



Integration Guide | PUBLIC

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# Integrating Sales Order History Data from SAP S/4HANA Cloud to SAP Integrated Business Planning

Integrating SAP IBP for Supply Chain 2402 with SAP S/4HANA Cloud Using SAP Cloud Integration

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# Document History

The following table provides an overview of the most important changes.

Version	Date	Description
1.1	May 15, 2024	Parameters in <a href="#">Defining Additional Parameters [page 8]</a> have been updated. <a href="#">Time Aggregation [page 12]</a> chapter has been added.
1.0	February 16, 2024	Initial version

# 1 Introduction

Using the integration flow, you can integrate data from SAP S/4HANA Cloud, as part of the solution SAP S/4HANA Cloud Public Edition to SAP Integrated Business Planning for Supply Chain (SAP IBP). Using this data, you can perform demand forecasting in SAP IBP, then integrate the results back to SAP S/4HANA Cloud as planned independent requirements.

Data integration between SAP IBP and SAP S/4HANA Cloud using the integration flows in the [SAP IBP - Integration with SAP S/4HANA Cloud](#) package is available with SAP IBP 2402 and higher.

The [Integrate Sales Order History Data from SAP S/4HANA Cloud to SAP IBP](#) integration flow collects sales order data from SAP S/4HANA Cloud, and transfers it into an existing location product in SAP IBP. Using this integration flow, you can make sales order history data available for running demand forecasting in SAP IBP.

## 2 Prerequisites

- You have run the *Integrate Products from SAP S/4HANA Cloud to SAP IBP* integration flow. The *Integrate Sales Order History Data from SAP S/4HANA Cloud to SAP IBP* integration flow uses a filter that is saved in a datastore created by the *Integrate Products from SAP S/4HANA Cloud to SAP IBP* integration flow, and if the datastore is not available, then all sales order history data is integrated from SAP S/4HANA Cloud.
- We recommend that you have configured frequently used parameters using the *Define Default Values for Data Integration Between SAP IBP and SAP S/4HANA Cloud* integration flow.

# 3 Configuring the Integration Flow

## 3.1 Configuring the Authentication

The integration flow connects to both the SAP S/4HANA Cloud and the SAP IBP system. Connections, including the authentication method, must be created and configured at different places depending on the respective system. Once the connections are created for both directions, you need to configure them in the integration flow under ► [Configure](#) ► [Receiver](#) ►.

### Authentication Methods for the Connection to SAP IBP

You can only choose basic authentication when connecting to SAP IBP. You can configure the authentication method during the configuration of the destination. You can set the name of the destination using the `Destination for SAP IBP` parameter of the integration flow.

For more information, see [Setting Up the Integration](#).

### Authentication Methods for the Connection to SAP S/4HANA Cloud

The following authentication methods are available when connecting to SAP S/4HANA Cloud:

- Basic authentication
- Client certificate (X.509 certificate)

You can select the authentication method in the integration flow under ► [Configure](#) ► [Receiver](#) ► [Authentication](#) ►. Although there are more options displayed in the list, only basic authentication and client certificate authentication are supported.

The default authentication method is client certificate.

### Setting Up the Client Certificate Authentication Method

As a prerequisite of using a client certificate, add and deploy the required key pair to the keystore. You can do so in SAP Integration Suite using the [Keystore](#) tile in the [Manage Security](#) section under [Monitoring Artifacts](#). For more information, see <https://help.sap.com/docs/cloud-integration/sap-cloud-integration/managing-keystore-entries>.

If you select authentication using a client certificate when configuring the integration flow, you need to enter the private key alias.

### Setting Up the Basic Authentication Method

As a prerequisite of using basic authentication, create and deploy the user credentials type of security material. You can do so in SAP Integration Suite using the [Security Material](#) tile in the [Manage Security](#) section under [Monitoring Artifacts](#). For more information, see <https://help.sap.com/docs/cloud-integration/sap-cloud-integration/managing-security-material>.

If you select basic authentication when configuring the integration flow, you need to enter the credential name.

## 3.2 Data Mapping

You can map the fields of the OData API to attributes in SAP Integrated Business Planning for Supply Chain (SAP IBP) for data integration.

