Informatica®

Informatica® Cloud Data Integration

SAP BW BEx Query Connector

Informatica Cloud Data Integration SAP BW BEx Query Connector
July 2024

© Copyright Informatica LLC 2015, 2024

This software and documentation are provided only under a separate license agreement containing restrictions on use and disclosure. No part of this document may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica LLC.

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation is subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License.

Informatica, the Informatica logo, Informatica Cloud, and PowerCenter are trademarks or registered trademarks of Informatica LLC in the United States and many jurisdictions throughout the world. A current list of Informatica trademarks is available on the web at https://www.informatica.com/trademarks.html. Other company and product names may be trade names or trademarks of their respective owners.

Portions of this software and/or documentation are subject to copyright held by third parties. Required third party notices are included with the product.

See patents at https://www.informatica.com/legal/patents.html.

DISCLAIMER: Informatica LLC provides this documentation "as is" without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of noninfringement, merchantability, or use for a particular purpose. Informatica LLC does not warrant that this software or documentation is error free. The information provided in this software or documentation may include technical inaccuracies or typographical errors. The information in this software and documentation is subject to change at any time without notice.

NOTICES

This Informatica product (the "Software") includes certain drivers (the "DataDirect Drivers") from DataDirect Technologies, an operating company of Progress Software Corporation ("DataDirect") which are subject to the following terms and conditions:

1. THE DATADIRECT DRIVERS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.
2. IN NO EVENT WILL DATADIRECT OR ITS THIRD PARTY SUPPLIERS BE LIABLE TO THE END-USER CUSTOMER FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES ARISING OUT OF THE USE OF THE ODBC DRIVERS, WHETHER OR NOT INFORMED OF THE POSSIBILITIES OF DAMAGES IN ADVANCE. THESE LIMITATIONS APPLY TO ALL CAUSES OF ACTION, INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS.

The information in this documentation is subject to change without notice. If you find any problems in this documentation, report them to us at infa_documentation@informatica.com.

Informatica products are warranted according to the terms and conditions of the agreements under which they are provided. INFORMATICA PROVIDES THE INFORMATION IN THIS DOCUMENT "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

Publication Date: 2024-07-14

Table of Contents

Preface 4

Informatica Resources 4

- Informatica Documentation 4
- Informatica Intelligent Cloud Services web site 4
- Informatica Intelligent Cloud Services Communities 4
- Informatica Intelligent Cloud Services Marketplace 4
- Data Integration connector documentation 5
- Informatica Knowledge Base 5
- Informatica Intelligent Cloud Services Trust Center 5
- Informatica Global Customer Support 5

Chapter 1: Introduction to SAP BW BEx Query Connector 6

SAP BW BEx Query Connector assets 6

Chapter 2: Connections for SAP BW BEx Query 7

Prerequisites 7

- Download and configure the SAP libraries 7
- Configure SAP user authorization 9

Connect to SAP BW BEx Query 9

- Before you begin 9
- Connection details 10
- Advanced settings 11

Chapter 3: Mappings and mapping tasks with SAP BW BEx 12

Prerequisites 12

SAP BW BEx sources in mappings 13

Advanced source properties in mappings 13

Configuring a mapping with a single SAP BW BEx source 13

Creating a mapping task 15

Monitoring a mapping task 16

Mapping and mapping task example with SAP BW BEx Query 16

Rules and guidelines for SAP BW BEx Query operations 20

Limitations for SAP BW BEx Query operations 20

Appendix A: SAP data type reference 21

SAP BW BEx Transformation Data Types 21

Index 23

Preface

Use *SAP BW BEx Query Connector* to learn how to read from SAP BEx queries by using Cloud Data Integration. Learn to create an SAP BW BEx Query connection, develop and run mappings and tasks in Cloud Data Integration.

Informatica Resources

Informatica provides you with a range of product resources through the Informatica Network and other online portals. Use the resources to get the most from your Informatica products and solutions and to learn from other Informatica users and subject matter experts.

Informatica Documentation

Use the Informatica Documentation Portal to explore an extensive library of documentation for current and recent product releases. To explore the Documentation Portal, visit https://docs.informatica.com.

If you have questions, comments, or ideas about the product documentation, contact the Informatica Documentation team at infa_documentation@informatica.com.

Informatica Intelligent Cloud Services web site

You can access the Informatica Intelligent Cloud Services web site at http://www.informatica.com/cloud. This site contains information about Informatica Cloud integration services.

Informatica Intelligent Cloud Services Communities

Use the Informatica Intelligent Cloud Services Community to discuss and resolve technical issues. You can also find technical tips, documentation updates, and answers to frequently asked questions.

Access the Informatica Intelligent Cloud Services Community at:

https://network.informatica.com/community/informatica-network/products/cloud-integration

Developers can learn more and share tips at the Cloud Developer community:

https://network.informatica.com/community/informatica-network/products/cloud-integration/cloud-developers

Informatica Intelligent Cloud Services Marketplace

Visit the Informatica Marketplace to try and buy Data Integration Connectors, templates, and mapplets:

https://marketplace.informatica.com/

Data Integration connector documentation

You can access documentation for Data Integration Connectors at the Documentation Portal. To explore the Documentation Portal, visit https://docs.informatica.com.

