Informatica®

Informatica® Cloud Data Integration

SAP ADSO Writer Connector

Informatica Cloud Data Integration SAP ADSO Writer Connector
July 2024

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Preface

Use SAP ADSO Writer Connector to learn how to write to SAP ADSO objects in the SAP BW/4HANA application by using Data Integration. Learn to create an SAP ADSO Writer connection, develop and run mappings, and mapping tasks in Data Integration.

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CHAPTER 1

Introduction to SAP ADSO Writer Connector

You can use SAP ADSO Writer Connector to load large volumes of data to SAP ADSO objects in the SAP BW/4HANA application.

Use SAP ADSO Writer Connector to integrate data with SAP at the object-level when you writer to SAP ADSO target objects.

SAP ADSO is the central object for data storage and consolidation in the SAP BW system. SAP ADSO is the primary data persistency object in BW/4HANA that simplifies data modeling and the support environment. SAP ADSOs are commonly stored in 2-dimensional transparent database tables.

You can use the SAP ADSO Writer connection in mappings and mapping tasks. You can switch mappings to advanced mode to include transformations and functions that enable advanced functionality.

To read data from SAP ADSO objects, you need to use the SAP Table connection. The SAP Table connection information is available in the SAP Table Connector documentation. For more information about the SAP Table connection, see the *SAP Table Connector* documentation.

SAP ADSO target objects

You can use SAP ADSO Writer Connector to write to SAP ADSO objects in the SAP BW/4HANA application.

SAP Advanced DataStore Object (ADSO) is the central object for data storage and data consolidation in the SAP BW system. ADSO is the primary persistent object in SAP BW/4HANA and simplifies the modeling and support environment. ADSOs are commonly stored in 2-dimensional transparent database tables.

You can use SAP ADSO Writer Connector in Data Integration to load large volumes of data to the target ADSO objects in the SAP BW/4HANA application.

Data Integration imports the following SAP ADSO information:

- ADSO name
- Description
- Type
- Info area
- Transfer structure
- Field information such as the name, type, description, precision, scale, SAP type, SAP length, SAP output length, and SAP decimals.

SAP ADSO Writer Connector assets

Create assets in Data Integration to integrate data using SAP ADSO Writer Connector.

When you use SAP ADSO Writer 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.

SAP ADSO Writer Connector administration

Before you use an SAP ADSO Writer connection to load data into an ADSO, the SAP Administrator needs to verify the required licenses are enabled and perform prerequisite tasks.

1. Verify the prerequisites in the SAP server.
2. Install the SAP ADSO Writer connection transport files.
3. Configure the SAP user authorization.
4. Download and configure the SAP libraries.

After the administrator has performed the configuration, you can set up and use an SAP ADSO Writer connection in mappings and mapping tasks.

Verify the prerequisites for SAP server

SAP ADSO Writer Connector supports only the SAP BW/4HANA system.

The minimum version of the BW/4HANA system must be 2.0, and is identified through the SAP component *DW4CORE, Release 200*.

Install SAP ADSO Writer Connector transport files

Install the SAP ADSO Writer transport files on the SAP machines that you want to access. Before you install the transports on your production system, install and test the transports in a development system.

Verify that you install the latest transport files to write to an SAP ADSO object.

Install the following data file and cofile to load data to an SAP BW/4HANA ADSO object.

Data and Cofile Names	Required/ Optional	Transport Request	Functionality
- K900131.B42 - R900131.B42	Required	- B42900131	Install the transports to write to an SAP ADSO.

Installing transport files

Install the latest transport files from a Secure Agent directory to write to a Unicode SAP BW/4HANA system. The transport files are for SAP BW/4HANA version 2.0 or later.

1. Find the transport files in the following directory on the Secure Agent machine:

   `<Informatica Secure Agent installation directory>\downloads\package-SAPADSO.<Latest version>\package\SAPADSO\sap-transport`

2. Copy the cofile transport file to the `Cofile` directory in the SAP transport management directory on each SAP machine that you want to access.

   The cofile transport file uses the following naming convention: `<TR Number>.<Sap system>`.

3. Copy the data transport file to the `Data` directory in the SAP transport management directory on each SAP machine that you want to access.

