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# Getting Started With SAP Datasphere, SAP BW Bridge

# Content

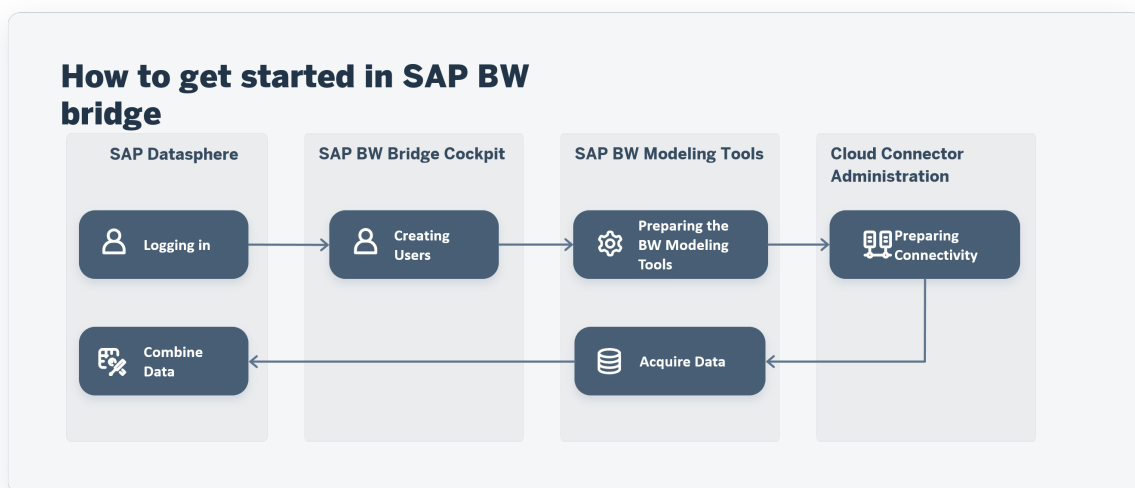
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# 1 Getting Started With SAP Datasphere, SAP BW Bridge

SAP Datasphere, SAP BW bridge enables you to use SAP BW functionality in the public cloud, and to import SAP BW bridge data models into SAP Datasphere.

SAP BW bridge offers SAP BW capabilities directly in SAP Datasphere and provides an easy way to move towards the innovation and efficiency of the cloud.

This guide will take you through the steps you need to take when you want to get started in SAP BW bridge. The following graphic illustrates the process:



- [Logging Into SAP BW Bridge \[page 6\]](#)
- [Creating Users \[page 7\]](#)
- [Preparing the BW Modeling Tools \[page 8\]](#)
- [Acquiring and Combining Data \[page 43\]](#)
- [Preparing Connectivity for ODP Source Systems in SAP BW Bridge \[page 16\]](#)
- [Acquiring and Combining Data \[page 43\]](#)

With SAP BW bridge, you can use the connectivity and business content for data integration (extractors) from SAP Business Suite and S/4HANA and its semantic flexibility: You can use the SAP BW bridge persistency layer for loading data with partitioning, monitoring, and error handling, all tailored to the needs of your company. You can connect data efficiently across clouds and hybrid landscapes and bring together data from all sources for a full picture. Business users can access these rich data models for business semantic modeling, separated from physical data storage, and consume this data using charts, dashboards, and other analytical artifacts in SAP Analytics Cloud and other analytics clients.

In addition to enabling the migration of SAP BW/4HANA into the cloud, SAP BW bridge also allows you to convert SAP BW objects including metadata into SAP BW bridge models. A conversion toolset supports you in this transition from SAP BW to SAP Datasphere.

## 1.1 Overview of SAP BW Bridge Tools

These tools support you in administration and data modeling.

### Modeling

There are two separate data modeling environments for SAP BW bridge and SAP Datasphere:

- the Eclipse-based BW Modeling Tools for SAP BW bridge objects: Here, you can model SAP BW objects like DataStore objects, InfoObjects, CompositeProviders, Transformations, Data Flows, as well as connect to DataSources. So, if you already know SAP BW or SAP BW/4HANA, you can use a familiar modeling environment to create your objects. For more information, see [Working with BW Modeling Tools in Eclipse](#).
- the Data Builder and the Business Builder in SAP Datasphere. Here, you can use various editors to acquire and replicate data from a range of sources and to combine and prepare it for consumption. For more information, see [Acquiring Data in the Data Builder](#) and [Modeling Data in the Business Builder](#).

To integrate entities from both modeling environments, you can import SAP BW bridge objects into SAP Datasphere as remote tables. For more information, see [Importing Entities with Semantics from SAP BW/4HANA or SAP BW Bridge](#).

### Administration

The SAP BW Bridge Cockpit is a central entry point for the administration of an SAP BW bridge system. The SAP BW Bridge Cockpit is an intuitive, Web-based user interface. It contains a number of SAP Fiori apps that can be used for process control, monitoring, and administration in SAP BW bridge. Which applications you see in the SAP BW Bridge Cockpit depends on which business roles are assigned to your user.

These apps assist you in monitoring and maintaining SAP BW bridge objects: [Apps in the SAP BW Bridge Cockpit](#)

Furthermore, there are apps for

- Managing security
- Users and roles
- Communication management

## 1.2 Provisioning the SAP BW Bridge Tenant

You can provision SAP BW bridge as an optional feature in SAP Datasphere.

### Prerequisites

You need an SAP Datasphere subscription (for productive tenant and for test tenant) with an appropriate number of capacity units to allocate to the different components of SAP Datasphere (Compute, Storage, SAP BW bridge and Data Lake).

### Context

This is the provisioning procedure for customer tenants. See also the blog post [How to Plan and Provision an SAP BW Bridge System Landscape](#) (published June 21, 2023).

For partner tenants, please follow this procedure: [Provisioning a Partner Tenant \(Test, Demo & Development license\) \[page 6\]](#)

### Procedure

1. Configure the size of your SAP BW bridge tenant in the Tenant Configuration. From the side navigation, go to **System > Configuration > Tenant Configuration**. Click *Save*, review your configuration and submit. For more information, see [Configure the Size of Your SAP Datasphere Tenant](#).

As soon as you click *Submit*, the SAP Datasphere instance will be automatically created and the allocated capacity units are assigned to SAP BW bridge.

#### Note

You can only change the size of your SAP BW Bridge storage later if you don't have any SAP BW Bridge instances.

2. To create your SAP BW bridge tenant, go to **System > Configuration > SAP BW Bridge**.
3. Click *Create* to trigger the creation of your SAP BW bridge tenant.
4. Enter a name and description for the SAP BW bridge space.

#### Note

We recommend choosing the same name for that space in all tenants of a system landscape. This can simplify transporting objects from one SAP Datasphere tenant to another.

5. For productive tenants: Deselect the option *Enable system for development*. This ensures that the tenant is created as productive tenant.

### Note

It is not possible to create or edit any objects in tenants for which *Enable system for development* is not selected. The property *Enable system for development* cannot be changed after tenant creation.

6. For non-productive tenants: Select the option *Enable system for development* depending on the system role: For development tenants, *Enable system for development* must be set. For test tenants (in a three-tier landscape), *Enable system for development* should not be set.
7. You can check the status of the provisioning process by choosing *Refresh* or *Sync and Refresh*.  
The status *create succeeded* indicates a successful provisioning of the SAP BW bridge tenant including the creation of the SAP BW bridge space and the required connection between SAP Datasphere and SAP BW bridge. This space can be found in Space Management.

## 1.2.1 Provisioning a Partner Tenant (Test, Demo & Development license)

The SAP BW bridge feature is available for SAP partner tenants, as an add-on license to the SAP Datasphere Test, Demo & Development license.

For detailed instructions on how to activate a partner tenant, see [SAP Partner Portal](#).

For more details on SAP BW bridge, see [Information on SAP BW bridge on the SAP Partner Portal](#).

## 1.3 Logging Into SAP BW Bridge

For logging into SAP BW bridge, we have to distinguish between two cases.

When a new SAP BW bridge tenant is provisioned together with a new SAP Datasphere tenant, the system owner receives a welcome email. Click the *Activate Account* button to connect to the server and set your password. You are then logged in to SAP Datasphere.

When a new SAP BW bridge tenant is provisioned to an already existing SAP Datasphere tenant, the first login to the SAP BW bridge tenant must be done by the user who was system owner of the SAP Datasphere tenant when the SAP BW bridge tenant was provisioned. The reason for this is that the initial administrator of the new SAP BW bridge tenant is identical to the system owner of your SAP Datasphere tenant at the time of provisioning.

To logon to the SAP BW Bridge Cockpit:

1. From the side navigation, choose *Space Management*.
2. Select the space *BW Bridge*.
3. Navigate to the section *Members*.
4. Add your user to the space.
5. Press *Save*.
6. From the side navigation, choose *Data Integration Monitor*.

7. Choose [Open SAP BW Bridge Cockpit](#). You are automatically logged in to the SAP BW Bridge cockpit. If you are prompted for user and password, see SAP Note [3156000](#) for instructions on how to set up user mapping between SAP Datasphere and SAP BW bridge.

## 1.4 Creating Users

You need to create SAP BW bridge users as well as SAP Datasphere users.

### Context

As there are two separate data modeling environments for SAP BW bridge, you need to create users for both. However, SAP BW bridge uses the Identity Provider of SAP Datasphere. Therefore, the corresponding users in SAP Datasphere and SAP BW bridge (with identical email address) share the same password and it is only necessary to login once.

The BW Modeling Tools and the SAP BW Bridge Cockpit use the Identity and Access Management. In the [Maintain Business Roles](#) app, you create business roles by combining pre-defined business catalogs, or, as we recommend, use business role templates. You need to

1. Create [Business Roles](#) from a template
2. Create [Employees](#) for the new users
3. Create [Business Users](#) for the new users

SAP Datasphere has its own user management system and is delivered with several standard roles. You can assign standard roles directly to users or, if you have different business needs, you can use them as a template for defining new roles.

### Procedure

#### Creating Users for SAP BW Bridge

1. Logon to the SAP BW Bridge Cockpit.
2. Create Business Roles from a template:
  1. Select the tile of the [Maintain Business Roles](#) app. On the initial screen select [Create From Template](#).
  2. Select the template SAP\_BR\_ADMINISTRATOR\_DWC and confirm the [Business Role ID](#) and [Description](#).
  3. In [Access Categories](#), [Write, Read, Value Help](#) is set to [No Access](#) while [Read, Value Help](#) is set to [Unrestricted](#), i.e. no write access is granted by default. However, users need to have write access to create and change objects. Therefore, open the drop-down menu next to [Write, Read, Value Help](#) and switch from [No Access](#) to [Unrestricted](#).
  4. Press [Save](#).
  5. Repeat steps a. to d. for the template SAP\_BR\_DEVELOPER\_DWC, SAP\_BR\_DEVELOPER, and SAP\_BR\_ADMINISTRATOR.

3. Create *Employees* for the new users:
  1. Select the tile of the *Maintain Employees* app.
  2. Create or import new employees.
4. Create *Business Users* for the new users and assign the new business roles created in step two above. For more information, see [Manage Business Users](#).

#### Note

The users who will be responsible for importing SAP BW bridge objects need the business catalog SAP\_DW4\_BC\_MODELING\_DWC\_PC in their role. This business catalog is part of the business role template SAP\_BR\_DEVELOPER\_DWC.