Informatica Knowledge Base

Use the Informatica Knowledge Base to find product resources such as how-to articles, best practices, video tutorials, and answers to frequently asked questions.

To search the Knowledge Base, visit https://search.informatica.com. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team at KB_Feedback@informatica.com.

Informatica Intelligent Cloud Services Trust Center

The Informatica Intelligent Cloud Services Trust Center provides information about Informatica security policies and real-time system availability.

You can access the trust center at https://www.informatica.com/trust-center.html.

Subscribe to the Informatica Intelligent Cloud Services Trust Center to receive upgrade, maintenance, and incident notifications. The Informatica Intelligent Cloud Services Status page displays the production status of all the Informatica cloud products. All maintenance updates are posted to this page, and during an outage, it will have the most current information. To ensure you are notified of updates and outages, you can subscribe to receive updates for a single component or all Informatica Intelligent Cloud Services components. Subscribing to all components is the best way to be certain you never miss an update.

To subscribe, on the Informatica Intelligent Cloud Services Status page, click **SUBSCRIBE TO UPDATES**. You can choose to receive notifications sent as emails, SMS text messages, webhooks, RSS feeds, or any combination of the four.

Informatica Global Customer Support

You can contact a Global Support Center through the Informatica Network or by telephone.

To find online support resources on the Informatica Network, click **Contact Support** in the Informatica Intelligent Cloud Services Help menu to go to the **Cloud Support** page. The **Cloud Support** page includes system status information and community discussions. Log in to Informatica Network and click **Need Help** to find additional resources and to contact Informatica Global Customer Support through email.

The telephone numbers for Informatica Global Customer Support are available from the Informatica web site at https://www.informatica.com/services-and-training/support-services/contact-us.html.

CHAPTER 1

Introduction to SAP BW BEx Query Connector

You can use SAP BW BEx Query Connector to read data from SAP BEx queries. SAP Connector uses the SAP APIs to integrate with the SAP BW system and read data from BEx queries.

You can use the SAP BW BEx Query connection in mappings and mapping tasks. Create a mapping task to process data based on the data flow logic defined in a mapping or integration template.

You can switch mappings to advanced mode to include transformations and functions that enable advanced functionality.

Note: Informatica recommends that you do not use SAP BW BEx Query Connector to extract large volumes of data. SAP BW BEx Query Connector was primarily designed to extract complex calculated fields from SAP where the logic cannot be replicated outside. You must consider extracting only the key fields and the calculated fields through the BEx query and merge with the rest of the dimensional data outside in a data warehouse.

SAP BW BEx Query Connector assets

Create assets in Data Integration to integrate data using SAP BW BEx Query Connector.

When you use SAP BW BEx Query Connector, you can include the following Data Integration assets:

- Mapping
- Mapping task

For more information about configuring assets and transformations, see *Mappings*, *Transformations*, and *Tasks* in the Data Integration documentation.

CHAPTER 2

Connections for SAP BW BEx Query

Create an SAP BW BEx Query connection to securely read SAP BW BEx queries from SAP BW.

You can use an SAP BW BEx Query connection in mappings and mapping tasks.

Prerequisites

Before you use an SAP BW BEx Query connection, the SAP administrator needs to perform certain prerequisite tasks to configure the Secure Agent machine and SAP system.

To process data through SAP, you also need to verify if the required licenses are enabled for the SAP system.

Download and configure the SAP libraries

To read data from SAP BW BEx Query, you need to download and configure the SAP JCo libraries on the Secure Agent machine. If you encounter any issues while you download libraries, contact SAP Customer Support.

1. Go to the SAP Support Portal, and then click **Software Downloads**.

   Note: You need to have SAP credentials to access **Software Downloads** from the SAP Support Portal.
2. Download the latest version of the 64-bit SAP JCo libraries based on the operating system on which the Secure Agent runs.

Operating System	SAP JCo Libraries
Windows	- sapjco3.jar - sapjco3.dll
Linux	- sapjco3.jar - libsapjco3.so

3. Copy the JCo libraries to the following directory:
   `<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\ext\deploy_to_main\bin\rdtm-extra\tpl\sap`

   Create the `deploy_to_main\bin\rdtm-extra\tpl\sap` directory if it does not already exist.

4. Log in to Informatica Intelligent Cloud Services and configure the JAVA_LIBS property for the Secure Agent.
   a. Select **Administrator** > **Runtime Environments**.
   b. Click **Runtime Environments** to access the **Runtime Environments** page.
   c. To the left of the agent name, click **Edit Secure Agent**.
   d. From the **Service** list, select **Data Integration Server**.
   e. From the **Type** list, select **Tomcat JRE**.
   f. Enter the JAVA_LIBS value based on the operating system on which the Secure Agent runs.

Operating System	Value
Windows	..\bin\rdtm-extra\tpl\sap\sapjco3.jar;..\bin\rdtm\javalib\sap\sap-adapter-common.jar
Linux	../bin/rdtm-extra/tpl/sap/sapjco3.jar:../bin/rdtm/javalib/sap/sap-adapter-common.jar

Warning: If you copy the value directly from the table, the hyphens (-) in the value might be incorrectly copied. Copy the value to a text editor and make sure that the value you copied is not corrupted.



   g. Click **Save**.
5. After you save the JAVA_LIBS value, configure the JVMClassPath property for the Secure Agent.
   a. From the **Service** list, select **Data Integration Server**.
   b. From the **Type** list, select **DTM**.
   c. Enter the JVMClassPath value based on the operating system on which the Secure Agent runs.