   The data transport file uses the following naming convention: `ADSO_WRITER_R<TR Number>.<Sap system>`.

4. To import the transports to SAP, in the STMS, click **Extras** > **Other Requests** > **Add** and add the transport request to the system queue.

5. In the **Add Transport Request to Import Queue** dialog box, enter the request number for the cofile transport.

   The request number inverts the order of the renamed cofile as follows: `<Sap system><number>`.

6. In the Request area of the import queue, select the transport request number that you added, and click **Import**.

7. If you are upgrading from a previous version of the Informatica Transports, select the **Overwrite Originals** option.

Configure SAP user authorization

Configure the SAP user account in the SAP system to process SAP BW/4HANA ADSO 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 an SAP BW/4HANA ADSO:

Read Object Name	Required Authorization Values	Value	Activity	Design Time/Run Time
S_RFC	RFC_TYPE - Function Group	SYST	16	Both
	RFC_TYPE - Function Module	RFCPING	16	Both
	RFC_TYPE - Function Group	RFC1	16	Both
	RFC_TYPE - Function Module	RFC_GET_FUNCTION_INTERFACE	16	Both
	RFC_TYPE - Function Group	RFC_METADATA	16	Both

Read Object Name	Required Authorization Values	Value	Activity	Design Time/Run Time
	RFC_TYPE - Function Module	RFC_METADATA_GET	16	Both
	RFC_TYPE - Function Group	RSDSO_UPDATE	16	Both
	RFC_TYPE - Function Module	DDIF_FIELDINFO_GET	16	Both
	RFC_TYPE - Function Module	BW4_FLP_NOTIFICATIONS_PUSH	16	Run Time
	RFC_TYPE - Function Module	/INFADI/ADSO_LIST	16	Both
	RFC_TYPE - Function Module	/INFADI/ADSO_METADATA	16	Both
	RFC_TYPE - Function Module	/INFADI/RSDSO_WRITE_API_RFC	16	Run Time
S_RS_ADSO	Field Name - RSINFOAREA	*	23	Both
	Field Name - RSOADSONM	*	23	Both
	Field Name - RSOADSOPAR	Data, Definition	23	Both

The following table describes the optional authorization to read from an SAP BW/4HANA ADSO:

Read Object Name	Required Authorization Values	Value	Activity	Design Time/Run Time
S_RS_AREA	RSINFOAREA	'INFO Area Name'	3	Both
S_ADMI_FCD	S_ADMI_FCD	PADM	N/A	Both

Download and configure the SAP libraries

To read data from an SAP BW/4HANA ADSO, 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 64-bit SAP JCo libraries based on the operating system on which the Secure Agent runs:

Secure Agent System	SAP JCo Libraries
Windows	`sapjco3.jar` `sapjco3.dll`
Linux	`sapjco3.jar` `libsapjco3.so`

Verify that you download the most recent version of the libraries.

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. Configure the *JAVA_LIBS* property in Data Integration:
   a. Log in to Data Integration.
   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

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

   g. From the **Type** list, select **DTM**.
   h. 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

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

   i. Click **OK** to save the changes.
   j. Repeat steps 2 through 4 on every machine where you installed the Secure Agent.

5. Restart the Secure Agent.

Use the serverless runtime environment

You can use a serverless runtime environment hosted on AWS or Azure to connect to the SAP system when you configure an SAP ADSO Writer connection on Linux.

You can't create an SNC connection when you use the serverless runtime environment.

Before you configure an SAP ADSO Writer connection using the serverless runtime environment, perform the following tasks:

- Add the libraries in the Amazon S3 bucket or Azure container in your AWS or Azure account.
- Configure the .yml serverless configuration file.
- Configure the JAVA_LIBS and JVMClassPath properties for the serverless runtime environment on Linux.

