You can use a multiple wild card search to search for any field. Each wild card can be separated by spaces. The search will return any fields and entities with those sequential characters. It also allows you to append Label/Picklist Codes in search results that appear in Find Field dialog box.



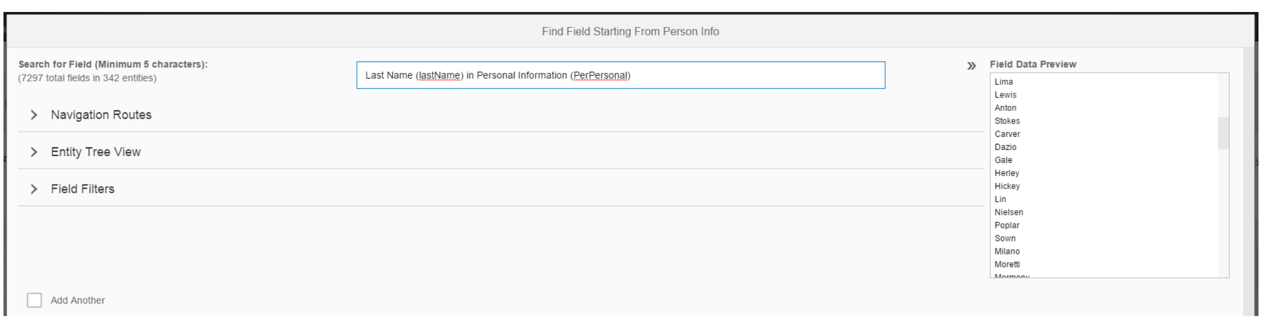
While searching for a field, you may see the following pop-up that explains the limit of 25 shortest navigations. This is a warning message and does not specify any failure in the course of searching and selecting a field.



Search and Select Field

Show Preview/Hide Preview

To display a list of sample values for the selected field, you can click the field data preview icon at the top right of the page. When you browse fields, we recommend hiding the preview to improve performance.



Field Data Preview

Navigation Routes

Selecting an item in the search results initiates a navigation route search for the target field, originating from the starting entity.

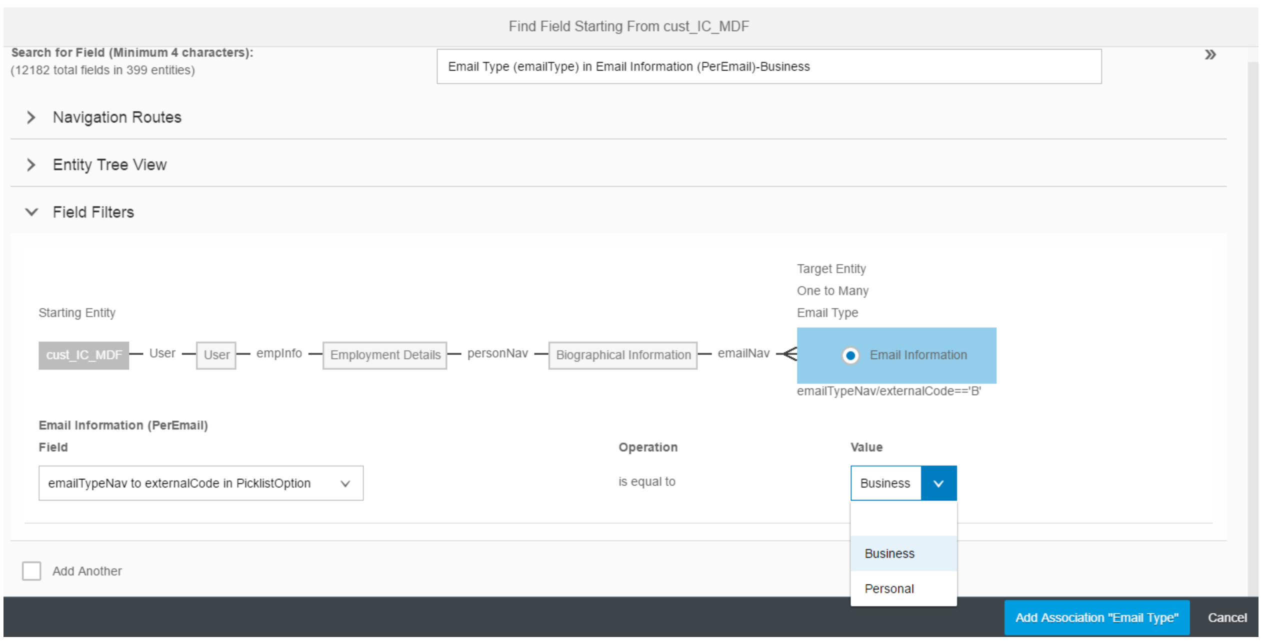
- If a navigation route is found, it is shown under *Navigation Routes*. The shortest route is selected and the *Add Association* button is enabled. Usually, the shortest route goes to the required entity and field.
- If no navigation route is found, an error is displayed. This means that the SuccessFactors data model is unable to reach that field from the starting entity.

The navigation route begins with the starting entity on the left and shows the navigation to the target entity via navigation fields through intermediate entities. One-to-many relationships are indicated by a crow's foot. For one-to-many relationships, multiple child records may be returned. By default, the association chooses the first child record, that is, the field from the first child object is included in the output file. The type of "many" relationship is also displayed. The following are common types of one-to-many relationships:

- Employee with many email types
- Employee with many phone types
- Employee with many pay components (for example, base pay, quarterly bonus, annual bonus)
- Department with many subdepartments

In the case of effective-dated or historic data, an entity can have many records. This occurs only when the full history of the data is read. For as-of-date queries, only the current effective-dated record is returned.

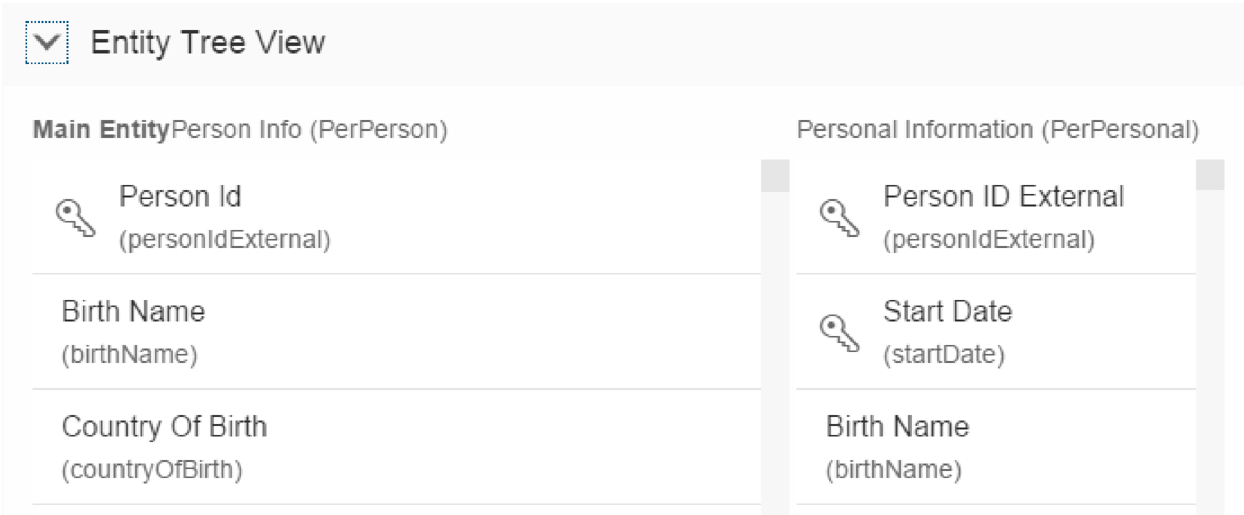
Instead of the shortest route, you may want to choose a different route to associate the field. For example, in the following figure, you may want to select the last name of the head of the department, instead of the last name of the head of the division containing the department.



Using Navigation Routes to Select the Exact Field

Entity Tree View

The entity tree view allows you to navigate manually through the data model, beginning from the starting entity.

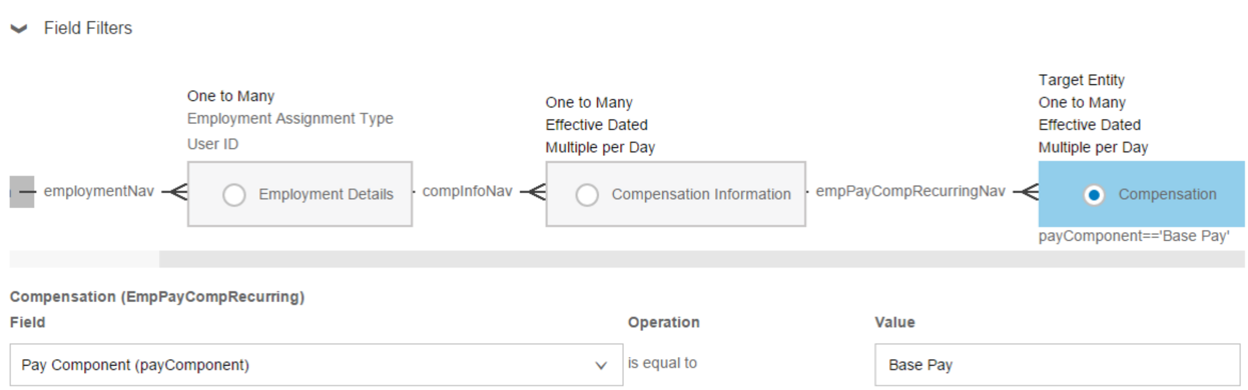


Entity Tree View

Field Filters

As an alternative to the behavior described above of taking the first child record of the child records returned, you can use a field filter to choose a specific child record. Note that many field filters are created and presented to you automatically (such as email type and phone type) and do not require you to specify them manually. You can now apply *Field Filters* on the parent node mapped with one-to-many (1:M) field navigations.

> **Example**
>
> Your sales staff have many pay components (such as base pay, quarterly bonus, and annual bonus). You use a field filter to specify a single pay component. If you then want to calculate the projected annual salary, you use an advanced calculation to iterate across all pay components and add them up. For more information, see Creating Calculated Fields Using String Data [page 94].



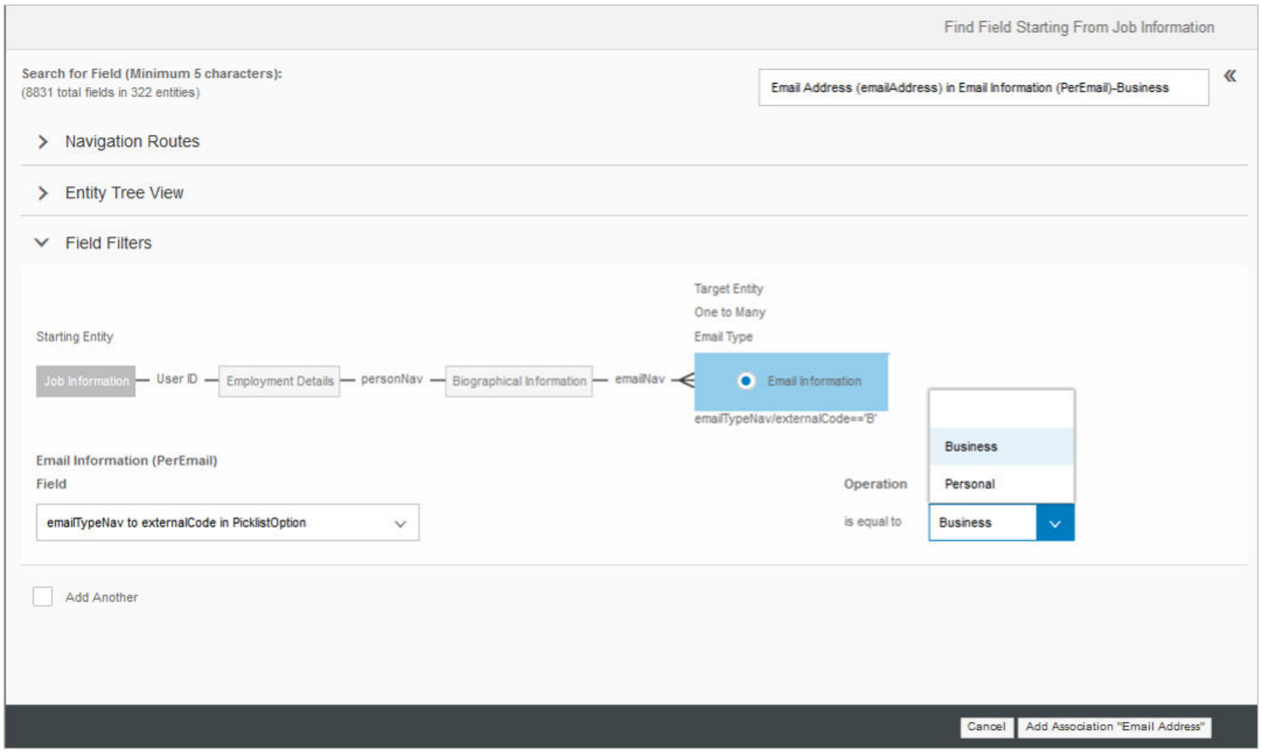
Field Filters

> **Note**
>
> To filter a particular field based on its occurrence, you can select ordinals FIRST, 1 to 10, and LAST from the Field filters dropdown list. For 1:M field navigation, Integration Center shows only one record and by default displays the result on the first index. The order in which the records are displayed is returned by the API and

Integration Center does not have a control on it. Based on the sequence returned by the API, Integration Center prints the data. If you need a specific value, you must use *Field Filters* on a field.

Let us consider an example where the starting entity is *Personal Information (PerPersonal)* and you want to display the email address of an Employee. If an employee has multiple email addresses, then Integration Center displays the first record in the order returned by the API. If you need only the primary email, apply the field filter *isPrimary=true*.

If the field filter is made up of business keys that reference picklists, you select the field filter operand from a dropdown, as shown in the following screenshot.



Dropdown for Field Filter Operands

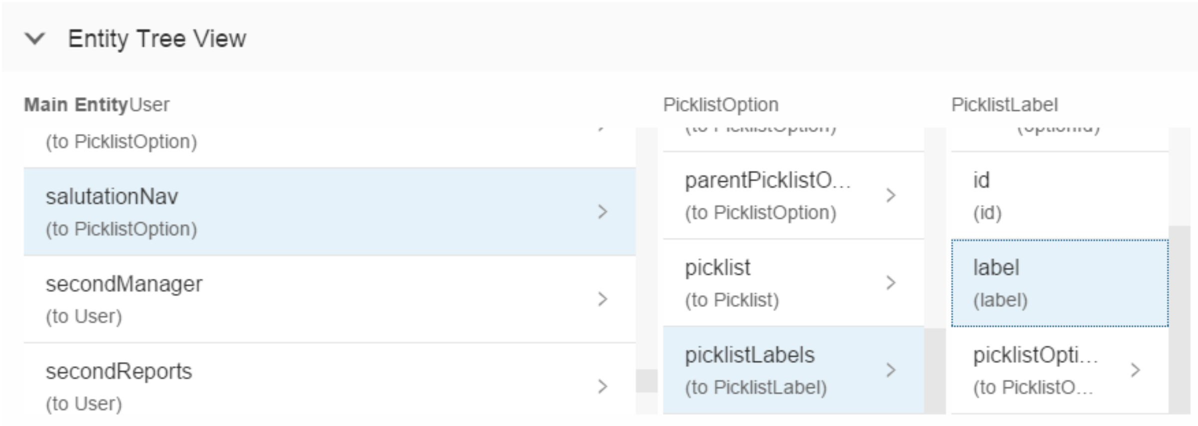
Related Information

Add Field [page 29]
Example: How to Query a Language-Specific Label for a Field Associated with a Picklist [page 35]
Creating Calculated Fields Using String Data [page 94]
Creating Outbound Integrations Using Integration Center [page 8]
Editing an Integration [page 125]

3.2.4.3.2 Example: How to Query a Language-Specific Label for a Field Associated with a Picklist

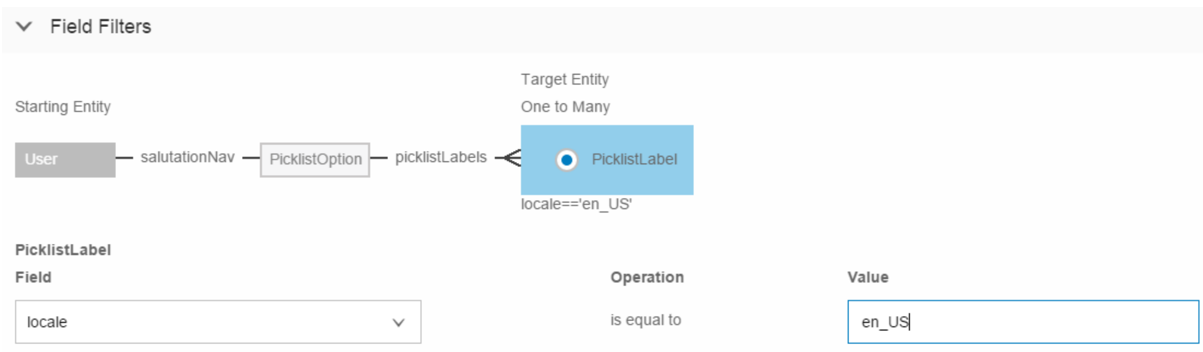
For example, in the entity *User*, you have the field *Salutation*. You want to get the label for the salutation.

1. On the *Configure Fields* page, you choose ▶ *Add...* ▶ *Add Field* ▶.
2. Under *Entity Tree View*, you navigate to the *PicklistLabel* object.



Navigate to PicklistLabel Object

3. Under *Field Filters*, you add a field filter for the label to pick out a specific language, which in this case is *en_US*.



Add Field Filter

Related Information

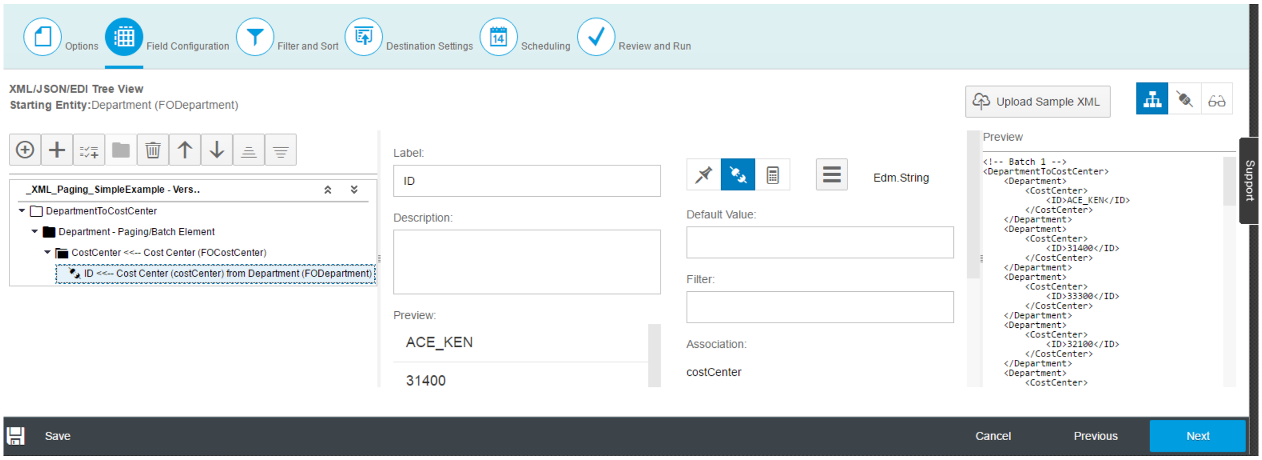
[Add Field [page 29]](#)
[Find Field Starting from <Entity> [page 31]](#)
[Creating Calculated Fields Using String Data [page 94]](#)

3.2.4.4 XML Output

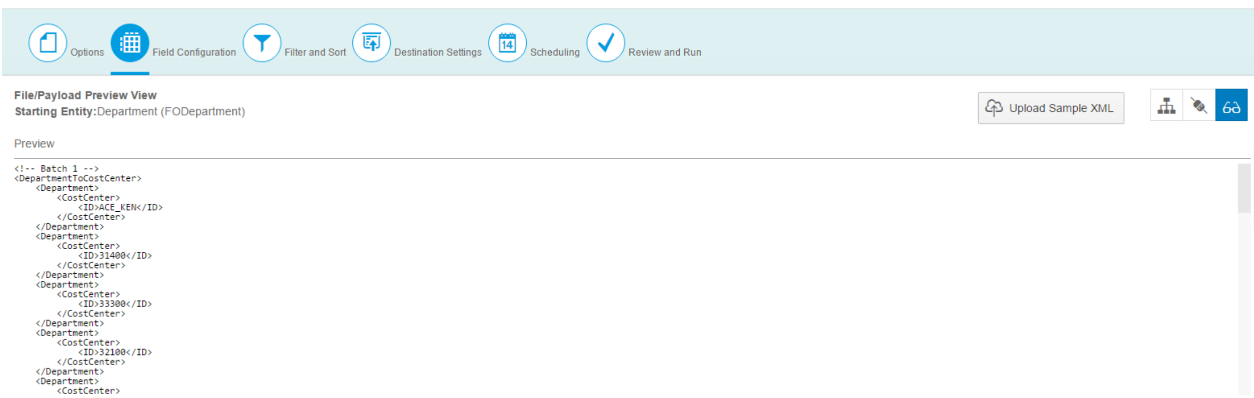
On the My Integrations page, you can choose XML Output by selecting *Create Scheduled XML File Output Integration* or by selecting XML as the *Format* from the complete list of available integration types in *More Integration Types*.

You can import a sample XML file or create your own XML structure on the *Configure Fields* page and format the output fields for XML output. The generated XML files have an _N suffix after the optional data suffix is selected. You can input the XML files to destination applications in addition to flat files.

> ⓘ Note
>
> The number of XML output files is limited to 2500.

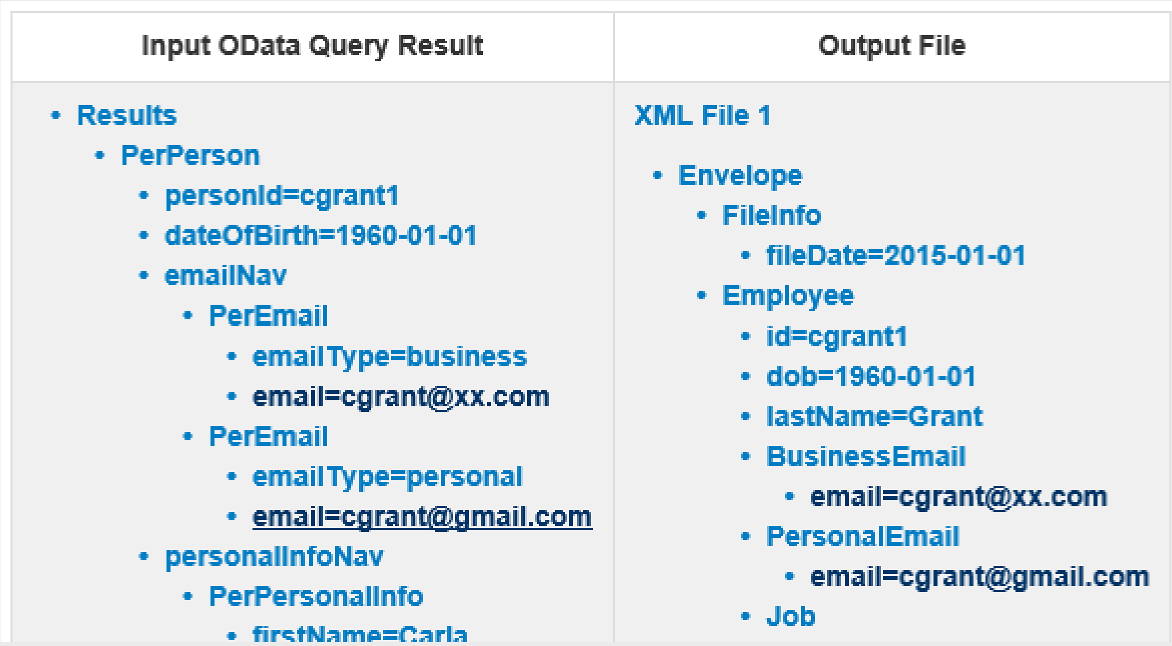


Upload Sample XML



Output File in XML Format

Example



Input OData Query Result	Output File

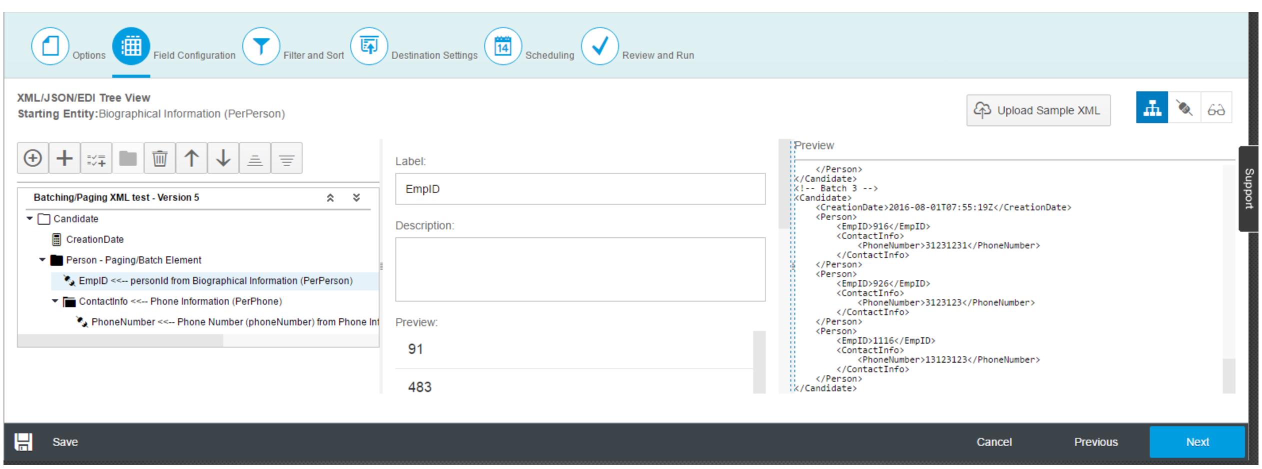
• Results
  • PerPerson
    • personId=cgrant1
    • dateOfBirth=1960-01-01
    • emailNav
      • PerEmail
        • emailType=business
        • email=cgrant@xx.com
      • PerEmail
        • emailType=personal
        • email=cgrant@gmail.com
    • personalInfoNav
      • PerPersonalInfo
        • firstName=Carla
	XML File 1
	• Envelope
	  • FileInfo
	    • fileDate=2015-01-01
	  • Employee
	    • id=cgrant1
	    • dob=1960-01-01
	    • lastName=Grant
	    • BusinessEmail
	      • email=cgrant@xx.com
	    • PersonalEmail
	      • email=cgrant@gmail.com
	    • Job

Hard-Mapping of Repeating Elements

A single file will be created for each OData main entity result record. There is a naming convention to provide a numeric suffix matching the ordinal of each main entity result document.

Manual editing of the Field Tree View

This feature allows you to edit the XML Tree view for tweaking a hierarchical schema and creating one from scratch where no sample XML, XSD, WSDL is available. It is also required for EDI support where import is not possible. Without this feature *Import* is the only way to create a schema which may be ok in the short run because hand building an xml schema from scratch is very tedious and sample xml should be available for import.



The following table lists out the options you can use while manually editing the *Field Tree View*.

Fields on the XML Output Integration

Field	Description
	Insert a sibling node after the selected element.
	Add a child node below the selected element.
	Add an XML attribute to the selected element.
	Set this node for paging/batching multiple starting entity records in one document.
	Delete the item.
	Move item up.
	Move item down.
	If the record is sortable, sort the records by values of this field from low to high.
	If the record is sortable, sort the records by values of this field from high to low.

Mapping of Fields

You can map fields by the following two ways :

1. Field Detail View (XML/JSON/EDI Tree View)
2. Field Mapping View (Drag and Drop associations)

Field Detail View

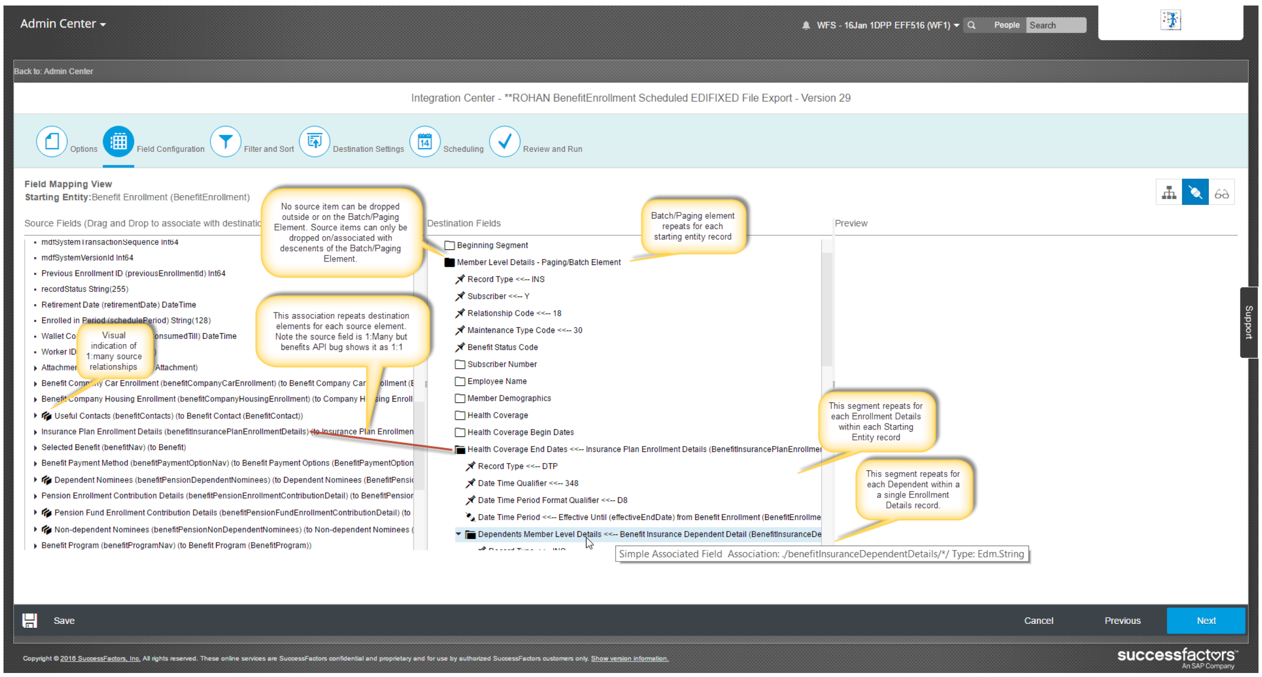
In the Field Details view you can select an element on the left side to view the details associated. Specify the values for Label, Description, Default Value. You can set these as a Fixed Value Field, Associated Field, or a Calculated Field. You can derive the parent-child relationship by using the:

- **Add Field** dialog
  or
- Drag-and-Drop option

> ⓘ Note
>
> You must first associate the parent node to a navigation property, then you can associate child nodes within to realize the relative association between the parent and child.

Field Mapping View

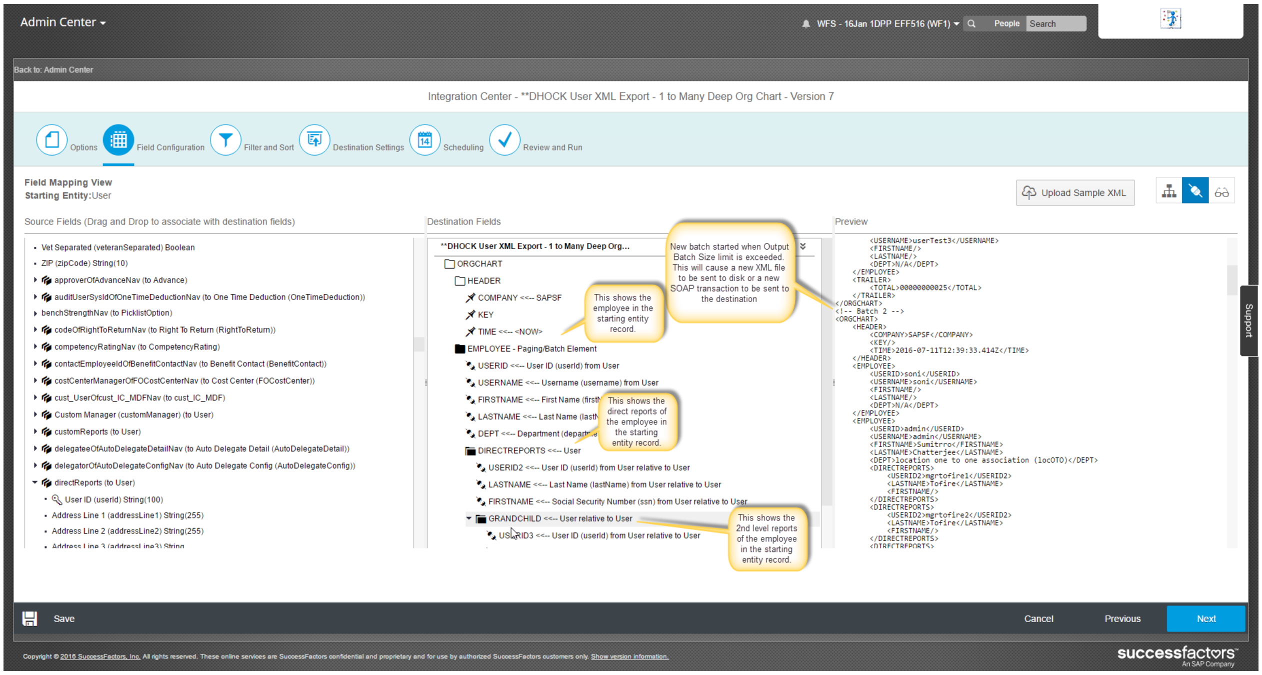
The Drag and Drop view works for Flat/XML files. For example, it is highly useful when a user imports a sample CSV file and then needs to associate all the destination fields with the source fields. Prior to the mapping view, this would require tedious opening and closing the Find Field dialog selecting Change Association for each destination field. With the Drag and Drop feature, fields can be mapped simply by dragging properties from the left side source fields and dropping them on right-hand side destination fields.