Operating System	Value
Windows	pmserversdk.jar;..\..\bin\rdtm-extra\tpl\sap\sapjco3.jar;..\..\bin\rdtm\javalib\sap\sap-adapter-common.jar
Linux	pmserversdk.jar:../../bin/rdtm-extra/tpl/sap/sapjco3.jar:../../bin/rdtm/javalib/sap/sap-adapter-common.jar

Warning: If you copy the value directly from the table, the hyphens (-) in the value might be incorrectly copied. Copy the value to a text editor and make sure that the value you copied is not corrupted.



d. Click **Save**.

e. Repeat steps 2 through 5 on every machine where you installed the Secure Agent.

6. Restart the Secure Agent.

Configure SAP user authorization

Configure the SAP user account in the SAP system to process SAP BW BEx Query data.

For more information about how to configure SAP user authorization in the SAP system, see SAP user authorizations.

The following table describes the required authorization to read from SAP BW BEx Query:

Read Object Name	Authorization
S_RFC	RFC1, RFC_METADATA, RFC_METADATA_GET, RSAB, RSOB, RS_UNIFICATION, SDTX, SUGU, SU_USER, SYST
S_RS_COMP	ACTVT=3 (DISPLAY)
S_RS_COMP1	ACTVT=3 (DISPLAY)
S_RS_ICUBE	ACTVT=3 (DISPLAY)

Connect to SAP BW BEx Query

Let's configure the SAP BW BEx Query connection properties to connect to SAP BW and read data from SAP BW BEx Query.

Before you begin

Before you get started, you'll need to configure the Secure Agent machine and SAP system to establish an SAP BW BEx Query connection.

Check out "Prerequisites" on page 7 to learn more about these tasks.

Connection details

The following table describes the basic connection properties:

Property	Description
Connection Name	Name of the connection. Each connection name must be unique within the organization. Connection names can contain alphanumeric characters, spaces, and the following special characters: _ . + -, Maximum length is 255 characters.
Description	Description of the connection. Maximum length is 4000 characters.
Type	SAP BW BEx Query
Runtime Environment	The name of the runtime environment where you want to run tasks. Select a Secure Agent or serverless runtime environment. For more information about how to configure and use the serverless environment, see "Serverless runtime environment setup in AWS" in *Runtime Environments* in the Administrator help.
Authentication	The authentication type to access SAP BW and read SAP BW BEx queries. Select the **SAP** authentication type and then configure the authentication-specific parameters.
Username	The user name with the appropriate user authorization to connect to the SAP BW account.
Password	The password to connect to the SAP BW account.
Connection type	Type of connection that you want to create when you read SAP BW BEx queries from SAP BW. Select one of the following connection types from the list: - Application. Create an application connection when you want to connect to a specific SAP BW server. - Load balancing. Create a load balancing connection when you want to connect to the SAP BW server with the least load at run time. If you select the **Load balancing** option, you need to enter values in the dedicated connection fields along with the **Message host name**, **R3 name/SysID**, and **Group** fields in the **Advanced Settings** section. Default is Application.
Host name	The host name or IP address of the SAP BW server to which you want to connect.
System number	The system number of the SAP BW server. Get the required system number from the SAP system to which you want to connect.
Client	The client number of the SAP BW server. Get the required client number from the SAP system to which you want to connect.
Language	Language code that corresponds to the SAP language. Get the required language code from the SAP system to which you want to connect.

Advanced settings

The following table describes the advanced connection properties:

Property	Description
Message host name	The host name of the SAP message server. This property is required only when you create a load balancing connection.
R3 name/ SysID	The system ID of the SAP message Server. This property is required only when you create a load balancing connection.
Group	The name of the SAP logon group through which you want to connect. This property is required only when you create a load balancing connection.
Trace	Determines whether to track the JCo calls that the SAP system makes. Enter one of the values between 0 and 8. By default, SAP doesn't store information about the JCo calls in a trace file. Default is 0. For more information about trace level values, see Setting up an SAP Java Connector (SAP JCo) and Related Traces. You can access the trace files from the following directories: - Design time information: `<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<Latest version>\ICS\main\tomcat` - Run-time information: `<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<Latest version>\ICS\main\bin\rdtm`

Additional parameters	Additional JCo connection parameters that you can use when you read SAP BW BEx queries from SAP BW.
	You can enter multiple JCo connection parameters, separated by semicolon, in the following format:
	`<parameter name1>=<value1>;<parameter name2>=<value2>;<parameter name3>=<value3>....`
	For example, if you want to create an SAP SNC connection, enter the following additional parameters:
	`SNC_MODE=1;SNC_QOP=3;SNC_MYNAME=p:CN=<Common name>, OU=<Organizational unit>, O=<Organization>, C=<Country>;SNC_PARTNERNAME=p:CN=<Common name>, OU=<Organizational unit>, O=<Organization>, C=<Country>;SNC_LIB=C:\SNC_11\sapcrypto.dll;TRACE=1`