Add the libraries in the Amazon S3 bucket or Azure container in your AWS or Azure account

Perform the following steps to configure an SAP ADSO Writer connection in a serverless runtime environment:

1. Create the following structure for the serverless agent configuration in AWS or Azure: `<Supplementary file location>/serverless_agent_config`
2. Add the libraries in the Amazon S3 bucket or Azure container in the following location in your AWS or Azure account: `<Supplementary file location>/serverless_agent_config/sap`

Configure the .yml serverless configuration file

Perform the following steps to configure the .yml serverless configuration file in the serverless runtime environment, and to copy the libraries to the serverless agent directory:

1. Copy the following code snippet to a text editor:

```
version: 1
agent:
  dataIntegrationServer:
    autoDeploy:
      sap:
        jcos:
          - fileCopy:
              sourcePath: sap/jco/<sapjco_libary_filename>
          - fileCopy:
              sourcePath: sap/jco/<sapjco_libary_filename>
```

   where the source path is the directory path of the library files in AWS or Azure.

2. Ensure that the syntax and indentations are valid, and then save the file as `serverlessUserAgentConfig.yml` in the following AWS or Azure location: `<Supplementary file location>/serverless_agent_config`
   When the .yml file runs, the libraries are copied from the AWS or Azure location to the serverless agent directory.

Configure the JAVA_LIBS and JVMClassPath properties for the serverless runtime environment

Perform the following steps in Administrator to configure the JAVA_LIBS and JVMClassPath properties for the serverless runtime environment on Linux:

1. Log in to Informatica Intelligent Cloud Services.
2. Select **Administrator** > **Serverless Environments**.
3. On the **Serverless Environments** tab, expand the Actions menu for the required serverless runtime environment, and then select **Edit**.
4. On the **Runtime Configuration Properties** tab, select **Data Integration Server** as the service.

5. Select the following **Type** and **Name**, and then enter the JAVA_LIBS and JVMClassPath values:

Type	Name	Value
Tomcat_JRE	JAVA_LIBS	`../bin/rdtm-extra/tpl/sap/sapjco3.jar:../bin/rdtm/javalib/sap/sap-adapter-common.jar`
PMRDTM_CFG	JVMClassPath	`pmserversdk.jar:../../bin/rdtm-extra/tpl/sap/sapjco3.jar:../../bin/rdtm/javalib/sap/sap-adapter-common.jar`

For more information about how to configure and use the serverless environment, see "Serverless runtime environment setup" in *Runtime Environments* in the Administrator help.

CHAPTER 2

SAP ADSO Writer connections

Use SAP ADSO Writer Connector to connect to the SAP BW/4HANA on-premise application.

You can use SAP ADSO Writer Connector to create an application server connection or a load balancing connection to connect using the SAP user name and password. You can also use create a Secured Network Application (SNC) application server connection or a load balancing connection to connect to SAP BW/4HANA using the SNC parameters.

You must create a connection to SAP BW/4 HANA on-premise systems before designing the mapping or mapping task.

SAP ADSO Writer connection properties

When you set up an **SAP ADSO Writer** connection, configure the connection properties.

The following table describes the SAP ADSO Writer 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 ADSO Writer

Property	Description
Runtime Environment	The name of the runtime environment where you want to run tasks. Select a Secure Agent or serverless runtime environment.

SAP Server Connection Type	The SAP server connection type to use.
	Select from the following options:
	- **Application Server Connection**. Connect to an SAP Application Server using the SAP user name and password.
	- **Application Server SNC Connection**. Connect to an SAP Application Server using the secured network connection:
	  - With X.509 Certificate. You do not need to specify the SAP user name and password explicitly. You must provide the path of the x.509 certificate file.
	  - Without X.509 Certificate. You must provide the SAP user name.
	- **Load Balancing Server Connection**. Connect to an SAP Application Server with the least load at run time.
	- **Load Balancing Server SNC Connection**. Connect to an SAP Application Server using SNC with the least load at run time.
	Note: Before you use an SNC connection, you must verify that SNC is configured both on the SAP Server and the machine where the Secure Agent runs.

The following table describes the properties that must configure when you select **Application Server Connection** as the connection type:

Connection property	Description
SAP Client Number	The client number of the SAP Server.
SAP Language	Language code that corresponds to the SAP language.
SAP Application Server	The host name of the SAP Application Server.
SAP System Number	The system number of the SAP Server to connect.
SAP Username	The SAP user name with the appropriate user authorization.
SAP Password	The SAP password.