Points to Consider

- Associations are performed by dragging source items from left to destination items in right.
- The Batch/Paging Element repeats for each Starting Entity record. The maximum Starting Entity records within a batch is controlled by the *Output Batch Size* option.
- Source items can only be associated with items that are descendants of the Batch/Paging Element. You cannot drag anything to the Batch/Paging Element or to the siblings of the Batch/Paging Element.
- Source Properties/Fields from the left can only be dropped to leaf elements on the right. You cannot drop Source Properties/Fields on to the destination parent items. XML elements that have only child attributes are still considered as "leaf nodes".
- Source Navigation Properties from the left can only be dropped to parent elements on the right. You cannot drop navigation properties onto leaf elements.
- Folders/parent elements not associated with navigation properties will be just 1:1 with their section.
  The following example shows an XML 2-level "org chart" implementation. For each employee, the output XML will contain up to 2- levels of information on their direct reports and 2nd line reports (direct reports of their direct reports).
- Ensure that the Source Page size is greater than the Batch Size. If you fail to do so, you won't be able to get multiple output files and each time one file will be overwritten.

- You can also handle 1:many for a maxoccurs=unbounded node. To use it, just drag a 1:M navigation to the element you want to repeat. Then, when you drag child items for the navigation, it will automatically use relative paths.



Related Information

[Source Settings For Your Inbound Integration [page 121]]
[Find Field Starting from <Entity> [page 31]]

3.2.4.5 EDI/Stacked File Format

You can now generate the file output in the EDI file format which enables you to take the information out of Integration Center in the required format.

In an EDI file format, the headers and trailers will appears only once in the file at the top and bottom of the file. The EDI file format will consist of headers, body, and trailers, and the body would be repeated for each paging record. EDI file format can also contain multiple header and trailer record based on the vendor requirement. The trailer record would contain the count of records, which includes the header and trailer records. You can also configure one to many relationship in the EDI format.

EDI file format

The body of an EDI file format can contain single element/segment or multiple segment/element. The EDI format will have one record to report complete employee information(all the information needed) or it can have multiple elements for different information i.e. one segment for the employee details, the other segment to report the dependents, another segment to report the dependents contact information, and so on.

You can manually edit the field tree view for tweaking the schema that you create for the EDI file format. This manual editing of the tree view is similar to the tree view structure editing that you do for the XML tree view. For more information refer to: Manual editing of the Field Tree View section in XML Output [page 36] topic.

You can also drag and drop the view that you create for the EDI file format. This is similar to the XML tree view drag and drop feature. For more information refer to: Drag and Drop Associations section in XML Output [page 36] topic.

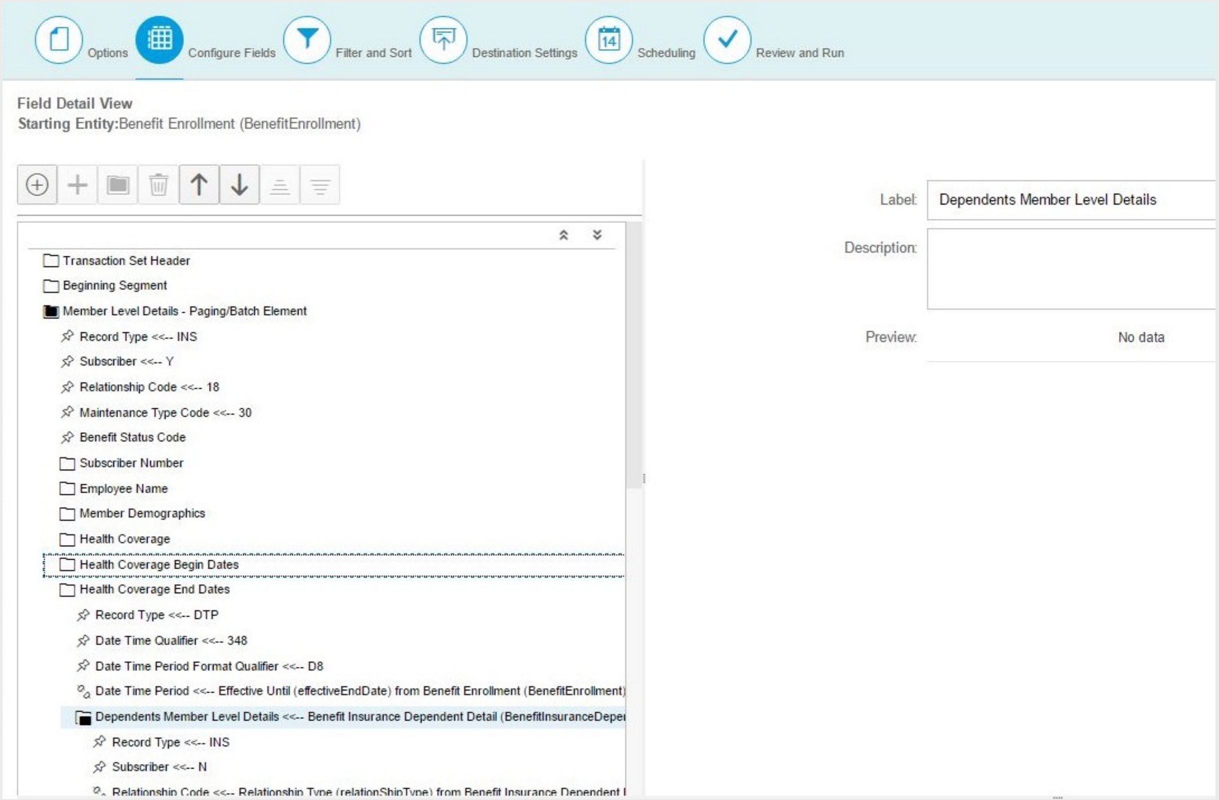
> Note
>
> Defining a paging/batching node is mandatory. All the leaf nodes must come first followed by the parent nodes. Also, the paging node should be at top level, it cannot be a child node of another node. You must first associate the parent node to a navigation property, then you can associate child nodes within to realize the relative association between the parent and child.

EDI format types:

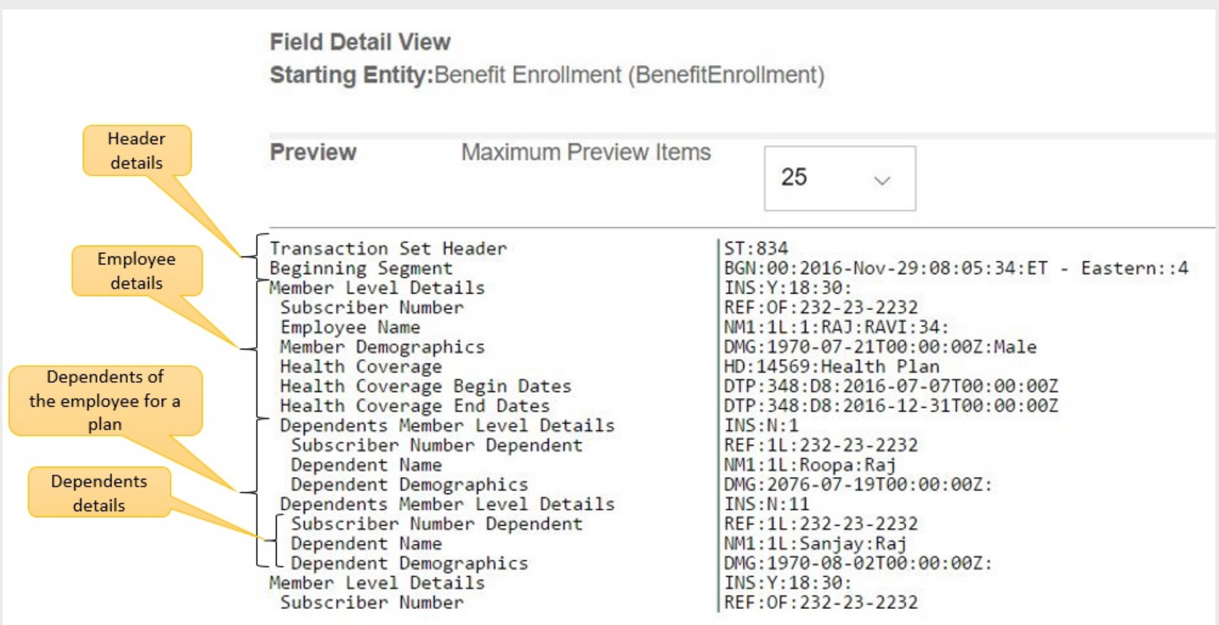
- EDI file format can contain multiple records/segments in the body and it repeats per employee.
- EDI file format can contain multiple records/segments in the body and it repeats for an employee with different information.
- EDI file format can contain multiple records with different schema.

> Example
>
> An example screenshot of an EDI file format where a benefits plan is having multiple employees and multiple dependents in it and dependent segments are repeated for all the dependents. Here you can see the header information followed by the employee information (employee name, data of birth, gender etc), health coverage type (insurance plan ID, description, health coverage begin date, end date etc), dependent details

which will be repeated for each dependents of the above employee enrolled for the chosen benefits plan.



The detailed preview view:



3.2.5 Filter and Sort

You can focus and filter on a specific set of data by using the Filter and Sort option.

1. Advanced Filters [page 44]
   You can use the advanced filters to specify more complex conditional expressions than are possible with the simple filters.
2. Time-Based Filters [page 47]
   Time-Based Filter helps you to get all the records (current and/or historical) that have been modified since the last time the integration ran. This is available by default for new integrations where the source is an API.
3. Advanced Sorting [page 50]
   You can use advanced sorting to sort the output records by multiple levels. Only sortable fields are included in the field lists.

Related Information

Creating Calculated Fields Using String Data [page 94]
Example : How to Build a Calculated Field using Switch case [page 102]

3.2.5.1 Advanced Filters

You can use the advanced filters to specify more complex conditional expressions than are possible with the simple filters.

Field	Description
Field	Select the field from the dropdown. Only fields which have property *SAP:Filterable* set to *True* in the metadata will be displayed in the *field* dropdown.
Operation	Specify operations such as *is not equal to*, *is greater than*. You can also select additional string operators in advanced filters, such as, startswith, not startswith, endswith, not endswith. → Tip If you have multiple filter options, we recommend using *is contained in* instead of *is equal to*. This helps in reducing the length of the request URI. For example, if you want to filter multiple Country Names, then in the advanced filter, select **Country is contained in (India,USA,China)** instead of **Country is equal to India,**

Field	Description
	OR Country is equal to USA, OR Country is equal to China.
Value	Enter the value you want to filter. If you specify a field and operation, but leave the value blank, the filter applies to records with blank or null values in the specified field.
Calculated Filter	Calculated Filter is used to filter records based on the result of some calculation which cannot be achieved using the filters provided by API. Calculated filters are negating filters, that is, it filters out the value based on the condition, instead of filtering in. **Note** Calculated filter supports only *If/Then* or *If/Then/Else* statements. An existing integration having any other logical statement has to be updated with *If/Then* or *If/Then/Else* statements. You can select your data type you plan to use for a specific condition. You can view the available data types when you select the ≡ icon that opens up a menu with these options: • Associate Field • More Field Options • Value Lookup Table **More Field Option**: This field allows you to configure the *Data Type*, its *Default Value* and its applicable *Format*. You can either set a user-defined default value for a selected *Data Type* or select a default value from *Default Value* list. However, to enter a user-defined default value, you must enter the value in a format that is agreeable with any of the available formats in the corresponding list in the *Format* field. **Example** For the *DateTime* data type, if the value entered is April 26, 2005 then the accepted formats are as follows: • 2005-04-26 • 20050426 • 2005-04-26 19:44:55 GMT+0200 • 2005-04-26 19:44:55:000 GMT+0200 • 04/26/2005 • 04/26/05

Field	Description
	→ Remember If you are selecting a default value from the available list, do not configure the *Format* field. Explicitely configuring the Format will lead to a mismatch in value mapping. **Value Lookup Table**: If you want to filter records with multiple values, you can use the *Value Lookup Table*. Let us consider an example where you have three records in *PerPerson* Entity with PersonId = {100001, 2, 1000003} and want to filter out **100001** and **2** using Calculated Filter. In the *Value Lookup Table*, enter the *Input Code* with PersonId (100001 and 2) and *Output Code* as **Remove**. In the Calculated filters, select the condition *If/Then* with the Field value (PersonId) and compare it with the constant value (Remove), that is, **If FieldValue = Remove Then Fieldvalue = true**. After applying Calculated filter, Integration Center will filter out to display only 1000003 PersonId.
Calculated Response Filter	Calculated Response filter is used for filtering the response got back from a REST endpoint. Based on a condition, user can decide which response needs to be mapped and not mapped. *Calculated Response Filter* filter is also used if you want to log an error or warning on to Execution Manager based on the response. The calculated response filter is useful for processing the response of web service calls. 1. Any calculation on Response resulting in a non blank value will skip that response record from being processed. 2. You can provide indication of errors in Execution Manager by assigning values to Log Error and Log Warning assignment operations.

Let us consider an example where you have an integration with starting entity as *User* and you want to retrieve inactive employees via integration center. In the filter set, use *Status* field present under *User* entity with operation parameter as *Is contained in* and enter the value as *Inactive, active*. This filter criteria will give you a list of both active and inactive employees.

If the starting entity of the integration is not *User*, then you can retrieve all the user with status as *Inactive, active* by navigating to the *Status* field of *User* and use the above filter.

Use the *Browse* button to chose fields that are not part of the current integration, for filtering.

Parent topic: Filter and Sort [page 44]

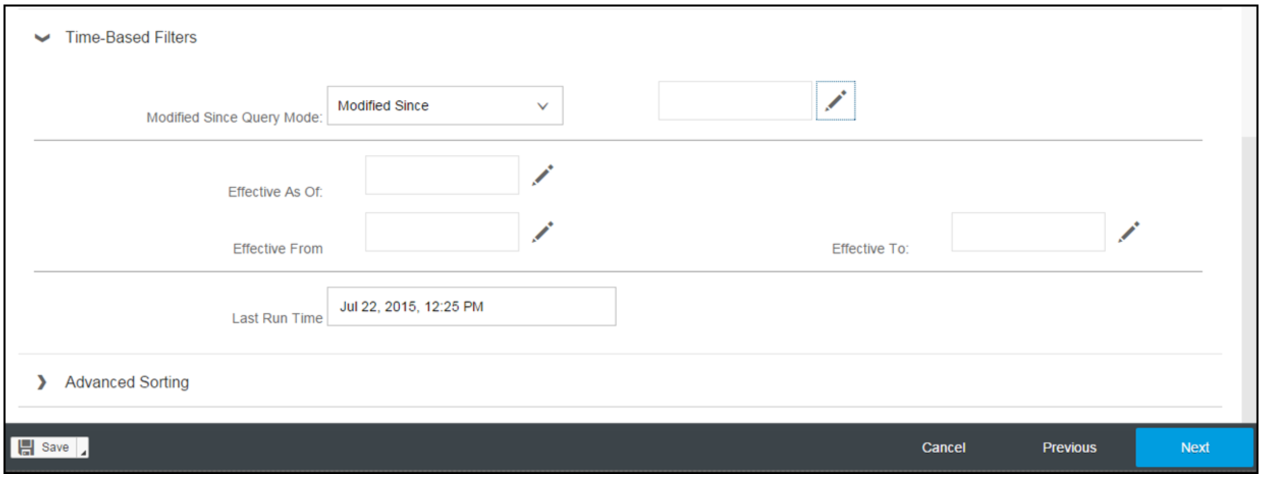
Next: Time-Based Filters [page 47]

Related Information

Using Configure Fields Tab

3.2.5.2 Time-Based Filters

Time-Based Filter helps you to get all the records (current and/or historical) that have been modified since the last time the integration ran. This is available by default for new integrations where the source is an API.



Time-Based Filters

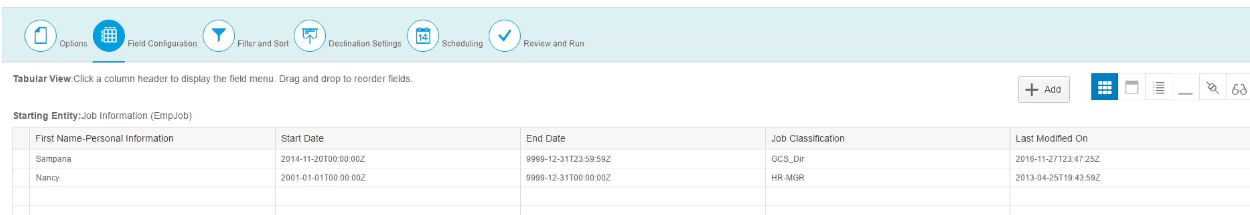
Field	Description
Modified Since Query Mode	Modified Since: Return only records with fields that have been modified since the date and time specified. You can specify a fixed date and time, the current date and time, or the last date and time that the integration was executed. Modified or Effective Since: As above, but also include records that have become effective since the specified date. Neither the *Modified Since* nor *Modified or Effective Since* queries fetch future records. If you want to fetch future records, use these queries together with the *Effective From* field. Let us consider an example where the Modified since Query mode is *lastModifiedDateTime* and the *Last Run Time* is May 1, 2018, 1:00 PM. When a Time-Based Filter is added as per the above example, it automatically adds the same 'lastModifiedDateTime' field filter for all the navigation entities used.

Field	Description
	So for example, if you are using navigations to Manager, HR structures, then the complete filter will be as follows: **Example** filter=lastModifiedDateTime ge datetimeoffset'2018-05-01T13:00:00.000Z' OR manager/lastModifiedDateTime ge datetimeoffset'2018-05-01T13:00:00.000Z' OR hr/lastModifiedDateTime ge datetimeoffset'2018-05-01T13:00:00.000Z' **Note** The Modified Since Query mode has been updated to include only those future dated employment records that were either modified or created after the last time the query was run. For Example: If your starting entity is Employment Details (EmpEmployment) and you select the Query Mode as "Modified or Effective Since", then the content is filtered based on the Last Modified Date only and not based on the Start Date.
Effective As Of	Include only non-effective-dated records and records that are effective as of the specified date, but exclude all historic records. The *Effective As Of* and *Effective From/Effective To* fields are mutually exclusive, which means that if you chose one, the other would get disabled.
Effective From/Effective To	Return all historic records that have become effective from/to the specified dates. Specifying only an effective-from date returns all records that have become effective from that date and all effective-dated records in the future.
Last Run Time	Change the stored "last run time" that is used for date calculations. This is useful for testing and for rerunning integration jobs from a specific point in time.

Field	Description
	Note If you change this value, you must reschedule the job for it to take effect, otherwise this value allows you to change the value used for preview data.

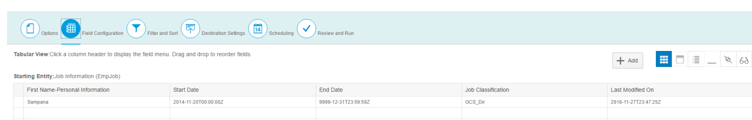
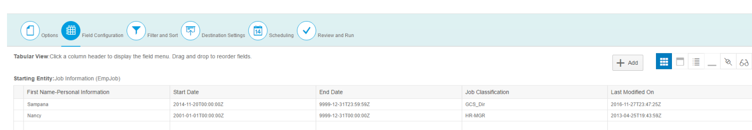
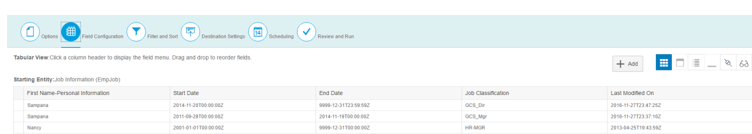
Example

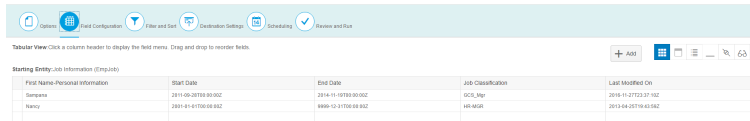
In the following example we have two employees Nancy and Sampana. Sampana is designated the *GCS_Mgr* post on September 28, 2011. On November 11, 2014 Sampana's post changes to *GCS_Dir*. When no Time based filter is applied the records for Sampana and Nancy as per the current effective date get displayed as shown in the following screenshot.



The table below indicates the input you give to each independent field and the corresponding output that gets displayed on the *Configure Fields* page.

Example: Time-Based Filter

Field	When you input value ...	The Configure Fields page displays ...
Modified Since Query Mode	Modified or Effective Since Last Run Time - Sep 1, 2014, 12:52 PM	
Effective As Of	Date Type - Fixed Date/Time Select Date/Time - 2014-11-20	
Effective From	Date Type - Fixed Date/Time Select Date/Time - 2011-09-01	

Field	When you input value ...	The Configure Fields page displays ...
Effective From & *Effective To*	*Effective From* Date Type - Fixed Date/Time Select Date/Time - 2011-09-01 *Effective To* Date Type - Fixed Date/Time Select Date/Time - 2012-11-28	

Parent topic: Filter and Sort [page 44]

Previous: Advanced Filters [page 44]

Next: Advanced Sorting [page 50]

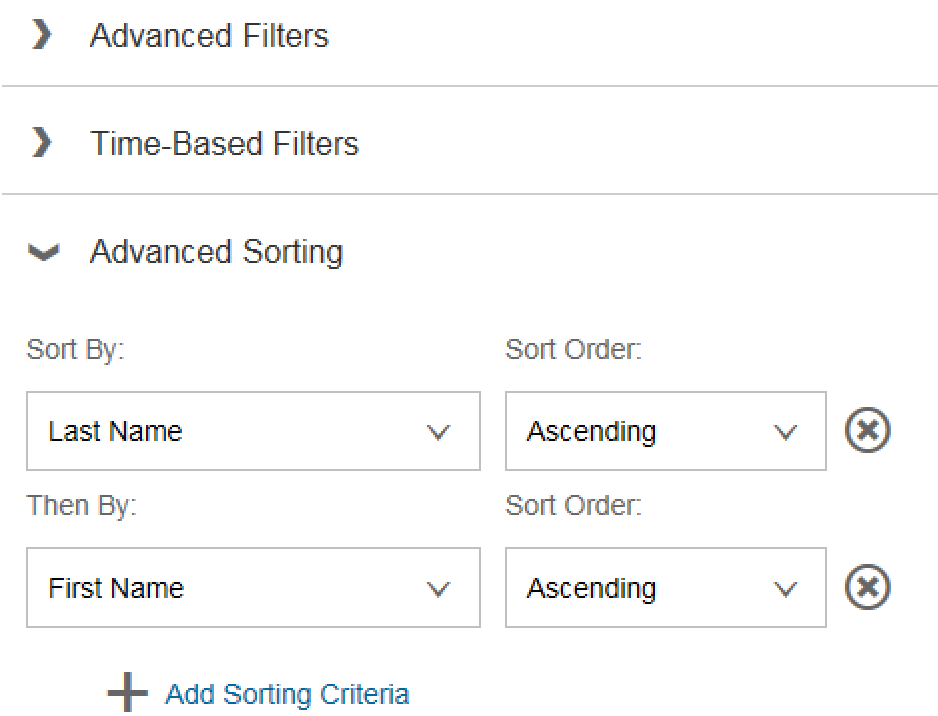
Related Information

Last modified queries and effective dated entities
Converting Date and Time values to different time zones
Querying Effective-Dated Entities

3.2.5.3 Advanced Sorting

You can use advanced sorting to sort the output records by multiple levels. Only sortable fields are included in the field lists.

> **Example**
>
> You want to sort the records by last name and then by first name for records with identical last name. In this case, the last name is the first sort field, and the first name is the second sort field.



Advanced Sorting

Parent topic: Filter and Sort [page 44]

Previous: Time-Based Filters [page 47]

3.2.6 Destination Settings

Context

On the *Destination Settings* page you must enter the endpoint/server settings for the destination of the integration. These settings help you send the output of your integration to

- The specified SFTP server location
- A rest service call
  or
- From one ODATA entity to another

> ⓘ Note
>
> If you are using the self-service *Instance Refresh* tool (through *Admin Center*) to refresh your target instance, then *Integration Center* does not copy *Destination Settings* artifacts from source to the target instance. This is done to avoid inconsistency or corruption of data during Instance Refresh. To know more about Instance Refresh, refer to the Instance Refresh guide.

> You need to maintain the destination settings post Instance Refresh.

3.2.6.1 SFTP Settings

This section describes the fields you need to enter to configure the SFTP settings on the *Destination Settings* page.

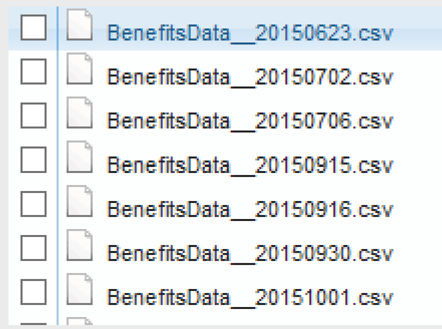
Context

On the *Destination Settings* page, enter the details as mentioned in the table below. You can create SFTP file settings here by selecting either *Single Destination* option or *Multiple Destinations* option, where you can add up to 3 SFTP destinations for an outbound integration created in *Security Center*.

Destination Settings

Field	Description
Single Destination	
SFTP Server Host Address	Enter the address of the SFTP server, the folder and file information, and the credentials needed to write the file to the destination folder
Port	For new integrations, you can't edit the SFTP port value. The port value is set to 22 by default. For existing integrations, you can change the existing port value only to 22. This value will be set as default and can't be changed. During an integration definition import, if the existing port value is a different value, then the port value will be changed and defaulted to 22. When you create an integration using the *save as* option, or when newly created integrations refer to existing security artifacts, only port 22 is allowed in SFTP configurations. Any other ports are either blocked or changed to port 22.
Authentication Type	Choose one of the following types for authentication: • Basic Authentication • Certificate-based Authentication

Field	Description
SFTP User Name	Your SFTP server must be available from the public internet; otherwise, it will not be available from the SAP SuccessFactors data centers. If your firewall blocks all external access (or allowed access that does not include the SAP SuccessFactors IP addresses), your SFTP server will not be available. *SFTP User Name* field supports alphanumeric characters, hyphen, underscore, and period.
SFTP Password	The *SFTP Password* field supports alphanumeric characters that are case sensitive. This field does not support special character (+) and non-ascii characters.
Authentication Key	From this dropdown you can select any previously generated SSH key or the *No key Authentication* option. This key is used for authentication while writing to the Destination. If you want to generate a new SSH key, choose *Click to manage Authentication Keys* option which navigates you to *Other Keys* page in *Security Center* where new SSH keys are generated. ⓘ Note Integration Center does not support both password and SSH key for authentication. Authentication can be done either by entering the password or using the SSH Key.
File Name And Folder Settings	
File Name Prefix	Template to be used for the file name, including the file extension. ⓘ Note Integration Center does not support blank space and any other special character other than '_' (underscore) in the file name.

Field	Description
Date Suffix Format	You can add a date/time suffix to the file name to distinguish between different files run at different times. Without the suffix, the results will be output to the same file name in each integration run, overwriting the previous file. **Example** The following BenefitsData file has a date suffix in the format yyyyMMdd.  Example of Date Suffix For outbound integrations, the SFTP file name calculation is based on the following settings: it first prioritizes the ICD timezone field, and if that is not available, it uses the tenant preferred timezone from Platform Settings. If neither of these options is available, it defaults to the UTC timezone.
File Extension	Select the extension for the file. **Note** Only the formats available in the dropdown list are supported.
File Folder	Enter the name of the folder to which the file is written.
Multiple Destinations	

Field	Description
Destination	Select the SFTP Destination setting from the dropdown. You can add up to 3 destinations by clicking on the + button. This will reduce the effort of creating and sending the same file to multiple SFTP locations. To add a new SFTP destination setting, select *Click to manage Destination Settings*. Refer to Creating SFTP Destination Settings for more information. **Note** 1. You cannot repeat the same destination and file folder in Destination Settings. For example, if you select **Destination_A** from *Destination 1* dropdown and select the File Folder as */IC_Inbound* and select the same destination and File Folder for *Destination 2*, an error message will be displayed. You can edit the file folder to save the same destination setting (**Destination_A**) in some other file folder. 2. After you schedule the integration, if any one of the SFTP destination fails, you will see the status as **Completed with Warnings** in the Execution Manager. If all the 3 SFTP destination fails, the status of the integration will be **Failed**.
File Folder	Enter the name of the folder to which the file is written. By default, it shows the file folder given in the SFTP Destination Settings for the selected Destination. You can override by giving any other valid directory path. **Note** The file folder supports only relative path.
Advanced Settings	
File Encryption	If you want to encrypt the final output file, select the *Encrypt File* from the dropdown and click the refresh icon to make it reflected. The keys offered in the dropdown are the ones populated for this instance on the *PGP Key Management* page in the Admin Center.
File Signing	Use this option to sign the file while writing to the destination. If no signing is done, it shows "No Signing Key". Click on the "Click to Manage PGP Encryption Keys"

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Calculated File Name</td><td>

In case the filename is dynamic in nature, you can use the "Calculated File Name"option to devise a complex file name that comprises of static & dynamic components. The calculated file name must also cover the file name extension.

In case of XML and JSON outbound file integration, calculated file name can be devised by associating fields from BiZx data making it dynamic based on the data. To support this, the destination page size is defaulted to 1 by Integration Center.

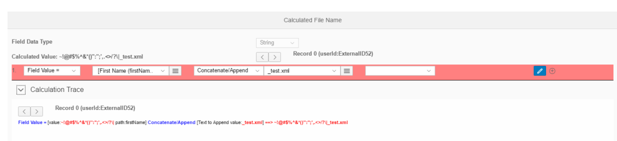
Note

In case of Flat File integration, since only a single file is generated with more that 1 record, the calculated file name cannot contain any associations from the BiZx data. even then, you can devise a calculated file name with dynamic components that are not derived from BiZx data.

Similarly, Calculated File Name cannot contain any associations with EDI-based integrations.

Example

In the following screen, the value of the file name is determined by the values selected in the expression, which is *first name* of the user *concatenated/appended* with *_test.xml*.



</td></tr>
<tr><td>Source Page Size</td><td>Specify the query page size. This number depicts the number of records fetched from the database at a single time which, helps in performance tuning at run time. The lowest value you can select is 50 and the maximum value is 1000. Large page size can yield higher performance, but complex queries may need small page size.</td></tr>
</table>

Field	Description
Enable Server Side Pagination	On selecting this option, a list of all the business keys are created on the server after executing the query on the top level main OData entity. By default, *Enable Server Side Pagination* checkbox is deselected. Integration Center supports server side pagination to optimize query performance, prevent potential data loss when an integration runs for a long time, and eliminate duplicates in API query results. Sometimes, processing of a single page might take longer time. In such cases, the integration is stopped and should be rescheduled with a reduced page size. A warning message is also displayed in the Execution Manager: "The integration has stopped as the server side pagination has timed out. Please reschedule the integration with a reduced page size." For more information on server side pagination, refer to the Pagination section of **SAP SuccessFactors HCM Suite OData API: Developer Guide** and scroll down to *Server Pagination* > *Snapshot-Based Pagination*.
Enable Diagnostics for Run Now	Previously, there have been cases where the customer was able to see preview data but the final output in the files were either not correct or missing. This usually happens if the COAPI returned the wrong data during the final output file generation. To address this, if you enable the *Enable diagnostics for Run Now* checkbox, a JSON file output is created that displays the COAPI dump. This file is helpful for the developers for debugging purpose. If you select *Enable diagnostics for Run Now* checkbox while selecting *Multiple Destinations* option, the COAPI dump is written only for the first SFTP destination and not all. If the first destination doesn't work, then no dump file gets generated.
Exclude empty files	When you configure the calculated filters for outbound integrations and there are no records available, Integration Center sends empty files for file-based integrations. Select the *Exclude empty files* option to stop generating empty files. This avoids sending empty files for file-based integrations, which might lead to errors in the systems.

Choose *Next*, the Scheduling your Integration [page 76] page appears.

Related Information

Configuring Certificate-based Authentication for Files sent to SFTP Server [page 58]
SAP Note 2395508

3.2.6.1.1 Configuring Certificate-based Authentication for Files sent to SFTP Server

Learn how authentication can be done without using password while sending files to SFTP using Integration Center.

Context

Integration Center supports authentication either by entering the password or by using certificate based authentication. Following are the steps to use certificate based authentication when sending files to SFTP using Integration Center.

Procedure

1. First step is to generate the keypair using *Security Center* > *Other keys*. You can refer to the related link section for information on generating the keypair using other keys.

   > Note
   >
   > You cannot use SSH authentication keys which you've generated on your own, in Integration Center.

   Let us consider an example of generating a keypair called *Certificate Authentication keypair* with the key category as *Authentication Key (SSH)* and *Type* as *RSA*. Click *Generate Key*.
2. After creating, download the public key by clicking on the cloud icon.
3. Give this public key to the SFTP team who hosts the server. The SFTP team needs to add the public keys into the server VM and link this to the user used in Integration center.

   Let us consider an example of linking the public key to *ghill* user.
4. Go to *Destination Settings* and in the *SFTP User Name* enter the user name which is linked to this public key.

   Considering the example of *ghill*, enter *ghill* as the user name.
5. In the *Advanced Settings*, select the key from the *Authentication Key* dropdown.

   Considering the example as described in step 1, select *Certificate Authentication keypair* from the dropdown. When you select the private key, the *SFTP Password* field is disabled.
6. Save the integration and click run.

Related Information

Generating Other Keys

3.2.6.2 Configuring REST based Outbound Integration

Context

This section describes the steps you need to follow to create an integration from a starting entity or from a template for REST Outbound process.