#### Creating Users for SAP Datasphere

5. Logon to SAP Datasphere.
6. Create SAP Datasphere users manually or by import from a \*.csv file. For more information, see [Managing SAP Datasphere Users](#).
7. Assign roles to your users. For more information, see [Managing Users and Roles](#).

## 1.5 Preparing the BW Modeling Tools

Before you can start with modeling objects, you need to go through several steps to prepare the BW Modeling tools.

### Prerequisites

You need to install the latest version of the BW Modeling Tools. For more information, see [Installation Guide for Modeling Tools](#).

### Context

These preparatory steps are necessary to establish a connection between the BW Modeling tools and SAP Datasphere and to enable the transport of objects, from a development system to a production system for example.

### Procedure

1. Create an SAP BW bridge project. For more information, see [Create an SAP BW Bridge Project \[page 9\]](#).
2. Create an ABAP cloud project. For more information, see [Create an ABAP Cloud Project \[page 12\]](#).



3. Create software components. For more information, see [Create Software Components \[page 14\]](#).
4. Monitor SAP BW bridge jobs. For more information, see [Monitor SAP BW Bridge Jobs \[page 16\]](#).

## 1.5.1 Create an SAP BW Bridge Project

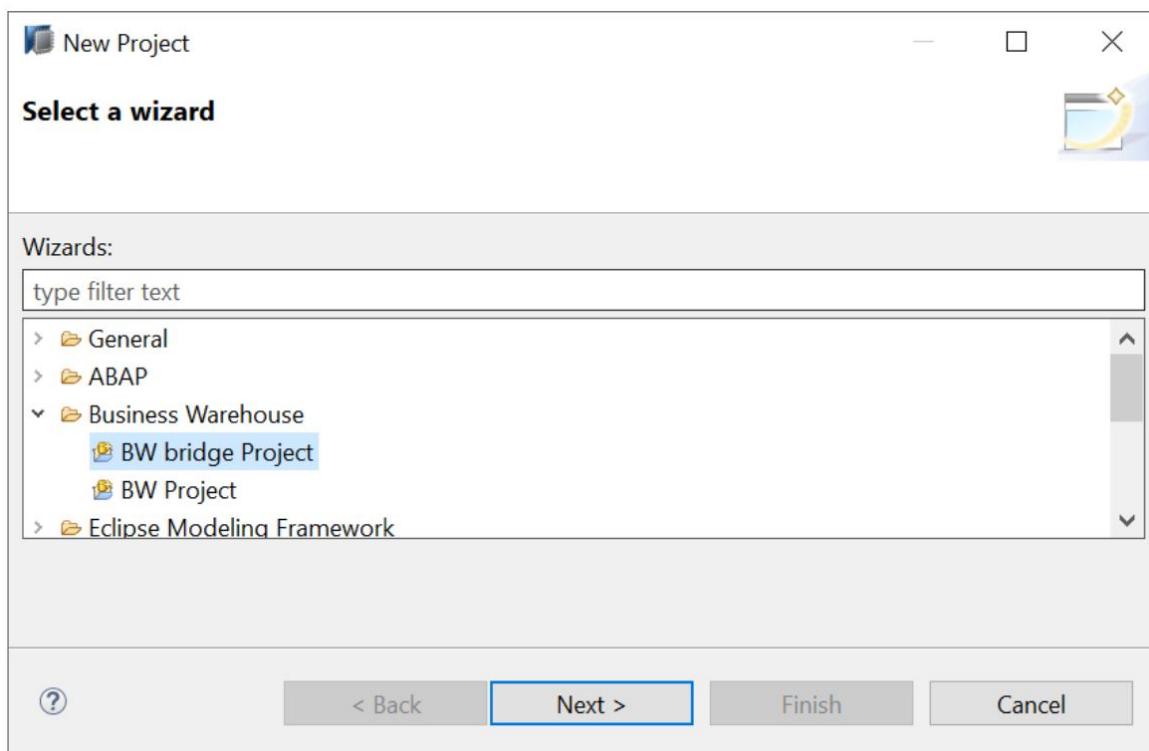
Before you start modeling SAP BW bridge artefacts, you first need to create an SAP BW bridge project.

### Context

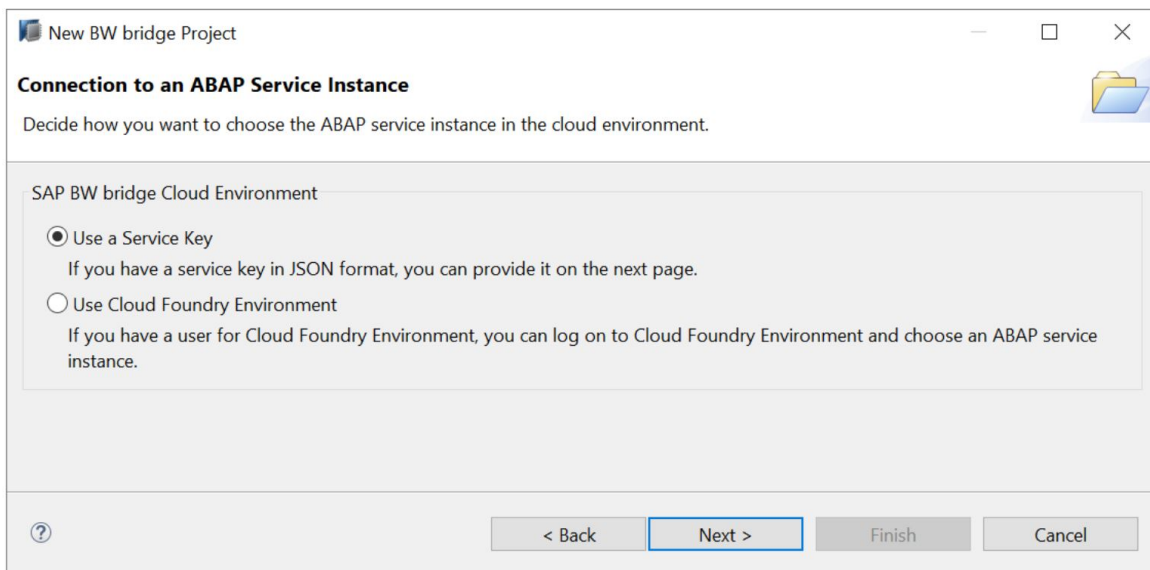
The BW bridge project is used to manage the connection to the SAP BW bridge tenant that you want to work with. The project acts as a container (on the front end) for the SAP BW bridge metadata objects located in the system.

### Procedure

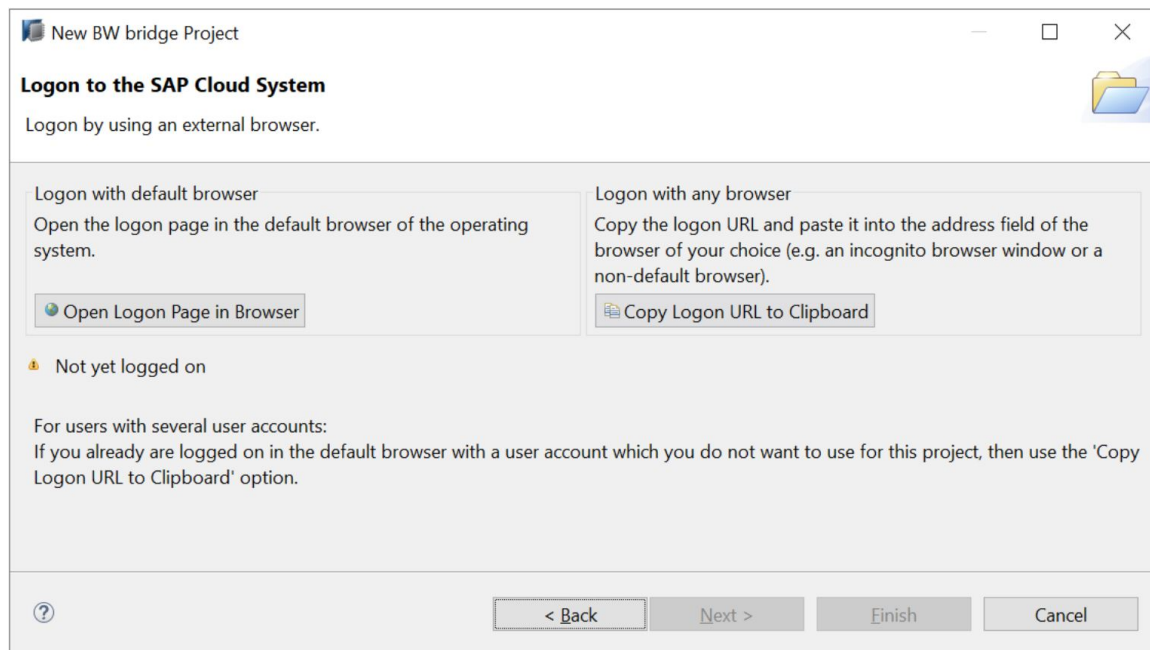
1. Open the BW Modeling Tools.
2. To launch the project creation wizard, choose **File > New > Project** in the main menu.
3. Select the project type **Business Warehouse > BW bridge Project** and choose **Next**.



- In the *Connection to an ABAP Service Instance* dialog, choose *Use a Service Key* and choose *Next*.



- Paste the service key into the field *Service Key in JSON Format* and choose *Next*. For more information, see [Copy the SAP BW Service Key \[page 11\]](#).
- In the *Logon to the SAP Cloud System* dialog, choose *Open Logon Page in Browser*. A browser window is opened.



- In the browser window, enter your credentials for your SAP Datasphere tenant (e-mail address and password) and logon. You should see the message "You have been successfully logged on".
- You can close the page in the browser and continue in the BW Modeling Tools.
- In the *Service Instance Connection* dialog, enter a language key in the field *Language* and choose *Next*.

### Note

The Service Instance URL is not supposed to be functional.


10. In the *Project Name* dialog, confirm the suggested *Project Name* or choose an own project name and choose *Finish*.
11. In the BW Modeling Tools, choose ► *Window* ► *Perspective* ► *Open Perspective* ► *Other...* ► in the main menu.
12. In the *Open Perspective* dialog, choose *BW Modeling* and choose *Open*. You should see the BW bridge project you created before.

## 1.5.1.1 Copy the SAP BW Service Key

### Context

You need the SAP BW service key for creating a SAP BW bridge project or an ABAP Cloud project in the SAP BW Bridge Modeling Tools.

### Procedure

1. Logon to SAP Datasphere.
2. From the side navigation, choose *Space Management*.
3. If not yet done, add your user to the BW bridge space. Save and deploy the BW bridge space.
4. Select the space *BW Bridge*.
5. From the side navigation, choose *Connections* and select the BW Bridge space .
6. Choose *Edit*.
7. Under *SAP BW Bridge Modeling Tools Access* choose  (*Copy to clipboard*) next to *SAP BW Service Key*.