Additional Parameters	Additional SAP parameters that the Secure Agent uses to connect to the SAP system.
	For example, to generate SAP JCo and SAP CPIC trace, specify the following properties:
	`jco.client.trace="1";`
	`jco.client.cpic_trace="3";`
	During the runtime, the JCo and CPIC traces file are generated in the following location:
	`<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<DIS version>\ICS\main\bin\rdtm`
	During the design time, the CPIC traces are generated in the `tomcat.out` files at the following location:
	`<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<DIS version>tomcat.out`

The following table describes the properties that must configure when you select **Load Balancing Server Connection** as the connection type:

Connection property	Description
SAP Client Number	The client number of the SAP Server.
SAP Language	Language code that corresponds to the SAP language.
SAP Message Server	The IP address or the host name of the SAP Message Server.
SAP System ID	The system ID of the SAP Message Server.
SAP Group	The login group name, for example, PUBLIC.
SAP Username	The SAP user name with the appropriate user authorization.
SAP Password	The SAP password.

Additional Parameters	Additional SAP parameters that the Secure Agent uses to connect to the SAP system.
	For example, to generate SAP JCo and SAP CPIC trace, specify the following properties:
	`jco.client.trace="1";`
	`jco.client.cpic_trace="3";`
	During the runtime, the JCo and CPIC traces file are generated in the following location:
	`<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<DIS version>\ICS\main\bin\rdtm`
	During the design time, the CPIC traces are generated in the `tomcat.out` files at the following location:
	`<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<DIS version>tomcat.out`

The following table describes the properties that must configure when you select **Application Server SNC Connection** as the connection type:

Connection property	Description
SAP Client Number	The client number of the SAP Server.
SAP Language	Language code that corresponds to the SAP language.
SAP Application Server	The host name of the SAP Application Server.
SAP System Number	The system number of the SAP Server to connect.
SNC My Name	Optional. The Informatica client Personal Security Environment (PSE) or certificate name. Default length is 256.
SNC Partner Name	The Informatica client PSE or certificate name. Default length is 256.

Connection property	Description
SNC Quality of Protection (QoP)	Specifies the SAP PSE or certificate name. You can select from the following options: - 1 - Apply authentication only. - 2 - Apply integrity protection (authentication). - 3 - Apply privacy protection (integrity and authentication). - 8 - Apply the default protection. - 9 - Apply the maximum protection. Default is *3 - Apply privacy protection (integrity and authentication)*.
SAP Cryptographic Library Path	The path to the cryptographic library. Specify `sapcrypto.dll` for Windows or `libsapcrypto.so` for Linux.
Use X509 Certificate	Specifies the quality of protection. Select to use X509 Certificate based SNC connection.
X509 Certificate Path or SAP Username	The path to the X509 certificate file. If you select to use the X509 certificate, specify the path to the X509 certificate file with .crt extension. You do not need to specify the SAP user name and password. If you do not want to use the X509 certificate, specify the SAP username for which SNC is configured in SAP Server.

Additional Parameters	Additional SAP parameters that the Secure Agent uses to connect to the SAP system.
	For example, to generate SAP JCo and SAP CPIC trace, specify the following properties:
	`jco.client.trace="1";`
	`jco.client.cpic_trace="3";`
	During the runtime, the JCo and CPIC traces file are generated in the following location:
	`<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<DIS version>\ICS\main\bin\rdtm`
	During the design time, the CPIC traces are generated in the `tomcat.out` files at the following location:
	`<Informatica Secure Agent installation directory>\apps\Data_Integration_Server\<DIS version>tomcat.out`

The following table describes the properties that must configure when you select **Load Balancing Server SNC Connection** as the connection type:

Connection property	Description
SAP Client Number	The client number of the SAP Server.
SAP Language	Language code that corresponds to the SAP language.
SAP Message Server	The IP address or the host name of the SAP Message Server.
SAP System ID	The system ID of the SAP Message Server.
SAP Group	The login group name, for example, PUBLIC.
SNC My Name	Optional. The Informatica client PSE or certificate name generated on the Secure Agent machine. Default length is 256.