The following default data mapping is available in the integration flow:

Field in OData API	Field in SAP IBP	Further Hints								
Product	PRDID									
Plant	LOCID									
SoldToParty, ShipToParty, or a dummy customer	CUSTID									
Period type	KEYFIGUREDATE	<p>The field in the OData API depends on the value of the <code>Time Period Type</code> in <code>SAP S/4HANA Cloud</code> parameter as follows:</p> <table border="1"> <tbody> <tr> <td>Week or calendar week</td> <td><code>FirstDayOfWeekDate</code></td> </tr> <tr> <td>Month</td> <td><code>FirstDayOfMonthDate</code></td> </tr> <tr> <td>Date</td> <td><code>DeliveryDate</code></td> </tr> <tr> <td>Technical week</td> <td><code>FirstDayOfWeekDate</code> or <code>FirstDayOfMonthDate</code>, whichever is later</td> </tr> </tbody> </table>	Week or calendar week	<code>FirstDayOfWeekDate</code>	Month	<code>FirstDayOfMonthDate</code>	Date	<code>DeliveryDate</code>	Technical week	<code>FirstDayOfWeekDate</code> or <code>FirstDayOfMonthDate</code> , whichever is later
Week or calendar week	<code>FirstDayOfWeekDate</code>									
Month	<code>FirstDayOfMonthDate</code>									
Date	<code>DeliveryDate</code>									
Technical week	<code>FirstDayOfWeekDate</code> or <code>FirstDayOfMonthDate</code> , whichever is later									

Field in OData API	Field in SAP IBP	Further Hints						
Quantity type	ACTUALSQTY	<p>The field in SAP IBP is the attribute defined in the <code>Key Figure Name</code> parameter. The value is considered in the base unit of measure.</p> <p>The field in the API depends on the value of the <code>Quantity Type</code> parameter as follows:</p> <table border="1"> <tbody> <tr> <td>Requested</td> <td>The sum of <code>ScheduleLineOrderQuantity</code>, as <code>sumOfQuantity</code></td> </tr> <tr> <td>Confirmed</td> <td>The sum of <code>ConfOrderQtyByMatlAvailCheck</code>, as <code>sumOfQuantity</code></td> </tr> <tr> <td>Delivered</td> <td>The sum of <code>DeliveredQuantityInBaseUnit</code>, as <code>sumOfQuantity</code></td> </tr> </tbody> </table>	Requested	The sum of <code>ScheduleLineOrderQuantity</code> , as <code>sumOfQuantity</code>	Confirmed	The sum of <code>ConfOrderQtyByMatlAvailCheck</code> , as <code>sumOfQuantity</code>	Delivered	The sum of <code>DeliveredQuantityInBaseUnit</code> , as <code>sumOfQuantity</code>
Requested	The sum of <code>ScheduleLineOrderQuantity</code> , as <code>sumOfQuantity</code>							
Confirmed	The sum of <code>ConfOrderQtyByMatlAvailCheck</code> , as <code>sumOfQuantity</code>							
Delivered	The sum of <code>DeliveredQuantityInBaseUnit</code> , as <code>sumOfQuantity</code>							

### 3.3 Defining Additional Parameters

Under [Configure](#) [More](#), you can find the following parameters that you can use to configure the integration flow:

Parameter Name	Default Value	How to Configure the Parameter?
Attributes in SAP IBP	PRDID,LOCID,CUSTID	Define the attributes of the sales order history master data type to which you want to upload data.
Batch Name	Sales Order History Run ID: \$ {header.SAP_MplCorrelation Id}	Define the name of the data batch. This name also identifies the corresponding job in the <a href="#">Data Integration Jobs</a> app.



Parameter Name	Default Value	How to Configure the Parameter?
Customer Filter	-keep default-	<p>Optionally, select customers by defining specific customer IDs or intervals. Separate data by commas.</p> <div style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 5px; margin: 10px 0;"> <p><b>❖ Example</b></p> <p>10100001-10100003,99999999</p> </div> <p>If you are using a dummy customer, this filter is not used.</p>
Customer Source for SAP IBP	DummyCustomerID	<p>Define the attribute in SAP S/4HANA Cloud that you want to map to the CUSTID field in SAP IBP.</p> <p>If you don't want to aggregate data based on customers, you can define a dummy customer, and data is then taken from the Dummy Customer ID attribute in the <a href="#">Define Default Values for Data Integration Between SAP IBP and SAP S/4HANA Cloud</a> integration flow.</p> <p>You can enter one of the following values:</p> <ul style="list-style-type: none"> <li>• SoldToParty</li> <li>• ShipToParty</li> <li>• DummyCustomerID</li> </ul>
Datastore ID for Product Plant Filter	-keep default-	<p>Optionally, define the datastore to be used for further filtering data. This filtering ensures that only existing product plant combinations are integrated.</p> <p>If you leave it empty, nothing is filtered out.</p>
Date From	<code>xsd:yearMonthDuration(' - P2Y' ) + xsd:date( substring( \$IFlowStartTimestamp, 1, 10 ) )</code>	<p>Define the starting date of the data to be integrated from SAP S/4HANA Cloud. The default starting date is two years before the current date.</p> <p>Use the date format <b>"yyyy-mm-dd"</b>. You can also use XPath expressions when configuring the integration flow.</p>