Procedure

1. On the landing page of the Integration Center, choose *My Integrations*.
2. On the My Integrations page, choose: *Create* > *More Integration Types*.
3. In the *Choose Integration Type* page, enter the following information:

Field	Option
Trigger Type	Scheduled
Source Type	SuccessFactors
Destination Type	REST (Asynchronous)
Format	XML

4. Choose a starting entity from the list or search for a starting entity by entering any consecutive characters from the name of the starting entity. For example choose User.
5. Enter the required fields in the Options [page 16] page.
6. Enter the required fields in the Using Configure Fields Tab [page 19] page.
7. Enter the required fields in the **Response Fields** page. Refer the REST Sync Response Mapping [page 64] section for more details.
8. Click *Next* to go to the Filter and Sort [page 44] page.
9. Click *Next* to go to the Destination Settings [page 51] page and enter the following information:

Field	Description
REST Server Settings	
Connection Name	Enter a connection name.
REST API URL	Enter the URL for the REST API. **Note** If your HTTP {Parameter} in the REST API URL contains **/**, replace it with **%252F** to pass the URL successfully. **Example** **REST API URL**: http://localhost:3000/message/{**Parameter**} **Parameter**: queue**/**msg **Modified URL must be**: http://localhost:3000/message/queue**%252F**msg **Note** If the REST endpoint doesn't respond within a duration of five minutes, the integration job will fail to run.
Authentication Type	Choose the supported authentication type. You can chose either or from the dropdown. 1. Basic Authentication: Basic Authentication is a method for an HTTP user agent to provide a user name and password when making a request. 2. OAuth: OAuth specifies a process for resource owners to authorize third-party access to their server resources without sharing their credentials. When you select OAuth form the dropdown, you will see a list of configured OAuth 2.0 with SAML Flow and OAuth 2.0 with Grant type as Password and Grant type as Client Credential configurations. To create an OAuth Configuration, refer to *Creating OAuth Configurations* in the related information.
User Name	Enter the user name of the system that you are accessing.

Field	Description
Password	Enter the password of the system that you are accessing. **Note** Currently, Integration Center does not support non-ascii characters in the password field.
OAuth 2.0 with SAML Flow Options	
CSRF Token URL	Enter the CSRF fetching token URL to be used with REST endpoint when you use OAuth with SAML. This option is only applicable for Oath with SAML functionality. **Example** /V1/rest/user/crf
SAML Subject NameID Path	This option is valid for OAuth with SAML Assertion only. Browse the path from where fields need to be assigned to the Subject User ID.
Custom Attribute 1	This option is valid for OAuth with SAML Assertion only. Enter the name for Custom Attribute 1. Click the Browse button to browse for a field to use for this value.
Custom Attribute 2	This option is valid for OAuth with SAML Assertion only. Enter the name for Custom Attribute 2. Click the Browse button to browse for a field to use for this value.
REST Operation Settings	
Operation Name	Name for the operation.
Operation URI	Destination system URL. **Note** If you are using operational URL, then the URL should end with "?"
Calculated URI	Choose the field data type and enter the calculated value for the dynamic URL to work. Refer Creating Calculated Fields Using String Data [page 94] for more information. **Note** This option is used only if the URL is dynamic, the destination page size should be equal to one, and no paging node.

Field	Description
HTTP Method	Choose either GET or POST HTTP method for the connection.
Payload Format	Choose the supported format.
Source Page Size	Number of records per page of data read form SuccessFactors.
Enable Server Side Pagination	On selecting this option, a list of all the business keys are created on the server after executing the query on the top level main OData entity. By default, *Enable Server Side Pagination* checkbox is deselected. Integration Center supports server side pagination to optimize query performance, prevent potential data loss when an integration runs for a long time, and eliminate duplicates in API query results. Sometimes, processing of a single page might take longer time. In such cases, the integration is stopped and should be rescheduled with a reduced page size. A warning message is also displayed in the Execution Manager: "The integration has stopped as the server side pagination has timed out. Please reschedule the integration with a reduced page size." For more information on server side pagination, refer to the Pagination section of **SAP SuccessFactors HCM Suite OData API: Developer Guide** and scroll down to *Server Pagination* > *Snapshot-Based Pagination*.
Enable diagnostics for Run Now	Outputs advanced http/https operations logging when executing Run Now. If you check this option, it turns on the Preview diagnostics option in the application. Uncheck this option for productive use to avoid negative performance impacts.

<table>
<tr><th>Field</th><th>Description</th></tr>
<tr><td>Execute with Exceptions</td><td>
Continues executions for all exceptions such as: 500 - Internal Server Error, 503 - Service Unavailable Error, and so on. However, the execution is stopped for 401 - Unauthorized or 403 - Unavailable Error, even if the functionality is enabled.
The following table bescribes the behavior when Execute with Exceptions is enabled:
<table>
<tr><th>Exception</th><th>Execute with Exceptions Checkbox</th><th>Result</th></tr>
<tr><td>429, 500, 503, or 504</td><td>Disabled</td><td> HTTP retry request is sent. If retry fails, then the integration stops If retry is successful, then the integration continues. </td></tr>
<tr><td>429, 500, 503, or 504</td><td>Enabled</td><td>HTTP retry request is sent. However, the execution of the integration will continue irrespective of whether the retry request is successful or not.</td></tr>
<tr><td>Exceptions other than 429, 500, 503 or 504</td><td>Disabled</td><td>HTTP retry request is not sent and the exectuion stops.</td></tr>
<tr><td>Exceptions other than 429, 500, 503 or 504</td><td>Enabled</td><td>HTTP retry request is not sent. However, the execution of the integration continues.</td></tr>
<tr><td>401 or 403</td><td>Enabled</td><td>The execution will stop even if the chekbox is enabled.</td></tr>
</table>
This functionality is applicable to new integrations and existing integrations.
</td></tr>
</table>

Field	Description
Exclude empty requests	When you configure the calculated filters for outbound integrations and there are no records available, Integration Center sends empty requests for REST integrations. Select the *Exclude empty requests* option to stop generating empty requests. This avoids sending empty requests for REST integrations, which might lead to errors in the systems.

10. Click *Next* to go to the Scheduling your Integration [page 76] page. Choose the scheduling type based on the requirement.
11. Click *Next* to go to the About Review and Run [page 80] page. Review all the information and click *Run Now* to run the Integration.

Related Information

Creating OAuth Configurations

3.2.6.2.1 REST Sync Response Mapping

In this section we talk about the response being sent back to any of the custom or ODATA entities in the source system.

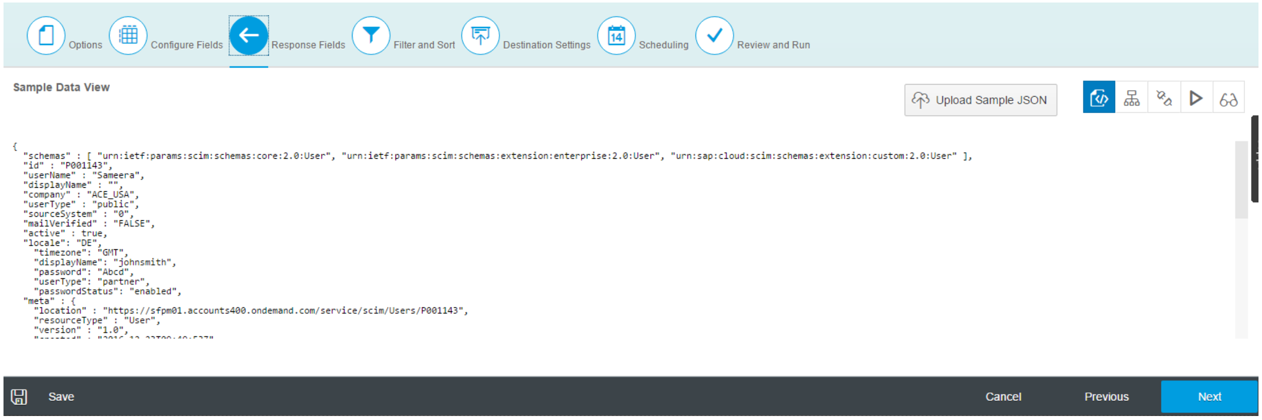
After the data is transferred to the REST end point, a response mapping is done to any of the custom or ODATA entities in the source system.

Currently we only support one request and one response in a single transaction. To achieve this, we have a new tab “Response Fields” with an “Upload Sample JSON” button. You must click this button to provide sample input data for preview and for associating to fields. Since we only support one request and one response, hence filtering only happens on a single response. Instead of just logging into Execution Manager, using “Calculated Response” filter you can decide if you want to write or ignore the data.

For example, you receive data of 50 employees in single response but your requirement is to map a response back to custom MDF only for few employees. You can achieve this using the “Calculated Response” filter.

Integration Center syncs all the metadata which will automatically add missing fields, update all the metadata including data types, remove fields that no longer exist in the metadata, while keeping the mapped fields intact.

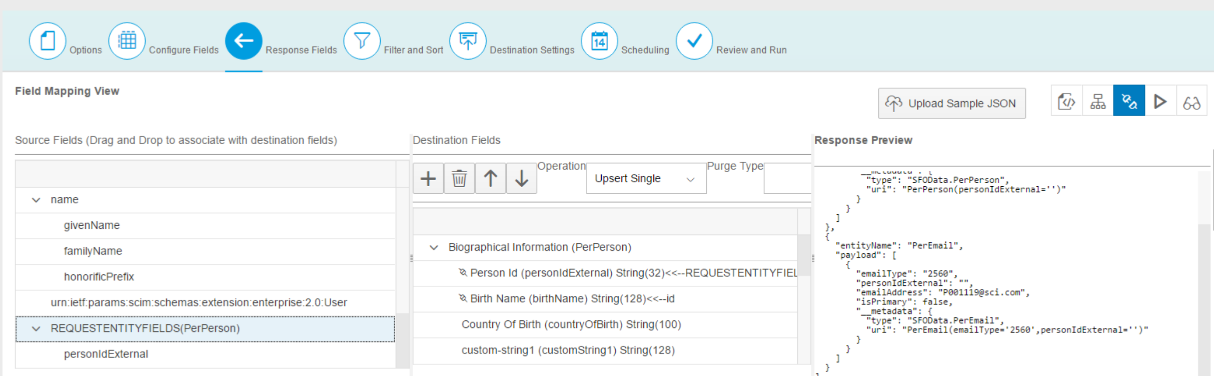
Let us consider an example where we add a new field say *State* to an existing entity *User*. When you go to *Response Fields* tab of any exisiting REST Outbound integration, with *User* as the starting entity, the following popup message is displayed on the screen: "SAP SuccessFactors fields are synchronized with the latest Metadata. Press Save to update integration in line with the latest Metadata. "



3.2.6.2.2 Writing response back to the requested entity

Along with supporting Synchronous response handling for REST calls and writing response payload to BizX entities, Integration Center also supports business keys from the request entity while writing data back to BiZx.

This will help you in writing the response back to the request entity itself.

> **Example**
>
> When you upload a sample JSON file, a tree structure gets populated. By default, a new node REQUESTENTITYFIELDS <REQUEST ENTITY> gets added as shown in the following screen.
>
> 
>
>
> In addition to this, you can also see the business keys as child node (s). You can map these business keys to the corresponding destination fields.

3.2.6.3 Configuring SOAP based Outbound Integration

A new Integration Destination type SOAP is now supported by Integration Center. With the source being SAP SuccessFactors, the data can be sent to a SOAP endpoint. This section describes the steps you need to follow to transfer data from SOAP Web services API.

Context

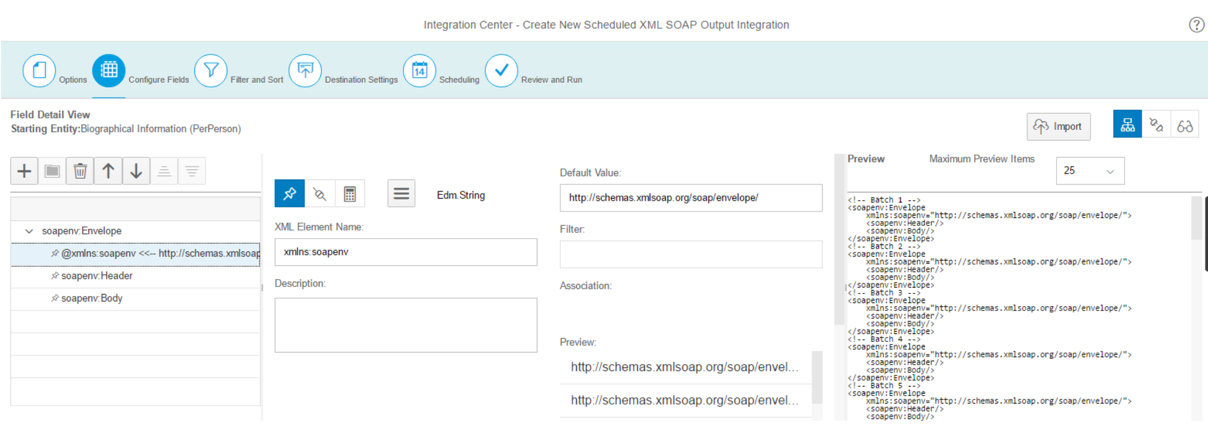
To achieve this, you must create an integration using the SOAP endpoint.

Procedure

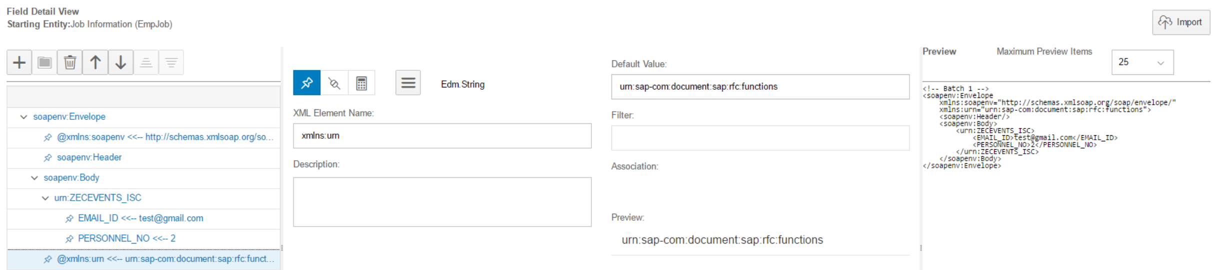
1. On the landing page of the Integration Center, choose *My Integrations*.
2. On the My Integrations page, choose: *Create* > *More Integration Types*.
3. In the *Choose Integration Type* page, enter the following information:

Field	Option
Trigger Type	Scheduled/Intelligent Services
Source Type	SAP SuccessFactors
Destination Type	SOAP
Format	XML

4. Choose a starting entity from the list or search for a starting entity by entering any consecutive characters from the name of the starting entity. For example choose User.
5. Enter the required fields in the Using Configure Fields Tab [page 19] page. Create a SOAP request payload in the Using Configure Fields Tab [page 19] page. Under the Detail view you will see a tree structure of the SOAP request. The tree structure shows a SOAP envelope which contains a namespace, header and body. On clicking the namespace, a default value appears that you can edit based on the SOAP endpoint. The SOAP Request Payload can be created using Insert Sibling Element, Add Child Element and Add Attribute under + icon. Other than setting a default value, you can also map the field to an entity in the Field Mapping view.



You can also add new namespaces to the SOAP envelope based on your configuration needs. To achieve this, click the + icon and chose the **Add Attribute** option from the dropdown. For the **XML Element Name**, type *xmlns:* followed by the namespace name, as shown in the following screen. This namespace can be added anywhere in the header or the body using the Attribute element.



> ⓘ Note
>
> In Integration Center *SOAP 1.1* is only supported.

6. Click *Next* to go to the Filter and Sort [page 44] page.
7. Click *Next* to go to the Destination Settings [page 51] page and enter the following information:

Field	Description
Connection Name	Enter a connection name.
SOAP API URL	Enter the URL of the SOAP Service Server. Integration Center supports query parameter in the SOAP URL to integrate successfully with various systems.
Authentication Type	Choose the supported authentication type. You can either chose Basic Authentication or you can create a security certificate from Security Center.
User Name	Enter the user name of the SOAP service that you are accessing.
Password	Enter the password of the SOAP service that you are accessing. ⓘ Note Currently, Integration Center does not support non-ascii characters in the password field.

Field	Description
Enable Server Side Pagination	On selecting this option, a list of all the business keys are created on the server after executing the query on the top level main OData entity. By default, *Enable Server Side Pagination* checkbox is deselected. Integration Center supports server side pagination to optimize query performance, prevent potential data loss when an integration runs for a long time, and eliminate duplicates in API query results. Sometimes, processing of a single page might take longer time. In such cases, the integration is stopped and should be rescheduled with a reduced page size. A warning message is also displayed in the Execution Manager: "The integration has stopped as the server side pagination has timed out. Please reschedule the integration with a reduced page size." For more information on server side pagination, refer to the Pagination section of **SAP SuccessFactors HCM Suite OData API: Developer Guide** and scroll down to *Server Pagination* > *Snapshot-Based Pagination*.
Enable Diagnostics	Outputs advanced http/https operations logging when executing Run Now. If you check this option, it turns on the Preview diagnostics option in the application. Uncheck this option for productive use to avoid negative performance impacts.
Exclude empty requests	When you configure the calculated filters for outbound integrations and there are no records available, Integration Center sends empty requests for SOAP integrations. Select the *Exclude empty requests* option to stop generating empty requests. This avoids sending empty requests for SOAP integrations, which might lead to errors in the systems.

Note

In case of an incorrect SOAP request payload, a message is displayed in execution manager, which contains a fault string and fault code with values as shown in the following example.

Sample Code

```
<soap-env:Envelope xmlns:soap-env="http://schemas.xmlsoap.org/soap/
envelope/">
    <soap-env:Header/>
    <soap-env:Body>
        <soap-env:Fault>
```

```
            <faultcode>soap-env:Server</faultcode>
            <faultstring xml:lang="en">Web service processing
error; more details in the web service error log on
provider side (UTC timestamp 20180417093529; Transaction ID
5ACAFFB48F265B7FE10000009B384596)</faultstring>
            <detail />
        </soap-env:Fault>
    </soap-env:Body>
</soap-env:Envelope>
```

Error handling is taken care of in case you enter an incorrect SOAP URL, for more information, refer error messages in Monitoring an Integration [page 130] section.

8. Click *Next* to go to the Scheduling your Integration [page 76] page. Choose the scheduling type based on the requirement.
9. Click *Next* to go to the About Review and Run [page 80] page. Review all the information and click *Run Now* to run the Integration.

3.2.6.3.1 Creating SOAP based Outbound Integration using Web-service Definition Language (WSDL)

Create a SOAP based integration using Web-service definition language (WSDL).

Context

If you want to integrate with a third-party system that supports the SOAP protocol for communication then you can create a SOAP integration in Integration Center. Integration Center allows you to create the SOAP Integration using WSDL. This enables you to create a SOAP integration in less time.

To achieve this, you must create an integration using the SOAP endpoint.

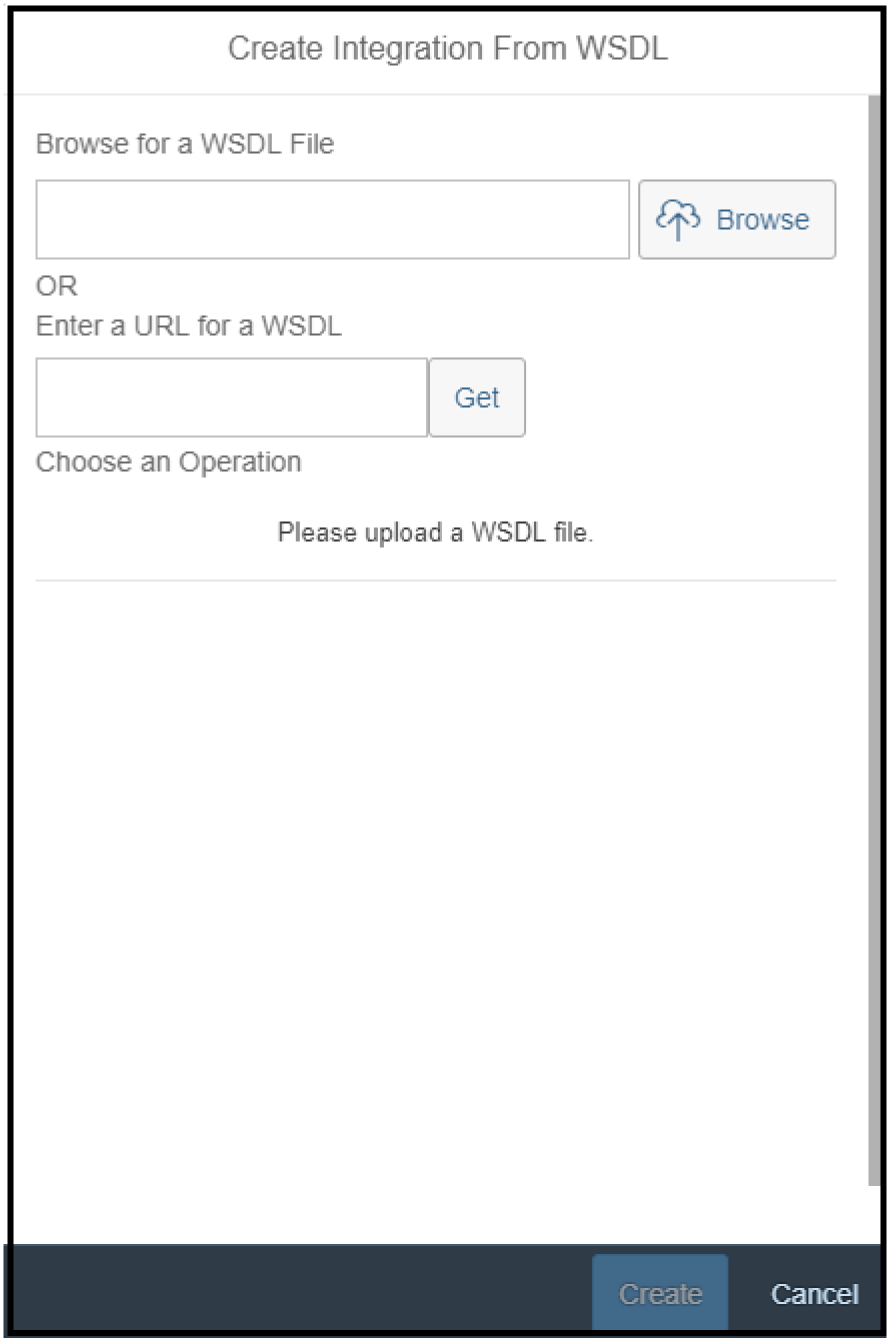
Procedure

1. On the landing page of the Integration Center, choose *My Integrations*.
2. On the My Integrations page, choose: *Create* > *More Integration Types*.
3. In the *Choose Integration Type* page, enter the following information:

Field	Option
Trigger Type	Scheduled/Intelligent Services
Source Type	SAP SuccessFactors

Field	Option
Destination Type	SOAP
Format	XML

4. Choose a starting entity from the list or search for a starting entity by entering any consecutive characters from the name of the starting entity. For example, choose User. Click **Create From WSDL**. You will now see the *Create integration From WSDL* page.



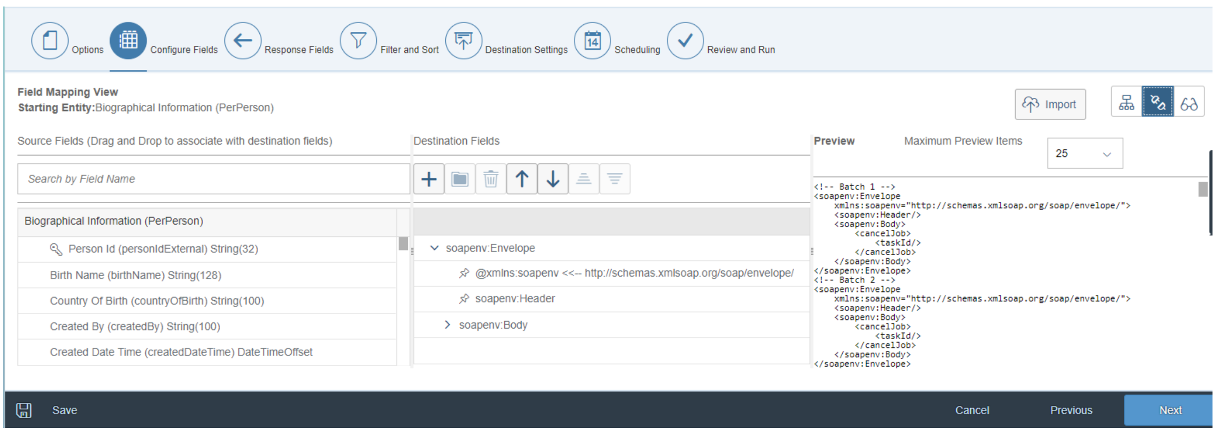
On the *Create integration From WSDL* dialog you have the following two options available:

1. **Browse** - Click this option to browse for a WSDL file from a local file location.
2. **Get** - If you have the URL to a hosted WSDL file, you can paste the link of the URL and then click this option.

After selecting one of the options above, the operations associated with the WSDL file will be listed down. Select an operation and click **Create**.

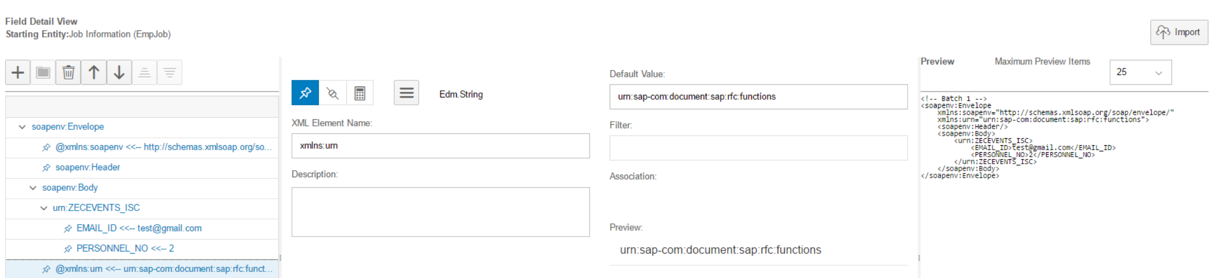
> **Note**
>
> You can select only one operation at a time for a WSDL integration to be created successfully.

5. On the **Options** page, enter the name of the integration in the **Integration Name** text box and description in the **Description** text box. Click **Next**.
6. The **Configure Fields** page is now pre-populated with some configurable request/response fields. You can edit a SOAP request payload on the Using Configure Fields Tab [page 19] page. Under the Detail view you will see a tree structure of the SOAP request. The tree structure shows a SOAP envelope which contains a namespace, header and body. On clicking the namespace, a default value appears that you can edit based on the SOAP endpoint. The SOAP Request Payload can be edited using Insert Sibling Element, Add Child Element and Add Attribute under + icon. Other than setting a default value, you can also map the field to an entity in the Field Mapping view.



.

You can also add new namespaces to the SOAP envelope based on your configuration needs. To achieve this, click the + icon and chose the **Add Attribute** option from the dropdown. For the **XML Element Name**, type *xmlns:* followed by the namespace name, as shown in the following screen. This namespace can be added anywhere in the header or the body using the Attribute element.



> **Note**
>
> In Integration Center *SOAP 1.1* is only supported.

7. Click *Next* to go to the Filter and Sort [page 44] page.
8. Click *Next* to go to the Destination Settings [page 51] page and enter the following information:

Field	Description
Connection Name	Enter a connection name.
SOAP API URL	By default, the System Endpoint URL obtained from the WSDL (if defined in WSDL) is listed here. You can edit this field based on your requirement changes. Note Parameter in SOAP URL is not supported. If provided, the integration will fail and the following error message will be displayed"*Failed due to - Query parameters for SOAP URL is not supported.*" Example <https://...?test=test>
Authentication Type	Choose the authentication type which is only of type *Basic*.
User Name	Enter the user name of the SOAP service that you are accessing.
Password	Enter the password of the SOAP service that you are accessing.
Enable Diagnostics	Outputs advanced http/https operations logging when executing Run Now. If you check this option, it turns on the Preview diagnostics option in the application. Uncheck this option for productive use to avoid negative performance impacts.

Note

In case of an incorrect SOAP request payload, a message is displayed in execution manager, which contains a fault string and fault code with values as shown in the following example.

```
<soap:Envelope
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"><soap:Header></
soap:Header><soap:Body><soap:Fault><faultcode>soap:Server</
faultcode><faultstring>An internal error occurred.
For error details check MPL ID AFjUtypLsphXZF8reZjWBDvvIeX8
in message monitoring or use the URL HYPERLINK #/shell/monitoring/
MessageDetails/%7b%22messageGuid%22:%22AFjUtypLsphXZF8reZjWBDvvIeX8%22%7d"SOAP
URL: to directly access the error
information.</faultstring></soap:Fault></soap:Body></soap:Envelope>
```

> Error handling is taken care of in case you enter an incorrect SOAP URL, for more information, refer error messages in Monitoring an Integration [page 130] section.

9. Click *Next* to go to the Scheduling your Integration [page 76] page. Choose the scheduling type based on the requirement.
10. Click *Next* to go to the About Review and Run [page 80] page. Review all the information and click *Run Now* to run the Integration.

3.2.6.3.2 Creating SOAP based Outbound Integration Using Sample Files

Create a SOAP based Outbound Integration using Sample XML or XSD files.

Procedure

1. Go to *Admin* > *Integration Center* > *My Integrations*.
2. Choose *Create* > *More Integration Types*.
3. In the *Choose Integration Type* page, enter the following information:

Field	Option
Trigger Type	Scheduled/Intelligent Services
Source Type	SuccessFactors
Destination Type	SOAP
Format	XML

4. Choose a starting entity from the list or search for a starting entity..
5. Choose *Select*.
6. Set general options for the integration and go to *Configure Fields* page.

> ⓘ Note
>
> The Configure Fields page is pre-populated with some configurable request/response fields. Under the Detail view you will see a tree structure of the SOAP request. The tree structure shows a SOAP envelope which contains a namespace, header and body. On clicking the namespace, a default value appears that you can edit based on the SOAP endpoint. The SOAP Request Payload can be edited using Insert Sibling Element, Add Child Element and Add Attribute under + icon.

7. Import a sample XML file or XSD file.
8. Continue with the mapping once the schema loads.

9. Go to Filter and Sort to filter on a specific set of data.
10. Go to *Destination Settings* and enter the following details:

Field	Description
Connection Name	Enter a connection name.
SOAP API URL	By default, the System Endpoint URL obtained from the WSDL (if defined in WSDL) is listed here. You can edit this field based on your requirement changes. **Note** Parameter in SOAP URL is not supported. If provided, the integration will fail and the following error message will be displayed"*Failed due to - Query parameters for SOAP URL is not supported.*" **Example** <https://...?test=test>
Authentication Type	Choose either *Certificate based Authentication* or *Basic Authentication*.
User Name	Enter the user name of the SOAP service that you are accessing.
Password	Enter the password of the SOAP service that you are accessing.
Enable Diagnostics	Outputs advanced http/https operations logging when executing Run Now. If you check this option, it turns on the Preview diagnostics option in the application. Uncheck this option for productive use to avoid negative performance impacts.

Note

In case of an incorrect SOAP request payload, a message is displayed in execution manager, which contains a fault string and fault code with values as shown in the following example.

```
<soap:Envelope
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"><soap:Header></
soap:Header><soap:Body><soap:Fault><faultcode>soap:Server</
faultcode><faultstring>An internal error occurred.
For error details check MPL ID AFjUtypLsphXZF8reZjWBDvvIeX8
in message monitoring or use the URL HYPERLINK #/shell/monitoring/
MessageDetails/%7b%22messageGuid%22:%22AFjUtypLsphXZF8reZjWBDvvIeX8%22%7d"SOAP
```

```
URL: to directly access the error
information.</faultstring></soap:Fault></soap:Body></soap:Envelope>
```

Error handling is taken care of in case you enter an incorrect SOAP URL, for more information, refer to error messages in Monitoring an Integration [page 130] section.

11. Go to *Schedule* and set the frequency, start and end dates.
12. Go to *Review and Run* to check the details and save the integration. Choose *Run Now* to run the integration immediately or choose *Set Schedule* to run at a specific scheduled time.

3.2.6.4 Configuring the ODATA Integration Type

You can now read data from SuccessFactors and write the data back to SuccessFactors. The format for this type of integration is ODataV2.

Procedure

1. To start, go to *Admin Center* > *Integration Center* > *My Integrations*.

   When you select this option, you are directed to the Integration CenterLanding Page.
2. Go to *+Create* > *More Integration Types*

   When you select *More Integration Types*, the *Choose Integration Type* dialog box opens.
3. For each section, select the following for *OData v2* integrations:

Integration Types	OData Integration Options
Trigger Type	Scheduled
Source Type	SuccessFactors
Destination Type	SuccessFactors
Format	ODATA v2

4. Select **`Create`** that opens up your starting entity search page.
5. Go to *Search for Entities by Entity Name* to enter your starting entity.

> → Tip
>
> We recommend that you use `EmpJob` or *Job Information* as your starting entity.

6. Select the **`Select`** button to continue to the *Options* page.
7. Enter the following information as described in the *Description* column:

Field	Description
Integration Name	Enter the name of the integration.
Description	Enter a short description about the integration.
Page Size	You can configure page size for your OData integrations instead processing data in batches of 1,000, by selecting a page size from the dropdown menu.
Enable Server Side Pagination	On selecting this option, a list of all the business keys are created on the server after executing the query on the top level main OData entity. By default, *Enable Server Side Pagination* checkbox is deselected. Integration Center supports server side pagination to optimize query performance, prevent potential data loss when an integration runs for a long time, and eliminate duplicates in API query results. Sometimes, processing of a single page might take longer time. In such cases, the integration is stopped and should be rescheduled with a reduced page size. A warning message is also displayed in the Execution Manager: "The integration has stopped as the server side pagination has timed out. Please reschedule the integration with a reduced page size." For more information on server side pagination, refer to the Pagination section of **SAP SuccessFactors HCM Suite OData API: Developer Guide** and scroll down to *Server Pagination* > *Snapshot-Based Pagination*.

3.2.7 Scheduling your Integration

On the Scheduling page you set time or recurrence rules for this integration to trigger based on the values you input.

Procedure

1. From the *Occurs* dropdown, choose a scheduling frequency.

   You can specify how often the job is run. For example, Once, Daily, weekly, monthly, yearly.