SAP Additional Parameters	Additional SAP properties that the Secure Agent uses to connect to the SAP system as an RFC client.
	Specify the required RFC-specific parameters and connection information that enable the Secure Agent to connect to SAP.
	For example, you can specify the SNC connection parameters as additional arguments listed in the following sample:
	`GROUP=interfaces`
	`ASHOST=<Application server hostname>`
	`SYSNR=20`
	`SNC_MODE=1`
	`SNC_PARTNERNAME=p:CN=<Common name>, OU=<Organizational unit>, O=<Organization>`
	`SNC_MYNAME=p:CN=<Common name>, OU=<Organizational unit>, O=<Organization>`
	`SNC_LIB=<Secure Agent installation directory>/apps/server/bin/<libsapcrypto.so for Linux/sapcrypto.dll for Windows>`
	`X509CERT=<X509 certificate>`
	`TRACE=2`
	If you specify a parameter in both the **SAP Additional Parameters** and **Additional parameters** fields, the value specified in the **SAP Additional Parameters** field takes precedence.
	For more information about RFC-specific parameters, see the SAP documentation.

CHAPTER 3

Mappings and mapping tasks with SAP BW BEx

You can create a mapping to read data from SAP BEx queries. SAP Connector uses the SAP APIs to integrate with the SAP BW system and read data from BEx queries.

In advanced mode, the Mapping Designer updates the mapping canvas to include transformations and functions that enable advanced functionality.

When you configure a mapping to describe the flow of data from a source to a target, you can also add transformations to transform data. A transformation includes field rules to define incoming fields. Links visually represent how data moves through the data flow.

After you create a mapping, you can run the mapping or you can deploy the mapping in a mapping task. You can use the Mapping application to process data based on the data flow logic that you defined in the mapping.

Use the Mapping Task wizard to create a mapping task. When you create a mapping task, you can select the mapping based on which you want to create the task. You can associate the task with a schedule to run it at specified times or at regular intervals. Or, you can run it manually. You can monitor tasks and view details about completed tasks.

Prerequisites

Before you use SAP Connector to read data from an SAP BEx query, you must allow access to the SAP BEx query from external systems.

1. Open the query in the SAP BEx Query Designer.
2. Click the **Extended** tab on the right pane.
3. In the **Release for External Access** section, select the **By OLE DB for OLAP** option under **Allow External Access to this Query**.

SAP BW BEx sources in mappings

To read data from an SAP BEx query, configure a Source transformation in the mapping.

When you select an SAP BW BEx query connection for a Source transformation, you can select a read operation that represents the imported SAP BEx query from which you want to read data.

You can use the sample XML template provided to configure the request message in an XML format. You can also configure filter conditions in the request XML to filter the data that you read from an SAP BEx query. Configure the advanced properties to set the tracing level and the cache size for the Web service response.

You can view the response structure in the field mapping. When you map the elements from the response structure to the output fields, the Secure Agent creates an output group. Map the fields from the SAP BEx query to the output group, and then connect the output group to a transformation or target to which you want to write data.

Advanced source properties in mappings

In a mapping, you can configure a Source transformation to represent an SAP BEx query source. For SAP BW BEx query connections used in mapping tasks, you can configure advanced properties in the **Source** page of the Mapping Task wizard.

The following table describes the advanced properties that you can configure in a Source transformation:

Property	Description
Tracing Level	Amount of detail that appears in the log for the Source transformation. Use the following tracing levels: - Terse - Normal - Verbose Initialization - Verbose Default is normal.
Cache Size for Web Service Response (KB)	Memory available for the web service response. The cache size depends on the amount of data you read from the SAP BEx query. If the web service response contains many rows or columns, you might want to increase the cache size. You can specify a maximum size of 99999 KB. Default is 1024 KB.

Configuring a mapping with a single SAP BW BEx source

Use the Data Integration Mapping Designer to configure a mapping. Create a Source transformation to read data from an SAP BW BEx query.

1. To create a mapping, click **Data Integration** > **New** > **Mappings**. Select **Mapping** and click **Create**.

2. Enter a name and description for the mapping, and click **OK**.

   You can use alphanumeric characters and underscores (_) in the mapping name.
3. To configure an SAP BW BEx query source, on the **Transformation** palette, click **Source**.
4. In the **Properties** panel, on the **General** tab, enter a name and description for the SAP BW BEx query source.
5. Click the **Source** tab and configure the SAP BW BEx query source details.
   a. In the **Connection** list, specify the SAP BW BEx query connection that you want to use to read data.
   b. In the **Operation** list, click **Select** to specify the read operation that you want to use to read data. When you click **Select**, a list of SAP BEx queries appears. You can search for a BEx query based on the technical name of the query. Special characters in the query are replaced with _. Select the SAP BEx query from which you want to read data.
   c. Under the **Request Options** section, click **Configure**. The **Edit Request Message** page appears and displays a sample XML template that you can use for the request message. You can copy and paste the sample message into the **Request Message** text box or customize the sample message. For example, if you want to filter the data that you read from the SAP BEx query, you can add filter conditions in the request message. Click **OK** to save the request message.
   d. Under the **Advanced** section, configure the tracing level and the cache size for the Web service response.
6. In the **Field Mapping** tab, click **Map all descendants** to map all the incoming fields from the SAP BEx query to the fields in the output group.
7. Click the **Fields** tab to edit the precision and scale for the output fields.