Parameter Name	Default Value	How to Configure the Parameter?
Date To	<code>xsd:date(substring(\$IFlowStartTimestamp,1,10))</code>	Define the last date of the data to be integrated from SAP S/4HANA Cloud. The default last date is the current date.  Use the date format <b>"yyyy-mm-dd"</b> . You can also use XPath expressions when configuring the integration flow.
Destination for SAP IBP	-keep default-	Enter the name of the SAP IBP system to which data is transferred.
Field Extensions		Optionally, add additional fields to integrate data from, or remove fields that are given by default.
Further Filters		Optionally, define additional filters for planned independent requirements.
Host for SAP S/4HANA Cloud	-keep default-	Define the base URL of the SAP S/4HANA Cloud API
Key Figure Name	ACTUALSQTY	Enter the name of the key figure in SAP IBP into which you want to integrate sales order history data from SAP S/4HANA Cloud.
OData Package Size	50000	Define the number of values to be integrated in one data package. The entered value must be 5000 or higher.
Planning Area	-keep default-	Define the planning area in SAP IBP from which you want data to be integrated.
Planning Area Version	-keep default-	Define the version of the target planning area in SAP IBP.
Plant Filter	-keep default-	Optionally, select plants by defining specific plant IDs or intervals. Separate data by commas.

#### ❖ Example

0001,0002-9000,9999

Parameter Name	Default Value	How to Configure the Parameter?
Product Filter	-keep default-	<p>Optionally, select products by defining specific product IDs or intervals. Separate data by commas.</p> <div style="border: 1px solid #ccc; background-color: #f9f9f9; padding: 5px; margin: 5px 0;"> <p><b>❖ Example</b></p> <p>FG126 , TG11_HD_001 , TG10_IBP</p> </div> <p>Note that only closed intervals are supported.</p>
Quantity Type	Requested	<p>Define the type of sales order history data.</p> <p>You can enter the following values:</p> <ul style="list-style-type: none"> <li>• Requested</li> <li>• Confirmed</li> <li>• Delivered</li> </ul>
Time Period Type in SAP S/4HANA Cloud	Technical week	<p>Define the time aggregation level for the data integrated from SAP S/4HANA Cloud.</p> <p>You can use one of the following values:</p> <ul style="list-style-type: none"> <li>• Date</li> <li>• Week</li> <li>• Technical Week</li> <li>• Month</li> </ul>
Time Profile Level in SAP IBP	2	<p>Define the time disaggregation level to be used in SAP IBP. You can check your time profile settings in SAP IBP using the <i>Planning Areas</i> or the <i>Time Profiles</i> app.</p>

To use the values defined in the [Define Default Values for Data Integration Between SAP IBP and SAP S/4HANA Cloud](#) integration flow, use the `-keep default-` value for the relevant parameters. This is also the default value of all parameters for which you can maintain a reusable default value in the [Define Default Values for Data Integration Between SAP IBP and SAP S/4HANA Cloud](#) integration flow.

## 3.4 Time Aggregation

You can configure `Time Profile Level` in SAP IBP and `Time Period Type` in SAP S/4HANA Cloud parameters. By matching the time levels, you can process data without aggregation attempts.

To load values into SAP IBP, you have the option to configure parameters such as the `Time Profile Level` in SAP IBP and the `Time Period Type` in SAP S/4HANA Cloud. These parameters can be combined in different ways.

SAP IBP only offers integrating key figure data on the base time profile level or can perform disaggregation when data are uploaded on a higher time profile level. If you upload data on a time profile level that's lower than the base time profile level of the key figure, this results in failure. To avoid this, we recommend that you process data without aggregation. This can be achieved by setting the combination through matching the time level value pairs. Assuming that time profile level `4` means month in SAP IBP, time profile level `2` means calendar week, and the base time profile level of the loaded key figure is calendar week as well, you can do the following:

### 🔗 Example

**Time Period Type:** `Week`

**Time Profile Level:** `2`

Alternatively, you can enable disaggregation as follows:

### 🔗 Example

**Time Period Type:** `Month`

**Time Profile Level:** `4`

### 📌 Note

Disaggregation happens in SAP IBP rather than in SAP Cloud Integration. Therefore, ensure the time period time and the time profile level values match in SAP Cloud Integration even during disaggregation.