   Suspended/Not Scheduled: Select this option if you want to cancel a job which is scheduled to recur in the future or run once in the future. However, once a job is running or queued, you cannot stop it.
2. Enter the following parameters:

Parameters	Description
Start Time	Specifies the start date and time you wish to run the integration. It is the time that the first execution of the day will run. By default, the timezone in the start time will be the local timezone of the browser and not the user's timezone. For example, if the user's timezone in the application is US/Eastern and the user is logging in from Japan, then the start time will display GMT+9 (which is Japan's timezone).
Email to	Specify an email Id of the user you wish to notify with error mails (if any) after the scheduled job is complete. These error mails provide comprehensive information, and they also provide a deep-link to the Execution Manager. Here, you can add multiple email ids separated by comma. This is an optional parameter.
Email event logs for failed integrations	Receive emails with the attachment of event logs for failed integrations. Depending on the attachment size, you can either choose to view the logs from the attachment or go to Execution Manager. ⓘ Note • The event logs are attached only if the attachment size doesn't exceed the limit of 1MB. • The Email event logs for failed integrations option is available only for scheduled integrations.

3. Choose *Next* to review and run your integration.

   You can also choose *Run Now* to run you integration immediately.

   > ⓘ Note
   >
   > - There is a limit of 10 concurrently running jobs via *Run Now*.
   > - *Run Now* will not allow the current integration to be triggered, if an ongoing integration exists.
   > - Integration Jobs are scheduled to occur on a daily basis as a minimum requirement.

   Here are some of the scenarios and their results of scheduling multiple versions of an integration.

   > ⓘ Note
   >
   > - You can schedule only one version of an integration irrespective of editing any older or newer version to create another version.
   > - You can create only up to 50 versions for an ongoing integration. After you reach the limit of 50 versions for an ongoing integration, you can create a new integration using the *Save As* option and schedule it. Remember to delete the current version.

- The threshold limit of jobs running in *Integration Center* is 8 hours. After reaching the threshold limit, the integration jobs are auto-terminated and you can view the logs in *Execution Manager*.

Scheduling - Multiple Versions Scenarios

Scenario	Result
Scheduling an integration where previous versions were not scheduled.	The latest version is scheduled.
Scheduling an integration say version 5 where one of the previous version say version 2 is scheduled.	The previous version, that is, version 2 is replaced with the newly scheduled version, that is, version 5.
Scheduling an integration say version 5, which already has multiple versions scheduled say version 2 and version 3. Now, if you edit an integration say version 5 and save it as a new version, that is, version 6. Unless you selected *Save and Schedule*, version 6 will not be considered as the latest scheduled version..	Only the last scheduled version, that is version 3, will be replaced with the new one.
Scheduling already scheduled integration say version 6 by changing the scheduled time without making any changes, that is, without changing the version number.	No duplicate records, the same version, that is, version 6 is scheduled.
Scheduling an integration when you click on the *Edit* button on *My Integrations* Page.	The newly created integration is scheduled and any previous (latest) version gets replaced.
Scheduling an integration by navigating to one of the previous version from *Audit History* option either from *My Integrations* page or from within Integration.	The newly created integration is scheduled and any previous (latest) version gets replaced.

→ Tip

It is recommended to configure integration jobs that complete within 2 hrs. You can do this by:

- Reduce the number or size of records to be processed in an integration.
- Reduce the number of fields included in the integration.
- Preferring delta load over complete load.
- Consider splitting jobs which include a very high number of records to be processed into multiple smaller jobs (these jobs are typically long-running) .
- Data size must not exceed the maximum allowed limit of 2 GB for both SFTP and EDI (Electronic data interchange).
- Ensure that the import file size doesn't exceed 2GB. If the file size exceeds this limit, the import job may fail.
- Include time-based filters.
- Always use UPSERT MULTIPLE for better performance.
- Integrations involving attachments or large binary content should not be scheduled as daily jobs, if possible try running these jobs through other channels.

- For COAPI to COAPI integrations, map the necessary entities and avoid un-entity mapping. This promotes improved data processing and avoids delays in job execution.
- Integrations with large record counts (> 100,000) should not be scheduled as daily, they should be scheduled as a single job that must be run on need basis.
- Use the *Enable Diagnostics* only when absolutely required. Choose to activate the Ad-Hoc option for troubleshooting purposes. This enables better performance with the integration jobs.

3.2.8 Scheduling Multiple Executions Per Day

In the scheduling page, you can set an outbound integration job to execute multiple integrations per day.

Prerequisites

Enable the *Time-Based Filters* in the *Filter and Sort* tab.

Procedure

1. Go to *Admin Center* > *Integration Center* > *My Integrations* .
2. Open the *Scheduling* tab while editing your integration job.
3. Choose *Multiple Executions Per Day* from the *Occurs* drop-down menu.
4. Configure the parameters according to your requirements.

Parameter	Description
Every	The frequency of the executions. You can only choose every 1 hour or every 2 hours.
Number of Times	It is the amount of times the integration will be executed each day. Minimum is 3 times, maximum is 12 times.
Start Time	Specifies the start date and time you wish to run the integration. It is the time that the first execution of the day will run. By default, the timezone in the start time will be the local timezone of the browser and not the user's timezone. For example, if the user's timezone in the application is US/Eastern and the user is logging in from Japan, then the start time will display GMT+9 (which is Japan's timezone).
Ending On	It is the end date for the recurring schedule. This is an optional parameter.

Parameter	Description
Email To	Specify an email Id of the user you wish to notify with error mails (if any) after the scheduled job is complete. These error mails provide comprehensive information, and they also provide a deep-link to the Execution Manager. Here, you can add multiple email ids separated by comma. This is an optional parameter.

5. Choose *Set Schedule*.
6. Choose *Next* to review and run your integration.

> ⓘ Note
>
> You can only have five Integration Center jobs with this type of schedule in your SAP SuccessFactors instance, and this can't be changed.

Related Information

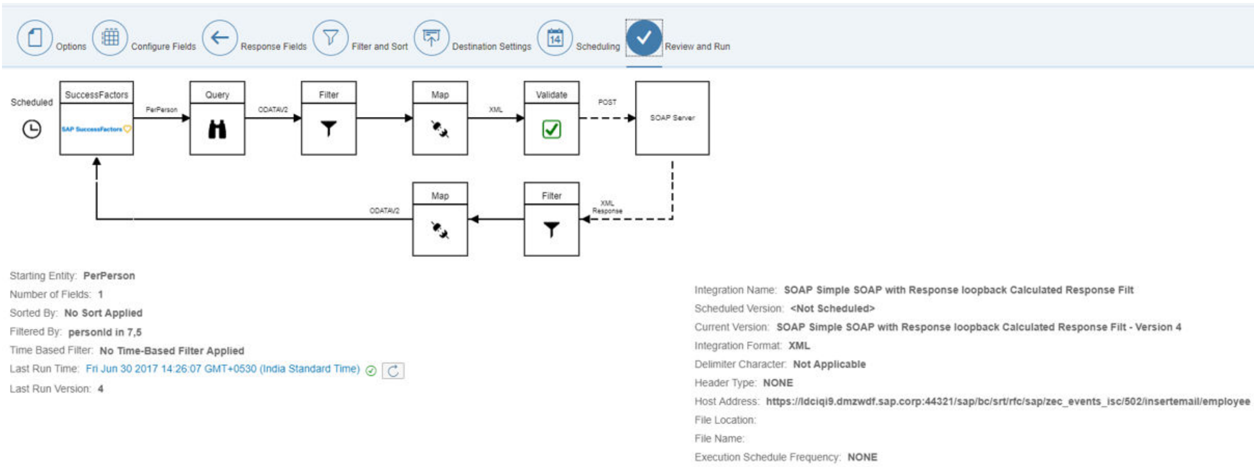
Time-Based Filters [page 47]

3.2.9 About Review and Run

You can use the *Review and Run* to review your settings before you save, run, or schedule your integration.

Reviewing Integration Definition

You can review your integration using the graphical representation that includes all integration steps.



Graphical Representation With Integration Steps

You can review your integration last execution detail after you have used the *Run Now* option. This is information that is available off the *Review and Run* page.

> **Note**
>
> If a job is interrupted due to server restart or any other maintenance activities, then Integration Center cancels all the scheduled jobs to avoid duplication of records.

3.2.9.1 Review and Run Page Information

When you have either used the *Set Schedule* and *Run Now*, options you have selected for your integration appear in different text fields on the *Review and Run* page.

Review and Run Information

Review and Run Option	Description
Starting Entity	The starting entity used for your integration
Number of Fields	Number of fields used for your integration.
Sorted By	The *Sorted By* is enabled if sorting preferences have been set up using the *Filter* tab of your integration. Otherwise, the message **No Sort Applied** appears in this field.
Filtered By	The *Filtered By:* is enabled filtering preferences have been set up using the *Filter* tab of your integration. Otherwise, the message **No Filter Applied** appears in this field.

Review and Run Option	Description
Last Run Time	Execution details after you have selected the *Run Now* to run your integration that includes: • View Job Status in Execution Manager • Job Process Status • Refresh Last Execution Details The *Last Run Time* displays different statuses to watch out for based on specific icons or action buttons. Last Run Time also displays the time stamp using which you can view the job status in Execution Manager. Following are the list of action buttons or icons in the Last Execution Details: 1. *Refresh button*: Refreshes last execution details 2. : You can see the *Completely Successfully* icon when your integration has completed successfully. 3. : You can see the *Completed with warnings* icon when your integration has completed with warnings. 4. : You can see the *Completed with errors* icon when your integration has completed with errors. → Tip You can view warning details in execution manager by selecting the *Last Run Time* link. ⓘ Note 1. You can also select the *Last Run Time* details link that directs you to Execution Manager. Refer to Monitoring an Integration [page 130] topic for more information on how to use Execution Manager 2. At run-time Integration Center fails the existing scheduled integrations where attachment API is used as the starting or destination entity and the following error message is displayed in the Execution Manager: *Integration Center no more supports Attachment as a primary entity due to which the integration failed and will be unscheduled.* 3. Integration Center retains the *Last Run Time* history only for 7 days and the system does not allow you

Review and Run Option	Description
	to manually select the last run time and the previous version.
Last Run Version	Version number of your integration is listed in the *Last Run Version* field. **Note** You cannot delete any specific or previous version. To delete any integration, you need to delete the whole integration.
Intelligent Service Event:	For Intelligent Services events only, this field shows the associated event name.
Integration Name:	The name of your integration.
Scheduled Version:	Name of your scheduled integration that includes the version. **Tip** `<Not Scheduled>` appears if you did not schedule your integration.
Current Version	Current version name of your integration. **Tip** `<Not Saved>` appears if there is only one version in the *Current Version* field.
Integration Format:	The selected format of your integration appears in the *Integration Format* field.
Delimiter Character:	Your File Delimiter options appear in the *Delimiter Character* field. **Tip** *Not Applicable* appears if delimiter character is not selected as an option.
Header Type:	The type of header selected appears in the *Header Type* field. **Tip** *None* appears if you are not using advanced headers as an option.

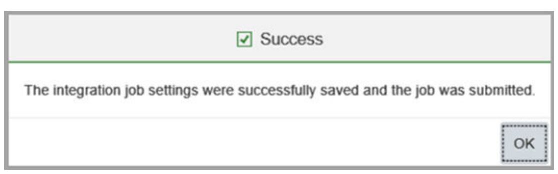
Review and Run Option	Description
Host Address:	The *Host Address* field contains host address information when your integration uses SFTP as the destination. Example `dc13-sftp.lab-rot.ondemand.com: 22`
File Location:	The filename information appears in the *File Location* when your integration uses SFTP as the destination.
File Name:	The name of your SFTP destination file appears in the *File Name* field.

3.2.9.2 Running your Integration

You can use the *Run Now* from the *Review and Run* tab to execute your integration.

Procedure

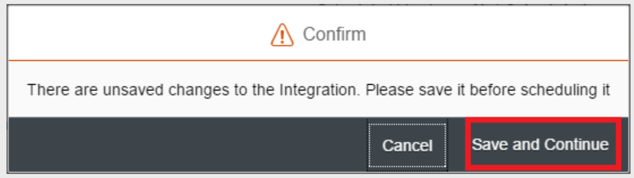
1. Go to *Review and Run* page:

Run Now Option	Instructions
Run Now **that has already been saved.**	Select *Run Now*. The *Success* dialog box appears. 
Run Now **that has not been saved.**	1. Select *Run Now*

<table>
<tr><th>Run Now Option</th><th>Instructions</th></tr>
<tr><td></td><td>

ⓘ Note

The *Confirm* dialog box opens:



2. Select the *Save and Close* button

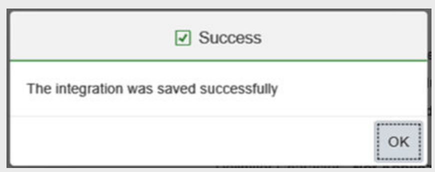
ⓘ Note

The *Save Integration* dialog box opens up.

3. Enter in the appropriate information in the *Save Integration* dialog box.

ⓘ Note

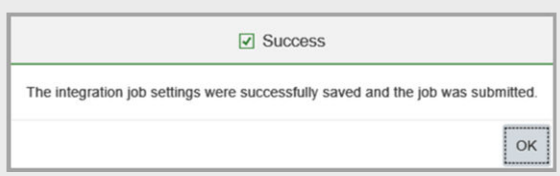
The first *Success* dialog box appears.



4. Select *OK*.

ⓘ Note

Another *Success* dialog box opens that reads: **The integration job settings were successfully saved and the job was submitted.**



</td></tr>
</table>

2. To finish, you can either:
   - Go to the *Last Run Time* field to view the last time your integration ran.
   - Go to the *Last Run Time* field to select link that takes you to Execution Manager to view integration details.

ⓘ Note

For an existing integration where attachment API is used as the starting or destination entity, the *Run Now* option is disabled from inbound integrations, outbound integrations, and OData to OData integrations.

3.2.9.3 Scheduling your Integration

You can select *Set Schedule* from the *Review and Run*

Prerequisites

- Scheduling options has been set up in *Scheduling* tab.

Procedure

1. From the *Review and Run*, select *Set Schedule*
   The *Set Schedule* button opens up the *Success* dialog box.

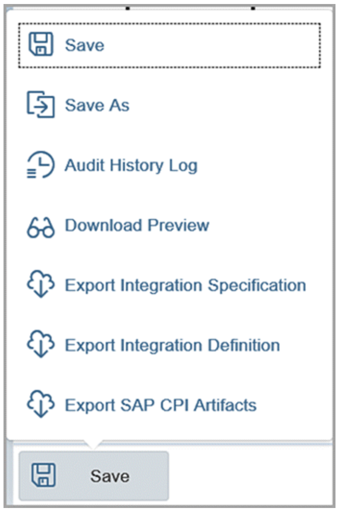
2. Select *OK* so that your integration runs during the scheduled time that has been set up.

> Note
>
> When you use the *Set Schedule* option, once a job starts running or queued, you cannot stop it.

3.2.10 Save Menu

There are a number of choices when you use the *Save* menu from saving, viewing audit history and preview logs. The *Save* menu allows you to export your integration specifications, definitions and your SAP CPI artifacts.

When creating or editing an integration, you can save your data at any time from the *Save* menu.

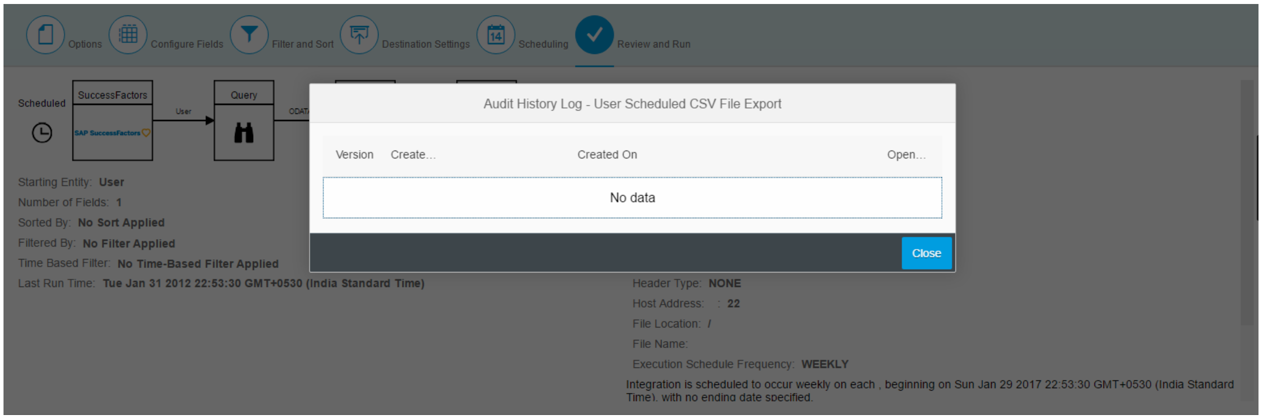


"Save" Menu

"Save" Menu

Option	Description
Save	Save a new or existing integration, including destination and scheduling settings. When you save a new version of Integration, we check if there is an older version scheduled. If a version is scheduled, you will see a warning message: "An older version of the integration is already scheduled. Click Save and Schedule if you wish to schedule new changes." Selecting *Save and Schedule* will save the integration and take you to the Scheduling page. Click *Set Schedule* to schedule the integration.
Save As	Save the integration as a new integration with a new name.
Audit History Log	View a list of the versions of the integration, who created the version, and when. To view the version, click the pencil icon.
Download Preview	Download the contents of the preview window to your computer, providing you with a quick example of the integration in the target format with the specified transformations. **Note** For an existing integration where attachment API is used as the starting or destination entity, the *Download Preview* option is disabled from inbound integrations, outbound integrations, and OData to OData integrations.
Export Integration Specification	Download a file containing details of the integration in a human-readable CSV format.

Option	Description
Export Integration Definition	Download a file containing the integration definition for import to another SAP SuccessFactors tenant. It excludes destination and scheduling settings. If this definition is imported into another system then the scheduling settings have to be re-entered if required.
Export SAP CPI Artifacts	Export an Integration Center definition for re-importing the content into SAP Cloud Platform Integration or SAP CPI (previously known as **HCI**.) **Note** The following features are supported currently: • Fixed Field Values (hard coded value)- When you add a fixed field value using the *Add Fixed Value Field* on the *Configure Fields* page, you must see the same appear on the SAP CPI integration after you import content to SAP CPI. • Associations from ODATA query- If you add associations in Integration Center, the same must appear in the ODATA query of the SAP CPI integration after you import content to SAP CPI. • XPATH statement for field filters- When you add a field filter in Integration Center the filter value must appear in the SAP CPI Integration with the appropriate XPATH in ODATA query as that of Integration Center. For example, Operation: Query(GET) ResourcePath :PerPerson?$select=personIdExternal,birthName,countryOfBirth,createdBy,createdDateTime,createdOn,customString1,lastModifiedDateTime,lastModifiedOn,personId,placeOfBirth&$filter=personIdExternal eq 'John' Path to edmx : edmx/qacand.sflab.ondemand.com_odata_metadata.xml



Audit History Log

Related Information

Creating Outbound Integrations Using Integration Center [page 8]
Editing an Integration [page 125]

3.2.11 Introduction to Calculated Fields

You can add calculated fields to your integration from the *Configure Fields* page. You can add calculated fields when you select *Add Calculated Field* from the *+Add* menu.

Field Data Types

Integration Center support three data output types for calculating fields for your integrations:

- **String:** is used to represent text rather than numbers. String data type is comprised of a set of characters that can contain spaces and numbers.
- **DateTime:** is used to denotes date and time with a specific range using different date formats as your output.
- **Numeric:** are numbers stored in database columns that use integer and decimal values:

Using Field Values

Field Values evaluates the expression and assigns value for that field. When you select *Field Value* as an option, your condition statement includes at least these two fields:

- *Operand*
- *Operation*

Operands

You can enter the field value you want to use in the *Operand* field, or you can select this ☰ icon that opens up an action menu with these options:

- Associate Field
- More Field Options
- Value Lookup Table

> **Restriction**
>
> All options are available for *String* data types only. For data type other than *String*, *Associated Field* is the only available option.

Operations

Operations calculate the value of your *Operand*, which can either be the field value you entered or an associated field. List of operations is dependent on the data type selected for your calculated field, so when you change the data type, so does the list.

Refer to Available Operations Based On Calculated Field Data Types [page 92] topic for more information.

Evaluation Condition Statements

When not using *Field Value*, you can set up different evaluation conditions that execute block of statements when a condition is true, using specific entity, log error, or log warnings.

3.2.11.1 Evaluation Condition Statements

You can select evaluation conditions that can calculate based on when a condition is true. Refer to the table in this topic to learn more about different evaluation conditions

Evaluation Conditions

If/Then/Else **Statements**	**Description**
If/Then	*If/Then* executes block of statements when a condition is true. **Restriction** We only support three levels of *If/Then* nesting.

If/Then/Else Statements	Description
If/Then/Else	Using *If/Then/Else* executes block of statements when a condition is true, otherwise execute second block of statements. Instead of using two *If/Then* statements, you can use as a single condition. ⚠ Caution When using *If/Then/Else* statements, only the statements that follow the first condition that is true is executed
Choose	Executes block of statements when condition is true and helps eliminate multiple *If/Then* statements and requires minimal rework. Easy to implement and can use for complex calculations. Integration Center allows nesting for switch cases. ⓘ Note You can use switch cases for one field at a time.
For Each Entity	When you select this option, you can select entities to calculate from such as job information records, pay components. You can select entities from the *Find Field - Entities Only* dialog box.
Log Error	Logs error events in Execution Manager and you can use this option when you want to log error messages in Execution Manager.
Log Warning	Logs warning events in Execution Manager. You can use *Log Warning* as an option when any conditions aren't met and does not impact your integration data output.

Information About Separate Conditions for If/Then and If/Then/Else Evaluation Condition Statements

Condition Statement	Description
Then	When using *If/Then/Else* statement, typically there is a separate *Then* statement that defines how Integration Center reacts when the corresponding *IF* condition is true.
Else	When using *If/Then/Else*, typically there is a separate *Else* condition for every *If/Then/Else*. *Else* statement defines how Integration Center reacts when the **none** of the conditions contained within your corresponding *IF* condition is true. → Tip When you have more than one *If/Then/Else* evaluation condition for your calculated field, there should be an *Else* condition statement for each one.

3.2.11.2 Available Operations Based On Calculated Field Data Types

You can use a number of different operation calculations for your field values depending on the data type that is selected for your calculated field.

Available Operations By Data Type

Data Type	Available Operations
String	When you have *Field Value* selected, these are the available operations for *String* calculated fields: • Concatenate/Append • To Upper Case • To Lower Case • Truncate • Trim Whitespace • Remove All • Replace All • Prepend Text • Truncate from Left • Truncate from Right • Substring • Split **Note** Make sure you avoid using a reserved symbol in regular expression. For example, for a Field data type *String*, if you use *(* in the field value, you must use */* to escape the reserved symbol *(*, that is, you must enter the field value as */(* to avoid causing any error.
DateTime	When you have *Field Value* selected, these are the available operations for *DateTime* calculated fields: • + • -

Data Type	Available Operations
Numeric	When you have *Field Value* selected, these are the available operations for *Numeric* calculated fields: • *+* • *-* • *** • */* • *Floor* • *Plus Age Calculation* • *Plus Date Difference*

3.2.11.3 Navigation for New Calculated Field Page

Refer to the table in this topic to understand how to use built-in navigation when you create, edit, or troubleshoot calculations for your calculated field.

Helpful Navigation Information for Calculated Fields

Field	Description or Action
Label	Where you can specify the name of your calculated field.
Field Data Type	*Field Data Type* menu displays one of three choices: • String • DateTime • Numeric
Evaluation Field	Evaluates expressions and assigns a value for that field.
	The pencil picker icon allows you to create or edit your statement with values.
	Deletes that condition and all statements within
	Adds statement at current level
	Moves statement down within the current block and executes it later.

Field	Description or Action
↑	Moves the statement up within the current block and executes it earlier.
Calculated Value:	Displays the end result that allows you to observe the calculation as preview data. If there is no preview data, value is blank.
>	Displays the calculation as preview data for the next record
<	Displays the calculation as preview data for the previous record.
Field Condition Value	You can select your conditions in this field
Operand	You can select your data type you plan to use for a specific condition. You can view the available data types when you select the ☰ icon that opens up a menu with these options: • Associate Field • More Field Options • Value Lookup Table **Restriction** All associated field type options are available for *String* data types only. For any conditions other than *String*, *Associated Field* is the only available option.
Calculation Trace	Displays evaluated expressions based on specific values that allows debugging. *Calculation Trace* is a blueprint of all calculations performed for your calculated field.

3.2.11.4 Creating Calculated Fields Using String Data

When your third-party or external application string fields use different field formats or values, you can calculate the existing text string data as a new field that matches with your external application. For instance, dependent information uses one-name field format, and your external system uses first and last name field format. You can create a calculation to split the name into a first and last name field that is required by that external system.

Context

The example discussed here shows how to create a calculated field using string data. It aims to derive the following information:

- Full and Part-time employees
- Identify Full-time country of birth for full-time employees only.

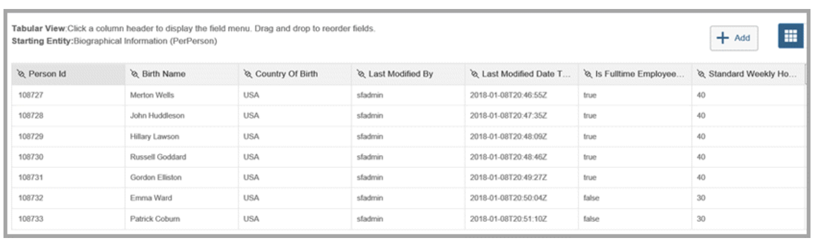
Fixed Fields being used for this example:

- *PersonId*
- *Birth Name*
- *Country of Birth*
- *Is Fulltime Employee - Job Information*
- *Standard Weekly Hours - Job Information*

> ⓘ Note
>
> *Standard Weekly Hours - Job Information* is optional and is not used for calculating your data but is being used for this example.

Procedure

1. To access Integration Center, go to *Admin Center* > *Integration Center*.
2. From the Landing Page:
   - Create your integration and follow the steps until you reach the *Configure Fields* tab.
   - Select an existing integration.
3. Go to the *Configure Fields* tab


Tabular View:Click a column header to display the field menu. Drag and drop to reorder fields.
Starting Entity:Biographical Information (PerPerson)

Person Id	Birth Name	Country Of Birth	Last Modified By	Last Modified Date T...	Is Fulltime Employee...	Standard Weekly Ho...
108727	Merton Wells	USA	sfadmin	2018-01-08T20:46:55Z	true	40
108728	John Huddleson	USA	sfadmin	2018-01-08T20:47:35Z	true	40
108729	Hillary Lawson	USA	sfadmin	2018-01-08T20:48:09Z	true	40
108730	Russell Goddard	USA	sfadmin	2018-01-08T20:48:46Z	true	40
108731	Gordon Elliston	USA	sfadmin	2018-01-08T20:49:27Z	true	40
108732	Emma Ward	USA	sfadmin	2018-01-08T20:50:04Z	false	30
108733	Patrick Coburn	USA	sfadmin	2018-01-08T20:51:10Z	false	30

4. Go to *+Add* > *Add Calculated Field*

   When you select *Add Calculated Field*, the *New Calculated Field* dialog box opens.
5. Go to the *Label* text field to enter a label for your calculated field.

Next Steps

You are now ready to set up your first evaluation condition statement. Refer to the next topic for more information.

3.2.11.4.1 Creating Your Evaluation Condition to Capture Full-Time Employees

You can use *If/Then/Else* statements to execute block of statements based on the conditions provided. This topic outlines steps on how to set up the first evaluation condition statement.

Context

Refer to the Evaluation Condition Statements [page 90] topic to understand more about different types of evaluation statements. For this example, the *If/Then/Else* evaluation condition is used.

Procedure

1. From the *New Calculated Field* page, go to the field labeled *Field Value* to select **`If/Then/Else`** from the dropdown menu as your evaluation condition.
   When you select your evaluation condition, the entire condition statement appears as a single line that include these fields:
   - Evaluation Condition
   - *Operand*
   - *Operation*

   Note that the *Then* and *Else* portion is nested under your evaluation condition statement as separate lines.

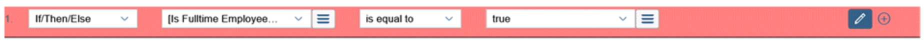
   Screenshot of Evaluation Condition Statement With Simple If/Then/Else Statements
2. Select the *Operand* ☰ icon to select *Associate Field* that opens the *Find Field Starting* dialog box.

   When you select *Associate Field*, the *Find Field Starting* dialog box opens.
3. Go to *Search for Field* and enter **`IsFullTime Employee in Job Information`** that opens up a list of choices.
4. Select *Is Full Time Employee (isFulltimeEmployee) in Job Information (EmpJob)*
5. Select *Change Association to Selected Field* button that directs you back to your calculated field dialog box.

   When you return to the edit screen for your calculated field, you can view the *Operation* field that contains a dropdown menu for your *If/Then/Statement*
6. Go to your operation field and select **`is equal to`**.

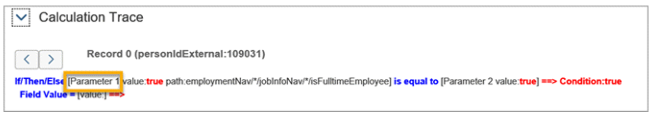
   When you select a condition from the menu, the actual value field appears at the end of your statement.
7. Go to the *Operand* field and enter in your field value. For this example, you are going to enter **`true`** in lowercase.

> ⚠ Caution
>
> When you enter your field value, the text is case-sensitive. So if that associated field is in all lowercase, or uppercase, the field value that is entered you must match.



Screenshot of your first Evaluation Condition Statement

8. To validate your first statement, locate, expand the *Calculation Trace* to view.



Screenshot of Calculation Trace for Your First Evaluation Condition Statement

> → Tip
>
> Note that *Parameter 1* is the variable name for your original evaluation condition statement.

Next Steps

You are now ready to set up your second evaluation condition statement to capture the country of birth for employees. Refer to the next topic for more information.

3.2.11.4.2 Creating Your Evaluation Condition to Capture Country of Birth

You can use *If/Then/Else* evaluation condition statement again to identify *countries of birth* for employees. This topic outlines steps on how to set up this second set of *If/then/Else* evaluation condition statement.

Procedure

1. From your new calculated field screen, select the pencil picker icon under the *Then* section.

   When you select the pencil picker icon, a new evaluation condition statement appears as a single line.
2. Go to the field labeled *Field Value* and select `If/Then/Else` . This is your second evaluation condition statement.

   When you select *If/Then/Else*, separate *Then* and *Else* condition statements is nested under your second evaluation condition statement.

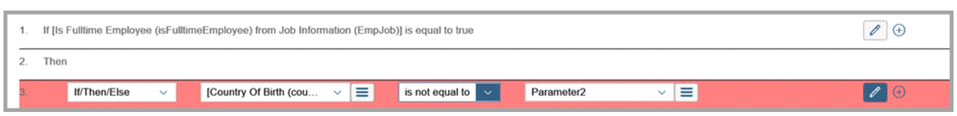
Screenshot that Includes Both Evaluation Condition Statements and all Nested Then and Else Condition Statements

3. From your new evaluation condition statement, select the *Operand* ☰ icon.

   The *Associate Field* menu now appears.
4. Select *Associate Field* that opens the *Find Field Starting* dialog box in front of your screen.
5. Go to *Search For Field* text box and enter in **`Country of Birth in PerPerson`** that opens up a list of available choices.
6. Select **`Country of Birth (countryOfBirth) in Biographical Information (PerPerson)`**
7. Select *Change Association to Selected Field* button that directs you back to your calculated field dialog box.

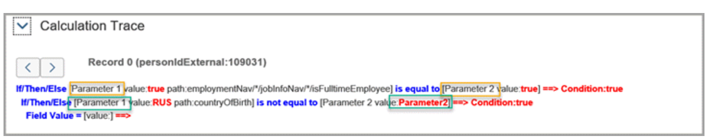
   When you return to the edit screen for your calculated field, you can view the *Operation* field that contains a dropdown menu for your *If/Then/Statement*
8. Go to your operation field and select **`is not equal to`**.
9. Go to the *Operand* field and enter in your field value. For this example, you are going to enter **`Parameter2`** exactly how it is written.

> → Remember
>
> As your second evaluation condition statement, the assigned variable name is **Parameter2**. You can use *Parameter2* to enter as your field value. Your field value is case sensitive and there is no space between **Parameter** and the number **2**.



Screenshot that Includes Both Evaluation Condition Statements

10. To validate both evaluation condition statements, expand *Calculation Trace* to view.



Screenshot of Calculation Trace That Includes both Evaluation Condition Statements

Next Steps

Now that you have both evaluation conditions set up, you can calculate what data you want as your text string in the new calculated field. Refer to the next topic for more information.

3.2.11.4.3 Adding Your First *Then* Condition

You can now specify the text string for your calculated field as a separate *Then* condition statement when both evaluation condition statements are true.

Prerequisites

The following have been set up:

- Evaluation condition statement for full-time employees
- Evaluation condition statement for country of Birth

Procedure

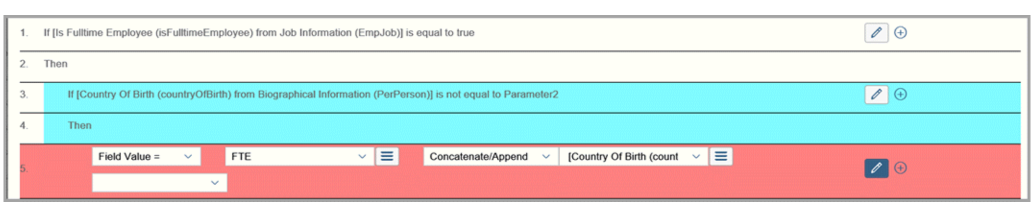
1. From your Calculated Field screen, locate the *Then* section that is nested below your second evaluation statement and select the pencil picker icon.

   When you select your evaluation condition, the entire condition statement appears as a single line.
2. Go to *Field Value* to ensure that *Field Value=* is selected.
3. Go to your *Operand* field to enter in this value: **`FTE`** and the **`space bar`**.
4. Go to your *Operation* field to select **`Concatenate/Append`**.

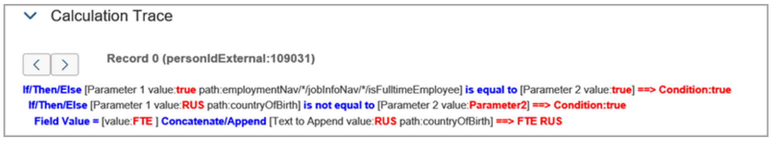
   When you select a condition for your field value, another evaluation condition field opens
5. Go to *Operand* icon to select *Associate Field*.