## 1.5.2 Create an ABAP Cloud Project

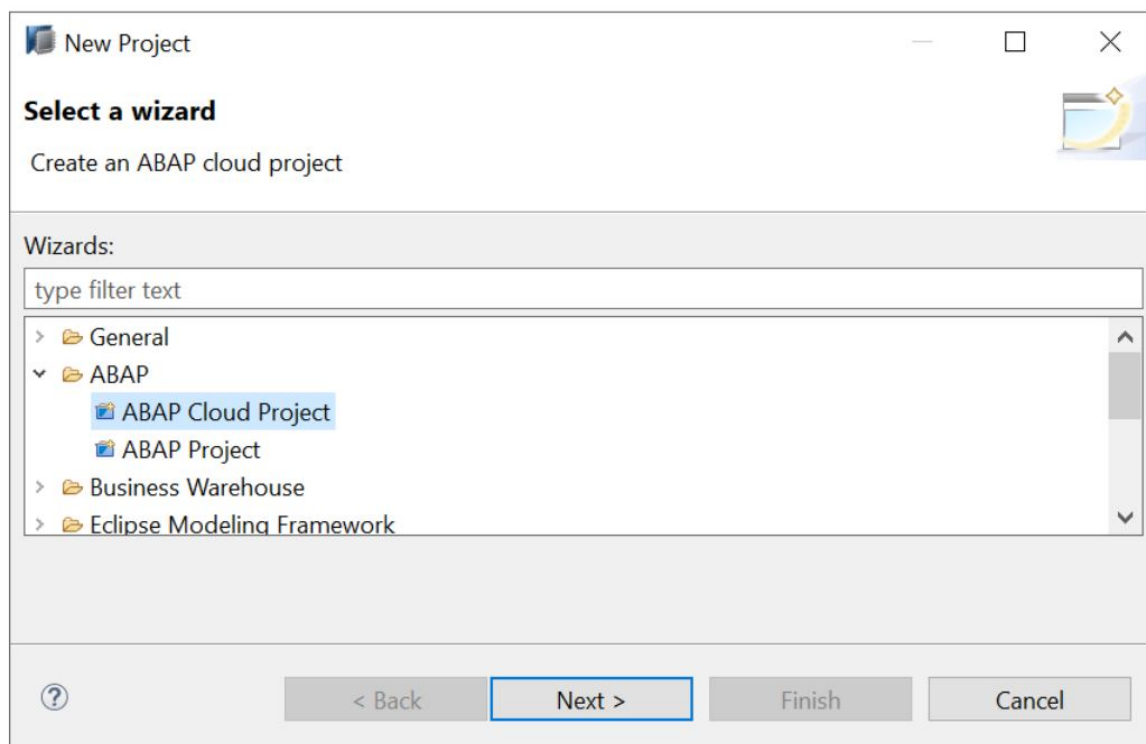
Before you start creating ABAP cloud artefacts in the BW Modeling Tools, you first need to create an ABAP cloud project.

### Context

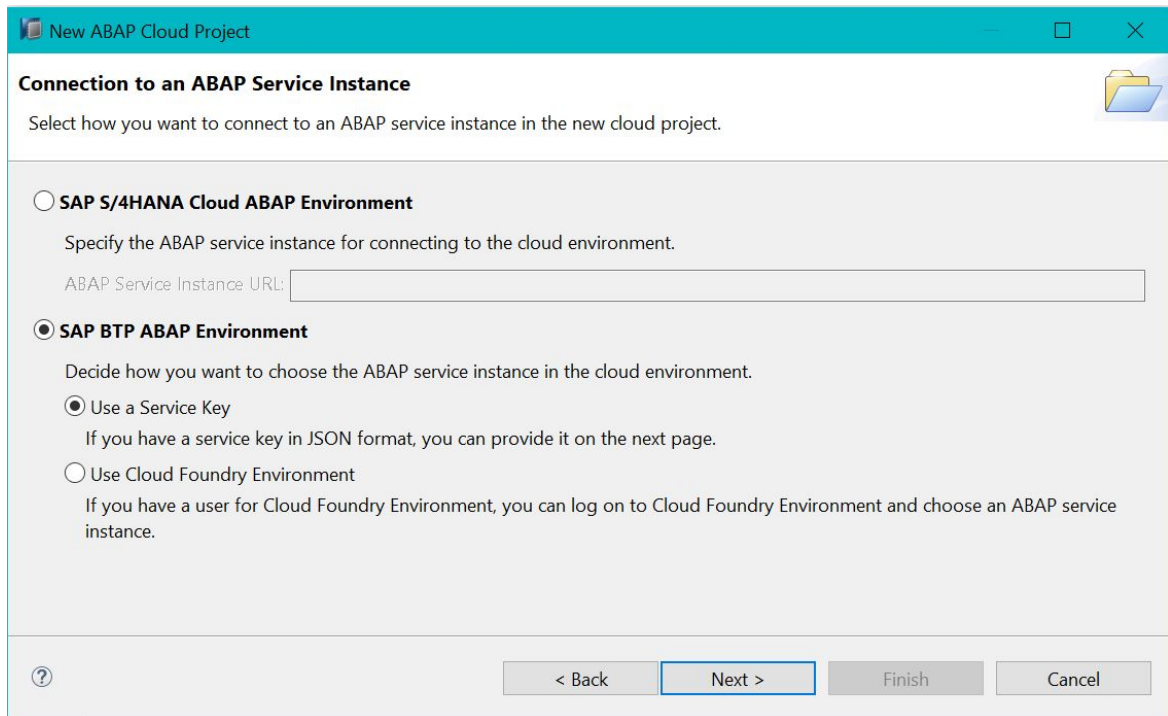
The ABAP cloud project is used to manage the connection to the SAP BW bridge tenant that you want to work with. The project acts as a container (on the front end) for the ABAP cloud objects located in the system.

### Procedure

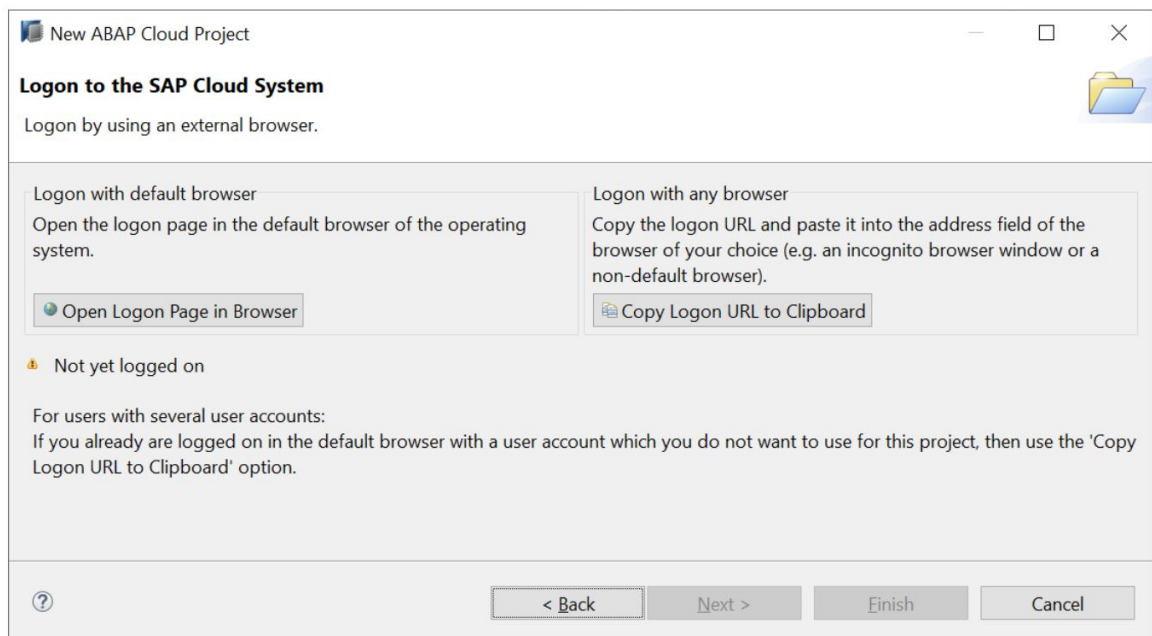
1. Open the BW Modeling Tools.
2. To launch the project creation wizard, choose **File > New > Project** in the main menu.
3. Select the project type **ABAP > ABAP Cloud Project** and choose *Next*.



4. In the *Connection to an ABAP Service Instance* dialog, choose **SAP BTP ABAP Environment > Use a Service Key** and choose *Next*.



5. Paste the service key into the field *Service Key in JSON Format* and choose *Next*. For more information, see [Copy the SAP BW Service Key \[page 11\]](#).
6. In the *Logon to the SAP Cloud System* dialog, choose *Open Logon Page in Browser*. A browser window is opened.



7. In the browser window, enter your credentials for your SAP Datasphere tenant (e-mail address and password) and logon. You should see the message "You have been successfully logged on".
8. You can close the page in the browser and continue in the BW Modeling Tools.
9. In the *Service Instance Connection* dialog, enter a language key in the field *Language* and choose *Next*.

#### Note

The Service Instance URL is not supposed to be functional.

10. In the *Project Name* dialog, confirm the suggested *Project Name* or choose an own project name and choose *Finish*.
11. In the BW Modeling Tools, choose ► *Window* ► *Perspective* ► *Open Perspective* ► *Other...* ► in the main menu.
12. In the *Open Perspective* dialog, choose *ABAP* and choose *Open*. You should see the ABAP cloud project you created before.

## 1.5.3 Create Software Components

Software components are used to save and transport SAP BW bridge objects.

### Context

SAP BW bridge is based on an ABAP Platform. In order to save and transport SAP BW bridge objects, such as DataStore objects and transformations, you need to create a software component and an ABAP development package.

#### Note

In SAP BW bridge, it is not possible to store SAP BW bridge objects on package \$TMP. All SAP BW bridge objects have to be assigned to an ABAP development package.

This development package must **not** be created under the package ZLOCAL since objects created on packages under ZLOCAL cannot be transported.

Note that it is not possible to change the assignment of an object to its development package after creation.

### Procedure

#### Create and Clone a Software Component

1. Open the SAP BW Bridge Cockpit.
2. Open the app *Manage Software Components*.
3. Choose *Create*.
4. Enter a name and description and ensure that *Type* is set to *Development*.

### Note

The names of software components must be unique across all SAP BW bridge tenants, globally. Therefore, as a best practice, include an identifier in the name of a software component that is likely to be unique, e.g. your company and project name.

5. Choose *Create* to start the creation of the software component.
6. Once the software component is created, you can clone the software component into your SAP BW bridge tenant. To do so, choose *Clone*.
7. In the *Clone* dialog, choose the *Repository Role* depending on the role of your SAP BW bridge tenant. For development tenants, choose *Source - Allow Push and Pull*. For quality assurance tenants and for productive tenants, choose *Choose Target - Allow Only Pull (Push Disabled)*.
8. Press *Clone* to start cloning the software component into your SAP BW bridge tenant. Cloning is triggered asynchronously. After a short while, refresh the browser window. The software component should now be shown as *Cloned: Yes*.
9. Choose *Settings* to disable the rollback mechanism. To do so, switch *Rollback Mechanism* to *Disabled - Allow also invalid commits to be imported* and choose *Save*.

For more information, see [How to Create Software Components](#).

### Create an ABAP Development Package

As soon as the new software component is cloned into your SAP BW bridge tenant, an ABAP structure package with the same name as the software component is created. Structure packages cannot be used to create ABAP repository objects or SAP BW bridge objects. They have to be created in an ABAP development package. The development package must be created as a sub-package of the structure package that is generated for the software component.

10. Open the BW Modeling tools and navigate to the ABAP Cloud project.
11. Open the context menu of the ABAP Cloud project and select **New > ABAP Package**.
12. In the *New ABAP Package* dialog, enter a name and description. Ensure that *Package Type Development* is selected. Next to *Superpackage*, select *Browse* and search for the structure package. Its name is identical to the name of the software component. Choose *Next*.
13. Choose an existing transport request or create a new transport request and choose *Finish*.