   Note: The Secure Agent imports the decimal data type as double. You must manually edit the scale and precision of decimal fields so that they match with the values in SAP. The maximum precision that SAP BW BEx Query Connector supports for key figure data is 22. If the precision exceeds 22, the data gets corrupted.
8. To add a transformation, on the **Transformation palette**, click the transformation name. Or, drag the transformation onto the mapping canvas.
   a. On the **General** tab, you can enter a name and description for the transformation.
   b. Draw a link to connect the output group to the transformation.

      When you link transformations, the downstream transformation inherits the incoming fields from the previous transformation.
      For a Joiner transformation, draw a master link and a detail link.
   c. To preview fields, configure the field rules, or rename fields, click **Incoming Fields**.
   d. Configure additional transformation properties, as needed.

      The properties that you configure vary based on the type of transformation you create.
   e. To add another transformation, repeat these steps.
9. To add a Target transformation, on the **Transformation palette**, click **Target**.
   a. On the **General** tab, enter a name and description for the target.
   b. Draw a link to connect the previous transformation to the Target transformation.
   c. Click the **Target** tab and configure target details. You can also create a target at run time. If necessary, configure the advanced target properties.

      Target details and advanced target properties appear based on the connection type.
   d. To preview fields, configure the field rules, or rename fields, click **Incoming Fields**.

e. Click **Field Mapping** and map the fields that you want to write to the target.

f. To add another Target transformation, repeat these steps.

10. Save the mapping. You can choose one of the following save options:
    - Click **Save and Close** to save and close the mapping.
    - Click **Save and Run** to save and run the mapping immediately.
    - Click **Save and New Mapping Task** to save and create a mapping task.

Creating a mapping task

You can create a mapping task based on a valid mapping.

1. To create a mapping task, click **Data Integration** > **New** > **Tasks** and then complete one of the following steps:
    - To create a mapping task based on a mapping, select **Mapping Task** and click **Create**.
    - To create a mapping task using a template, expand the appropriate template category and select the template you want to use, and then click **Create**.

    To edit a mapping task, on the **Explore** page, navigate to the mapping task. In the row that contains the task, click **Actions** and select **Edit**.
2. Enter a name for the task.

    Task names must be unique within the organization. Task names are not case sensitive. Task names can contain alphanumeric characters, spaces, and the following special characters: _ . + -
3. Select the runtime environment that contains the Secure Agent that you want to use to access the SAP BEx queries.
4. Select **Mapping** as the task based on which you want to create the mapping task.
5. Click **Select** to specify a mapping.

    The **Select a Mapping** dialog box appears.
6. Select a mapping. You can also search for a mapping based on its name and description.
7. Click **OK**.

    The image of the selected mapping appears.
8. Click **Next**.

    The **Runtime Options** page appears.
9. Configure a schedule and advanced options. Perform any of the following steps based on your requirements:
    a. Click **Run this task on schedule** and specify the schedule that you want to use.

    b. Configure the email notification options.

    c. Configure advanced options for the task.

    d. Specify the execution mode.
10. Optionally, add advanced session properties.
    a. Click **Add**.

    b. Select a session property.

c. Configure the value of the session property.

11. Save the mapping task. You can choose one of the following save options:
    - Click **Save and Close** to save and close the task.
    - Click **Save and Continue** to save the task and continue with configuring the task.
    - Click **Save and Run** to save and run the task immediately.

Monitoring a mapping task

After you run a mapping task, you can monitor the task and view the logs.

In **Monitor**, you can monitor the status of the logs after you run the task.

You can also monitor the progress of the task by calling Transaction SM37 from SAP. You can view the actual job duration in SAP. The job duration listed in the Data Integration activity log is a higher value because it also includes time required to complete processing in Data Integration.