   When you select *Associate Field*, the *Find Field Starting* dialog box opens.
6. Go to *Search For Field* text box and enter in **`Country of Birth in PerPerson`** that opens up a list of available choices.
7. Select **`Country of Birth (countryOfBirth) in Biographical Information (PerPerson)`**
8. Select *Change Association to Selected Field*.

   When you select *Change Association to Selected Field*, you are directed back to the edit screen for your calculated field. New operation field appear in the same line as your first *Then* statement, leave this new operation field blank. You have set up conditions to capture information on country of birth for all full-time employees.

   Screenshot of Filled out Then Condition With Country of Birth for Full-time Employees
9. To validate your *Then* condition, expand the *Calculation Trace* to view.



Screenshot of Calculation Trace When Both Evaluation Conditions are True

3.2.11.4.4 Adding Your Else Conditions

Once you have set up your evaluation and *Then* conditions, you can set up your *Else* statements. *Else* statements define how Integration Center reacts when your evaluation condition is **not** true. The *Then* statement is skipped and Integration Center executes what is defined as your *Else* statement.

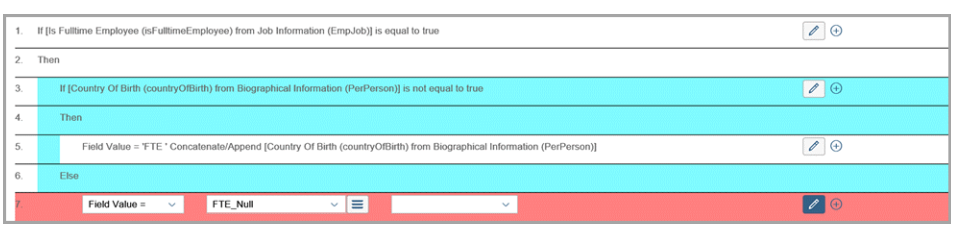
Context

Every *If/Then/Else* evaluation condition statement requires at least one *Else* statement. For this example, there are two *If/Then/Else* evaluation condition statements that requires two *Else* statements

Procedure

1. To set up your *Else* statement to calculate against your first evaluation condition statement:
   a. From your calculated field screen, go to the first *Else* statement and select the pencil picker icon.
   b. Go to *Field Value* to ensure that *Field Value=* is selected.
   c. Go to your *Evaluation Field* and enter .`FTE_Null`

   > → Tip
   >
   > Leave the *Operation* field blank.

   Screenshot of Your First Else Condition

   d. To validate your first *Else* condition, and expand the *Calculation Trace* to view.

Screenshot of Calculation Trace For Your First Else Condition

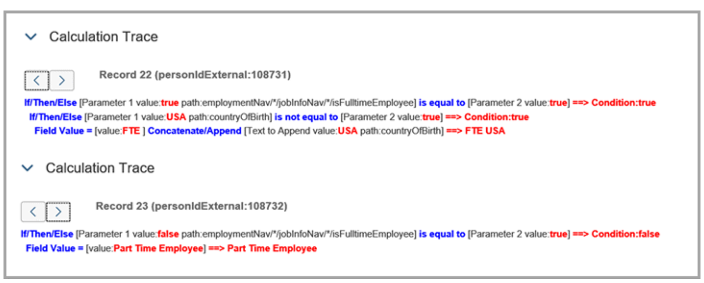
2. To Set up your second *Else* condition to close your calculated field:Calculation Trace for Your First Else Condition
   a. From your calculated field screen, go to the last *Else* statement and select the pencil picker icon.

      When you select the pencil picker icon, your entire evaluation condition statement appears as a single line.
   b. Go to *Field Value* to ensure that *Field Value=* is selected.
   c. Go to your *Evaluation Field* and enter **`Part Time Employee`**.

> → Tip
>
> Leave the last *Operation* field blank.

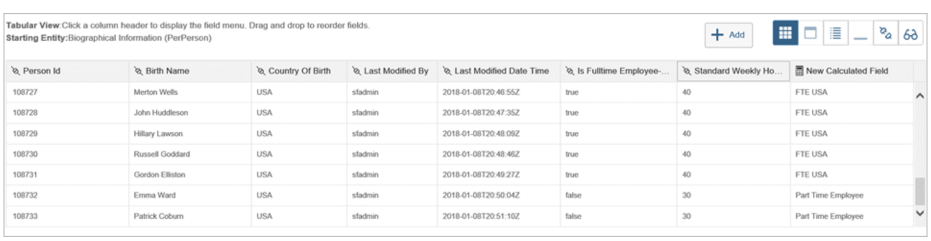
Screenshot Of Your Last Else Condition

   d. To validate your first *Else* condition, and expand the *Calculation Trace* to view.



Screenshot of Calculation Trace for Two Records

3. Select **OK** to finish.



Tabular View:Click a column header to display the field menu. Drag and drop to reorder fields.
Starting Entity:Biographical Information (PerPerson)

Person Id	Birth Name	Country Of Birth	Last Modified By	Last Modified Date Time	Is Fulltime Employee-...	Standard Weekly Ho...	New Calculated Field
108727	Merton Wells	USA	sfadmin	2018-01-08T20:46:55Z	true	40	FTE USA
108728	John Huddleson	USA	sfadmin	2018-01-08T20:47:35Z	true	40	FTE USA
108729	Hillary Lawson	USA	sfadmin	2018-01-08T20:48:09Z	true	40	FTE USA
108730	Russell Goddard	USA	sfadmin	2018-01-08T20:48:46Z	true	40	FTE USA
108731	Gordon Elliston	USA	sfadmin	2018-01-08T20:49:27Z	true	40	FTE USA
108732	Emma Ward	USA	sfadmin	2018-01-08T20:50:04Z	false	30	Part Time Employee
108733	Patrick Coburn	USA	sfadmin	2018-01-08T20:51:10Z	false	30	Part Time Employee

Tabular View Of Your Calculated Field for CSV Integration

3.2.11.5 Example : How to Build a Calculated Field using Switch case

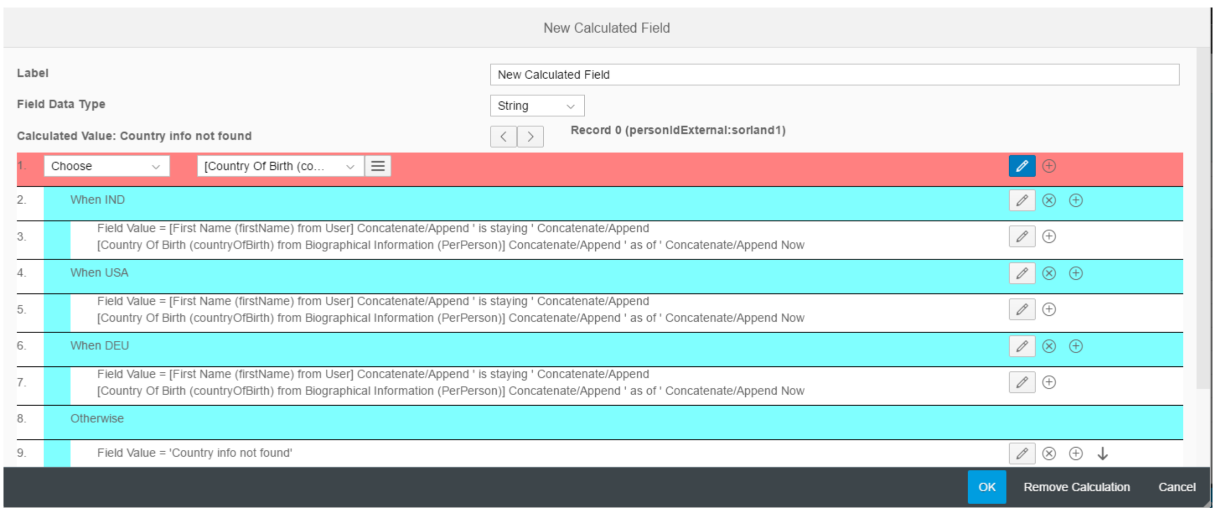
In this section we build a calculated field using the Switch case.

The main objective of having the switch case is to simply the if/then or if/then/else logic where the conditional statement is on same field getting repeated over and over again. This simplifies the user to select the field value only once using find field value, followed by setting a series of case blocks.

Use Case

In the following example, we select the *Choose* operation for the *Country Of Birth* field value as an operand. When we do that, we need to provide conditions out of which any one will be true at a single point in time. We have the following two clauses that need to be defined:

- When
- Otherwise
  In the *When* clause we provide a valid value for the *Country Of Birth* field, for example (IND, USA and so on ..). The *Otherwise* clause is a default case which is a true condition if none of the *When* clauses are true.



If the *Country Of Birth* is IND the return value is "<firstname> is staying in IND as of 2/17/2017".

If the *Country Of Birth* is USA, the return value is "<firstname> is staying in USA as of 2/17/2017".

3.3 Creating Outbound Integrations Using Data Model Navigator

You can create outbound integrations using Data Model Navigator for your starting entity.

Procedure

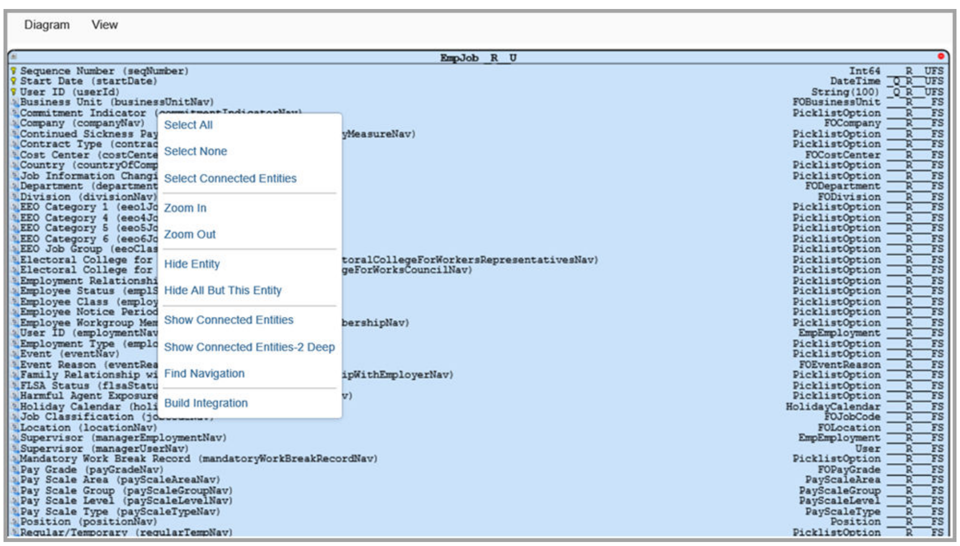
1. To access Data Model Navigator, go to *Admin Center* > *Integration Center* > *Data Model Navigator*.

   When you select Data Model Navigator, you are directed to the *Choose Entities for Display* dialog box.
2. You can enter in the following:
   - Your starting entity name such as

     > Example
     >
     > `Job Information (EmpJob)`
   - Select tags to filter your search.

   When a starting entity is selected, the Data Model Navigator *Diagram Menu* appears on your screen.
3. To create an integration, select with your mouse anywhere in the *Diagram Menu* of your starting entity.

   When you use your mouse to select your Data Model Navigator *Diagram Menu*. the *Diagram View Menu* appears.



4. To create your integration, go to *Diagram View Menu* > *Build Integration*.

   When you select *Build Integration*, you are immediately directed to the *Options* tab of your integration within Integration Center.
5. Follow the steps to configure your integration.
6. You can either use one of these two options to finish:

- Run Now
- Set Schedule

Related Information

Using Data Model Navigator

Data Model Navigator [page 132]

How to Create Outbound Integrations Using Integration Center

Creating Outbound Integrations Using Integration Center [page 8]

Using Run Now and Set Schedule options

Running your Integration [page 84]

Scheduling your Integration [page 86]

4 Creating Inbound Integrations

You can create integrations from a third-party or external application to SAP SuccessFactors.

Inbound Integrations

You can create inbound integrations one of two ways from the *+Create* menu in Integration Center:

- ← *Scheduled CSV Input Integration*
- *More Integration Types*

Upload Sample CSV

When your third-party uses different picklist from Employee Central, you can use the *Upload Sample CSV* to upload values during the creation of your inbound integration.

> Note
>
> When you create your inbound integration, you can upload your sample CSV up to 500 fields. If your CSV file contains more than 500 fields, the data contained in those fields won't appear in your integration.

> → Tip
>
> It is recommended that you do not import effective dated entities such as Job Information or FO Business Unit using Integration Center, as it might lead to missing records due to data integrity issues. Instead, you can use the Import and Export Data feature of MDF.
>
> However, if you still wish to use Integration Center, please consider the below scenarios:
>
> Let us consider a scenario where there is no existing data in the system for an entity, we recommend you to do the following steps:
>
> 1. Sort the import file by two fields, first by External code and second by effective start date (ascending order).
> 2. Use the incremental upload using Integration center.
>
> Let us consider another scenario where there is an existing data in the system and we assume that the effective date of first record in the source cannot be changed or you can extract only those records which has been changed since the last import to SAP SuccessFactors. In such cases, we recommend you do the following steps:
>
> 1. From the source system, extract only data which is changed since the last upload to SAP SuccessFactors.
> 2. Sort the import file by two fields, first by External code and second by effective start date (ascending order).

3. Use the incremental purge using the Integration Center, to upload the data.

4.1 Creating Inbound Integrations Using *Scheduled CSV Input Integration* Option

You can create Inbound integrations using *Scheduled CSV Input Integration* option from the *+ Create* menu within Integration Center

Prerequisites

- Sample CSV File that contains data for your inbound integration.

Procedure

1. *Admin Center* > *Integration Center*
2. From Integration CenterLanding Page, select `My Integrations`.
3. From the *Integration Center - My Integrations* page, choose *Create* > *Scheduled CSV Input integration*.

   When you select the *Scheduled CSV Input Integration* option, you are directed to the *Integration Center - Create a New Scheduled CSV File Input Integration* page.
4. From the *Integration Center - Create a New Scheduled CSV File Input Integration*, go to field to enter any of the following:
   - Entity Name in the *Search for Entities by Entity Name*
   - Field Name in the *Search for entities by field name*

     > **Note**
     >
     > The Integration Center can retrieve the value of as many as **20** reportable custom fields from the objective plans or career development plans. If you don't see the value of your custom fields among the search results, check whether the fields are defined as reportable in the template or whether the total number of custom fields exceeds the upper limit **20**.
   - Go to *Tag* and select tag where you can find your starting entity that uses that tag.

     > **Note**
     >
     > You have an option to choose from a starting entity from the displayed list. When an entity has been selected, fields contained for that entity appear on the page and cannot be selected or deselected. However, you can add or remove fields from the *Configure Fields* tab. Tags have been added for each API in the metadata that enables you to filter by tag.

5. Select your starting entity.
6. Use the **Select** button to continue to the *Options* page.
7. On the *Options* page, enter the following information:

Field	Description
Integration Name	Either accept the name that is defaulted or change it to a name of your choice. This name is also used to name the job in the job scheduler.
Description	Enter a short description about the integration you are creat-ing.

8. Select **Next** to finish and continue to the *Configure Fields* page.

4.2 Creating Inbound Integrations Using *More Integration Types* Option

You can create inbound integrations using the *More Integration Types* option. When you use the *More Integration Types* option, steps are similar except that you specify trigger, source, destination, and format types.

Procedure

1. *Admin Center* > *Integration Center*
2. From Integration CenterLanding Page, select **My Integrations**.
3. From the *Integration Center - My Integrations* page, choose *+ Create* > *More Integration Types*.

   When you select the *More Integration Types* option, the *Choose Integration Type* dialog box appears.
4. From the *Choose Integration Type* page, go to *Trigger Type* and select trigger types that is applicable for your inbound integration. For this topic, *Secheduled* is selected.
5. Go to *Source Type* and select *SFTP*.

   > Note
   >
   > When you select *SFTP* as the source type, Integration Center automatically grays out options that does not apply for inbound integration. *Destination Type* now defaults to *SuccessFactors* and format is *CSV*.
6. Select **Create**.

   When you select *Create* button, you are directed to the *Integration Center - Create a New Scheduled CSV File Input Integration* page.
7. From the *Integration Center - Create a New Scheduled CSV File Input Integration*, go to field to enter any of the following:

- Entity Name in the *Search for Entities by Entity Name*
- Field Name in the *Search for entities by field name*
- Go to *Tag* and select tag where you can find your starting entity that uses that tag.

> ⓘ Note
>
> 1. You have an option to choose from a starting entity from the displayed list. When an entity has been selected, fields contained for that entity appear on the page and cannot be selected or deselected. However, you can add or remove fields from the *Configure Fields* tab. Tags have been added for each API in the metadata that enables you to filter by tag.
> 2. Integration Center no longer supports Compound Employee API (BETA version).
>   For any existing scheduled integrations having Compound Employee API as the starting entity, the integration Center jobs will be unscheduled and an error message will be logged in the Execution Manager. Editing any existing unscheduled integration having Compound Employee API as the starting entity, will throw an error stating that Integration Center no longer supports Compound Employee API.

8. Select your starting entity.
9. Use the **`Select`** button to continue to the *Options* page.
10. When you are in the *Options* page, enter the following information:

Field	Description
Integration Name	You can accept the default name or you can rename your integration. The name you use also matches the name of the job within the job scheduler
Description	Enter a short description for your integration

11. Select **`Next`** to finish and continue to the *Configure Fields* page.

4.3 Using *Configure Fields* Tab For Inbound Integrations

For your inbound integrations, you can use *Configure Fields* tab to upload your Sample CSV file, Execute a number of OData operations, and map fields.

Using the *Configure Fields* For Inbound Integrations

When you edit an existing inbound integration, Integration Center syncs all the metadata which will automatically add missing fields, update all the metadata including data types, remove fields that no longer exist in the metadata, while keeping the mapped fields intact.

Let us consider an example where we add a new field say *CustomString* to an existing entity *PerPerson* in *Configure Object definitions*. When you edit any previously created inbound integration with *PerPerson* as the starting entity, the following popup message is displayed on the screen: "The Destination Fields are synchronized with the latest Metadata. Press Save to update integration in line with the latest Metadata. "

Let us consider another example where you can add a new field to any of the entites that can be navigated from *User*, say *PerEmail* in *Configure Object definitions*. Now, when you go to *Configure fields* tab of any exisiting inbound integration, and click on the expand button against the navigation to which the changes are made, the same popup message will be displayed on the screen.

You can use *Configure Fields* to do the following for inbound integrations:

1. Uploading Your Sample CSV File for Inbound Integrations [page 109]
   You can upload a CSV file with any number of fields and associate each of the fields using the *Field Mapping View*. Using a sample CSV is a good option to use for inbound integration when your third-party application uses different picklist or field values from Employee Central. You can upload the picklist values when you create your integration to map with Employee Central picklist or fields.
2. Using Field Detail View for Inbound Integrations [page 112]
   You can add, remove, and delete entities from the *Field Detail View*. You can use this view to specify formats, default value, and calculations for fields when selected.
3. Field Mapping View for Inbound Integrations [page 114]
   You can use *Field Mapping View* to map fields from your sample CSV file to your SAP SuccessFactors applications for your inbound integration.
4. Using File Import Test View for Inbound Integrations [page 118]
   You can use the *File Import Test View* so you can execute an OData call, and based on the correctness of mapping and data, it is upserted or created for your SAP SuccessFactors application. You can execute the OData call by selecting

4.3.1 Uploading Your Sample CSV File for Inbound Integrations

You can upload a CSV file with any number of fields and associate each of the fields using the *Field Mapping View*. Using a sample CSV is a good option to use for inbound integration when your third-party application uses different picklist or field values from Employee Central. You can upload the picklist values when you create your integration to map with Employee Central picklist or fields.

Prerequisites

- Sample CSV File

  > ⚠ Restriction
  >
  > 1. When you create your integration, your sample CSV file can have up to 500 fields. If your sample CSV file contains over 500 fields, the additional data contained in those fields won't appear in your integration.
  > 2. When you upload a CSV file having more than 10 records, a warning message will be displayed: "The CSV file you are trying to upload has more than 10 records. Only the first 10 records will be picked, saved and displayed in the sample data view." This enhancement is done to optimize the performance of Integration Center.
  > 3. Make sure that the CSV file is in UTF-8 format. If the file contains only ASCII characters, then the file encoding could be in UTF-8. If the file contains special characters (beyond ASCII), then the file encoding could be in UTF-8 with BOM.

4. For any boolean type field, the only values we support are true/false. Any other value should be handled using calculated fields.

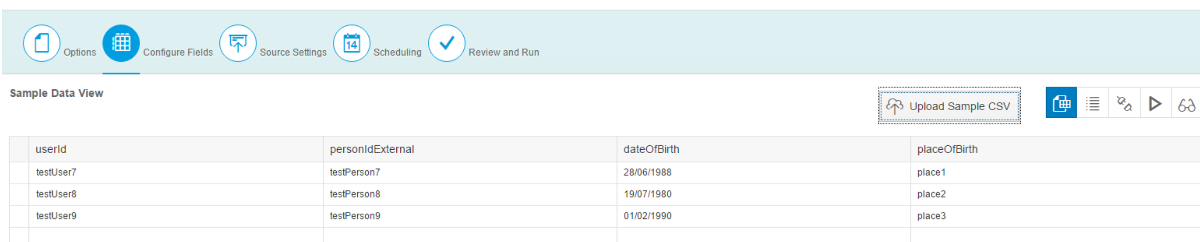
Procedure

1. From the *Configure Fields* tab, select the *Upload Sample CSV* button.

   When the *Upload Sample CSV* button is selected, the *Import Sample CSV* dialog box opens up.
2. To upload sample CSV file from your hard drive, select the *Browse* button that opens up the dialog box.
3. From the *Choose File to Upload*, choose your sample CSV file and Choose File to Upload**`Open`**

   When you select **`Open`**Choose File to you are directed back to the original *Import Sample CSV* dialog box. The filepath of your sample CSV file appears in the same dialog box.
4. Select **`Upload`** to complete the sample CSV file upload.

   When you return back to the *Configure Fields* screen, your uploaded data appear as a table.



Task overview: Using Configure Fields Tab For Inbound Integrations [page 108]

Next: Using Field Detail View for Inbound Integrations [page 112]

4.3.1.1 Example: Uploading Employee's profile photos using CSV file for Inbound Integrations

Explains how an Admin can upload Employee's profile photos in the system using Integration Center.

Context

You can use Integration Center inbound feature to import attachments of type photo using *Photo* as the starting entity.

Procedure

1. **Preparing a CSV file containing master data**

   First, you need to prepare a CSV file which contains the data to be imported. To upload a photo of an Employee, the file should contain:

Columns	Description
User Id	Indicates the user id of the employee.
Photo Name	Indicates the name of the file to be uploaded as profile picture of the employee.
Photo Type	Indicates the type of photo, for example, LIVE_PROFILE, ORG_CHART, QUICK_CARD or so on. For more information on the lists of various photo types that are available, refer Photot.
Photo	Indicates the image to be uploaded. The image should have either JPEG, PNG, or BMP extension. The photo files can be in the same folder as the CSV file or under some child folder of that. Under photo column ensure that the filename of the photos uploaded on the source folder is same with the file on the list (along with the extension).

   Here's a CSV file with sample data:

PhotoType	UserID	Photo	PhotoName
1	Cgrant	CarlaGrant.jpeg	CarlaGrant.jpeg
2	Mhoff	Markhoff.png	Markhoff.png

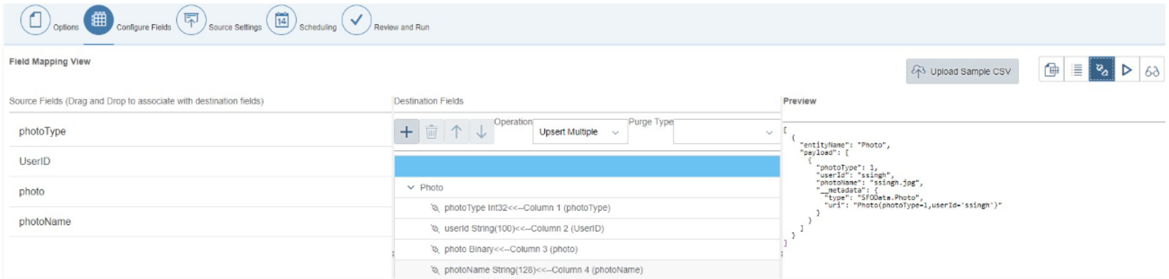
   In the CSV file, the first row is treated as header.

2. **Uploading the CSV file to SFTP Server**

   The CSV file and the corresponding image files should be uploaded in a folder on the SFTP server. If the photo is in a different folder, you can provide a relative path to the folder where the CSV file is uploaded (the folder specified on Source Settings tab).

3. **Creating integration with Integration Center**

   a. On the landing page of *Integration Center*, create a new CSV inbound integration with starting entity as *Photo*.
   b. In the *Options* tab, enter the *Integration Name* and *Description*.
   c. Go to *Configure Fields* tab and upload the sample CSV file (prepared in Step 1).
   d. Define mapping between source fields and target fields.



e. Go to Source Settings tab and specify the SFTP details.
   1. Enter the server address, credentials, and folder location of the SFTP server where the CSV file and photos are uploaded (as in Step 2).
   2. Enter the name of the CSV file (without file extension) in the File Name Prefix field.
   3. Choose the file extension as CSV.
   4. Specify the Processing Folder where the files should be moved post-processing.

f. Save the integration and click on *Run Now*.

4. **Verifying the integration**

   Once the integration is run, you can go to employee's profile and verify that the photo is uploaded.

4.3.2 Using *Field Detail View* for Inbound Integrations

You can add, remove, and delete entities from the *Field Detail View*. You can use this view to specify formats, default value, and calculations for fields when selected.

Using Details View for Inbound Integrations

You can access *Field Detail View* by selecting the *Switch to Detail View* button.

You can specify date formats, default value, and calculations on fields or data using the *Field Detail View*

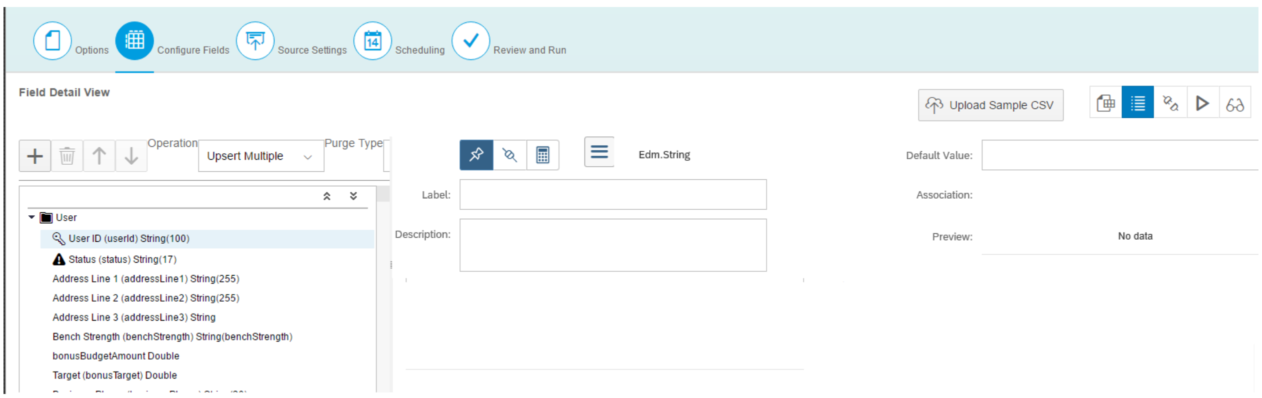
For more information about *Field Detail View* features, refer to Using Configure Fields Tab [page 19] topic.

Field Detail View

You can use the *Field Detail View* navigation icons as described in this table:

Field Detail View Menu

Icon	Description
Add Entity	When you select the *Add Entity* icon, the *Add Entity* dialog box opens up over your screen. You can use the search screen to search for the entity you want or select it from the list. To finish, select the **Add** button to save your additional entity
Delete seleted entity	You can use the *Delete seleted entity* function to remove any entities you don't need for your inbound integration.
Move up *Move down*	You can use the *Move up* or *Move down* arrows to reorder your entities. The *Move up* and *Move down* is handy for maintaining body fields with a list format.



Screenshot of Details View For Inbound Integration

Parent topic: Using Configure Fields Tab For Inbound Integrations [page 108]

Previous task: Uploading Your Sample CSV File for Inbound Integrations [page 109]

Next: Field Mapping View for Inbound Integrations [page 114]

4.3.3 *Field Mapping View* for Inbound Integrations

You can use *Field Mapping View* to map fields from your sample CSV file to your SAP SuccessFactors applications for your inbound integration.

Using *Field Mapping View*

To go to *Field Mapping View*, select the *Field Mapping* icon.

Using Drag and Drop Feature of *Field Mapping View*

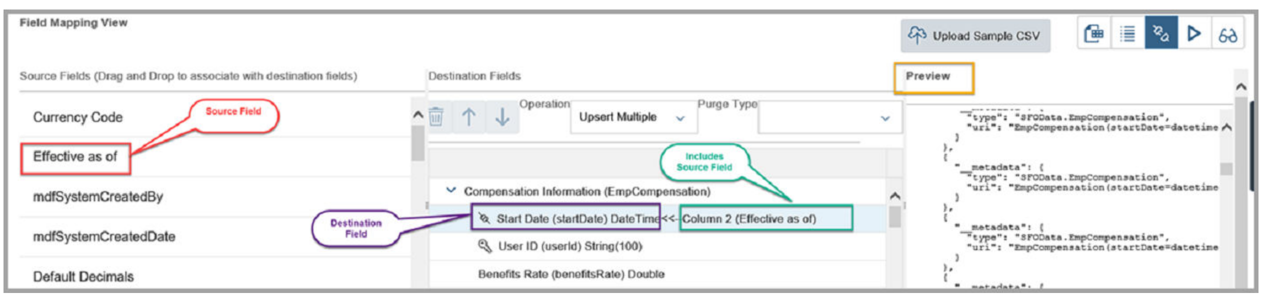
You can drag your source fields uploaded to Integration Center from your sample CSV file to your destination fields. Using this feature allows you to change associations that can save time and is less complex.

Your source fields from your sample CSV appear under the *Source Fields (Drag and Drop to associate with destination fields)* column.

Your SAP SuccessFactors destination fields appear under the *Destination Fields* column to the right of your source fields. You can drag the source field to the destination field you want to map. Once mapped, the destination field show the *Field Mapping* on the left of the source field name. The <<-- characters appear between the source and destination field names as featured in the screenshot.

Previewing Your Payload

You can view your payload data under the *Preview* window, next to the *Destination Fields* section.



Operation and Purge Types

You can set up your OData Operation and purge type within the *Destination Fields* section from the *Field Mapping View*. To learn more, refer to related links at the end of this topic or proceed to the next topic.

Parent topic: Using Configure Fields Tab For Inbound Integrations [page 108]

Previous: Using Field Detail View for Inbound Integrations [page 112]

Next: Using File Import Test View for Inbound Integrations [page 118]

Related Information

To Learn More about Using *Operations* and *Purge Types* From Field Mapping View:
OData Operations and Purge Types for Inbound Integrations [page 115]

4.3.3.1 OData Operations and Purge Types For Inbound Integrations

OData Operations

OData API is a standardized protocol for accessing databases that contain entities within its metadata. OData protocol allows the service provider such as SAP SuccessFactors HCM suite decide which operations is supported which may vary based on entity.

OData Operations Supported by Inbound Integrations

Supported OData Operations	Description
Create/Post *POST*	Creates a new record and returns generated keys within the response.
Update/Merge *MERGE*	This operation can either replace existing data or merge existing data with new data. For inbound integrations, only fields that have been provided is updated.
Update/Put *PUT*	Replaces your records so that your existing property entity values receives the new information.

UPSERTS

Upserts is an OData service operation that takes an array of entities as the request. The server updates the entity for which external ID already exists. A new entity is inserted if external one doesn't exist. There are two types of Upsert parameters that is supported:

Supported Upserts

Supported Upsert Type	Description

Upsert Multiple
 	
UPSERT
	An upsert operation that uses external keys. If external key already exists in the system, update is performed. Otherwise, a new key is created.
	
	ⓘ Note
	
	• Purge Types is only supported by the *Upsert Multiple* OData operation
	• For inbound integrations where data is upserted into SAP SuccessFactors, *Upsert Single* and *Upsert Multiple* methods are used.
	For the following entities, *Integration Center* will always use the operation *Upsert Multiple* even if you have configured the entities to use *Upsert Single* during runtime:
	  • Perperson
	  • Position
	  • Candidate
	  • CandidateLight
	  • JobRequisition
	  • JobApplication

Upsert Single *UPSERTBATCH*	Allow success of records even if some records fail as a multiple upsert that is used for records with inline properties and do not support full purge. For background entities only. This Upserts one record at a time as a batch. ⓘ Note Purge Types is not supported for this operation.

Purge Types

Employee Central Upsert API supports both Full purge and incremental updates using parameters.

Upsert Parameters

Upsert Parameter Name	Description
Full Purge	Existing record is deleted when the upsert operation is performed. A new record is created with the data specified through a URL parameter.
Incremental Purge	Only records specified in the payload is purged and replaced. All other records remain untouched. The data is specified through a URL parameter.

Additional Information

There are several great reference topics that explain more about how OData Operations work and which purge types can be used with specific operations. Please refer to related links at the end of this topic to learn more.

API Option Profile ID

API Option Profile ID is an optional parameter which is relevant for configuring inbound integrations. This is currently supported for the `User` entity. *API Option Profile ID* can be created using the *Manage API Option Profile* tool by selecting a set of options. This *API Option Profile ID* can then be entered while configuring the inbound integration. Based on the configured options in the API Option Profile ID, its associated actions are performed on running the integration.

> Note
>
> The API Option Profile ID is displayed in the tool for every entity, however, it is only applicable for the `User` entity and will be ignored upon selecting other entities.