For more information, see [Creating ABAP Packages](#).

### Maintain a Default Development Package

You are prompted for a development package whenever a new SAP BW bridge object is created. Creating SAP BW bridge objects on \$TMP is not possible. To ease the selection of a development package, you can maintain a default development package in the BW Modeling Tools.

14. In the BW Modeling Tools, go to **Window > Preferences**.
15. Choose *BW Modeling*.
16. In section *Transport Settings*, you can define a default package for all SAP BW bridge projects or a project specific default package.

For more information on how to transport in an SAP BW bridge system landscape, see the blog post [How to Transport in an SAP BW Bridge System Landscape](#) (published June 21, 2023).

## 1.5.4 Monitor SAP BW Bridge Jobs

You can subscribe to the BW Job Repository for a SAP BW bridge system to display jobs in the [Feed Reader](#).

### Context

In the Feed Reader, shortdumps are also displayed.

### Procedure

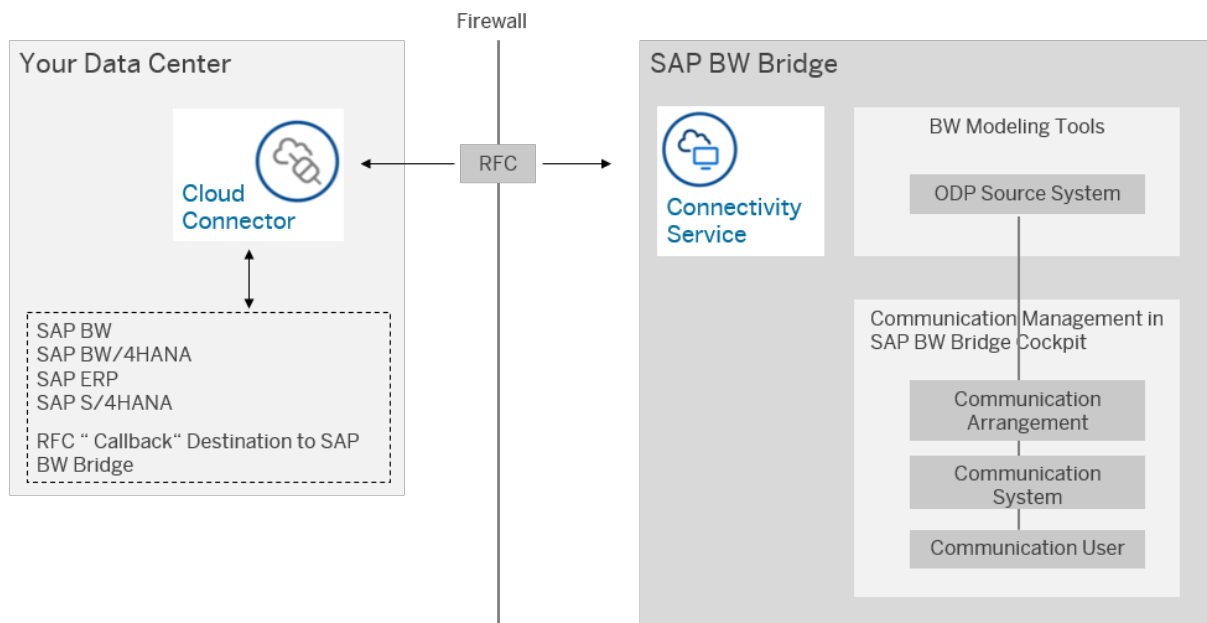
1. Log in to the SAP BW bridge tenant in the BW Modeling Tools.
2. Open the [Feed Reader](#) view. If it is not visible yet in the BW modeling tools, open it by choosing **▶ Window ▶ Show View ▶ Other ▶ ABAP ▶ Feed Reader ▶**.
3. Configure the feed query. For more information, see [Subscribing to the BW Job Repository Feed](#).

## 1.6 Preparing Connectivity for ODP Source Systems in SAP BW Bridge

Connecting an SAP on-premise system to SAP BW bridge requires a few more steps than connecting the same system to an SAP BW on SAP HANA or SAP BW/4HANA system. However, you may already know some of the building blocks if you have connected SAP on-premise systems to an SAP SaaS offering in the public cloud before.

A Cloud Connector serves as a link between the on-premise source system and your SAP BW bridge tenant which is technically based on an ABAP Platform in SAP BTP. RFC is used as a protocol for data exchange between on-premise source systems and SAP BW bridge.





The on-premise source system must be configured as communication system. And last but not least the source system itself needs specific properties.

The source system connectivity is established following these procedures:

1. Add the SAP Datasphere subaccount in the Cloud Connector. For more information, see [Add the SAP Datasphere Subaccount in the Cloud Connector \[page 19\]](#).
2. Create the on-premise source system in the Cloud Connector. For more information, see [Create the On-Premise Source System in the Cloud Connector \[page 21\]](#).
3. Add the relevant resources to the source system. For more information, see [Add Resources to Source System \[page 23\]](#).
4. Add a service channel to the SAP BW bridge tenant in the Cloud Connector. For more information, see [Add a Service Channel to the SAP BW Bridge Tenant in the Cloud Connector \[page 24\]](#).
5. Create a communication system in the SAP BW bridge tenant. For more information, see [Create a Communication System in the SAP BW Bridge Tenant \[page 26\]](#).
6. Create the source system in the SAP BW Modeling Tools. For more information, see [Create the Source System in the BW Modeling Tools \[page 28\]](#).
7. Optional: Select and activate preconfigured SAP BW bridge Content objects. For more information, see [Use SAP BW Bridge Content \[page 45\]](#).

## 1.6.1 Best Practices for Naming Conventions of Source Systems in SAP BW Bridge

In **on-premise SAP BW systems**, projects often used a naming convention for technical names of source systems to identify system ID, client, and context. For example ABC001\_CDS for a development system with system ID ABC, client 001 and ODP context ABAP\_CDS that serves as a source system.

DataSources are source-system dependent objects. The technical names of DataSources include the technical name of the source system. During transports **in on-premise systems**, for example from a development

system to a quality assurance system, the after-import transport handling adapts the technical name of the quality assurance system, and the technical name of the DataSource to reflect that it points from the quality assurance system to the respective quality assurance source system after the transport. This was done according to mapping table RSLOGSYSMAP.

This source system mapping in the after-import transport handling is not done in SAP BW bridge. Therefore, for **SAP BW bridge**, the following approach is recommended:

- Use a "semantical" name for the Source System e.g. HR\_APJ\_CDS. Thus, there is no need to rename DataSources when transporting them to another system.
- For the Communication Arrangement, it is recommended to use the same name as for the ODP source system i.e. HR\_APJ\_CDS in this example.
- For the Communication System, a "technical" name shall be used to reflect the actual source system i.e. <system ID>\_<client>, in our example ABC\_001.

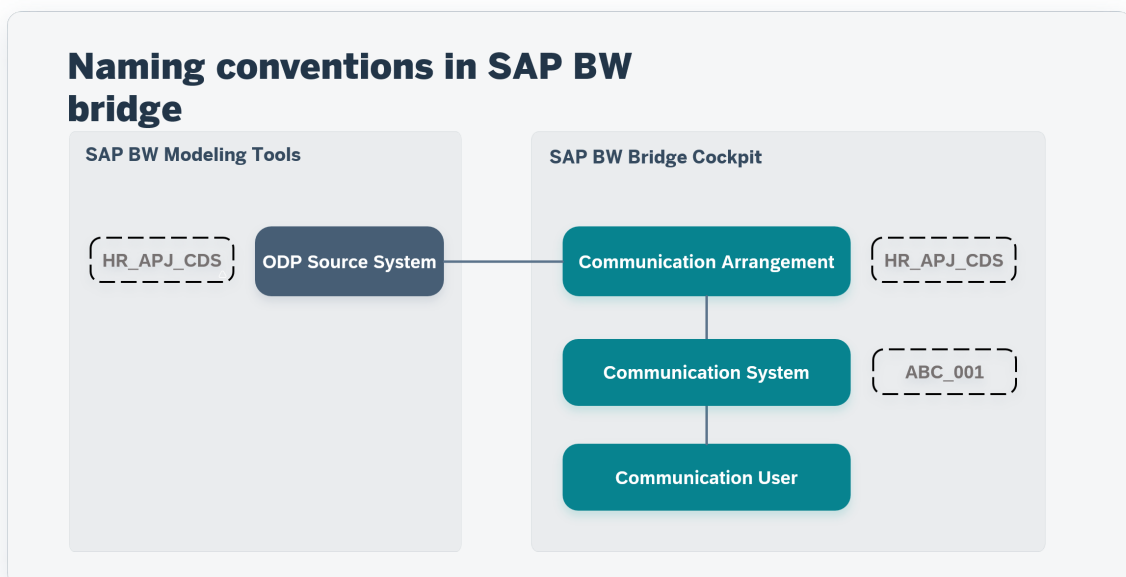
### 📌 Note

A Communication System can be used for several ODP source systems. That can be useful if different ODP contexts are required for that source system.

### 📌 Note

See SAP note [3355699](#) for further details on SAP BW bridge gCTS transport issue with source system dependent objects.

Here is an example for naming convention of source systems:



## 1.6.2 Add the SAP Datasphere Subaccount in the Cloud Connector

You need to add the SAP Datasphere subaccount to the Cloud Connector in order to connect on-premise systems to SAP BW bridge.

### Prerequisites

Before configuring the Cloud Connector, the following prerequisites must be fulfilled:

- The Cloud Connector is installed in your on-premise network. The Cloud Connector version must be 2.13.1 or higher.  
For more information, see [Cloud Connector Installation](#) in the *SAP BTP Connectivity* documentation.
- Before configuring the Cloud Connector, you or the owner of your organisation will need an SAP Business Technology Platform (SAP BTP) account. If you don't have an account yet, create an account by clicking [Register](#) in the [SAP BTP cockpit](#).
- During Cloud Connector configuration you will need information for your SAP Datasphere subaccount. Make sure that you have the subaccount information available in [System](#) > [Administration](#) > [Data Source Configuration](#) > [SAP BTP Core Account](#).  
For more information, see [Set Up Cloud Connector in SAP Datasphere](#).

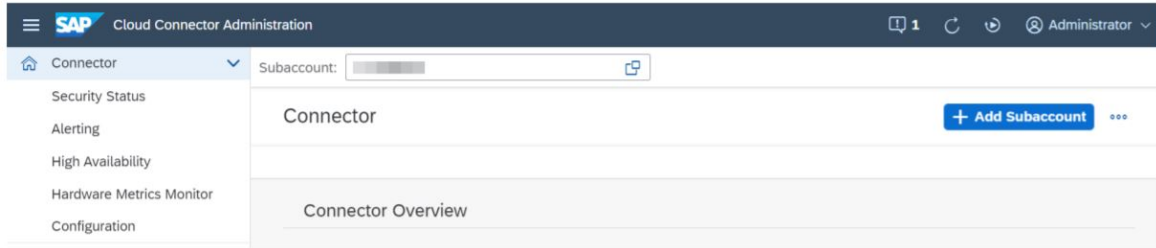
#### Note

If you have an account but cannot see the account information there, enter the SAP BTP user ID. This ID is typically the email address you used to create your SAP BTP account. After you have entered the ID, you can see the [Account Information](#) for SAP Datasphere: [Subaccount](#), [Region Host](#), and [Subaccount User](#).