Connection property	Description
SNC Partner Name	The Informatica client PSE or certificate name generated on the SAP Server. Default length is 256.
SNC Quality of Protection (QoP)	Specifies the SAP PSE or certificate name. You can select from the following options: - 1 - Apply authentication only. - 2 - Apply integrity protection (authentication). - 3 - Apply privacy protection (integrity and authentication). - 8 - Apply the default protection. - 9 - Apply the maximum protection. Default is *3 - Apply privacy protection (integrity and authentication)*.
SAP Cryptographic Library Path	The path to the cryptographic library. Specify `sapcrypto.dll` for Windows or `libsapcrypto.so` for Linux.
Use X509 Certificate	Specifies the quality of protection. Select to use X509 Certificate based SNC connection.
X509 Certificate Path or SAP Username	The path to the X509 certificate file. If you select to use the X509 certificate, specify the path to the X509 certificate file with .crt extension. You do not need to specify the SAP user name and password. If you do not want to use the X509 certificate, specify the SAP user name for which SNC is configured in the SAP Server.

Additional Parameters	Additional SAP parameters that the Secure Agent uses to connect to the SAP system.
	For example, to generate SAP JCo and SAP CPIC trace, specify the following properties:
	`jco.client.trace="1";`
	`jco.client.cpic_trace="3";`
	During the runtime, the JCo and CPIC traces file are generated in the following location:
	`<Informatica Secure Agent installation directory>\apps \Data_Integration_Server\<DIS version>\ICS\main\bin\rdtm`
	During the design time, the CPIC traces are generated in the `tomcat.out` files at the following location:
	`<Informatica Secure Agent installation directory>\apps \Data_Integration_Server\<DIS version>tomcat.out`

Creating an SAP ADSO Writer connection

1. Click **Administrator** > **Connections**, and then click **New Connection** to create a connection.

   The **New Connection** page appears.
2. Enter a name for the SAP ADSO Writer connection.
3. Enter a description for the connection.

   The description can have a maximum length of 255 characters.
4. Select **SAP ADSO Writer** as the connection type.

   The **SAP ADSO Writer Connector Connection Properties** section appears.
5. Select the name of the runtime environment where you want to run the tasks.

6. In the **Connection** section, perform the following tasks based on your requirement:
    a. Select from one of the following connection types:
        - Application Server. Use this connection type to connect to the SAP Application Server using the SAP user name and password.
        - Application Server SNC. Use this connection type to connect to the SAP Application Server using the secured network.
        - Load Balancing. Use this connection type to connect to the SAP message server that uses a load balanced application server. This connection type uses the SAP user name and password.
        - Load Balancing Server SNC. Use this connection type to connect to the SAP message server using the secured network. This connection type uses the secured network connection.

        Note: The connection properties appear based on the selected connection type. When you use an SNC connection type, you must configure SNC in both SAP and in the Informatica Secure Agent server.
    b. Enter the SAP client number.
    c. Enter the SAP language with which you want to establish the connection.
7. In the **System Connection Details** section, specify the system connection details based on the type of SAP connection type.
    a. If you select the Application Server or the Load Balancing connection type, you must specify the following system details:
        - SAP Application Server. Specify the IP address or the host name of the Application Server to which you want to connect.
        - SAP System Number. Specify the SAP system number.
    b. If you select the Application Server SNC connection or the Load Balancing Server SNC connection, you must specify the following system details:
        - SAP Message Server. Specify the details of the SAP message server, for example, the IP address or the host name.
        - SAP System ID. Specify the system ID of the SAP message server.
        - SAP Group. Specify the logon group name, for example, *PUBLIC*.
8. In the **Connection Logon Details** section, specify the login details depending on the connection type.
    a. If you select the Application Server or Load Balancing Server connection, specify the following SAP credentials:
        - Username. Specify the SAP user name.
        - Password. Specify the SAP password.
    b. If you select the Application Server SNC Server or Load Balancing Server SNC connection, specify the following connection parameters:
        - SNC My Name. The client PSE or certificate name generated for the Secure Agent.
        - SNC Partner Name. The server PSE or certificate name generated on the SAP server.
        - SNC Quality of Protection (QoP). Select from one of the following options:
            - 1 - Apply authentication only.
            - 2 - Apply authentication and integrity protection.
            - 3 - Apply authentication, integrity and privacy protection (encryption).