Related Information

OData API Guides

SAP SuccessFactors HCM Suite OData API: Developer Guide

SAP SuccessFactors Employee Central OData API: Reference Guide

OData Operation Parent Topics: Refer to Child Topics for More Information

OData Operations

Processing Parameters Using Upsert Purge: Refer to Child Topics for More Information

Processing Parameters for Upsert

Creating and Editing Users Using an API Option Profile

4.3.4 Using File Import Test View for Inbound Integrations

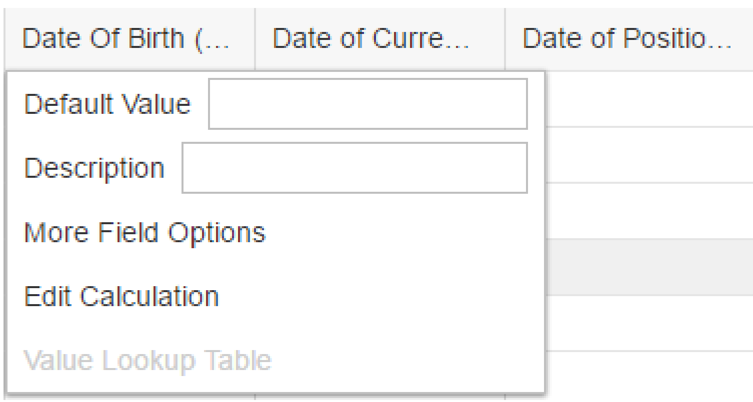
You can use the *File Import Test View* so you can execute an OData call, and based on the correctness of mapping and data, it is upserted or created for your SAP SuccessFactors application. You can execute the OData call by selecting

File Import View

File Import View allows you to change formats for any fields from your *Sample CSV* file, and of course, execute your integration as a OData call that test your mappings and data.

Additional Field Options

You can change the default value, description, and use *More Field Options* when you select the row header of the field you want opens up the *More Field Options* menu.

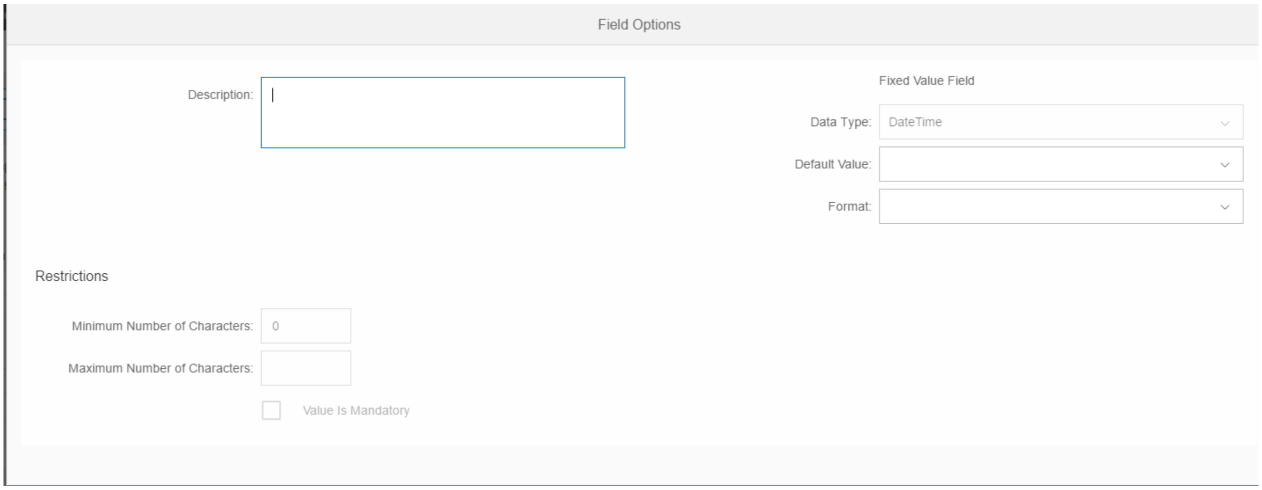


Screenshot of More Field Options Menu For a Selected Field

You can enter the default value or description within those text boxes or you can select *More Field Options* that opens up the *Field Options* page. The *Field Options* allows you to change the following in one place:

Option	Description
Description	A general field description that you can add for documentation purposes. It is also output when you choose Export Integration Specification in the Save menu.
Default Value	Value for an associated or calculated field if a null or blank value is returned from SAP SuccessFactors. It is also the value of a fixed value field.
Minimum Number of Characters	If the length of the resulting value is less than the minimum number of characters, a warning appears in the execution manager and it is excluded from the integration.

Option	Description
Maximum Number of Characters	If the length of the resulting value is greater than the maximum number of characters, a warning appears in the execution manager and it is excluded from the integration. If the output file type under *Options* is *Fixed Field Length*, the maximum number of characters that you specify here defines the width of each field. If you add a calculated field whose data type is *String* and specify *Truncate* as the operation, the number of characters is truncated to the number that you specify here.
Value Is Mandatory	If this checkbox is selected, an error is returned if no value is specified. This is effectively the same as minimum number of characters = 1.
Format	This field is applicable for Numeric, Date and Time data types. For Numeric fields, you can provide any one of the three formats provided in the drop down list, or any custom format. In addition, if no format is specified it takes 3 decimal places as the default value. For Date data type, there are some predefined formats in the drop down list. You can enter your own Date format as well. For example, you can enter **dd/MM/yyyy** as the date format, if you wish to display the date in this format. For Time data type, by default, the format is *hh:mm:ss a*, where *a* stands for AM/PM. You can either enter your own time format or select the following time formats from the dropdown: 1. hh:mm 2. hh:mm:ss 3. hh:mm:ss:SSS 4. HH:mm:ss 5. HH:mm:ss:SSS For example, if you enter the value as *11:00* and select the format as *hh:mm:ss*, then the value of that field will be displayed as *11:00:00* in the application. **Note** If your data does not match the format that is specified in the *Format* field, you may receive the *Date Format Mismatch* error message within the *File Import Test View*.



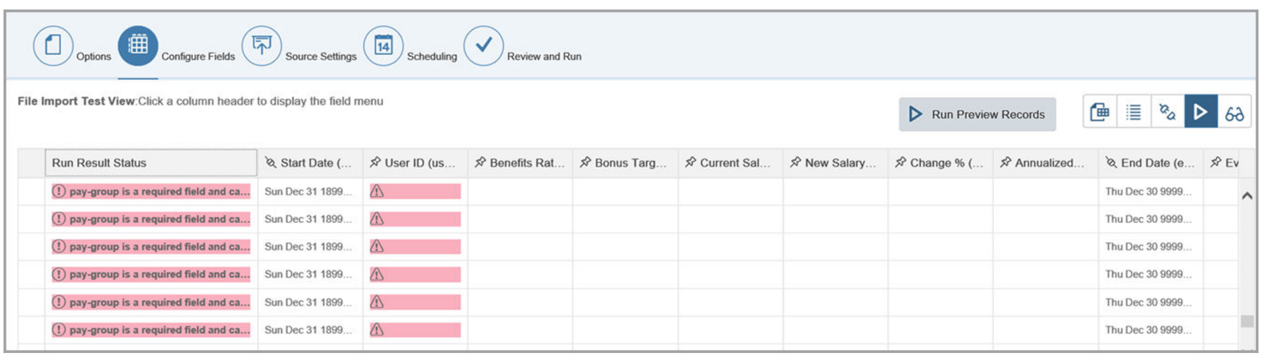
Screenshot of Field Options Page

Errors and Using the *Run Preview Records*

Any fields that have missing mandatory values are highlighted in red and there is an ⚠ alert icon.

For example, any unsupported date format or any mismatch in the date format will throw an error. Hence all the date fields need to be formatted before you run preview records.

When you select the **`Run Preview Records`** button, OData call is executed. Based on correctness of mapping and data, your data is upserted or created to your SAP SuccessFactors application based on the settings specified from the *Field Detail View* or *Field Mapping View*. The results of the *Run Preview Records* appear in the first column labeled: *Run Results Status*



> ⓘ Note
>
> For an existing integration where attachment API is used as the starting or destination entity, the *Run Preview Records* option is disabled from inbound integrations, outbound integrations, and OData to OData integrations.

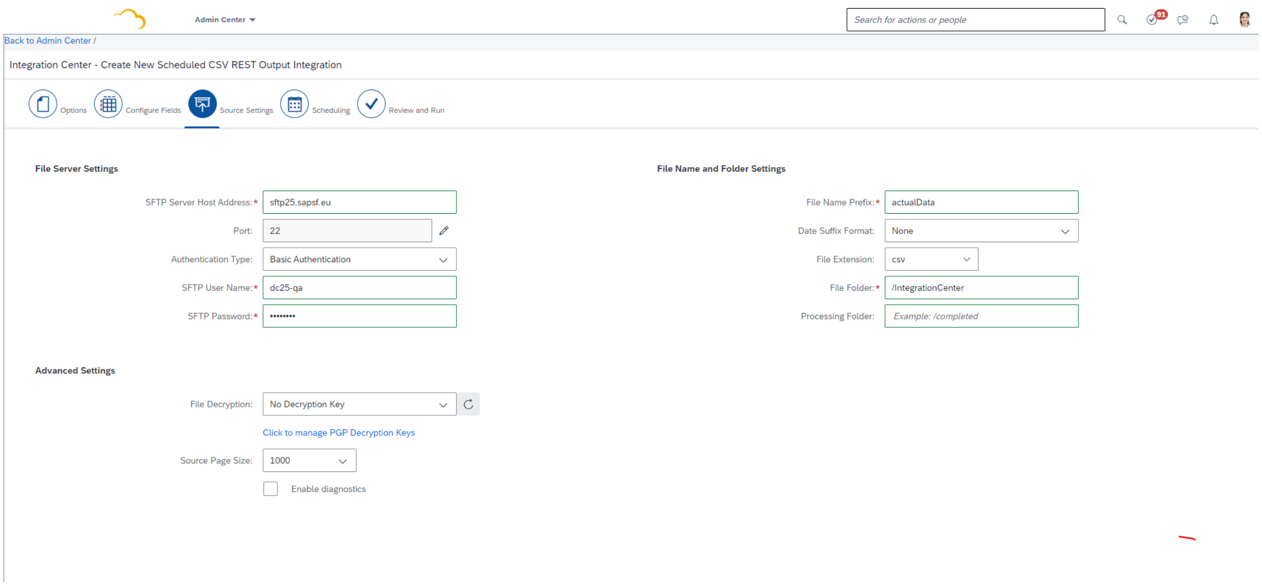
Screenshot of File Import Test View After Running the Run Preview Record

Parent topic: Using Configure Fields Tab For Inbound Integrations [page 108]

Previous: Field Mapping View for Inbound Integrations [page 114]

4.4 Source Settings For Your Inbound Integration

You can enter the *File Server Settings*, *File Name and Folder Settings*, and *Advanced Settings* on the *Source Settings* page for the input source of the integration. These settings are required for your integration to run successfully.



File Server Settings

Field	Description
SFTP Server Host Address	Enter the Domain name/internet address and port of the SFTP server.
Port	For new integrations, you can't edit the SFTP port value. The port value is set to 22 by default. For existing integrations, you can change the existing port value only to 22. This value will be set as default and can't be changed. During an integration definition import, if the existing port value is a different value, then the port value will be changed and defaulted to 22.
SFTP User Name	Enter the User name for the SFTP account. **Note** You can use the period '.' character, the underscore '_' character, and the hyphen '-' character to create your SFTP User Name.

Field	Description
SFTP Password	Enter the password for the SFTP account. This field supports alphanumeric characters that are case sensitive. This field does not support special characters (@,#,$%,^,&*).
Authentication Key	From this dropdown you can select any previously generated SSH key or the *No key Authentication* option. This key is used for authentication while writing to the Destination. If you want to generate a new SSH key, click *Generate SSH Key* option which navigates you to the page where new SSH keys are generated.

File Name and Folder Settings

Field	Description
File Name Prefix	Enter the name of the template to be used as the file name. This name must be the same as the file in SFTP location. You can process multiple files by adding wild cards (? *) to the file name (s) that need to be processed. For example: If the File Name Prefix is **Person_Data_***, it means that all files in the SFTP location, of file name starting with **Person_Data_** will be processed sequentially. File names, *Person_Data_USA*, *Person_Data_UK* and so on will be processed. If the File Name Prefix is **Person_Data_?**, it means that all files in the SFTP location, of file name starting with **Person_Data_** and ending with only one character will be processed sequentially. File names, *Person_Data_1*, *Person_Data_2* and so on will be processed. In this case file name *Person_Data_10* will not be processed since it ends with two characters. ⓘ Note 1. Make sure that the case used in the extension of the SFTP *File Name Prefix* is consistent with the *File Extension* field. For example, if you select the *File Extension* as **csv**, then the extension in the *File Name Prefix* should be **.csv**. In case you type in any other extension, it should match the case of the actual file extension in the SFTP directory. For example, if you enter **CSV** in the *File Extension* field, then the extension in the SFTP *File Name Prefix* should be **.CSV**. 2. Integration Center does not support blank space and any other special character other than '_' (underscore) in the file name.
Date Suffix Format	You can add a date/time suffix to the file name to distinguish between different files run at different times. Without the suffix, the same file name will be considered in each integration run. For inbound integrations, it currently always checks the SFTP file in the UTC timezone.

Field	Description
File Extension	Select or enter an extension of the file, excluding the period. This extension must be the same as the extension of the file in SFTP location. ⓘ Note If the outbound file is encrypted and saved with the extension csv, then in inbound integration, you need to enter **csv.pgp** in the *File Extension* field. This will fetch the **csv.pgp** file from SFTP location. Also, make sure to provide the *Decryption key* in the Advanced Settings section with the file extension as **csv.pgp**.
File Folder	Enter the folder name from which the files have to be picked.
Processing Folder	Enter the folder name to which the file is moved to after it is read or processed. Note that write privileges to the folder are required. ⓘ Note The processing folder is mandatory if the *File Name Prefix* field contains wildcard characters.

Advanced Settings

Field	Description
Enable Diagnostics	Select this checkbox to save the source data of your integration in JSON format as a zip file to specified SFTP destination folder, after executing the integration. ⓘ Note Selecting this option may affect performance.
Authentication Key	Select the authentication key from the dropdown to get authentication so that you can write to the destination and implement single sign-on by the system administrators or power users.
File Decryption	Select the decryption key from the dropdown to decrypt the file when reading from the source.

After entering the valid entries, click *Next*. You will now be on the *Scheduling* page. See Scheduling your Integration [page 76] section for more details.

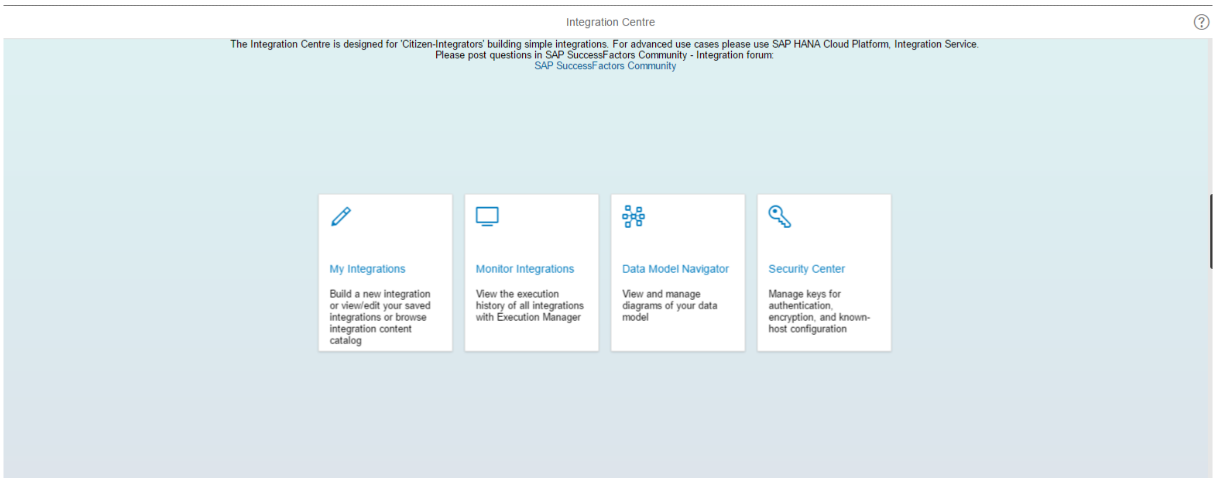
After you schedule the integration, click *Next*. You will now be on the *Review and Run* page. See About Review and Run [page 80] section for more details.

5 Editing an Integration

You can open a previously saved integration and edit it through a guided workflow.

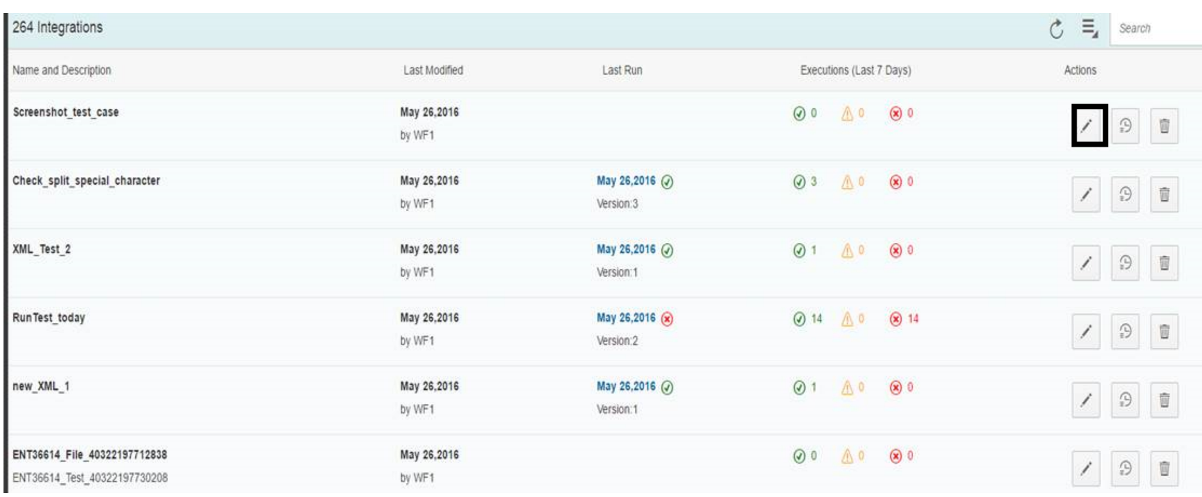
Procedure

1. On the landing page of the Integration Center, choose *My Integrations*.



My Integrations

2. On the *My Integrations* page, click the *Edit Integration* icon next to the integration that you want to edit. You can search for an integration by entering any consecutive characters from the name of the integration. The values in the Last Run column is linked to the Execution Manager. The executions are denoted by the three icons, green icon denotes the number of jobs successfully completed, yellow icon denotes the number of jobs completed with warnings and red icon denotes the number of jobs completed with errors.



Edit Integration

ⓘ Note

When you search for an integration on My Integrations page, the Search Results and Audit History logs are retained when you navigate back from any integration.

3. Follow the guided workflow.

Related Information

Options [page 16]
Using Configure Fields Tab [page 19]
Filter and Sort [page 44]
Destination Settings [page 51]
Scheduling your Integration [page 76]
About Review and Run [page 80]

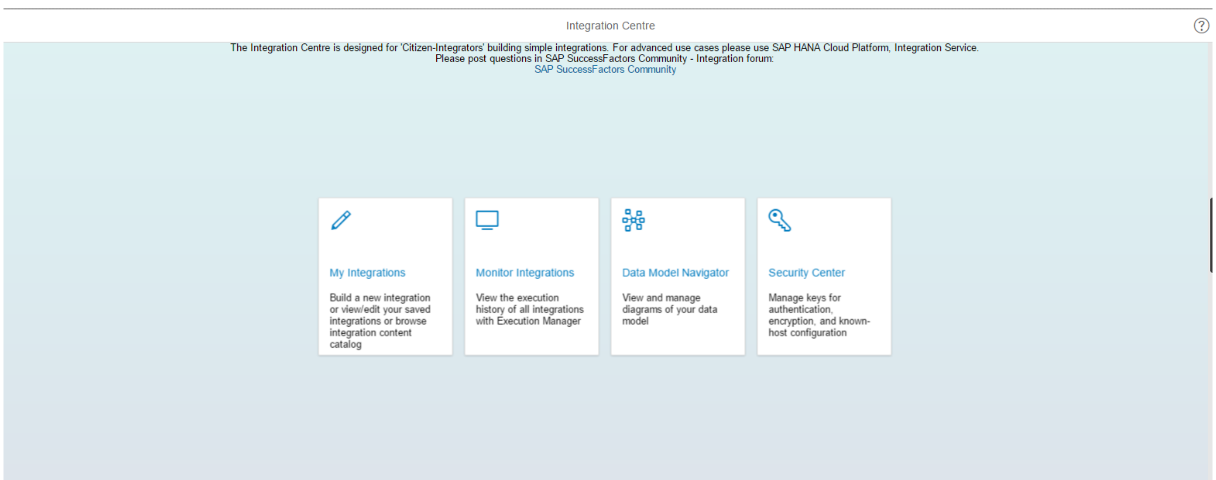
6 Deleting an Integration

Context

The following procedure helps you to delete an integration. When you try to delete a scheduled integration, it's future executions are also deleted.

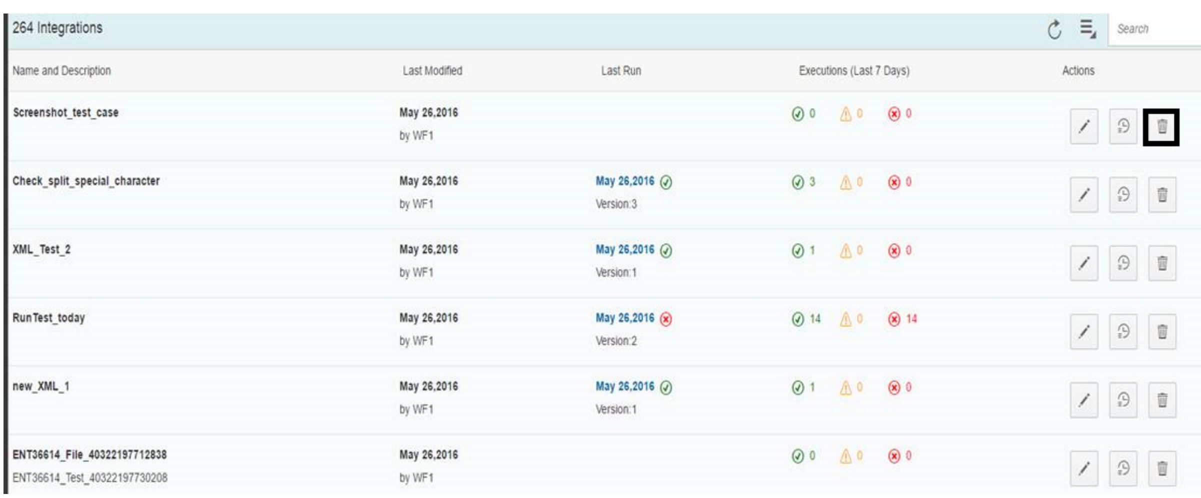
Procedure

1. On the landing page of the Integration Center, choose *My Integrations*.



My Integrations

2. On the *My Integrations* page, click the *Delete Integration* icon next to the integration that you want to delete. You can search for an integration by entering any consecutive characters from the name of the integration.



Delete Integration

7 Adding Integrations to a Transport Bundle in the Integration Center

Add Integrations to a transport bundle in the Integration Center to transport it from a source system to a target system using the Configuration Transport Center.

Prerequisites

- Go to *Admin Center* > *Manage Permission Role* > *Access to view and download configurations* and *Access to transport configurations.*
- You've created a transport bundle in the Configuration Transport Center.

Context

Bundles are artifacts in Configuration Transport Center that contain configurations of your system. You can use bundles to transport the configurations of a source system to a paired target system.

Procedure

1. Go to *Integrations Center* > *My Integrations* .
2. Choose **Add to Transport Bundle** under the **Actions** tab.

   A list of available transport bundles are displayed.
3. Choose the bundle to which you want to add the configuration.
4. Choose **Save**.
5. Choose **Close**.

Results

The Integration is added to the transport bundle.

Next Steps

To transport these integrations from source system to a target system, go to *Admin Center* > *Configuration Transport Center* > *Bundle Management*.

Note

- Only the latest version of integrations are transported.
- Destination settings are removed during the transport. You have to configure them again in the target instance.
- Transported Integration Jobs are not scheduled. You have to schedule them in the target instance.
- Active integrations can be transported. In case the integration already exists in the target instance, you should delete it before transporting.

Related Information

Creating New Configuration Bundle using Configuration Transport Center
Exporting SAP SuccessFactors Application Configurations Using Configuration Transport Center
Importing Configurations to Your Tenant Using Configuration Transport Center

8 Monitoring Integrations

8.1 Monitoring an Integration

You can monitor the status of executed integrations and those in progress. You can also view useful error/log messages in the Execution Manager.

Procedure

1. On the landing page of the Integration Center, choose *Monitor Integrations*.

   In a new window, the Execution Manager lists the Integration Center jobs in a process view.
2. Click the > icon of a corresponding process to display the error, warning, and info messages generated by the executed job appearing as the events view.

   > Note
   >
   > You can download a report based on your requirement:
   >
   > - To download a report that is specific to an event, select the corresponding *Event Description* summary and choose *Download Report*.
   > - You can also use the ⤓ icon on the top right to download the event log from the events view. This log contains the detailed error messages for all events which may be helpful to you for debugging purpose.

8.2 Execution Manager Logging Improvements for API Errors

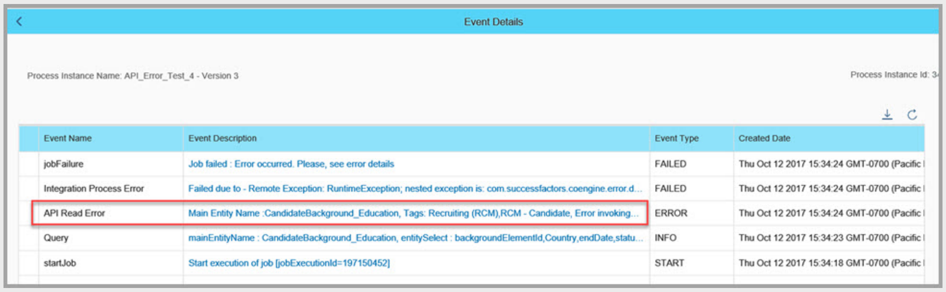
You can now view all failed *API* integrations include the entity name and tag within Execution Manager logs.

Tag and Entity name

The tag indicates which SAP SuccessFactors application that the `API` entity belongs with such as Employee Central. When you call SAP SuccessFactors, you can provide the entity and tag name so that your case is routed to the correct team.

Example

The failed API integration message states: *Main Entity Name: PerPerson, Tags: Employee Central (EC), EC - Personal Information, Recommended, Error: Invalid value for field xxxxx*

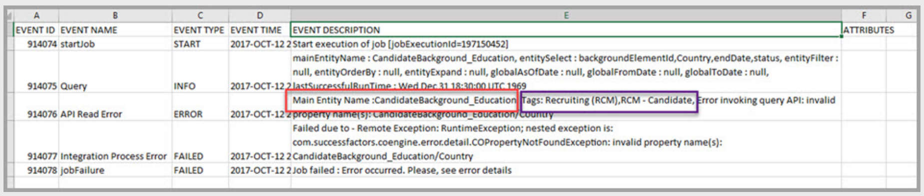

Event Details

Process Instance Name: API_Error_Test_4 - Version 3

Process Instance Id: 3

Event Name	Event Description	Event Type	Created Date
jobFailure	Job failed : Error occurred. Please, see error details	FAILED	Thu Oct 12 2017 15:34:24 GMT-0700 (Pacific
Integration Process Error	Failed due to - Remote Exception: RuntimeException; nested exception is: com.successfactors.coengine.error.d...	FAILED	Thu Oct 12 2017 15:34:24 GMT-0700 (Pacific
API Read Error	Main Entity Name :CandidateBackground_Education, Tags: Recruiting (RCM),RCM - Candidate, Error invoking...	ERROR	Thu Oct 12 2017 15:34:24 GMT-0700 (Pacific
Query	mainEntityName : CandidateBackground_Education, entitySelect : backgroundElementId,Country,endDate,statu...	INFO	Thu Oct 12 2017 15:34:23 GMT-0700 (Pacific
startJob	Start execution of job [jobExecutionId=197150452]	START	Thu Oct 12 2017 15:34:18 GMT-0700 (Pacific

API Read Error message From Execution Manager



EVENT ID	EVENT NAME	EVENT TYPE	EVENT TIME	EVENT DESCRIPTION	ATTRIBUTES
914074	startJob	START	2017-OCT-12 2	Start execution of job [jobExecutionId=197150452]	
914075	Query	INFO	2017-OCT-12 2	mainEntityName : CandidateBackground_Education, entitySelect : backgroundElementId,Country,endDate,status, entityFilter : null, entityOrderBy : null, entityExpand : null, globalAsOfDate : null, globalFromDate : null, globalToDate : null, lastSuccessfulRunTime : Wed Dec 31 18:30:00 UTC 1969	
914076	API Read Error	ERROR	2017-OCT-12 2	Main Entity Name :CandidateBackground_Education Tags: Recruiting (RCM),RCM - Candidate, Error invoking query API: invalid property name(s): CandidateBackground_Education/Country	
914077	Integration Process Error	FAILED	2017-OCT-12 2	Failed due to - Remote Exception: RuntimeException; nested exception is: com.successfactors.coengine.error.detail.COPropertyNotFoundException: invalid property name(s): CandidateBackground_Education/Country	
914078	jobFailure	FAILED	2017-OCT-12 2	Job failed : Error occurred. Please, see error details	

API Read Error message From Downloadable CSV File Extracted from Execution Manager

→ Remember

The new *API* error logging applies towards new integration. Older integrations, tag names does not show up in Execution Manager error logs.

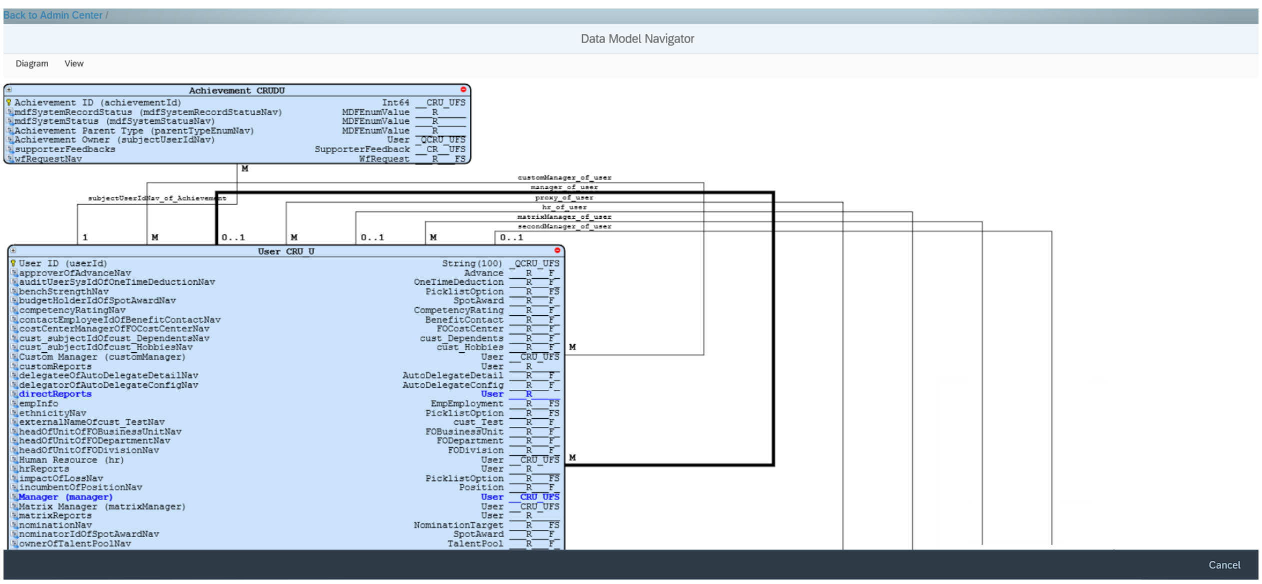
9 Data Model Navigator

The Data Model Navigator allows you to view the OData metadata in graphical form. This tool graphically shows the relationships between the APIs and can be filtered by BizX Module and functional area.

The Data Model Navigator could also be referred to as the OData Entity Diagramming Tool, as it gives valuable insights into how the API entities interrelate from their associations or navigations or $expand abilities.

You can access *Data Model Navigator* from the landing page of *Integration Center*. Choose the entities to display on the canvas. The available entities can be viewed in entirely, filtered by a name search, or by their tag grouping. You can also search for OData Function Import and Complex Type offerings. After choosing the items, you can move the items around the canvas by dragging and dropping the entity.

Let us consider an example where a Manager wants to view his Direct Reports' achievement. In this case, select *Achievement* and *User* entities. Using the Data Model Navigator, you can graphically see the relationship and navigation details between the two entities.



Related Information

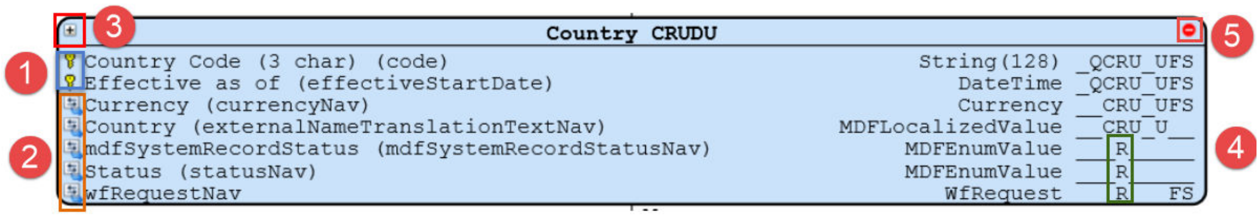
SAP SuccessFactors HCM Suite OData API: Reference Guide
SAP SuccessFactors HCM Suite OData API: Developer Guide
SAP SuccessFactors Employee Central OData API: Reference Guide

9.1 Describing the Menu options available in the Data Model Navigator

This section gives you an insight on the menu's and their options available.

Let us consider an example of selecting the entity as Country.