- In the source system, the SAP Notes [2703850](#), [3076927](#), and [3083347](#) must be applied. Only those SAP Notes are relevant which contain correction instructions for the respective source system. Note that SAP ECC or SAP S/4HANA source systems contain a software component SAP\_BW, hence SAP Notes with correction instructions for software component SAP\_BW may also be applicable in these systems.

### Procedure

1. Log on to the [Cloud Connector Administration](#) on `https://<hostname>:8443`.  
`<hostname>` refers to the machine on which the Cloud Connector is installed. If installed on your machine, you can simply enter localhost.
2. In the side navigation area of the [Cloud Connector Administration](#), click [Connector](#) to open the [Connector](#) page and click [+ Add Subaccount](#) to open the [Add Subaccount](#) dialog.



3. Enter or select the following information to add the SAP Datasphere subaccount to the Cloud Connector.

<i>Field</i>	<i>Description</i>
<i>Region</i>	Select your region host from the list.
<i>Subaccount</i>	Add your SAP Datasphere subaccount name.
<i>Display Name</i>	(Optional) Choose a display name for the account.
<i>Subaccount User</i>	Add your subaccount username.
<i>Password</i>	Enter the password of the subaccount user in SAP BTP.
<i>Location ID</i>	(Optional) Define a location ID that identifies the location of this Cloud Connector for the subaccount.
<i>Description</i>	(Optional) Add a description for the Cloud Connector.

**Note**

- Using location IDs you can connect multiple Cloud Connector instances to your subaccount. If you don't specify any value, the default is used. For more information, see [Managing Subaccounts](#) in the *SAP BTP Connectivity* documentation.
- Each Cloud Connector instance must use a different location, and an error will appear if you choose a location that is already been used.
- We recommend that you leave the *Location ID* empty if you don't plan to set up multiple Cloud Connectors in your system landscape.

4. Click [Save](#).

## Results

As a result, you have added the SAP Datasphere tenant to the Cloud Connector.

In the [Subaccount Dashboard](#) section of the [Connector](#) page, you can see all subaccounts added to the Cloud Connector at a glance. After you have added your subaccount, you can check the status to verify that the Cloud Connector is connected to the subaccount.

## 1.6.3 Create the On-Premise Source System in the Cloud Connector

You have to allow access to an on-premise system in the Cloud Connector.

### Context

The Cloud Connector controls the access to on-premise systems.

When adding the system information, you enter internal and virtual system information:

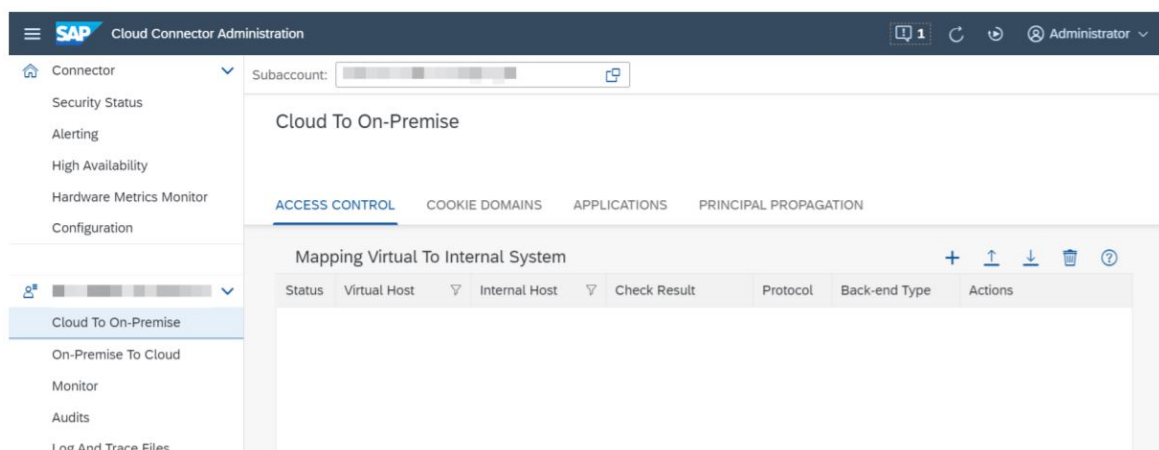
- The internal host and port specify the actual host and port under which the backend system can be reached within your corporate network. It must be an existing network address that can be resolved on your corporate network and has network visibility for the Cloud Connector. The Cloud Connector tries to forward the request to the network address specified by the internal host and port, so this address needs to be real.
- You can virtualize the system information in case you like to hide your internal host names from the cloud. The virtual server name can be an arbitrary name which does not need to exist. We recommend to use a virtual (cloud-side) name that is different from the internal name.

### Procedure

1. Log on to the *Cloud Connector Administration* on `https://<hostname>:8443`.

`<hostname>` refers to the machine on which the Cloud Connector is installed. If installed on your machine, you can simply enter localhost.

2. In the left-side menu of the administration UI, select *Cloud To On-Premise*.



3. In the *Subaccount* field, choose the subaccount of your SAP Datasphere tenant.
4. On the *Access Control* tab, in the *Mapping Virtual to Internal System* section, click + (*Add*) to add a new mapping for your source system.

5. In the *Add System Mapping* dialog, use the following values:
  1. Choose *ABAP system* as *Back-end Type*.
  2. Select *RFC* as *Protocol*.
  3. We recommend to choose *With load balancing (system ID and message server)* as *Connection Type*.
  4. **If connection type 'With load balancing (system ID and message server)' was set:**  
 Maintain the message server of the ABAP system as *Message Server*.  
 Enter the system ID as *System ID*. The system ID is a three-char identifier that is also found in the SAP Logon configuration. Alternatively, it is possible to directly specify the message server port in the *System ID* field. If you are not sure about the message server port number, call transaction SMMS in the source system.

#### 🔗 Example

This could look like this:

```
Message Server Running on : hostname / sapmsSID ( 9394 ) , Internal
Communication : 3901 (SSL activated)
```

In this example, the message server port number is 9394. This number can be entered as System ID.

#### **If connection type *Without load balancing (application server and instance number)* was set:**

Maintain the hostname of the application server as *Application Server*.

Enter the instance number of the source system as *Instance Number*. Alternatively, it is possible to directly specify the RFC port in the *Instance Number* field. If you are not sure about the RFC port number, call transaction SMGW in the source system, then display the gateway trace file. It should contain a line like this:

```
Bind service sapgw00 (socket) to port 3300
```

5. Optional: You can virtualize the system information in case you like to hide your internal host names from the cloud. The virtual information can be chosen arbitrarily and does not need to exist. The fields will be pre-populated with the values of the configuration provided in the step before.

#### **If connection type *With load balancing (system ID and message server)* was set:**

The *Virtual Message Server* and the *Virtual System ID* will later be used when maintaining the communication system in the SAP BW bridge tenant pointing to the on-premise source system.

#### 📌 Note

The *Virtual System ID* should be a three-char identifier, for example, XYZ. The virtual port will then be composed as sapmsXYZ. Alternatively, you may also choose a numeric port number as *Virtual System ID*.

If connection type *Without load balancing (application server and instance number)* was set:

The *Virtual Application Server* and the *Virtual Instance Number* will later be used when maintaining the communication system in the SAP BW bridge tenant pointing to the on-premise source system.

#### 📌 Note

The *Virtual Instance Number* must be a two-digit number, for example, 72. The virtual port will then be composed as sapgw72.

6. Optional: Enter a *Description*.
7. Set *Check Internal Host* and choose *Finish*.

## Results

As a result, you have defined the source system in Cloud Connector. It should be shown as *Reachable* in the column *Check Result*.

ACCESS CONTROL    COOKIE DOMAINS    APPLICATIONS    PRINCIPAL PROPAGATION

Mapping Virtual To Internal System (12)

Status	Virtual Host	Internal Host	Check Result	Protocol	Back-end Type
			<input checked="" type="checkbox"/> Reachable	RFC	ABAP System

## 1.6.4 Add Resources to Source System

You need to add some additional resources to your source system.

### Procedure

1. Log on to the *Cloud Connector Administration* on `https://<hostname>:8443`.
2. In the left-side menu of the administration UI, select *Cloud To On-Premise*.
3. On the *Access Control* tab, in the *Mapping Virtual to Internal System* section, select the newly created source system.
4. On the *Access Control* tab, in the *Resources* section, click (Upload) (*Upload*) to import resources into the new source system.
5. Download the file ODP\_RFC\_RESOURCES.zip attached to [3112568](#)
6. In the *Import Scenario* dialog, select *Browse* and locate the zipped file downloaded in the previous step. Do not unzip the file.
7. Select *Import*.

## Results

As a result, you have added the relevant resources to your newly created source system. Its *Status* should be shown as  (*Accessible resources are available*) .

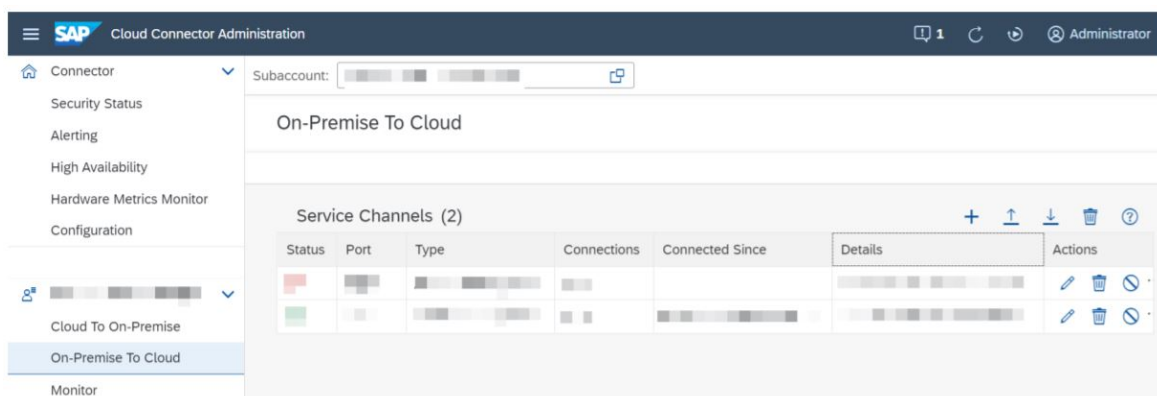
## 1.6.5 Add a Service Channel to the SAP BW Bridge Tenant in the Cloud Connector

### Context

The on-premise source system must be able to call the SAP BW bridge tenant via RFC. Therefore, a service channel must be added in the Cloud Connector.

### Procedure

1. Log in to the Cloud Connector application.
2. In the left-side menu of the administration UI, select *On-Premise To Cloud*.



3. In the *Subaccount* field, choose the subaccount of your SAP Datasphere tenant.
4. In the *Service Channels* section, click **+** (*Add*) to add a new service channel.
5. In the *Add Service Channel* dialog, use the following values:
  1. *Type*: ABAP Cloud System
  2. *ABAP Cloud Tenant Host*: For SAP BTP ABAP based systems like SAP BW bridge, the tenant host is `<serviceinstanceguid>.abap.<region>.hana.ondemand.com` (Note that this is not the frontend address with the abap-web subdomain). The region is, for example, eu10 or us10.  
To retrieve the host name:
    - Log on to SAP Datasphere.
    - From the side navigation, choose *Space Management*.
    - Select the space *BW Bridge*.
    - Navigate to the section *Connections*.
    - Mark the local connection BWBRIDGE and choose *Edit*.
    - Under *HTTP Access* copy the host name to the clipboard (without https://).
  3. In the same dialog window, define the *Local Instance Number* under which the SAP BW bridge system is reachable for the source system(s). You can enter any instance number between 00 and 99 for



which the port is not used yet on the Cloud Connector host. The port numbers result from the following pattern:

33<Local Instance Number>

The <Local Instance Number> will later be used when maintaining the RFC destination in the on-premise source system pointing to the SAP BW bridge system (i.e. in the so-called callback destination).