- 8 - Apply global default protection.
- 9 - Apply the maximum protection.

c. SAP Cryptographic Library Path. Specify the path of the SAP Cryptographic library.

   You must specify `sapcrypto.dll` for Windows or `libsapcrypto.so` for Linux.

d. Use X509 Certificate. Select this option to use the X.509 certificate to log in.

e. X509 Certificate Path or SAP Username. Specify the path of the X509 certificate file with `.crt` extension if you selected the X509 certificate. Otherwise, specify the SAP user name for which SNC is configured in the SAP server.

f. Additional Parameters. Enter any additional connection parameters that you want to use.

9. Click **Test Connection** to determine if the connection to the SAP BW4/HANA system is successful.
10. Click **Save** to save the connection.

CHAPTER 3

Mappings and mapping tasks with SAP ADSO Writer

Use a mapping to define the data flow logic. Use the Data Integration Mapping Designer to configure mappings. 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 source and 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. The Mapping Configuration application allows you to process data based on the data flow logic defined in a mapping or integration template.

Use the Mapping task wizard to create a mapping task. When you create a mapping task, you select the mapping or integration template for the task to use.

If you configured parameters, which are placeholders for information, in a mapping, you can define the parameters in the mapping task. Defining parameters provides additional flexibility and allows you to use the same mapping in multiple mapping tasks. For example, you can use a parameter for a target connection in a mapping, and then define the target connection when you configure the mapping task.

When you create a mapping task, you can associate the task with a schedule to run it at specified times or on regular intervals. Or, you can run it manually. You can also configure advanced session properties. You can monitor tasks that are currently running and view details about completed tasks.

SAP ADSO Extractor targets in mappings

To write data to an SAP BW/4HANA application, configure an SAP ADSO object as the Target transformation in a mapping.

Specify the name and description of the SAP ADSO target. Configure the target and advanced properties for the target object.

The following table describes the SAP ADSO Writer target properties that you can configure in a Target transformation:

Property	Description
Connection	Name of the source connection.
Target Type	The source type. Select from one of the following types: - Single Object. Select to specify a single SAP ADSO object. - Parameter. Select to specify the SAP ADSO object as a parameter.
Object	Target object for the task. Click **Select** and then select the target object.
Operation	The type of operation for the task. Only Insert is applicable.
Preview Data	Not applicable.

The following table describes the SAP ADSO Writer advanced target properties:

Property	Description
Activate Option Mode	Loads the data into the target ADSO object and then sends data activation requests to SAP BW/4HANA based on the activate options you select. You can select from the following activate options: - **0-Do Not Activate**. Does not send an activate request. - **1-Activate**. Creates a single activation request for all load requests in the queue. - **2-Activate Request by Request**. Creates a separate activation request for each of the load requests in the queue. - **Parameter**. Use this option to parameterize the activate options. Specify a valid activate option value in the **Parameter Name for Activate Option Mode** field. Default is Do Not Activate.
Parameter Name for Activate Option Mode	The parameter name that you defined for the **Activate Option Mode** in the parameter file. You can specify the following values for the data fetch mode: - 0 for Do Not Activate - 1 for Activate - 2 for Activate Request by Request If you pass any other value, the jobs fail when you run the mapping,
Packet size in MB	The packet size of each SAP data packet while writing data to SAP BW4/HANA. Default value is 10 MB.
Tracing	Sets the amount of detail that appears in the log file. You can choose terse, normal, verbose initialization, or verbose data. Default is normal

Activate option mode for SAP ADSO Writer mappings

You can select the activate option mode when you load data to the ADSO target in SAP BW/4HANA.

When you specify the activate mode, the Secure Agent first loads the data into the target ADSO object and then sends the data activation requests to SAP BW/4HANA based on the following activate options you select:

- **0-Do Not Activate**. Does not send an activate request and the activation precessing does not occur.
- **1-Activate**. Creates a single activation request for all load requests in the queue.
- **2-Activate Request by Request**. Creates a separate activation request for each of the load requests in the queue.