Within each entity you can see the following:



Description of a canvas shape:

Icons	Description
Key	Displays OData Keys.
Navigation Property	Displays Navigation properties; the type to which the navigation points are displayed in the right-hand column.
+	Expand the item by clicking the expand icon at the top left of the item. Displays all properties like data type, maximum length, an associated picklist ID if applicable are displayed.
Capability Indicators	• N Nullable • C Creatable • R Readable • U Updatable • D Deletable • U Upsertable • F Filterable • S Sortable
-	Removes items from the canvas by clicking the red icon at the top left of each item.

Diagram Menu

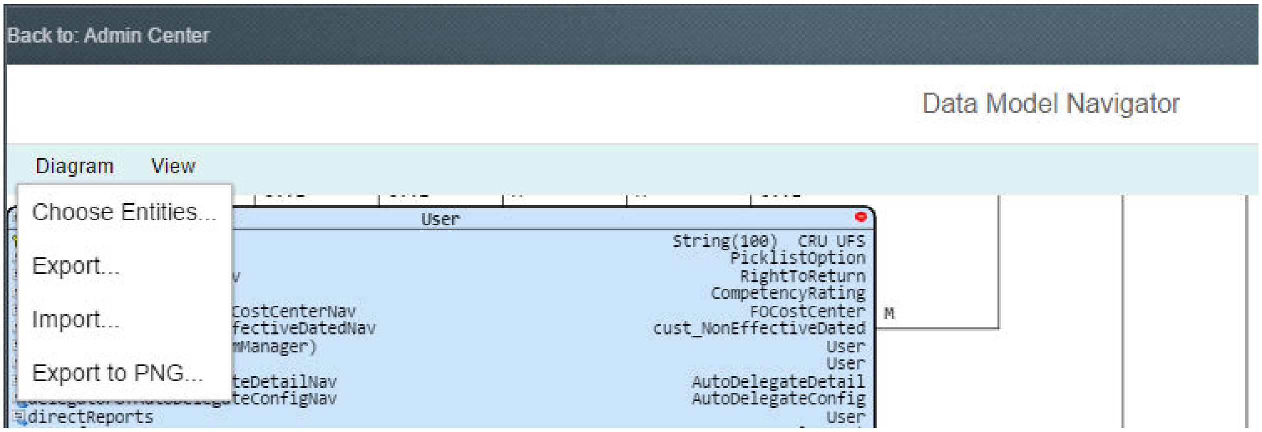
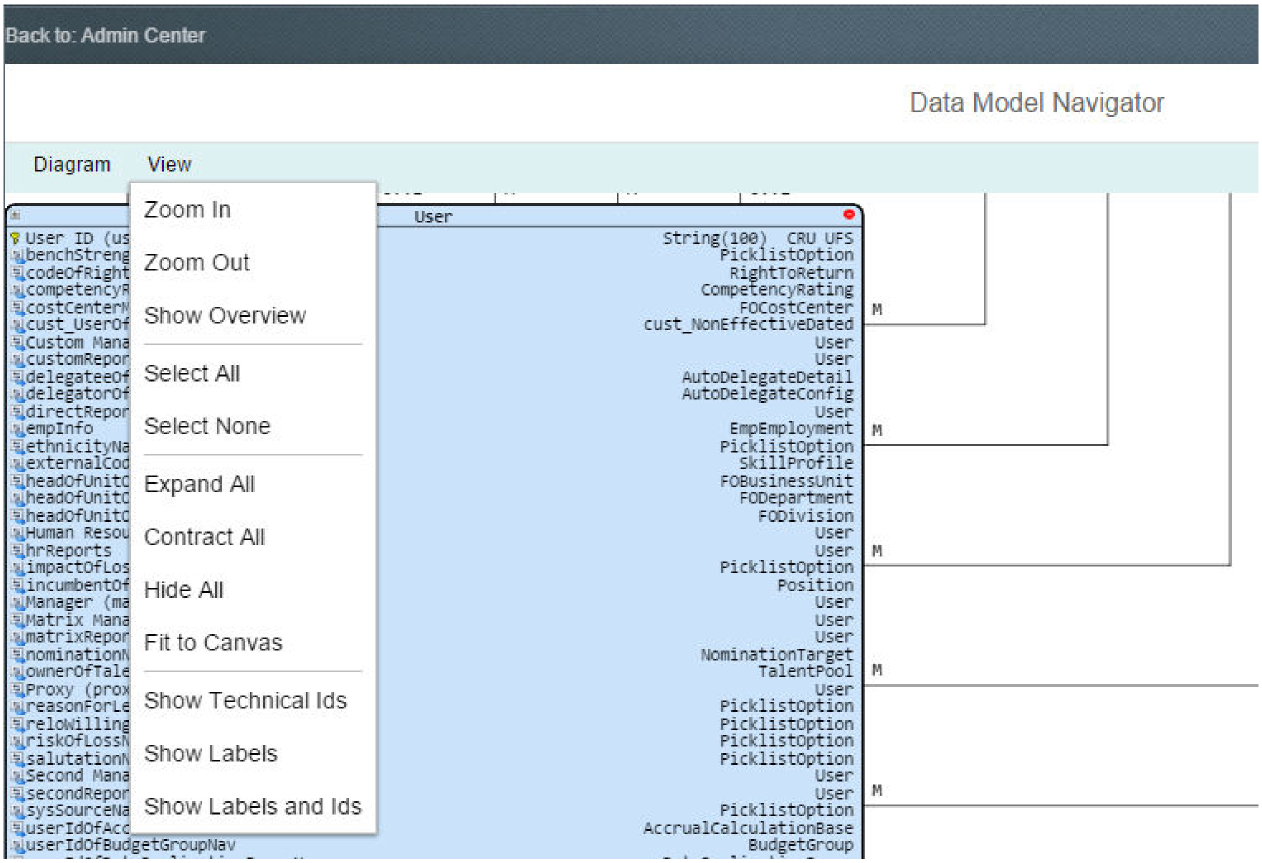


Diagram Menu

Diagram Menu Options

Option	Description
Choose Entities	The *Choose Entities for Display* dialog box appears when you first launch the Data Model Navigator. Using this you can select the data model elements to display on the canvas. The search and tag capabilities are as described in Creating Outbound Integrations Using Integration Center [page 8]. You can view all, or view only entity types, complex types, or function imports. The items are automatically laid out on the canvas as they are selected. Any associations are displayed between visible items that have navigation properties. Refer Common Entities for more information on each entity.
Export	Export a diagram to your desktop via an .odd file. This is how you can save the layout of a created diagram. You can import the file for later use.
Import	Import a previously exported diagram.
Export to PNG	Download a graphical image of the diagram in a .png file.

View Menu



View Menu

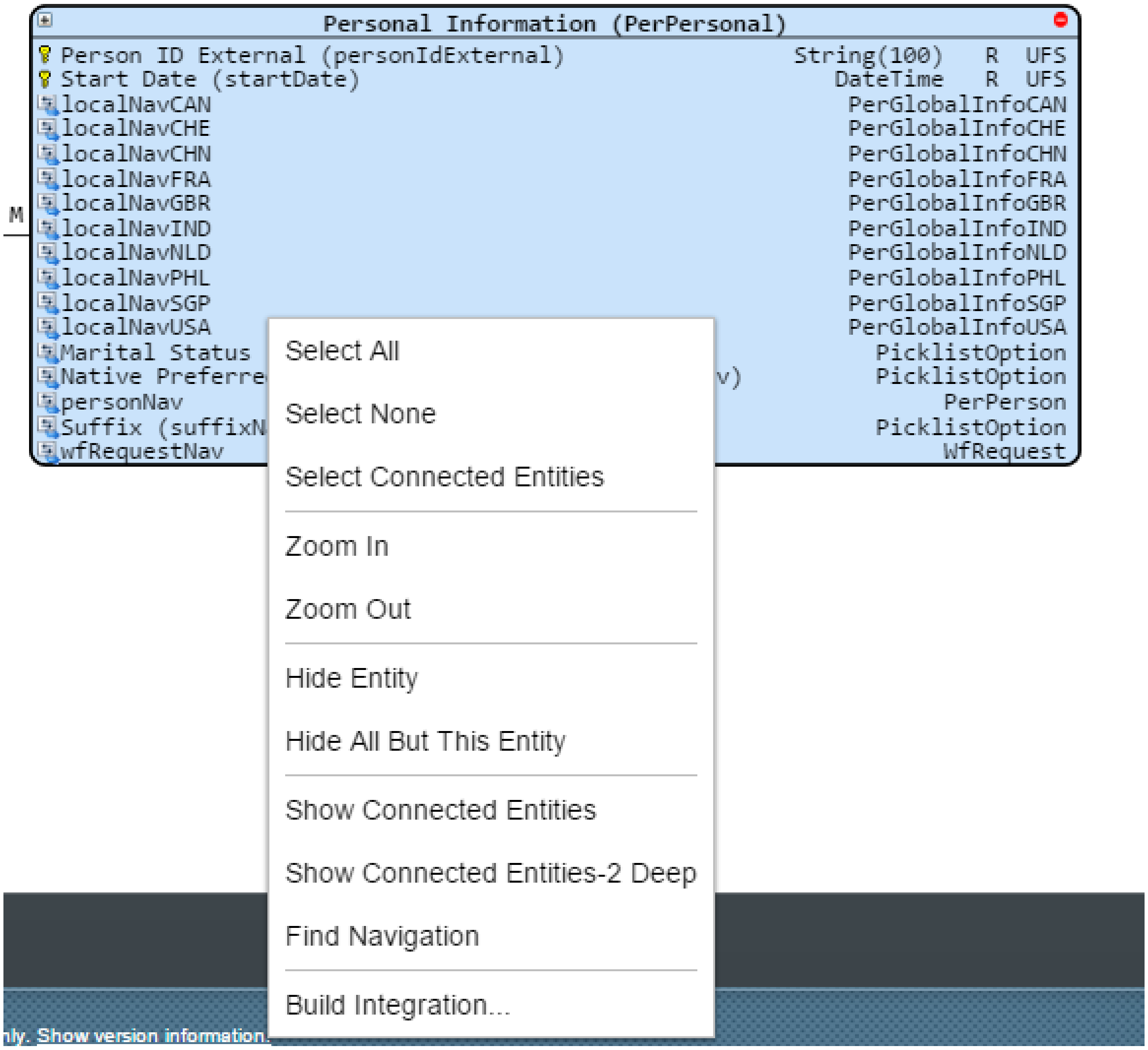
View Menu Options

Option	Description
Zoom In	Allows you to zoom the selected entity.
Zoom Out	Allows you to zoom out the selected entity.
Show Overview	Display the layout of the entire canvas. You can also use it to zoom and scroll the viewport within the canvas.
Select All	Allows you to select all the entities.
Select None	Deselects all the selected entities.
Expand All	Expand all items on the canvas to display all property types.
Contract All	Contract all items so that only the keys and navigation properties are visible.
Hide All	Hide all items on the canvas.

Option	Description
Fit to Canvas	Resize all items in the diagram so that they fit perfectly to the borders of the canvas. → Recommendation Do this before exporting to a .png file so that the entire image is filled.
Show Technical IDs	Show only the IDs of the properties within items.
Show Labels	Show only the customer-configurable labels of properties.
Show Labels and IDs	Show both Labels and IDs.

Popup Menu

When you right-click an item on the canvas, it displays the following popup menu.



Popup Menu

Popup Menu Options

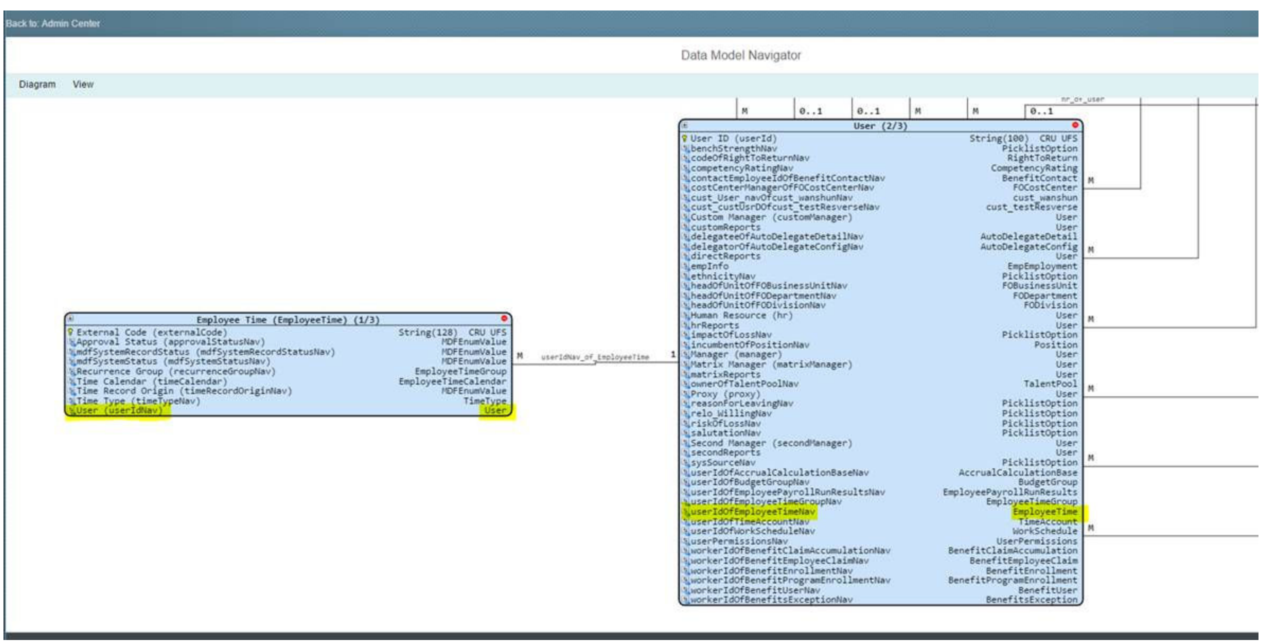
Option	Description
Select All	Allows you to select all the entities.
Select None	Deselects all the selected entities.
Select Connected Entities	Select any visible/not hidden entities connected to the entity.
Zoom In	Allows you to zoom the selected entity.
Zoom Out	Allows you to zoom out the selected entity.
Hide Entity	Hides the selected entity.
Hide All But This Entity	Hides all the entities other than the selected one.

Option	Description
Show Connected Entities	Show any entities that are directly associated with this entity. If they are not yet visible, they will be automatically displayed around the entity.
Show Connected Entities 2-Deep	Same as above, but also show entities connected to the directly associated entity.
Find Navigation	Helps in identifying the connection between the entities. First select the entity to which you want to find a navigation. Then right-click and choose *Find Navigation*. If navigation paths exist, the shortest one is displayed with all intermediate entities.
Build Integration	Open the Integration Center for this entity.

9.2 Best Practises on choosing the Starting Entity

The first task for creating an integration is deciding what should be the starting entity. This is the most important decision in creating an integration.

Let us consider an example of creating an export of *EmployeeTime*, where you want a file row for every timecard for every employee. Each row includes a time card, the owner of the time card, and further information like the employees cost center. Let's look at the relationship between User and EmployeeTime.



Note that a user can have many *EmployeeTime* cards but a card can be associated with only one user. It would be incorrect to use *User* as the starting entity because this would mean you could have a user appear in one and only one file row and you would only be able to show one card per user.

The best approach is to have *EmployeeTime* as the starting entity instead of *User* or *PerPerson*. From there you can navigate to user via *userIdNav*. You can navigate further to get the users employment information by navigating to *EmpEmployment* via *userIdNav* or *empInfo*. From Employment you can access department, cost center and other information for the owner of the time card. *Find Navigation* option will make it easy for you to find all these navigations. But make sure you select the correct starting entity.

Another example is an integration that extracts *New Hires*. Again, you can use *PerPerson* as your starting entity. Although that might work, it would not be the best choice. The best choice is to choose *EmpJob* as the starting entity. This is because an employee can have many *EmpJob*or *Job History records*, but you only want the one for *EmpJob.Event=New Hire*.

Once you have choosen *EmpJob* as the starting entity, you can navigate to other employee information via EmpJob.empEmploymentNav/perPersonNav

10 Integrating Intelligent Services with Integration Center

Intelligent Services provide suite-wide events that occur within the SAP SuccessFactors HCM suite. When an event occurs in one part of suite, other areas are made aware of it and can react accordingly.

Intelligent Services is now integrated with Integration Center, as *Intelligent Services Center*. The *Intelligent Services Center* will enable you to model the business processes for the Intelligent Services events within SAP SuccessFactors and other business applications.

If there is a change in event in Employee Central, the *Intelligent Services Center* integration is triggered. The change in event could be any of the following types:

- New Hire,
- Change in Manager Employee Time off,
- Change in Location, etc.

The *Intelligent Services Center* tool offers seamless integration.

When this integration is triggered, a file is generated. This file will contain information of those employees for which an event was triggered in Employee Central, which means that the file will not contain all data, rather it will contain data of employees for which the change event was triggered. We also support REST output for Intelligent Services based integration.

Accessing Intelligent Services Center

You can access the *Intelligent Services Center* tool from the Admin Center. If *Intelligent Services Center* is not configured, you must contact Technical Support.

Example to trigger an integration from Intelligent Services Center

Suppose you want to trigger the *Change in Manager* event in *Intelligent Services Center*.

Here are the steps you'd follow:

1. Click the *Change in Manager* event in Intelligent Services Center.
2. On the details page, click *Integration* under *Custom Activities*.
3. On the *Select Integration* page, you have the following two options:
   - To add an existing integration:
     Select an integration listed under *My Integrations* and then click *Add Integration*.
   - To create new integration:
     Click *Create New Integration*. Then, on the *Chose Integration Type* page, select the *Destination Type* and the *Format* of the output file and click *Create*.
4. You are now in the Integration Center view. Select and fill in the appropriate fields in the tabs.
5. On the *Review and Run* page, you have an option to go back to the *Intelligent Services Center* by clicking *Go to ISC* button.
6. From the *Intelligent Services Center* landing page, select the *Change in Manager* event. Click *Event Monitoring* and you can see event logs.

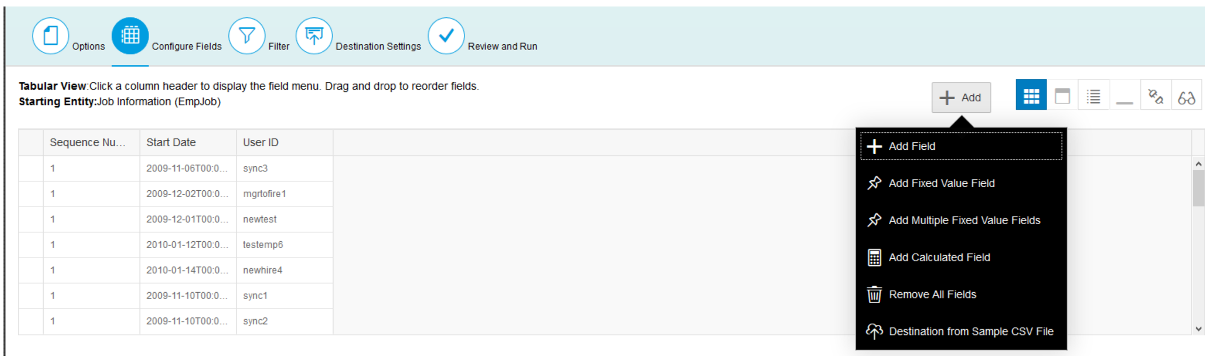
Example to use business keys in an integration created on Intelligent Services Center

When Intelligent Services event is triggered, only business keys are received. In Integration Center, typically customers extract additional data using the business keys from the corresponding ODATA API before sending the output data to either SFTP or REST API. Let's see this example.

Suppose you trigger the *Change in Manager* event in *Intelligent Services Center*.

Here are the steps to follow:

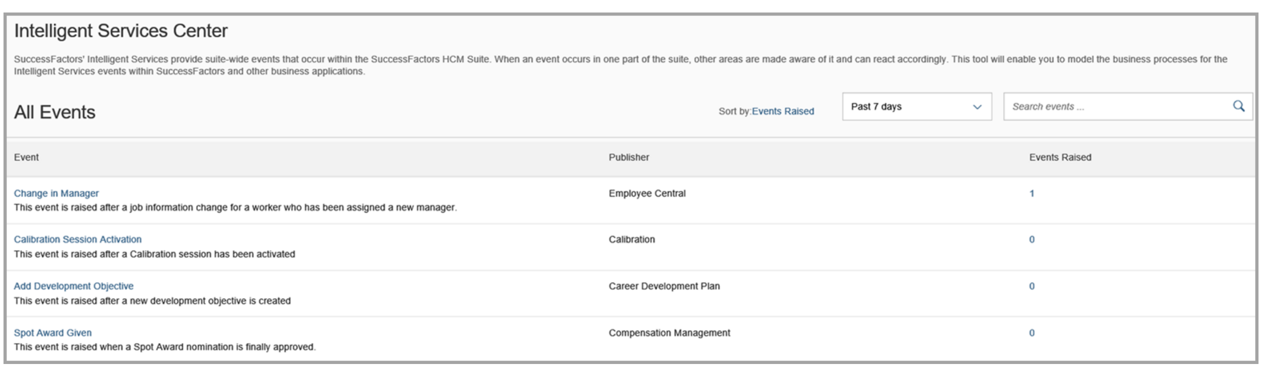
1. Click the *Change in Manager* event.
2. On the details page, click *Integration* under *Custom Activities*.
3. On the *Select Integration* page, choose *Create New Integration*.
4. On the *Chose Integration Type* page, select the *Destination Type* and the *Format* of the output file and click *Create*.
5. This takes you to the *Options* page in Integration Center. Click *Configure Fields* and you see by default, three configured business keys as shown in the following screen.



You can click the + icon to add multiple fields.

10.1 How to Access Intelligent Services Center

You can access the Intelligent Services Center tool from Admin Center. If you do not have Intelligent Services Center enabled in your instance, you can use Upgrade Center.



Accessing Intelligent Services Center

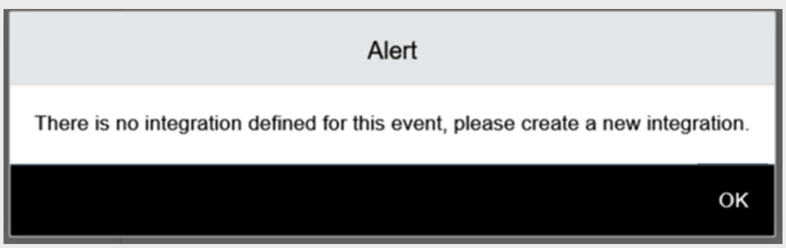
10.2 Using Intelligent Services Center for Integrations

After an integration is created, it is linked to an event in the Integration Center and is added as a configurable action. You can define a rule and timing options. When the event is triggered, the integration is called automatically. SAP SuccessFactors Integration Center supports REST and SFTP File Transfer.

Using Integration Tab

There are two options available when you use *Integrations* tab in Intelligent Services Center:

- My Integrations
- Create New Integrations

> ⓘ Note
>
> If no integrations have been created for a specific event, an alert appears that state: *There is no integration defined for this event, please create a new integration*.
>
> 
>

10.2.1 Selecting an Existing Integration in Intelligent Services Center

You can set up an already existing integration for your event, from the Intelligent Services Center *Integration* tab.

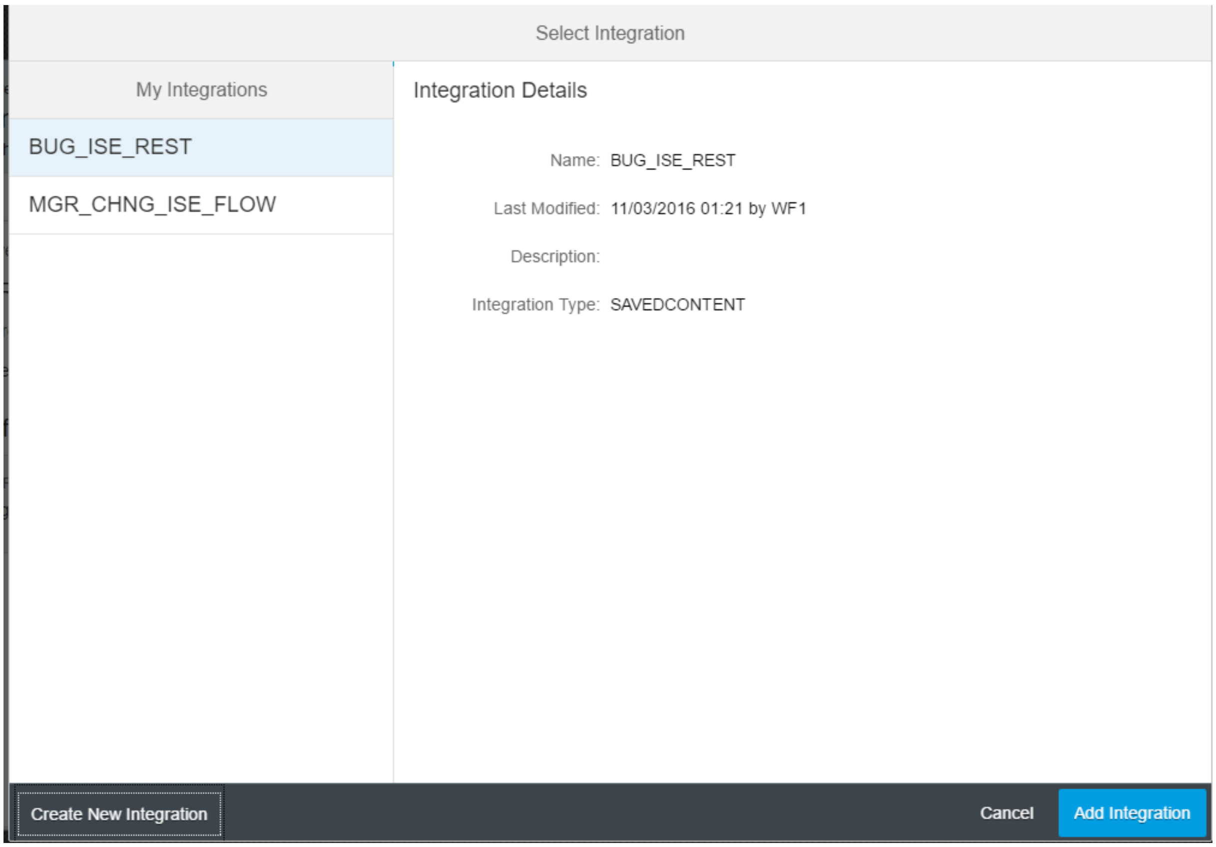
Prerequisites

You have the ▶ *Intelligent Services Tools* ▶ *Intelligent Services Center (ISC)* ◀ permission.

Procedure

1. Go to ▸ *Admin Center* ▸ *Intelligent Services Center* ▸.
2. Go to ▸ *Activities* ▸ *Custom Activities* ▸ *Integration* ▸.

   The *Select Integration* dialog box opens that contains a list of integrations under the *My Integrations* tab.



List of Integrations under the My Integrations tab in the Select Integration dialog box

3. Select the Integration package you want to use from the *My Integrations* tab.
4. Select *Add Integration* to finish.

10.2.2 Creating a New Integration in Intelligent Services Center

You can create new integrations from Intelligent Services Center that links with Integration Center.

Prerequisites

You have the ▸ *Intelligent Services Tools* ▸ *Intelligent Services Center (ISC)* ▸ permission.

Context

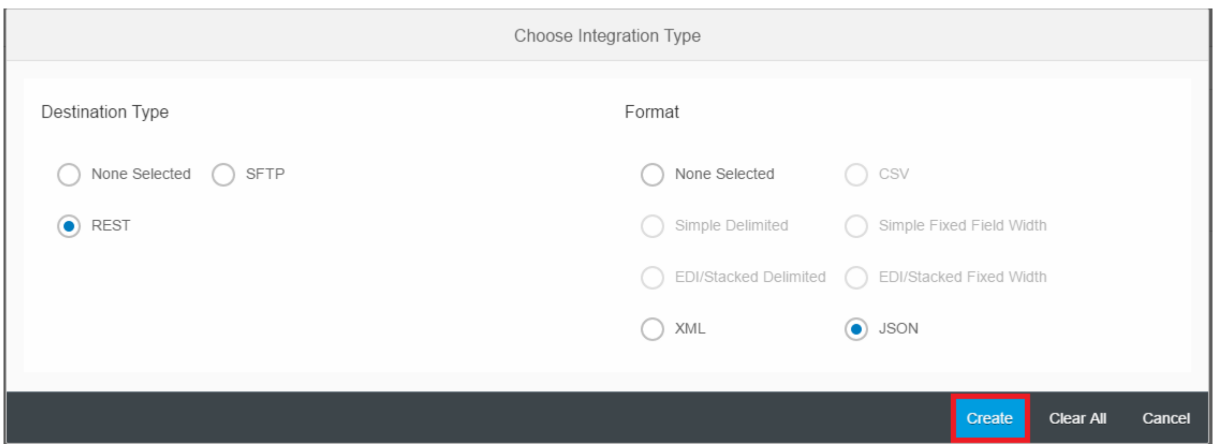
> ⓘ Note
>
> Integration Center supports SOAP-based integration, but can't be done from Intelligent Services Center. You can create your SOAP-based integrations using Integration Center first and add to your event later.

Procedure

1. Go to *Admin Center* > *Intelligent Services Center*.
2. Go to *Activities* > *Custom Activities* > *Integration*.
3. Select *OK* until the alert dialog box disappears.

   You now see the *Select Integration* dialog box.
4. Select *Create Integration*.

   The *Choose Integration Type* dialog box opens

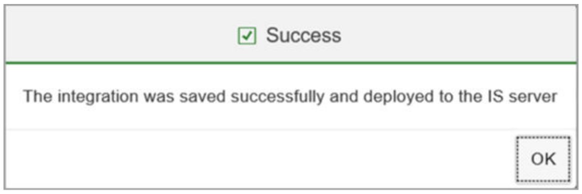
   

   Choose Integration Dialog Box for a New Integration
5. Go to *Destination Type* to select any of the two destination types:
   - REST
   - SFTP
6. Go to *Format* to select the format you want.
7. Select *Create*

   You're now in the Integration Center view.
8. Configure the following in each tab:
   - Options
   - Configure Fields
   - Filter
   - Destination Settings

9. Select *Next* until you reach the *Review and Run* page.
10. Select *Save* button to save your Intelligent Services integration.

    When you save your Intelligent Services, the *Success* dialog box appears.



Successful Integration When Saving for Intelligent Services

11. To finish, you can do either of the following:
    - Select *Run Now* to run your integration.
    - Select *Go to ISC* to return back to Intelligent Services Center.

> **Restriction**
>
> Note that there's a difference in number of records processed for **bulk** events and for **standard** events. For bulk events, multiple records can be processed, but standard events, only one record is processed.

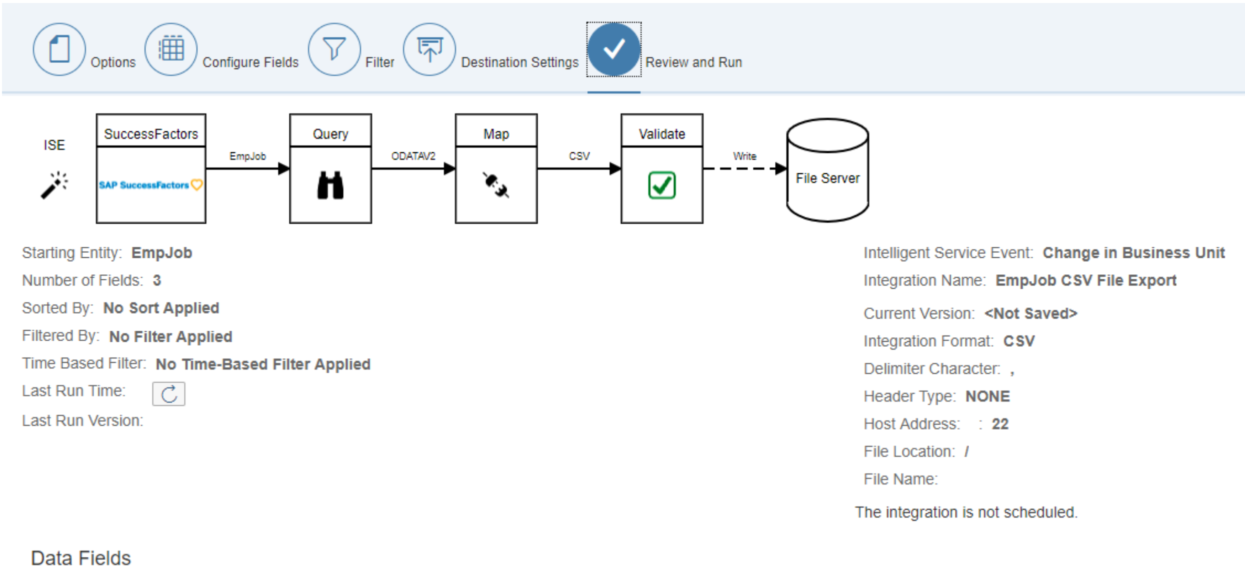
10.2.3 Displaying Event Names for Intelligent Services Integrations

You can now see the event names associated with the Intelligent Services based integrations on the Review and Run page.

Intelligent Services Events Names in *Review and Run*

Under the *Review and Run* page, you can view the Intelligent Services *Event Name* for Intelligent Services based integration. You can locate the event name above or near the *Integration Name* field under the diagram.

> **Restriction**
>
> Tags are not available for Intelligent Services events.



Screenshot for Change in Business Unit Event in the Review and Run Page

10.2.4 Using Business Keys For Intelligent Services Integrations

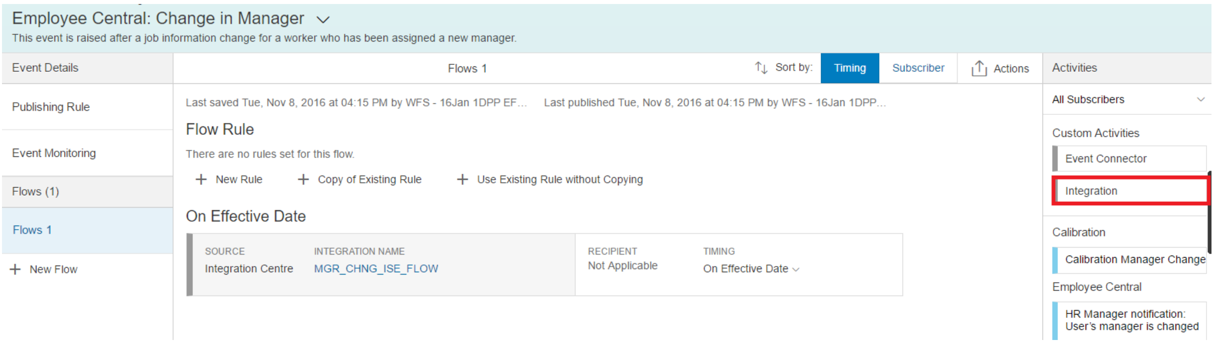
You can extract additional data using business from corresponding OData APIs before you send output data to SFTP or REST API for new integrations for Intelligent Services events.