#### Note

The service channel port overview lists all service channels that are configured in the Cloud Connector. It lets you see immediately which server ports are already used by a Cloud Connector installation. To find the overview list, choose [Connector](#) from the navigation menu and go to section [Service Channels Overview](#).

4. Leave [Connections](#) set to 1.
5. Leave [Enabled](#) selected to establish the channel immediately after choosing [Finish](#). Unselect it if you don't want to establish the channel immediately.
6. Select [Finish](#).

## Results

You have declared the SAP BW bridge tenant in the Cloud Connector. Its [Status](#) should be shown as  ([Service channel is enabled](#)).

Status	Port	Type	Connections
<input type="checkbox"/>	---	ABAP Cloud System	0 / 1
<input checked="" type="checkbox"/>	---	ABAP Cloud System	1 / 1

Service channel is enabled

#### Note

When addressing an SAP BW bridge system in a destination configuration, e.g. in an RFC destination that is maintained in an on-premise system, the Cloud Connector host must be entered as application server host and the <Local Instance Number> that you configured for the service channel must be entered as instance number.

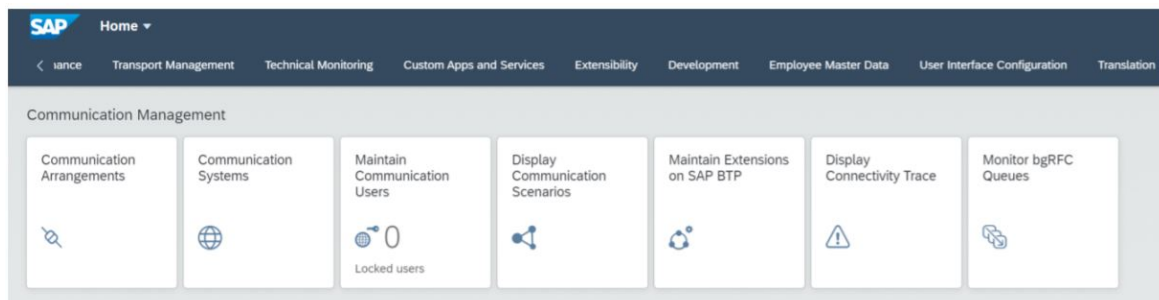
## 1.6.6 Create a Communication System in the SAP BW Bridge Tenant

### Context

The on-premise source system must be configured as communication system in the SAP BW bridge tenant. A communication system is a specification of a system that represents a communication partner and the technical information required for the communication (inbound/outbound), such as the host name and user information (inbound/outbound).

### Procedure

1. Log on to the SAP BW Bridge Cockpit.
2. In the *Communication Management* section, select the app *Communication Systems*.



3. Click *New* to add a new Communication System.
4. In the *New Communication System* dialog, enter a *System ID* and a *System Name* and choose *Create*.

#### Note

Follow the best practices for naming conventions: [Best Practices for Naming Conventions of Source Systems in SAP BW Bridge \[page 17\]](#).

5. Under *Technical Data*, maintain the following values:
  1. Enter the virtual host name maintained in the Cloud Connector as *Host Name*.
  2. Fill in the port number 33<instance number> as *Port*, e.g. 3300 if the instance number is 00. If you are not sure about the port number, call transaction SMGW in the source system, then display the gateway trace file. It should contain a line like this:  

```
Bind service sapgw00 (socket) to port 3300
```
  3. Switch on the property *Cloud Connector*.
6. Under *RFC Settings*, maintain the following values:
  1. Set *Load Balancing* if the on-premise source system was created with the option *With load balancing (system ID and message server)* in the Cloud Connector.

- Maintain the client of the source system as *Client*.
- If *Load Balancing* was set, maintain a logon group of the source system as *Group*. Enter the virtual system ID maintained in the Cloud Connector as *Target System*. Enter the virtual message server maintained in the Cloud Connector as *Message Server*.  
If *Load Balancing* was not set, enter the virtual instance number maintained in the Cloud Connector as *Instance Number*. Enter the virtual application server maintained in the Cloud Connector as *Target Host*.
- Maintain the location ID of the Cloud Connector as *SCC Location ID*. In case you did not specify a location ID in the Cloud Connector, you can leave *SCC Location ID* blank.

The screenshot shows the 'General' configuration page for 'Users for Inbound Communication'. It includes sections for 'General' (Host Name, Port, Business System, Inbound Only), 'Destination Service' (OFF), 'Cloud Connector' (ON), 'RFC Settings' (Load Balancing checked, Client: 003, Group: PUBLIC), and 'Target System' and 'Message Server' fields.

- Under *Users for Inbound Communication*, click **+** (*Add*) to maintain the user that is used in the SAP BW bridge tenant for the inbound communication. Select an existing user or click *New User* to create a new user.

**Note**  
The length of the inbound user name must not exceed 12 characters.

The required authorizations are automatically granted to this user when creating the communication arrangement. The authorizations are pre-defined by SAP in the communication scenario used by the communication arrangement.

- Under *Users for Outbound Communication*, click **+** (*Add*) to maintain the user that is used in the on-premise source system for the outbound communication. Enter the username and password of an existing user in the on-premise source system or create new user there.

This user in the on-premise system needs authorization profile S\_BI-WHM\_RFC if the source system is an SAP BW or an SAP BW/4HANA system resp. authorization profile S\_BI-WX\_RFC for any other SAP source system, such as SAP ERP or SAP S/4HANA. The User Type of this user must be *System*.

- Save the new communication system.

## Results

As a result, you have created the on-premise source system as communication system in the SAP BW bridge.

### 1.6.7 Create the Source System in the BW Modeling Tools

The on-premise source system must be created as source system in the BW Modeling Tools.

## Context

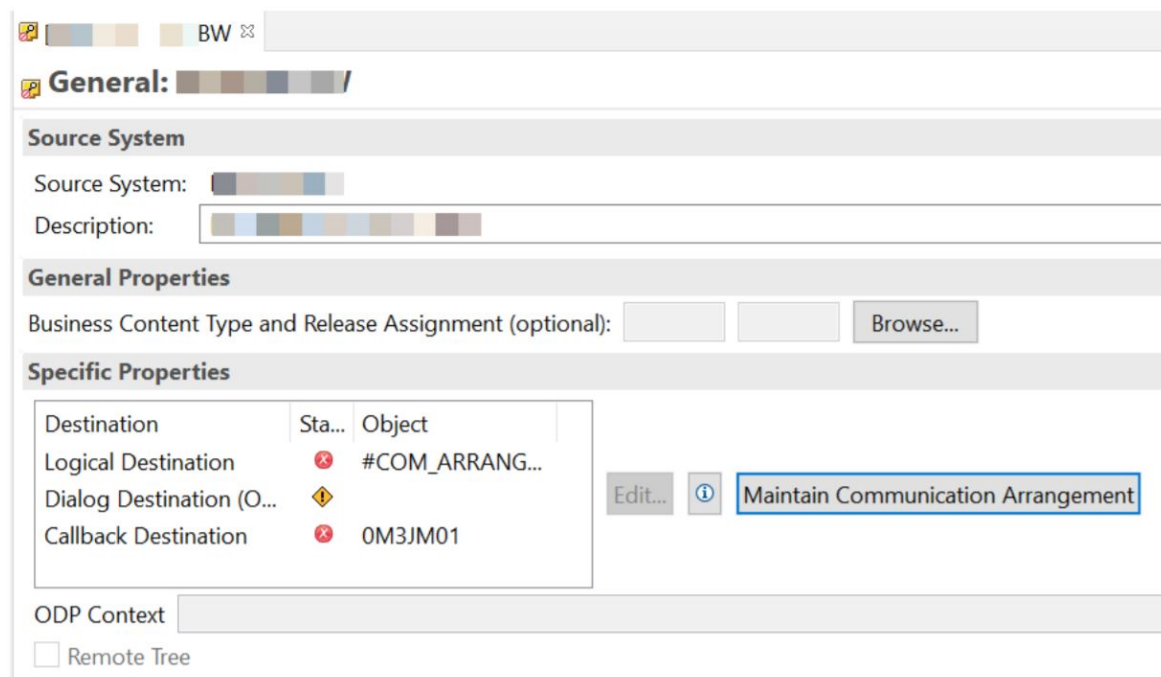
As part of this step, you must create a communication arrangement in the SAP BW bridge tenant as well as an RFC "callback" destination in the on-premise source system. A communication arrangement is a runtime description of a specific communication scenario. It describes which communication partners communicate with each other in the scenario and how they communicate.

## Procedure

1. Log in to the SAP BW bridge tenant in the BW Modeling Tools.
2. Create a new source system using the function **► New > Source System >**
  - from the *File* menu,
  - from the context menu of your BW project,
  - via the context menu for the Data Sources node of your project, or
  - via the context menu for the folder of the required source system type in the DataSources tree.
3. In the *New Source System* dialog, enter the following information:
  1. Enter name and description of the new source system and choose *Next*.
  2. Choose *ODP* as *Connection Type* and choose *Next*.
  3. Choose *RFC with Remote System* and choose *Finish*.

### Maintain Communication Arrangement

4. Under *Specific Properties*, choose *Maintain Communication Arrangement*. The SAP BW Bridge Cockpit opens.



5. In the SAP BW Bridge Cockpit, click *New* to add a new communication arrangement.
6. In the *New Communication Arrangement* dialog, enter the following values:
  1. Open the value help for *Scenario* and choose the predefined communication scenario SAP\_COM\_0692.
  2. Discard the proposal for the *Arrangement Name*. Instead, use the technical name of the source system as *Arrangement Name* and choose *Create*.
7. In the *Common Data* section, choose the communication system you created earlier. The system automatically fills in
  - the *User Name* in the *Inbound Communication* section with the user you maintained as *User for Inbound Communication*,
  - the required *Inbound Service(s)*,
  - the *User Name* in the *Outbound Communication* section with the user you maintained as *User for Outbound Communication*,
  - the required *Outbound Service(s)*.

#### Note

The *User for Inbound Communication* automatically receives the authorization profile defined in the communication scenario i.e. the authorizations required to invoke the "callback" from the on-premise source system.

- In the *Additional Properties* section, choose the ODP Source System you created in step 3 above.
- Save the new Communication Arrangement.

As a result, you have created the Communication Arrangement that is needed as *Logical Destination* in the ODP source system.

#### Note

You cannot

- create multiple communication arrangements for the same source system.
- create a communication arrangement for a source system that does not exist yet.
- delete an ODP source system if it is still used in a communication arrangement.

- Switch back to the BW Modeling Tools and press F5 to refresh the source system. You should now see that the new communication arrangement is shown as *Logical Destination*. Its status should be green. It may be necessary to close the ODP source system and open it again. You can find it in the ODP folder.

#### Specific Properties

Destination	Status	Object
Logical Destination	✓	ZCA100AJXAP5E...
Dialog Destination (O...	⚠	
Callback Destination	✗	0M3JM01

Edit...