The activation request activates all the previous load requests in the queue that are pending for activation. Activation occurs per load request in a chronological sequence, starting from the earliest pending request to the most recent load request. The Secure Agent waits for the activation to be fully processed in SAP BW/4HANA system. The wait time depends upon the number of load requests in the queue that were available earlier to the load request associated with the current mapping.

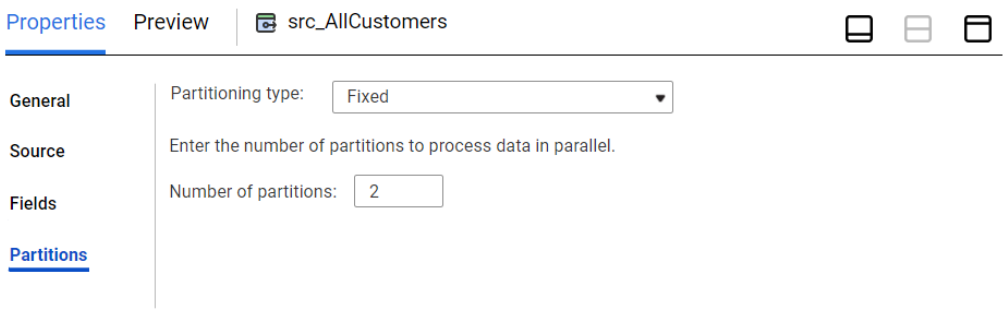
During the activation process, if the activation of a specific load request fails, the whole activation process fails and the rest of the load requests are also not activated. In such cases, the mapping fails even though the Secure Agent loaded the data correctly based on the enabled activate mode.

Fixed partitioning for SAP ADSO targets

You can configure fixed partitioning in a mapping that writes to SAP ADSO targets.

Enable partitioning when you configure the Source transformation in the Mapping Designer. You do not have to enable fixed partitioning in the Target transformation. The Secure Agent considers the same number of partitions you specified for the source as the target partition number.

On the **Partitions** tab for the Source transformation, you select fixed partitioning and enter the number of partitions, as shown in the following image:



When you run the mapping, the Secure Agent distributes rows of data for the target based on the number of partitions that you specify in the Source transformation. You can specify up to 64 partitions.

Configuring a mapping with an SAP ADSO target

Use the Data Integration Mapping Designer to configure a mapping.

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 a source, on the **Transformation** palette, click **Source**.
4. In the **Properties** panel, on the **General** tab, enter a name and description.
5. Click the **Source** tab and configure source details.
6. Specify the source type. You can choose one of the following options:
   - Select **Single Object** to select a single SAP object.
   - Select **Parameter** to configure the source objects in a mapping task associated with this mapping.
7. Click **Query Options** in the **Source** tab to specify any filter for the SAP ADSO object.
8. Click **Advanced** to specify the advanced source properties.

   Note: You cannot add or remove source fields or edit the field metadata.
9. 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 previous transformation 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.
10. To add an ODSO object to the Target transformation, on the **Transformation palette**, click **Target**.
    a. On the **General** tab, you can enter a name and description.
    b. Draw a link to connect the previous transformation to the Target transformation.
    c. Click the **Target** tab, configure the target details. Specify the target type:
       - Select **Single Object** to select an ADSO object.
       - Select **Parameter** to configure the target objects in a mapping task associated with this mapping.
       - Select **Operation** as **Insert**.
       - Click **Advanced** and specify the advanced target properties.
    d. Click **Field Mapping** and map the fields that you want to write to the target.
    e. To add another Target transformation, repeat these steps.
11. Click the **Field Mapping** to map the Source and Target fields.

    You can use the Automatic option if the fields are similar between the source and target.
12. Save and run the mapping or save and create a mapping task.

Creating a mapping task

You can create a mapping task based on a valid mapping or integration template on the Mappings page.

1. To create a mapping task, click **Data Integration** > **New** > **Tasks**.
2. Enter a name for the task.

   Task names must be unique within the organization. Task names can contain alphanumeric characters, spaces, and the following special characters:_ . + -Task names are not case sensitive.
3. Select the runtime environment that contains the Secure Agent that you want to use to access the SAP ADSO Writer connection.
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 or search for the required mapping and select **OK**.