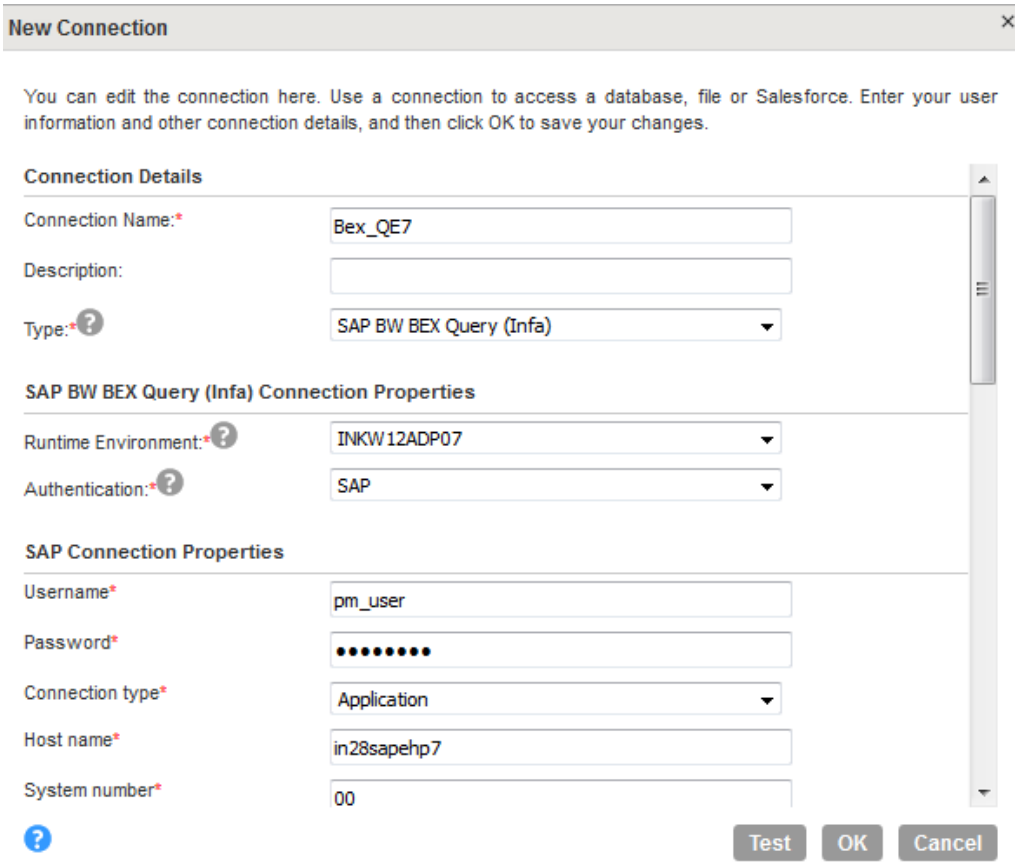
You can view the HTTP and HTTPS log files in the SMICM transaction. Optionally, you can increase trace level to 3 to view the detailed logs.

Mapping and mapping task example with SAP BW BEx Query

You are a financial consultant and you want to use SAP BW BEx Query Connector to read data from an SAP BW BEx query that extracts a financial planning report in SAP BW. You want to configure a filter to extract a specific project plan from the financial report.

To configure a mapping and mapping task to extract a specific project plan from SAP BW BEx Query and write to a flat file, perform the following tasks:

1. Create an SAP BW BEx Query connection. Select `SAP` as the authentication method, select `Application` as the connection type, and enter the SAP connection properties.
   The following image shows the configured SAP BW BEx Query connection:

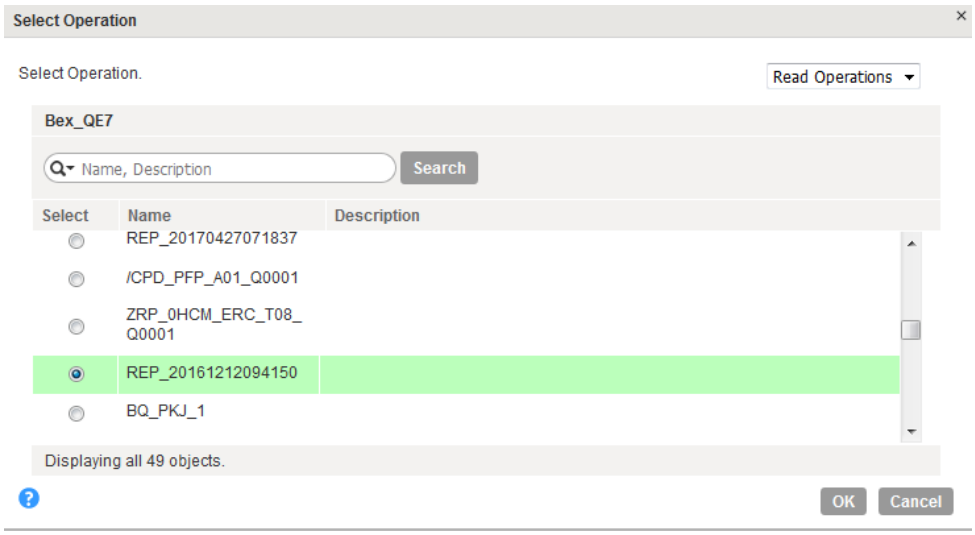


2. Create a flat file connection to write data to the flat file.
3. Create an SAP BW BEx Query mapping in the Cloud Mapping Designer.
   The following image shows the SAP BW BEx Query mapping:



4. Add a Source transformation, specify a name and description in the general properties.
5. On the **Source** tab, perform the following steps:
   a. In the **Connection** field, select the configured SAP BW BEx Query connection to connect to SAP BW BEx Query.
   b. In the **Operation** field, select query `REP_20161212094150` as the operation to extract the financial planning report from SAP BW BEx Query.

The following image shows the queries from the list of read operations:



You can view the SAP BW BEx source and flat file target in the mapping.