Maintain Communication Arrangement

#### Maintain Callback Destination

- In the next step, the Callback Destination must be maintained in the on-premise source system.
  - Log in to the on-premise source system.
  - Call transaction SM59.
  - Choose *Create* to create a new RFC connection.
  - In the *Create Destination* dialog, enter the name of the *Callback Destination* shown in the BW Modeling Tools as name of the *Destination* and choose *RFC connection to ABAP system* as *Connection Type*.
  - Under *Description*, enter a meaningful description.
  - On the *Technical Settings* tab, enter the hostname of the Cloud connector (without https:// and without port number) as *Target Host* and the local instance number you defined in the Cloud Connector for the service channel as *Instance Number*.
  - On the *Logon & Security* tab, enter the *Language*, 100 as *Client* and *User* and *Password* of the user you defined as *User for Inbound Communication*.
  - Save the new RFC destination.
  - Perform a *Connection Test* to check if the RFC destination works as expected. In case of errors, check the error messages in the *Problems* view and right-click the error messages to see if the *Full Description* contains additional information on the root cause. Check the settings of the involved firewalls with your infrastructure team if the connection test is failing.
- Switch back to the BW Modeling Tools and press F5 to refresh the source system. You should now see that the *Callback Destination* is in status green. It may be necessary to close the ODP source system and open it again. You can find it in the ODP folder.

#### Specific Properties

Destination	Sta...	Object
Logical Destination	✓	ZCA100AIYG7NS...
Dialog Destination (O...	⚠	
Callback Destination	✓	0M3JM01

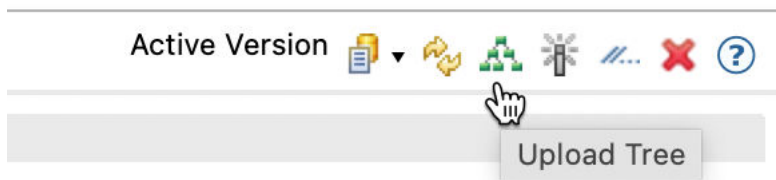
Edit...



Maintain Communication Arrangement

- In the *Specific Properties* section, maintain the following information:
  - Choose an *ODP Context*. To do so, open the drop-down box and select the appropriate ODP context.
  - Set *Remote Tree* if ODP context is BW, ABAP\_CDS, or SAPI.

12. Save and activate the new source system.
13. You should now be able to display the tree of application components by expanding the source system. If the tree is not displayed, click on *Upload Tree*.



### Customize Source System

14. You can upload customizing and transfer exchange rates from the newly created source system. In the context menu of your source system, choose *Update Customizing Settings* and *Transfer Exchange Rates*. See SAP Note [3312218](#) in case this does not work as expected.

**Note**

In case the *Update Customizing* setting does not work, you should check the source system for blocked function modules, see SAP Note [3312218](#) for more information.

**Note**

To allow collection of source system dependent objects during content activation such as DataSources and SAP BW bridge Transformations with DataSource as source, you must create content versions by clicking *Content Update* in the source system. See SAP Note [2433354](#) for more information.

The Content Update starts a BW job. To monitor the progress of this job, open the view *BW Jobs* in the BW Modeling Tools. If the *BW Jobs* view is not visible, go to **Window > Show > View > Other...**, expand the folder *Business Warehouse*, and double-click the view *BW Jobs*.

Other prerequisites are mentioned in the respective content areas.

## Results

Your SAP BW bridge tenant is now ready to extract data from the on-premise source system.

## 1.6.8 Troubleshooting

This section explains how to identify configuration issues in the connectivity of on-premise source systems to SAP BW bridge.

## Related Information



[Troubleshooting Issues in Step "Create the On-Premise Source System in the Cloud Connector" \[page 32\]](#)

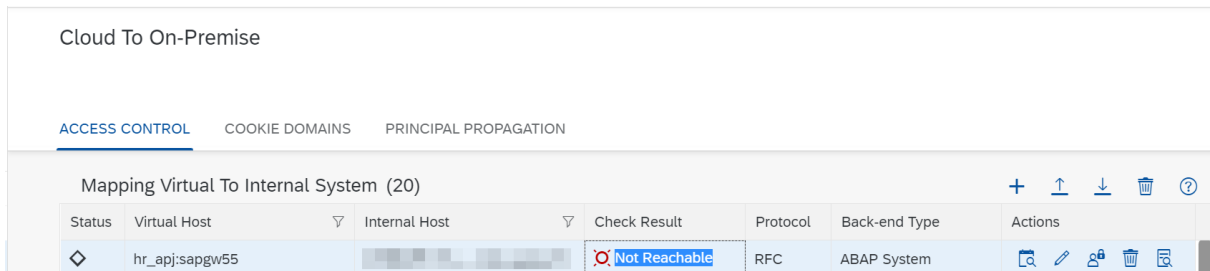
[Troubleshooting Issues in Step "Create the Source System in the BW Modeling Tools" \[page 32\]](#)







### 1.6.8.1 Troubleshooting Issues in Step "Create the On-Premise Source System in the Cloud Connector"

If you need help solving issues with setting up the Cloud Connector, you may find the solution here.

#### Internal Host Not Reachable

In the *Cloud Connector Administration* on `https://<hostname>:8443`, in the section *Cloud To On-Premise* choose  (*Check availability of internal host*) to check the availability of the internal host. This may lead to a check result  *Not reachable*.



Status	Virtual Host	Internal Host	Check Result	Protocol	Back-end Type	Actions
	hr_apj:sapgw55	[REDACTED]	 Not Reachable	RFC	ABAP System	   

In this case, ensure that the name of the internal host can be resolved on the server where the Cloud Connector is installed. Try with the fully qualified domain name. As an alternative, you may also use an IP address.

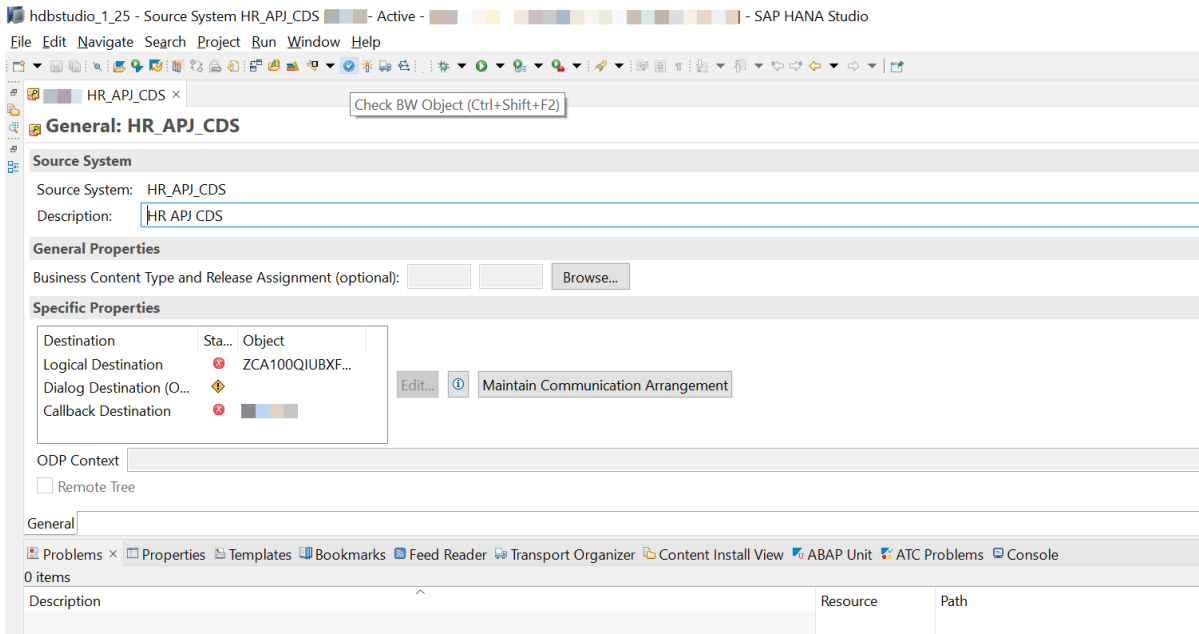
### 1.6.8.2 Troubleshooting Issues in Step "Create the Source System in the BW Modeling Tools"

If you need help solving issues with creating a source system in the BW Modeling Tools, you may find the solution here.

#### Red Status of Logical Destination/Callback Destination

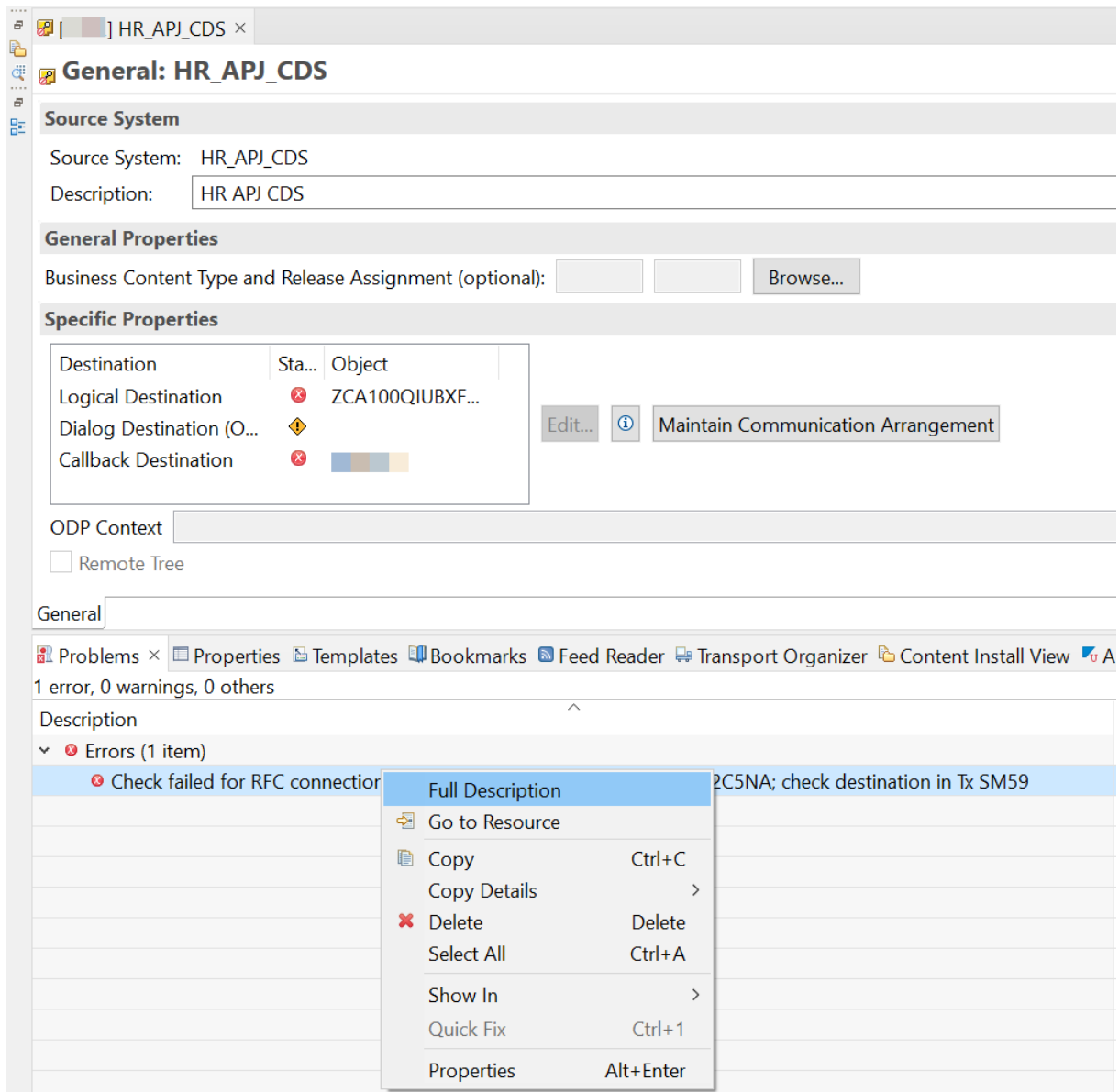
In case the status of the *Logical Destination* is red and/or the status of the *Callback Destination* is red, try to close the source system first and open it again. If the issue persists, check the source system by pressing the button *Check BW Object* or `Ctrl` + `Shift` + `F2`.