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

   If you specified any parameters in the source or target details in the mapping, the Source or Target page appears. If not, the Schedule page appears.
8. Click **Next** to 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 you want to use.
   b. Configure the email notification options.
   c. Configure advanced options for the task.
   d. Configure the advanced target properties.
   e. Specify the execution mode.
9. Optionally, add the advanced session properties.
   a. Click **Add**.
   b. Select a session property.
   c. Configure the value of the session property.
10. Save and run the mapping task.

Rules and guidelines for SAP ADSO targets

Use the following rules and guidelines when you configure SAP ADSO targets:

- Only the activated ADSOs appear in the browser list of the SAP ADSO Writer Connector. Ensure that the required ADSO is activated in the SAP system before you can use in Data Integration.
- If the ADSO name has namespace `("/")` characters at the beginning, the Secure Agent replaces those characters with `T__`. Every subsequent namespace character in the ADSO name is replaced by `"__"`. For example, if the ADSO name is `/IMO/CMSD17`, it appears in the browser list as `T__IMO__CMSD17`.
- Do not edit the field metadata as it might corrupt the extracted data.

- If the field name of the selected ADSO has a namespace character (“/”), the Secure Agent replaces it with an underscore “_” character.
- When you define a mapping, you must select the operation as Insert. While activating, SAP BW/4HANA uses its algorithm to handle loaded data. You do not need to set any additional property in Data Integration to perform update or delete operation. Operations such as update and delete are handled at the SAP BW/4HANA layer itself.
- Ensure that data with the different data types that you load to BW/4HANA is correct. The activation of the loaded packet might fail if the inserted data is incorrect.
- The Secure Agent does check the validity of the data according to the supported transformation data type. However, if the data is incorrect, the Secure Agent loads the data to SAP BW/4HANA, but fails during the data activation. Ensure that the data is valid according to the data type of the fields.
- The default packet size to write data is 8 MB. When you set the packet size value equal to greater than 8 MB and you encounter out-of-memory issues, you can increase the Java heap memory for the Secure Agent. In the **System Configuration Details** section of the Secure Agent properties, select **DTM** and set the **JVMOption1** property to the following value: *Xmx512m*. Click **OK** to save the change and then restart the Secure Agent. Adjust the value for the JVMOption1 property based on the amount of records you want to write and the available memory on the Secure Agent machine.
- The default precision for variable length data types such as STRING and RAWSTRING is set to a higher value of 1333. To manage the optimal record length, you must, however, set the length for these data types in the Edit Metadata Section of the mapping based on the expected length of the actual data.

CHAPTER 4

Data type reference

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

SAP native data types

SAP data types appear in the **Fields** tab of the Target transformation when you choose to edit metadata for the fields.

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 writes to a target, it converts the transformation data types to the comparable native data types.

SAP and transformation data types

The following table lists the SAP data types that SAP ADSO Writer Connector supports along with the corresponding transformation data types:

SAP Data Type	Transformation Data Type	Range for Transformation Data Type
ACCP	Date/time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D.
CHAR	String	1 to 104,857,600 characters Fixed-length or varying-length string.
CLNT	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	Decimal	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
INT1	Small Integer	Precision 5, scale 0
INT2	Small Integer	Precision 5, scale 0
INT4	Integer	Precision 10, scale 0
LANG	String	1 to 104,857,600 characters Fixed-length or varying-length string.
LCHR	String	1 to 104,857,600 characters Fixed-length or varying-length string.
LRAW	Binary	Uninterrupted sequence of bytes with a maximum length of 255 positions.
NUMC	String	1 to 104,857,600 characters Fixed-length or varying-length string.
PREC	Binary	Uninterrupted sequence of bytes with a maximum length of 255 positions.
QUAN	Decimal	Precision 1 to 28 digits, scale 0 to 28
RAW	Binary	Uninterrupted sequence of bytes with a maximum length of 255 positions.
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.
VARC	String	1 to 104,857,600 characters Fixed-length or varying-length string.

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