## 3.5 Working with Field Extension

With field extensions, you can specify additional attributes to integrate data from and change data mapping.

In general, the required syntax of the value of the `Field Extensions` parameter is the following:

### 📄 Sample Code

```
<FIELDNAME value = 'DESIRED VALUE' skip="DESIRED VALUE" nil = "DESIRED VALUE" >
```

### Note

The `FIELDNAME` must be a field that is listed in the `Attributes` in `SAP IBP` parameter.

The `DESIRED VALUE` can be defined as a constant value, such as `"0"` or `"TEXT"`. If you use a constant value, all the rows are filled with this value for the given field. The entered values of `skip` and `nil` are evaluated as either true or false. The value entered after `skip` is skipped, and the value entered after `nil` is nullified. Note that using the `skip` and `nil` parameters is optional, and that instead of skipping a constant value, you can skip mapping itself.

You can also define the `DESIRED VALUE` as a function mixed with an XPath expression. This way, you can select specific values from the data set or define a logic using exact values.

### Example

Using the following code, you can define `CUSTOMFIELD` to be `CustomfieldXXX` where `xxx` is the ID of the corresponding row in the data set:

```
<CUSTOMFIELD value = "concat('Customfield',./ID)">
```

### Example

Using the following code, you can skip the field for a certain ID value:

```
<CUSTOMFIELD value = "./DESIRED4FIELD" skip = "ID='ID value'">
```

You can define an evaluation like the above for any of the fields and with different logical functions. Operations such as `FIELD != ''` also work.

### Note

The value of the `DESIRED4FIELD` can be any of the fields that are requested from SAP S/4HANA Cloud. In the CDS view, you can check which fields are included in the request. You cannot extend the list of the fields in the request, however, you can cycle through the values of the data set using an XPath expression.

In general, the data structure of an XPath expression looks as follows:

### Sample Code

```
<item>
<field1>value1a</field1>
<field2>value1b</field2>
</item>
<item>
<field1>value2a</field1>
<field2>value2b</field2>
</item>
...
```

Based on the above sample, to select `value1a` and `value2a`, use `./field1`, and to select `value1b` and `value2b`, use `./field2`.

Note that the structure of the data can be different at this stage, therefore, it is recommended to always check the structure of the data set before executing the XPath selection.

### Note

Although the integration flow validates the syntax of the field extension XML, you need to make sure that its content is defined according to your business needs.

## Extending Sales Order History Data

### Example

The following example skips the `ACTUALSQTY` key figure and adds the `DELIVQTY` field that uses the value of `sumOfQuantity`, which is an inner variable for aggregating quantities.

### Sample Code

```
<ACTUALSQTY skip='true' /><DELIVQTY value=''sumOfQuantity/text()' />
```

## 3.6 Scheduling the Integration Flow

You can schedule the execution of the integration flow under **Configure > Timer**.

By default, the start of the integration is scheduled for 2100-01-01 to prevent unnecessary integration jobs during the initial deployment. After you've finalized the configuration of the integration flow, you can manually set the timer according to your needs.

You can select *Run Once* to start integration directly. You can also schedule the job for a future date or make it recurring. For more information about scheduling, see <https://help.sap.com/docs/cloud-integration/sap-cloud-integration/define-timer-start-event>.

# 4 Troubleshooting

The following points describe some of the common issues during integration:

- No data is found in the given source. In this case, the integration flow escalates.
- The defined filters are invalid.

## ❁ Example

```
PRDID value = "FG226"
```

- The value defined in the `OData Package Size` is smaller than the number of entries of a single product.
- A product plant combination is already deleted in SAP IBP, but the datastore can still contain this combination, thus data integration is attempted.
- You are trying to integrate data to different planning levels using the `Field Extensions` parameter, however, you can only integrate to one planning level.
- The format of the OData request is invalid. In this case, the error message looks like the following:



```
org.apache.camel.RuntimeCamelException:  
com.sap.gateway.core.ip.component.exceptions.OData4Exception: (/IWCOR/  
CX_OD_EXPR_SYNTAX_ERROR/<GUID>) Invalid token at position  
13null [HTTP/1.1 400 Bad Request], cause:  
org.apache.olingo.client.api.communication.ODataClientErrorException: (/IWCOR/  
CX_OD_EXPR_SYNTAX_ERROR/<GUID>) Invalid token at position 13null [HTTP/1.1 400  
Bad Request]
```

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