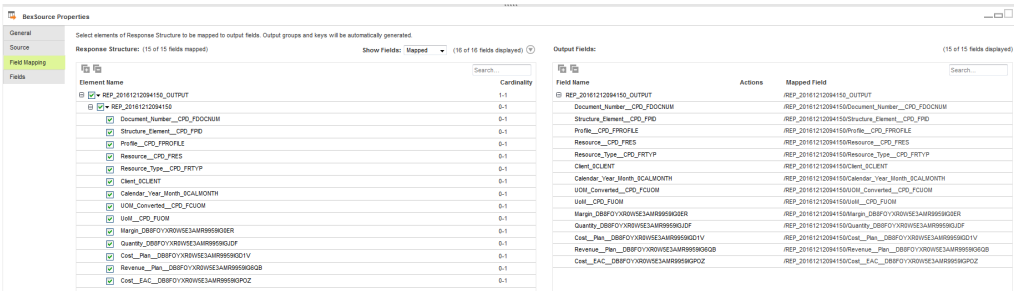
c. In the **Request Options** section, configure the request message in the following XML format, specify the attributes in the message, and validate the message:

```
<!--1 or more repetitions:-->
<proc:REP_20161212094150_INPUT xmlns:proc="http://xml.schemas/infa/procedure/">
  <!--Optional:-->
  <REP_20161212094150>
    <!--Optional:-->
    <var_temp>$$Param_variable</var_temp>
  </REP_20161212094150>
</proc:REP_20161212094150_INPUT>
```

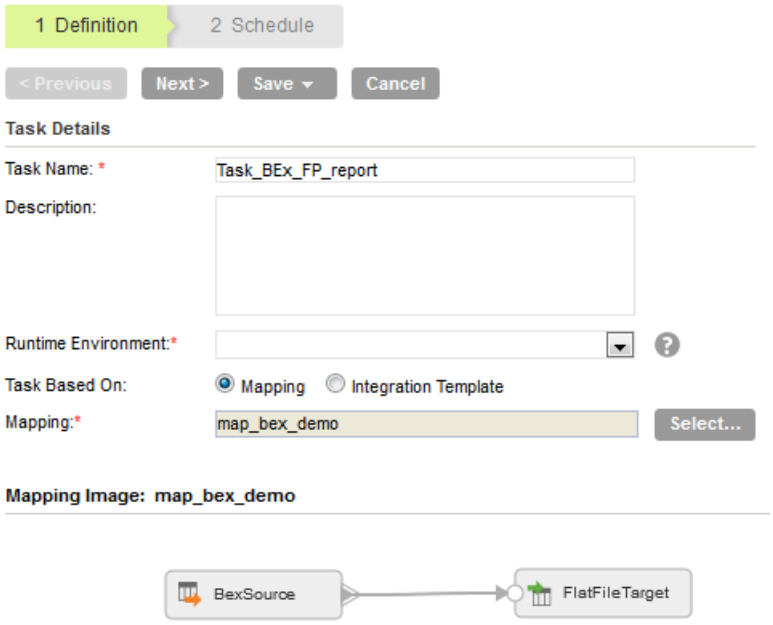
The request message specifies the criteria to include the financial planning report query `REP_20161212094150` and includes a parameter to filter a particular project plan within the financial planning report. You need to define the parameter `$$Param_variable=PR00004446` entry in a parameter file, `parameterfile_name.txt`, and save the file in the following directory: `<Secure Agent installation directory>/apps/Data_Integration_Server/data/userparameters`. Later, enter the parameter file name on the Runtime Options and Advanced Options page of the Mapping Task wizard.

d. In the **Advanced Properties** section, set the tracing level to Normal, and use the default cache size of 1024.

6. On the **Field Mapping** tab, map all descendants from the incoming fields of the SAP BEx query response structure to the output fields.
The following image shows the response structure on the left pane and the output fields on the right pane:



7. Add a flat file Target transformation and specify the target object for the transformation. Perform the following steps:
   a. Select a flat file connection for the target transformations to write data to the flat file.
   b. Draw a link to connect the previous transformation to the Target transformation.
   c. Create a target object `Bex_query.csv` file to write data to the target.
   d. Map the fields that you want to link to the target fields.
8. Click **Save and New Mapping Task** to save and create a mapping task.
   The following image shows the Mapping Task wizard with the applied mapping:



9. Under **Advanced Options** on the **Runtime Options** tab, specify the parameter file name `parameterfile_name.txt` in which you configured the filter parameter value for the request XML
10. When you save and run the mapping, the Secure Agent retrieves the specified project plan from SAP BW BEx Query and writes the data to the corresponding flat file.
    The target flat file shows the following data extracted from the specified project plan after you run the task:

```
"Document_Number__CPD_FDOCNUM","Structure_Element__CPD_FPID","Profile__CPD_FPROFILE",
"Resource__CPD_FRES","Resource_Type__CPD_FRTYP","Client_0CLIENT",
"Calendar_Year_Month_0CALMONTH","UOM_Converted__CPD_FCUOM","UoM__CPD_FUOM","Margin_DB
8FOYXR0W5E3AMR9959IG0ER","Quantity_DB8FOYXR0W5E3AMR9959IGJDF",
"Cost__Plan__DB8FOYXR0W5E3AMR9959IGD1V","Revenue__Plan__DB8FOYXR0W5E3AMR9959IG6QB","C
ost__EAC__DB8FOYXR0W5E3AMR9959IGPOZ","Var_Temp"
,"800PR00004446",,"800ZMRS0MRS1429","800ZMRS0MRS",,,,,-12,0,1200,0,20000,"PR00004446"
```

Note: You can also read data from an SAP BW BEx query by using a Web Services transformation. For more information, see the Informatica How-To Library article, "Configuring a Web Services Transformation in Informatica Cloud Data Integration to Read Data from an SAP BW BEx Query". To get the Informatica How-To Library article, contact Informatica Global Customer Support.