Context

When Intelligent Services event launches, only business keys are received by Integration Center. To use business keys to add additional data for new integrations, follow these steps:

Procedure

1. Go to *Admin Center* Intelligent Services Center.
2. Select the event you want.
3. Go to *Custom Activities* *Integration*



Integration Option for Change in Manager Event

When you see the *Select Integration* page, you can either create a new integration or add an existing one.

4. Follow the steps in this table starting from the *Select Integration* dialog box to select the type of integration you want:

Integration Type	Steps
Create New Integration	1. Select *Create New Integration*. The *Choose Integration Type* dialog box appears. 2. Select your destination type and format. 3. Select *Create* that directs you to the *Integration Center - Create New Intelligent Services* page in Integration Center. 4. Fill out the required information in the *Options* tab of your new integration. 5. Select *Next* to continue to the *Configure Fields* tab. 6. To add additional data, you can select any of these two choices from the *+Add* menu: • Add Fixed Value Field • Add Multiple Fixed Value Fields • Add Calculated Field 7. Fill out all required information for your new integration. 8. Select *Next* until you reach the *Review and Run* tab. 9. When finished, select *Run Now* to finish.
Add Integration (Existing Integration)	1. From the *Choose Integration Type* list, select the integration you want to use. 2. Select *Add Integration* that adds this already existing integration for your event Intelligent Services Center that also closes up the *Choose Integration Type* dialog box. 3. Locate your Integration within Intelligent Services Center and select the *Action Menu*. The *Action Menu* displays two options: • View In Integration Center • Add Rule 4. Select *View In Integration Center* that takes you to the *Integration Center - Create New Intelligent Services* page in Integration Center. 5. Fill out the required information in the *Options* tab of your new integration.

Integration Type	Steps
	6. To add additional data, you can select any of these two choices from the *+Add* menu: • Add Fixed Value Field • Add Multiple Fixed Value Fields • Add Calculated Field 7. Fill out all required information for your new integration. 8. When finished, select *Run Now* to finish.

5. To return back to Intelligent Services Center, go to the *Review and Run* tab and select *Go to ISC*.

11 Quick configuration validations

11.1 Using the Check Tool to Solve Issues

Get an overview of potential problems and errors in your configuration that you can try to solve yourself before you contact Technical Support about an issue.

Prerequisites

- You've enabled the Metadata Framework.
- You have the following *Administrator Permissions* > *Check Tool* permissions:
  - *Access Check Tool* authorizes users to access the tool.
  - *Allow Configuration Export* authorizes users to attach configuration information to a ticket.
  - *Allow Check Tool Quick Fix* authorizes users to run quick fixes for the checks that have this feature. A quick fix can be used to immediately correct any issues found by that check.

  For more information about role-based permissions, refer to List of Role-Based Permissions.

> → Tip
>
> Refer to Guided Answers for the Check Tool for a guided navigation through the available check tool checks and more information on each check.

Context

The check tool provides an overview of the issues found in the system. New checks that are being added in a new release go through a first initial run to return a result. After the initial run, checks are run on a regular basis (at least monthly). We recommend you open the check tool after you upgrade to a new release to see whether issues have been found by new checks.

In addition to these runs performed by the system, you can also run individual checks after you make changes to the system, for example, after updating data models or picklists. For more information, refer to the application-specific documentation.

Procedure

1. Go to *Admin Center* > *Check Tool*.

   The *Check Tool* page opens displaying the results of the first tab **System Health**.

2. Depending on the check type of the check you're interested in, select the corresponding tab.

Tab	Description
System Health	Displays configuration checks that have returned errors or warnings after the last run. We recommend you solve these in a timely manner. To display all checks, select all result types in the *Result Type* search filter and select *Go*.
Migration	Displays the migrations that are still pending, either because the check tool couldn't automatically migrate all issues or because new issues have been found after the last run. We recommend you solve these in a timely manner. To display all checks, turn on the *Show completed migrations also* search filter and select *Go*.
Validation	Displays a list of all validation checks. **Note** Validation checks require one or more parameters for execution, therefore we can't run these checks automatically. You need to enter input parameters and run the corresponding check manually to get results.

3. To solve a check that returned issues, select it.

   The detail view opens to the right side of the screen with more information on the check and on how to solve the issue.
4. Evaluate the results and resolve the issues. If the check provides a quick fix that you can use to immediately correct issues found during a check run, select the *Quick Fix* button.
5. If you encounter an error you can’t resolve, contact Technical Support by creating a ticket.

Next Steps

To verify that you've solved the underlying issue, select the checkbox for the corresponding checks and choose *Run Checks*. You can also wait until the next automatic run to see if the issue has been solved.

> **Note**
>
> If the check you selected requires one or more prechecks (checks that need to be run successfully first), the prechecks are run first even if you haven't selected them.

Related Information

[Running Checks [page 151]]
[Using the Quick Fix Feature [page 155]]

11.1.1 Benefits of the Check Tool

The SAP SuccessFactors check tool helps you identify and resolve issues when your system doesn't work as you expect.

If your SAP SuccessFactors applications are behaving in unexpected ways, it is likely that it has a configuration or data conflict: you have some data that is inconsistent or a configuration error. The check tool quickly identifies these types of problems so that you can avoid support tickets. You might still need to create a support ticket if the problem is severe, but even in severe cases, the check tool can save you time because it can export the results of the check and your configuration for Technical Support. The support engineer, therefore, can identify the issue more quickly.

When you open the check tool, you see:

- A list of issues in your configuration or data and the severity of each issue.
- A solution or recommendation to address the issue.

11.1.2 Running Checks

Trigger the execution of individual checks to find potential issues in the system, or to check if an issue has been solved in the meantime.

Prerequisites

- You've enabled the Metadata Framework.
- You have the following *Administrator Permissions* > *Check Tool* permissions:
    - *Access Check Tool*
    - *Allow Configuration Export*
    - *Allow Check Tool Quick Fix*

Context

In addition to the job runs performed automatically by the system, you can also run individual checks. For example:

- You want to check whether the issue has been solved.

- You want to run a check as a prerequisite or post-step of a task. For example, you made changes to the system (such as updating data models or picklists), and you want to verify that your changes didn't cause any new issues. For more information, refer to the application-specific documentation.
- Validation checks need to be run manually as they require input parameters.

Procedure

1. Go to *Admin Center* > *Check Tool*.

   The *Check Tool* page opens displaying the results of the first tab *System Health*.
2. Depending on the check type of the check you want to perform, select the corresponding tab.

   A list of checks is displayed in the results table according to the predefined selection criteria.
3. **Optional:** If the check you're searching for is not listed in the results table, adjust the selection criteria and choose *Go*.

   You get a list of checks that fulfill the selection criteria you've entered.
4. Select the corresponding checks, and choose *Run Checks* from the top right of the results table.

   > Note
   >
   > Please note that, for checks on the *Validation* tab, you can only select one row at a time. Execution of multiple checks at once is not possible.
   >
   > Also, for validation checks you need to enter the required input parameters when running a check.

   > Note
   >
   > If the check you selected requires one or more prechecks (checks that need to be run successfully first), the prechecks are run first even if you haven't selected them.

   The *Results* column displays any issues found.

Next Steps

Investigate and solve the underlying issue.

11.1.3 Check Types

Overview of the different check types and their purpose.

The check type groups those checks that have a common purpose. On the *Check Tool* page, each tab represents a check type.

Overview of Check Types

Check Type	Description	Automatic Job Runs
System Health	Checks that run without parameters and check configuration and data issues that need to be fixed. The predefined selection criteria displays only those that have returned errors or warnings after the last run. We recommend you solve these in a timely manner. To display all checks, select all result types in the **Result Type** search filter and select *Go*.	• Automatic initial run at the beginning of a new release • Periodic runs (usually monthly)
Migration	Checks that perform an automatic migration of features. When you open the page, only pending migrations are displayed. To display also the competed migrations, turn on the *Show completed migrations also* search filter and select *Go*.	• Automatic initial run at the beginning of a new release • Periodic runs (usually monthly)
Validation	Checks which need one or more parameters for execution, for example: • A specific template • A specific user • A specific time frame Validation checks can be triggered by single selection and choosing the *Run* button. A popup appears with input fields for the parameters. Execution of multiple checks at once is not possible.	Only triggered through user

11.1.4 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, select 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.

Related Information

Creating Technical Support Tickets from the Check Tool [page 154]

11.1.5 Creating Technical Support Tickets from the Check Tool

When the check tool reports a serious issue that you can't solve, you might need to contact Technical Support. You can create a support ticket from within the check tool.

Prerequisites

You've run the check tool. You can find the check tool by going to *Admin Center* > *Check Tool*. You create the ticket from the details page of the tool.

Procedure

1. Select the check you can't solve.

   The detail view opens to the right side of the screen with more information on the check and on how to solve the issue.
2. On the *Result* tab, scroll down to the results table to look for the errors you want to report on.

   You usually contact Technical Support for high severity issues not low severity issues.
3. On the *Check Information* tab, under *Need Assistance?*, copy the component ID.

   For example, LOD-SF-EC is the component ID for Employee Central.
4. Create a customer case in the relevant category.
5. When you create the ticket, paste the component ID into the ticket.

11.1.6 Using the Quick Fix Feature

The check tool includes a quick fix feature that you can use to immediately correct issues found during a check run.

Prerequisites

The checks you want to solve with a quick fix have run and provide a check result with error or warning.

Procedure

1. Go to *Admin Center* > *Check Tool*.

   The **Check Tool** page opens.
2. Select the check you want to fix.

   The details screen opens on the right side of the page with more information about the check. If the check includes a quick fix, the *Quick Fix* button is displayed on the *Result* tab, under *Proposed Solution*.
3. Choose *Quick Fix* to start fixing the issue.

   A third screen opens to the right side, with step 1, called *Select Correction*, that shows one or more corrections for the issue.
4. Select the correction you want to carry out and choose *Step 2* to proceed to *Final Approval*.

   In the *Final Approval* step, you can opt to change your mind and not carry out the fix.
5. If you want to proceed, choose *Step 3*.

   The system confirms that the fix is now running.
6. Choose *Close* to complete the procedure.

After a short time, the system runs the check again to verify that the fix has run correctly.

11.1.7 Exports

11.1.7.1 Exporting Configuration Information

Export the configuration information from your system and attach it to the Support ticket created from the check tool. This information can help Support identify the issue of a check you can't solve yourself.

Prerequisites

You have the *Administrator Permissions* > *Check Tool* > *Allow Configuration Export* permission.

Context

> **Restriction**
>
> Export of configuration information is supported only in the following applications:
>
> - Payroll Information
> - Position Management
> - Time Off
> - Time Sheet

Procedure

1. Go to *Admin Center* > *Check Tool*.

   The *Check Tool* page opens with a list of all applications for which you can use the check tool..
2. Select the corresponding application.

   If the application has the export configuration feature enabled, you can see an information message at the bottom of the page with a link.
3. Choose the *Export Configuration* link in the information message.

Results

The system downloads a file with the configuration information for the application you've selected.

Next Steps

Attach the downloaded file to the Support ticket you created from the check tool.

11.1.7.2 Exporting Check Results

After you run checks in the check tool, you can export the results.

Context

- Ensure you run the check before exporting the check results. If you don't do this, you can view only the first 100 check results.
- The downloaded check result table can display a maximum number of 10,000 rows.

Procedure

On the *Result* tab, select the *Export Results* button to download the check results.

11.1.7.3 Exporting a List of All Checks

Get an overview of all checks available in the system by exporting a CSV file.

Procedure

1. Go to *Admin Center* > *Check Tool*.

   The *Check Tool* page opens.
2. In the top-right corner, select *Export all checks*.

   A CSV file with all checks available in the system is downloaded, including check descriptions and application area.

> ⓘ Note
>
> The list includes also checks that you can't access from the user interface if you don't have the corresponding applications set up, or if you lack the required permissions.

11.2 Resolutions to Common Problems in Integration Center

Gives you additional information on why the checks might fail and where these checks are applicable.

Available checks for Integration Center

Integration Center Checks	Description
Field filter check for 1:M field associations.	The Field Filter check verifies one to many (1:M) navigation in the following: 1. *Configure Fields* > *Add* > *Add Field* > *Field Filters* 2. *Configure Fields* > *Add* > *Add Calculated Field* > *Field Filters* 3. *Filter and Sort* > *Advanced Filters* > *Calculated Filter* This check is applicable for field filters in *CSV*, *True CSV*, *Simple Delimited*, *Simple Field Fixed Width* file formats. The Field Filter check is executed for the integrations whose trigger type is *Intelligent Services* or *Scheduled*. **When Trigger Type is Scheduled**: This check is executed only for integrations that are scheduled with recurring frequency. If an integration is saved and not scheduled, then Field filter check is not executed on such integrations. **When Trigger Type is Intelligent Services**: This check is executed for the latest version.
Scheduling check for multiple Integration versions or same version scheduled for multiple frequencies.	This check is executed only for integrations that are scheduled with recurring frequency. The check is not executed on integrations that are saved, but not scheduled.
Integration Center can connect to SFTP server and have read and/or write access.	This check is executed only for integrations that are failing. **When Trigger Type is Scheduled**: This check is executed only for integrations that are scheduled with recurring frequency. **When Trigger Type is Intelligent Services**: This check is executed for the latest version.

ⓘ Note

The Check Tool application provides detailed information on the proposed solution.

12 Appendix

12.1 Using SAP Cloud Integration Artifacts From Integration Center

You can export your *Export SAP Cloud Integration Artifacts* from Integration Center as a `.iflw` file to use with SAP Cloud Integration or SAP CPI.

Supported Integrations Using SAP Cloud Integration and Reference Information

Currently, *Simple CSV* outbound integrations are supported using SAP Cloud Integration. You can export your SAP Cloud Integration artifacts from the *Save* menu when you select *Export SAP Cloud Integration Artifacts*

When you select *Export SAP Cloud Integration Artifacts* option you are prompted to save these files to your hard drive:

- `main.iflw`
- Your mapping file in `xsl` format.
- Your output file in `xsd` format.
- Your metadata file in `xml format.`

Additional Reference Information using SAP Cloud Integration

Simple calculation is supported using *RecordCount* and *NOW* when you generate `XSL` script. You can view your calculated fields in the `mapping.xsl` file that is one of the downloaded files. Calculated fields using SAP Cloud Integration support these data types:

- String
- Number

> **Restriction**
>
> Date fields format that contain month as text: *DEC/JAN* is not supported.

For instructions on how to configure SAP Cloud Integration using Eclipse and learn more about SAP Cloud Integration, refer to these links:

- Configuring SAP Cloud Integration: SAP Cloud Integration Tools
- More about SAP Cloud Integration: SAP Cloud Integration Reference Links

1. Exporting SAP CPI Artifacts From Integration Center [page 161]
   You can export several files using the *Export SAP CPI Artifacts* option from the *Save* menu for your *Scheduled Simple File Output Integration*
2. Configuring Integration Flow for SAP CPI [page 162]
   You can easily configure your integration flow for SAP CPI using Eclipse, so you can later configure your *Export SAP CPI Artifacts* files to work with Eclipse.
3. Importing Integration Artifact Files [page 163]
   You can copy and paste your downloaded *Export SAP CPI Artifacts* from Integration Center so you can configure your channel connectors so you can pull data from your SAP SuccessFactors instance to your *SFTP* folder.

12.1.1 Exporting SAP CPI Artifacts From Integration Center

You can export several files using the *Export SAP CPI Artifacts* option from the *Save* menu for your *Scheduled Simple File Output Integration*

Prerequisites

- SAP CPI installed and configured for use with Eclipse
- An existing or saved *Scheduled Simple File Output Integration* or *Simple CSV* outbound integration

Context

As a best practice, you want to save your outbound integration before you export the necessary SAP CPI artifact files from Integration Center. The steps described in this topic starts from the *Review and Run* page when you have already scheduled or run your integration.

Procedure

1. From the *Review and Run* tab of your *Scheduled Simple File Output Integration* or *Simple CSV* integration, go to *Save* > *Export SAP CPI Artifacts*.
   When you select the *Export SAP CPI Artifacts* option, four *Save As* dialog boxes may appear at one time for download or one *Save As* dialog box at a time to download your SAP CPI files that is dependent on type of browser.
2. When prompted, save the following four SAP CPI export files to your hard drive:
   - The `main.iflw` file
   - Your mapping file in `xsl` format.
   - Your output file in `xsd` format.

- Your metadata file in `xml format.`

Next Steps

You can now set up your integration flow for SAP CPI, for more information, refer to the next topic.

Task overview: Using SAP Cloud Integration Artifacts From Integration Center [page 160]

Next task: Configuring Integration Flow for SAP CPI [page 162]

12.1.2 Configuring Integration Flow for SAP CPI

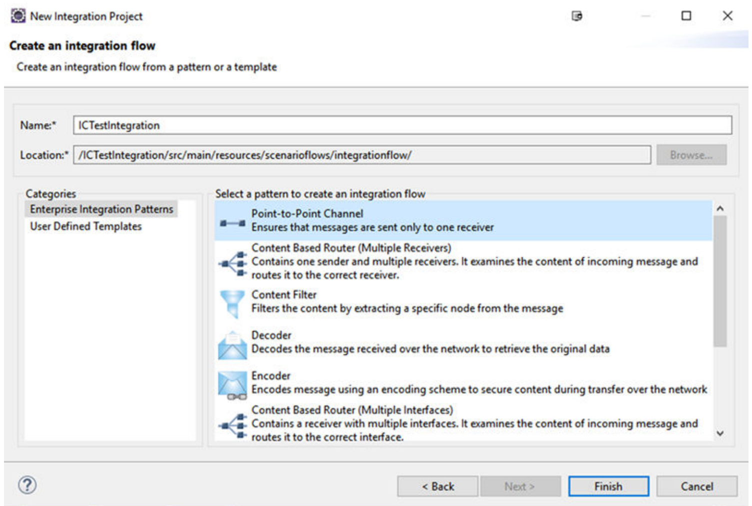
You can easily configure your integration flow for SAP CPI using Eclipse, so you can later configure your *Export SAP CPI Artifacts* files to work with Eclipse.

Prerequisites

- SAP CPI or SAP CPI *Eclipse* has been installed

Procedure

1. Launch Eclipse and go to *File* > *New* > *Integration Project*.
   When you select *Integration Project* the *Create an Integration Project* dialog box appears.
2. From the *Create an Integration Project* dialog box, enter in the name of your integration project.
3. Go to *Project Type* and ensure that *Integration Flow* is selected from the menu.
4. Select **`Next`** to create integration flow for your integration project.
   When you select *Next*, another dialog box *Create an integration flow* appears.
5. From the *Create an integration flow* dialog box, go to *Categories* and select *Enterprise Integration Patterns*.
6. Go to *Select a pattern to create an integration flow* and select *Point-to-Point Channel*.



Screenshot of the Create an Integration Flow Dialog Box That Contains Selected Category and Integration Flow Pattern

7. Select *Finish* to set up your integration flow.

   When you select the *Finish*, the system finishes integration flow set up and you are directed to the *Integration Designer* screen for your integration.

Next Steps

You can now import your *Export SAP CPI Artifacts* files. For more information, see next topic.

Task overview: Using SAP Cloud Integration Artifacts From Integration Center [page 160]

Previous task: Exporting SAP CPI Artifacts From Integration Center [page 161]

Next task: Importing Integration Artifact Files [page 163]

12.1.3 Importing Integration Artifact Files

You can copy and paste your downloaded *Export SAP CPI Artifacts* from Integration Center so you can configure your channel connectors so you can pull data from your SAP SuccessFactors instance to your *SFTP* folder.

Prerequisites

All four *Export SAP CPI Artifacts* files have downloaded to your hard drive from Integration Center:

- The `main.iflw` file
- Your mapping file in `xsl` format.

- Your output file in `xsd` format.
- Your metadata file in `xml format.`

Context

You can import your files when your project is expanded with the *Integration Designer* perspective open.

Procedure

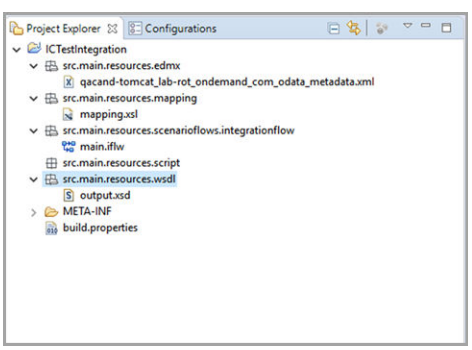
1. Browse to the directory path where your *Export SAP CPI Artifacts* files are located on your hard drive.
2. Copy the `main.iflw` file and paste it into your eclipse project structure under this package: *src.main.resources.scenarioflows.integrationflow*.
3. Remove the default `.iflw` package that was automatically created with your project.

   > ⚠ Caution
   >
   > If you do not delete the default `.iflw` package, you may encounter error messages when you attempt to deply the project content with the additional artifact files.

4. Copy and paste the downloaded `mapping.xsl` file from your hard drive and paste it into your existing *src.main.resources.mapping* package.
5. To create a new package, select your integration folder and use the right button of your mouse to open up your integration project menu.
6. From your integration project menu, select ▶ *New* ▶ *Package* ▶.

   When you have selected *Package* from the menu, the *Java Package* dialog box opens.
7. Go to the name field *Java Package* and enter in this name for your new package: *src.main.resources.edmx*.
8. Select *Finish* to create your new package.

   When you have entered in *src.main.resources.edmx* as your package name and selected *Finish* the dialog box disappears and you can now see the new package under your integration project folder.
9. Copy and paste the downloaded `.xml` file from your hard drive and paste it into *src.main.resources.edmx*.

   Screenshot of Your Eclipse Project Structure With all Copied Artifact Files
10. To finish, open your *main.iflw* file that opens up the *Model Configuration* page, make the following changes to channel connection lines:

Channel Connection Line	Steps
SuccessFactors **Receiver Channel**	To configure your receiver channel for *SuccessFactors*: 1. Double-click the dotted line that leads to *SuccessFactors* channel that opens up the *Receiver Channel for SuccessFactors* page. 2. Go to the *Adapter Specific* tab to enter in your credential alias to access your SAP SuccessFactors
SFTP **Receiver Channel**	To configure your receiver channel for *SFTP*: 1. Double-click the dotted line that leads to *SFTP* channel that opens up the *Receiver Channel for SFTP-host*. 2. Go to the *Adapter Specific* tab to enter credential alias for your *SFTP* host to place your file.

11. Save your `.iflw` component.
12. Select your project folder to open up your project menu.
13. Select your project from the *Project Explorer* view to open project menu.
14. Select *Deploy Integration Content* so you can import your SAP CPI *iflow* to execute your integration.

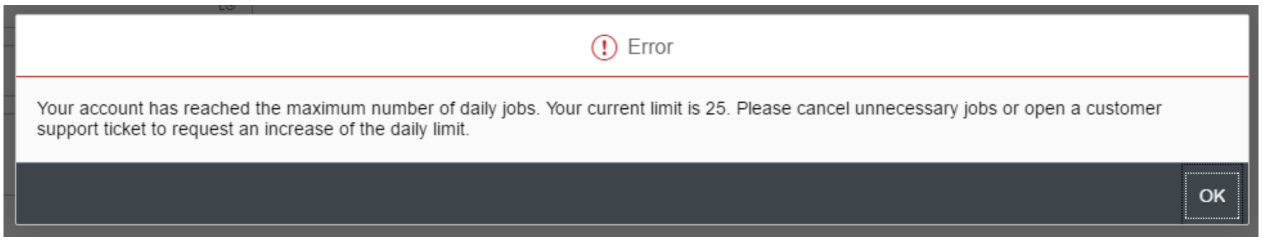
Task overview: Using SAP Cloud Integration Artifacts From Integration Center [page 160]

Previous task: Configuring Integration Flow for SAP CPI [page 162]

13 Troubleshooting

13.1 Scenario 1: Schedule Throttle Error

If you receive the following error message, it means that you have exceeded the daily limit of scheduled jobs (this error message is specific to a tenant whose Job threshold limit, by default is set to 25).



The Job threshold limit, by default, has been set to a specific limit. To change the job limit for your tenant, you must contact SAP SuccessFactors Support and request the change in the limit.

13.2 Scenario 2: Cannot Reach Destination Server for REST and SOAP Integrations

When you create a *REST* or *SOAP* outbound integration you may receive an HTTP error message to check if your endpoint IP address has been whitelisted.

Error Message for Both *REST* and *SOAP* Integrations

This message appears as an informational *HTTP error* for *REST* integrations and as an Informational *SOAP error* for *SOAP* integrations. View the example for exact text of the

> Example
>
> Could not connect to destination server from IP Address 155.56.251.10. Please check to see if IP Address 155.56.251.10 is whitelisted by your destination server. Contact your IT for more information

> → Remember
>
> The message is an informational message, it may appear even if your endpoint IP address has been whitelisted.

HTTP Error Message for REST Integrations

You can view this informational message for your failed *REST* integration in Execution Manager or by downloading the log as a .csv file.

Process Instance Name: INT_37670_DC_Egree_IP_REST_Reg_1711 - Version 3

Event Name	Event Description	Event Type	Created Date
jobFailure	Job failed : Error occurred. Please, see error details	FAILED	Fri Oct 20 2017 09:11:20 GMT-0700 (Pacific Daylight Time)
Integration Process Error	HttpOperationFailedException: Failed due to - HTTP operation failed invoking https://sfpm01.accounts4...	FAILED	Fri Oct 20 2017 09:11:19 GMT-0700 (Pacific Daylight Time)
HTTP Error	Could not connect to destination server from IP Address 155.56.251.10. Please check to see if IP Addre...	INFO	Fri Oct 20 2017 09:11:19 GMT-0700 (Pacific Daylight Time)
HTTP Error	Http Error response code 404 with response state text: Not Found ; Click text to download payload for fu...	ERROR	Fri Oct 20 2017 09:11:19 GMT-0700 (Pacific Daylight Time)
Integration Process Info	Calling REST destination URL https://sfpm01.accounts400.ondemand.com/service/scm/Users	INFO	Fri Oct 20 2017 09:11:18 GMT-0700 (Pacific Daylight Time)
Page 1	2 records processed in 00 mins 00 secs 086 msecs - 2 records completed in 00 hrs 00 mins 00 secs 10...	INFO	Fri Oct 20 2017 09:11:18 GMT-0700 (Pacific Daylight Time)
Query	mainEntityName : PerPerson, entitySelect : personIdExternal,employmentNav/userNav/firstName,emplo...	INFO	Fri Oct 20 2017 09:11:16 GMT-0700 (Pacific Daylight Time)
startJob	Start execution of job [jobExecutionId=200776702]	START	Fri Oct 20 2017 09:11:10 GMT-0700 (Pacific Daylight Time)

Informational Message In Execution Manager

D	E	F
EVENT TIME	EVENT DESCRIPTION	ATTRIBUTES
2017-OCT-20 16:11:10	Start execution of job [jobExecutionId=200776702]	
2017-OCT-20 16:11:16	mainEntityName : PerPerson, entitySelect : personIdExternal,employmentNav/userNav/firstName,employmentNav/userNav/lastName, entityFilter :	
2017-OCT-20 16:11:18	2 records processed in 00 mins 00 secs 086 msecs - 2 records completed in 00 hrs 00 mins 00 secs 101 msecs	
2017-OCT-20 16:11:18	Calling REST destination URL https://sfpm01.accounts400.ondemand.com/service/scm/Users	
2017-OCT-20 16:11:19	Could not connect to destination server from IP Address 155.56.251.10. Please check to see if IP Address 155.56.251.10 is whitelisted by your destination server. Contact your IT for more information	
2017-OCT-20 16:11:19	Http Error response code 404 with response state text: Not Found ; Click text to download payload for further details	
2017-OCT-20 16:11:19	HttpOperationFailedException: Failed due to - HTTP operation failed invoking	
2017-OCT-20 16:11:20	Job failed : Error occurred. Please, see error details	

Informational Message as viewed from the .CSV log

SOAP Error Message for SOAP Integrations

For failed *SOAP* integrations, this can also be viewed in Execution Manager and by downloading the log as a .csv file..

13.3 Scenario 3: Adding Double Header File using Integration Center

Context

Let us consider a scenario where you want to build an integration in the Integration Center with the type EDI stacked. The output file should have multiple header lines.

Procedure

1. Go to the *Admin Center*.
2. In the *Tools Search*, enter *Integration Center*.
3. Click on the *My Integration* tile which lists the integrations already existing in system along with the last seven days of execution status and some actions to modify, list older versions and deleting of the integration.
4. Use the *+ Create* button and select *Scheduled EDI/Stacked File Output Integration*.
5. Select the entity and click *Select* to open the integration center wizard.
6. *Configure field* does the mapping of SuccessFactors data model to the output format. The Configure Field tab uses two of the EDI Terminologies of *Segment* and *Element*.

   Click on the + sign above the table and select *Insert Sibling*. The first Sibling is added with the first data element given by default.

   > Note
   >
   > The selection in the table is cell specific. So even though the highlighting is for the whole row, it is always necessary to select cell and use the detail display on the right to understand the cell context.

7. Now select the *New Segment* (column 1) and name it as per your requirement. Let us name it as *HeaderLine1*.

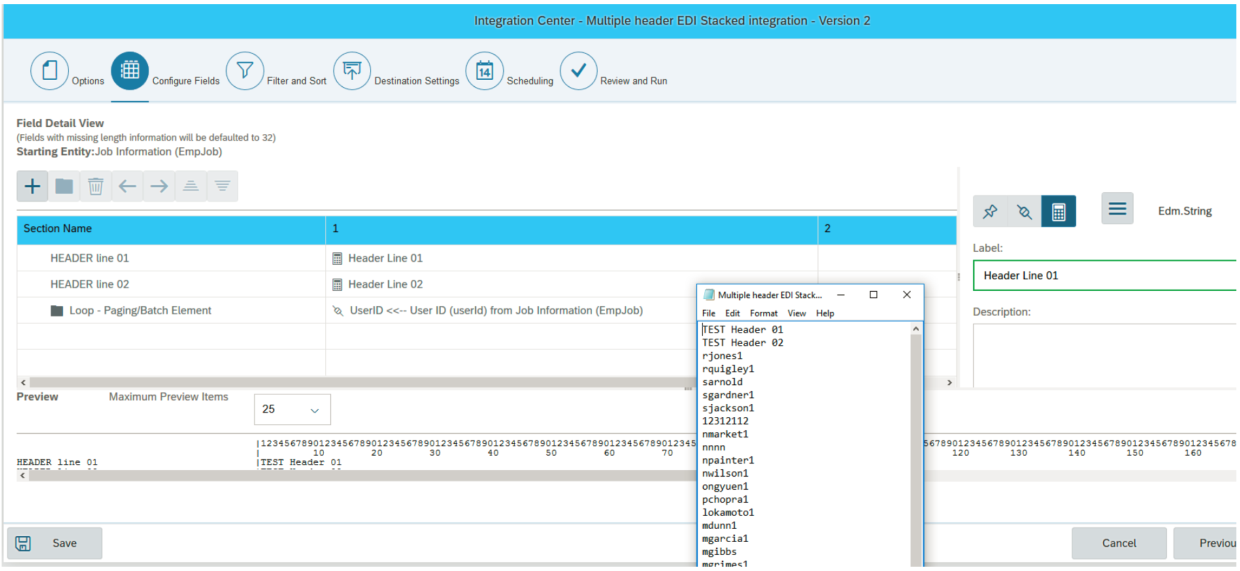
   Let us create another header. Click on the + icon to click on *Insert Sibling*. It will add another header *HeaderLine2*.

Mapping the Fields:

8. Next mark the Body segment as a paging or batching node by selecting it and click on the folder icon next to the + icon.
9. Click on *Insert Child Segment* and add elements.

Results

Here's an example of how the final EDI Formatted output looks like:


Integration Center - Multiple header EDI Stacked integration - Version 2
Options
Configure Fields
Filter and Sort
Destination Settings
Scheduling
Review and Run
Field Detail View
(Fields with missing length information will be defaulted to 32)
Starting Entity:Job Information (EmpJob)
Section Name
1
2
HEADER line 01
Header Line 01
HEADER line 02
Header Line 02
Loop - Paging/Batch Element
UserID <<-- User ID (userId) from Job Information (EmpJob)
Preview
Maximum Preview Items
25
HEADER line 01
|TEST Header 01
Edm.String
Label:
Header Line 01
Description:
Multiple header EDI Stack...
File Edit Format View Help
TEST Header 01
TEST Header 02
rjones1
rquigley1
sarnold
sgardner1
sjackson1
12312112
nmarket1
nnnn
npainter1
nwilson1
ongyuen1
pchopra1
lokamoto1
mdunn1
mgarcia1
mgibbs
Save
Cancel

14 Change History

Learn about changes to the documentation for Integration Center in recent releases.

1H 2025

Type of Change	Description	More Info
Changed	Added information about the 2GB import file size limit.	Scheduling your Integration [page 76]
Changed	Added information about decrease in the maximum data size limit to 2GB for SFTP and a data size limit of 2GB for EDI.	Scheduling your Integration [page 76]
Changed	Added information about threshold limit of Integration Center jobs being reduced to 8 hours.	Scheduling your Integration [page 76]
Changed	Added information about the creation of a maximum of 50 versions for an ongoing integration.	Scheduling your Integration [page 76]
Changed	Added information about the attachment pagination limit being reduced 1000 to 100 for both existing and new integrations.	

2H 2024

Type of Change	Description	More Info
New	You can create SOAP based Outbound Integrations using Sample XML or XSD files.	Creating SOAP based Outbound Integration Using Sample Files [page 73]

1H 2024

Type of Change	Description	More Info
New	You can add integrations to a transport bundle in the Integration Center.	Adding Integrations to a Transport Bundle in the Integration Center [page 128]

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