Rules and guidelines for SAP BW BEx Query operations

Consider the following rules and guidelines when you read data from SAP BW BEx Query:

- To read large number of records from SAP BW BEx Query, you must perform the following tasks:
  - Set the JVM options for type DTM to increase the -Xms and -Xmx values in the system configuration details of the Secure Agent.
  - Increase the cache size for the web service response in the advanced properties of the SAP BW BEx Source transformation
- You can configure characteristics to be displayed as **Key and Text**, **Key**, or **Text and Key**. To do this, open the query in the SAP BEx Query Designer, select the characteristic, and click the **Display** tab on the right pane. In the **Value Display** section, select the **Key and Text**, **Key**, or **Text and Key** option under **Display As**. In the **Result Rows** section, select the **Always Suppress** option.
- When you configure a mapping to read data that contains the Date and Time data types for key figures from an SAP BW BEx query, you must map the Date and Time data types of key figures to String.

Limitations for SAP BW BEx Query operations

SAP BW BEx Query Connector has the following known limitations:

- You cannot extract a large volume of data in SAP BW BEx Query mappings.
- You cannot read a large number of columns and rows. You can read less than 10 to 15 columns and 45,000 rows without performance degradation.
  To know more about the performance details of SAP BW BEx Query Connector, see KB article 000160936.
- You cannot read data from the SAP BW BEx query that contains more than one key figure structure. The value of each key figure must be in a single currency.
- You cannot read data from free characteristics. Even though the free characteristic fields appear in the response structure, the data from the free characteristics is not fetched in the output.
- You cannot read data from the SAP BW BEx query that contains the following components:
  - Characteristic hierarchies
  - Characteristic structures
- You cannot perform an SAP BW BEx query data extraction when the technical name of the variable in the BEx Query Designer exceeds eight characters.
- You can only configure characteristics as rows and key figures as columns in the SAP BEx Query mapping.

APPENDIX A

SAP data type reference

Data Integration uses the following data types in mappings and mapping tasks with SAP:

Native data types

Native data types are data types specific to the source and target databases or flat files. They appear in non-SAP sources and targets in the mapping.

SAP data types

SAP data types appear in the Fields tab for Source and Target transformations when you choose to edit metadata for the fields. SAP performs any necessary conversion between the SAP data types and the native data types of the underlying source database tables.

Transformation data types

Set of data types that appear in the remaining transformations. They are internal data types based on ANSI SQL-92 generic data types, which Data Integration uses to move data across platforms. Transformation data types appear in all remaining transformations in a mapping or mapping task.

When Data Integration reads source data, it converts the native data types to the comparable transformation data types before transforming the data. When Data Integration writes to a target, it converts the transformation data types to the comparable native data types.

SAP BW BEx Transformation Data Types

The following table lists the SAP data types that SAP BW BEx Query Connector supports along with the corresponding transformation data types:

SAP Data Type	Transformation Data Type	Range for Transformation Data Type
CHAR	String	1 to 104,857,600 characters Fixed-length or varying-length string.
CUKY	String	1 to 104,857,600 characters Fixed-length or varying-length string.
CURR	Decimal	Precision 1 to 28 digits, scale 0 to 28
DATS	Date/time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. Precision to the nanosecond.
DEC	Double	Precision 1 to 28 digits, scale 0 to 28

SAP Data Type	Transformation Data Type	Range for Transformation Data Type
FLTP	Double	Precision 15, scale 0
INT4	Integer	Precision 10, scale 0
LANG	String	1 to 104,857,600 characters Fixed-length or varying-length string.
NUMC	String	1 to 104,857,600 characters Fixed-length or varying-length string.
QUAN	Decimal	Precision 1 to 28 digits, scale 0 to 28
TIMS	Date/time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. Precision to the nanosecond.
UNIT	String	1 to 104,857,600 characters Fixed-length or varying-length string.

INDEX

C

Cloud Application Integration community
  URL 4
Cloud Developer community
  URL 4

D

Data Integration community
  URL 4
data types
  SAP 21

I

Informatica Global Customer Support
  contact information 5
Informatica Intelligent Cloud Services
  web site 4

M

maintenance outages 5
mapping example
  Source transformation 16

S

SAP
  data types 21
SAP BW BEx mapping tasks
  configuring 13
SAP BW BEx mapping tasks *(continued)*
  creating 15
  monitoring 16
  overview 12
SAP BW BEx mappings
  configuring 13
  configuring the Source transformation 13
  overview 12
  selecting a read operation 13
SAP BW BEx Query
  assets 6
SAP BW BEx query connection
  properties 9
SAP integration methods
  using SAP BW BEx Query 6
status
  Informatica Intelligent Cloud Services 5
system status 5

T

trust site
  description 5

U

upgrade notifications 5

W

web site 4