Navigate to the *Problems* view, expand the node *Errors*, right-click on the error message, and select *Full Description*.

If the *Problems* view is not visible, go to **Window > Show > View > Other...**, expand the folder *General*, and double-click the view *Problems*.



The full description of the error message, namely the section *Diagnosis* or *System Response*, often gives a hint on the root cause of the error.

#### Most frequent errors and how to resolve them:

- [Access denied for RODPS\\_REPL\\_CONTEXT\\_GET\\_LIST on <virtual host>:<port>. Expose the function module in your Cloud Connector. \[page 35\]](#)
- [Error when opening an RFC connection \(Opening connection to <virtual host>:<port> denied. Expose the system in your Cloud Connector\) \[page 35\]](#)
- [Error when opening an RFC connection \(There is no SAP Cloud Connector \(SCC\) connected to your subaccount\) \[page 37\]](#)
- [Execution of request "POST /sap/bw/modeling/checkruns" for destination <projectname> failed: 500 Internal Server Error \[page 38\]](#)
- [System failure: "RFC Callback Call via SAP Cloud Connector Not Permitted." \[page 38\]](#)
- [Name or password is incorrect \(repeat logon\) \[page 39\]](#)

- No RFC authorization for function module RODPS\_REPL\_CONTEXT\_GET\_LIST [page 40]
- Result of the destination check: No RFC authorization for function module TH\_SERVER\_LIST. [page 40]
- Result of the destination check: Access denied for RFC\_WALK\_THRU\_TEST on <virtual host>:<port> [page 41]
- Access denied for RODPS\_REPL\_CONTEXT\_GET\_LIST on <virtual host>:<port>. Expose the function module in your Cloud Connector [page 42]
- COMM\_FAILURE: Invalid RFC protocol (for details see note 875767#) [page 43]

### 1.6.8.2.1 Access denied for RODPS\_REPL\_CONTEXT\_GET\_LIST on <virtual host>:<port>. Expose the function module in your Cloud Connector.

This error message may also indicate that no resources have been uploaded for the on-premise system in the Cloud Connector. For detailed instructions, see [Add Resources to Source System \[page 23\]](#).

### 1.6.8.2.2 Error when opening an RFC connection (Opening connection to <virtual host>:<port> denied. Expose the system in your Cloud Connector)

#### Context

This error message usually indicates one of the issues below:

- Internal host name and virtual host name are different (which is recommended) and you have maintained the **internal** host name in the communication system – instead of the **virtual** host name.
- You have created the on-premise system with option *Without load balancing (application server and instance number)* in the Cloud Connector but with option *Load Balancing* in the communication system.
- You have created the on-premise system with option *With load balancing (system ID and message server)* in the Cloud Connector but without option *Load Balancing* in the communication system.

To establish a communication to the on-premise system, SAP BW bridge looks up the communication system maintained in the communication arrangement of the source system. The information maintained in the section *RFC Settings* of the communication system is used to ask the Cloud Connector if the on-premise system is exposed for communication to cloud systems. The Cloud Connector receives this request and checks if a system with this virtual host and port is exposed. Therefore, the *Virtual Host* maintained in the Cloud Connector must match the *Target Host* (in case load balancing is not used) respectively the *Message Server* (in case load balancing is used) maintained in the communication system.

Not only the virtual host must match. Also, the virtual port maintained in the Cloud Connector must match the virtual port that is composed based on the settings in the communication system:

- **Virtual Port in Cloud Connector:** In case the on-premise system was created in Cloud Connector with option *Without load balancing (application server and instance number)*, the virtual port is created as `sapgw<nn>` with `<nn>` being the Virtual Instance Number of the source system. In case the system was created with option *With load balancing (system ID and message server)*, the virtual port is created as `sapms<VSI>` with `<VSI>` being the Virtual System ID of the source system.
- **Virtual Port in SAP BW bridge:** If load balancing is unset in the communication system, SAP BW bridge composes the virtual port as `sapgw<nn>` with `<nn>` being the instance number maintained in the communication system. If load balancing is set in the communication system, SAP BW bridge composes the virtual port as `sapms<VSI>` with `<VSI>` being the target system maintained in the communication system.

## Procedure

To identify the relevant information maintained in the Cloud Connector, proceed as follows:

1. Logon to the Cloud Connector.
2. In the left-side menu of the administration UI, choose *Cloud To On-Premise*.
3. In the *Subaccount* field, choose the subaccount of your SAP Datasphere tenant. If you are not sure about the subaccount, logon to SAP Datasphere and locate the subaccount via **System > Administration > SAP Cloud Platform (SAP CP) Account > Data Source Configuration**.
4. In Cloud Connector, locate the line for the source system in question.
5. Choose *(Edit)*. The *Virtual Host* and *Virtual Port* are shown.

To identify the relevant information maintained in the communication system, proceed as follows:

6. In the BW Modeling Tools, in the editor of the source system under *Specific Properties*, choose *Maintain Communication Arrangement*. The SAP BW Bridge Cockpit opens.
7. In the communication arrangement, locate the section *Common Data*, and there, right next to the name of the communication system, press *Display*. The communication system is displayed.
8. In the communication system, locate the section *Technical Data*, and there, under *RFC Settings*, check the information maintained for the option *Load Balancing* and the fields *Instance Number* and *Target Host* (in case *Load Balancing* is not set) respectively *Target System* and *Message Server* (in case *Load Balancing* is set).

## 1.6.8.2.3 Error when opening an RFC connection (There is no SAP Cloud Connector (SCC) connected to your subaccount)

### Context

This error message often indicates one of the issues below:

- The subaccount is in status 'Not connected' in the Cloud Connector.
- The location ID maintained in the Cloud Connector and the location ID maintained in the communication system are not identical.

### Procedure

To check the status of the subaccount:s:

1. Logon to the Cloud Connector.
2. In the left-side menu of the administration UI, choose [Connector](#) from the navigation menu and check the section [Subaccount Dashboard](#).
3. Locate the subaccount of your SAP Datasphere tenant. If you are not sure about the subaccount, logon to SAP Datasphere and locate the subaccount via [System](#) [Administration](#) [SAP Cloud Platform \(SAP CP\) Account](#) [Data Source Configuration](#).
4. In the [Status](#) column, you should see an icon indicating that the subaccount is connected. If the subaccount is not connected, click the [Connect](#) icon in the [Actions](#) column

To identify the location ID maintained in the Cloud Connector, proceed as follows:

5. Logon to the Cloud Connector.
6. In the left-side menu of the administration UI, choose [Connector](#) from the navigation menu and check the section [Subaccount Dashboard](#).
7. Locate the subaccount of your SAP Datasphere tenant. If you are not sure about the subaccount, logon to SAP Datasphere and locate the subaccount via [System](#) [Administration](#) [SAP Cloud Platform \(SAP CP\) Account](#) [Data Source Configuration](#).
8. The column [Location ID](#) in the Subaccount Dashboard indicates the location ID maintained in the Cloud Connector.

To identify the location ID maintained in the communication system, proceed as follows:

9. In the BW Modeling Tools, in the editor of the source system under [Specific Properties](#), choose [Maintain Communication Arrangement](#). The SAP BW Bridge Cockpit opens.
10. In the communication arrangement, locate the section [Common Data](#), and there, right next to the name of the communication system, choose [Display](#). The communication system is displayed.
11. In the communication system, locate the section [Technical Data](#), and there, under [Cloud Connector](#), the [SCC Location ID](#) is displayed.

The location IDs maintained in the Cloud Connector and the location ID maintained in the communication system must match.

## 1.6.8.2.4 Execution of request “POST /sap/bw/modeling/checkruns” for destination <projectname> failed: 500 Internal Server Error

### Context

This error message is shown in a dialog window when checking the source system. In parallel, runtime errors are written.

### Procedure

To check if runtime errors have been written, proceed as follows:

1. Go to **Window** > **Show View** > **Other...**, expand the folder *ABAP*, and double-click the view *Feed Reader*.
2. Select *Add feed query...* from the context menu of your SAP BW bridge project.
3. In the *New Feed Query* dialog, choose *ABAP Runtime Errors* and choose *Next*.
4. Choose a meaningful title and remove the flag for *Apply filter*.

In the new feed, you should see one or more runtime errors *RFC Callback Call via SAP Cloud Connector Not Permitted* (CALLBACK\_BY\_RFC\_OVER\_SCC). This error message usually indicates that one of the prerequisites is not met in the on-premise source system. Implementing [3076927](#) should fix the issue. For more information, see [Add the SAP Datasphere Subaccount in the Cloud Connector \[page 19\]](#).

## 1.6.8.2.5 System failure: "RFC Callback Call via SAP Cloud Connector Not Permitted."

### Context

This error message is shown in a dialog window when checking the source system. In parallel, runtime errors are written.

## Procedure

To check if runtime errors have been written, proceed as follows:

1. Go to **Window > Show View > Other...**, expand the folder *ABAP*, and double-click the view *Feed Reader*.
2. Select *Add feed query...* from the context menu of your SAP BW bridge project.
3. In the *New Feed Query* dialog, choose *ABAP Runtime Errors* and choose *Next*.
4. Choose a meaningful title and remove the flag for *Apply filter*.

In the new feed, you should see one or more runtime errors *RFC Callback Call via SAP Cloud Connector Not Permitted* (CALLBACK\_BY\_RFC\_OVER\_SCC). This error message usually indicates that one of the prerequisites is not met in the on-premise source system. Implementing [3076927](#) should fix the issue. For more information, see [Add the SAP Datasphere Subaccount in the Cloud Connector \[page 19\]](#).

## 1.6.8.2.6 Name or password is incorrect (repeat logon)

### Context

This error message indicates that you have not created the user for outbound communication in the on-premise source system or that either username or password is incorrect.

### Procedure

To check the user for outbound communication maintained in SAP BW bridge, proceed as follows:

1. In the BW Modeling Tools, in the editor of the source system under *Specific Properties*, choose *Maintain Communication Arrangement*. The SAP BW Bridge Cockpit opens.
2. In the communication arrangement, locate the section *Common Data*, and there, right next to the name of the communication system, choose *Display*. The communication system is displayed.
3. In the communication system, locate the section *Users for Outbound Connection* and verify if this user was created in the source system and if the password is correct.

## 1.6.8.2.7 No RFC authorization for function module RODPS\_REPL\_CONTEXT\_GET\_LIST

### Context

This error message may indicate that the user for outbound communication created in the on-premise source system does not have the required authorizations.

### Procedure

To check the user for outbound communication maintained in SAP BW bridge, proceed as follows:

1. In the BW Modeling Tools, in the editor of the source system under *Specific Properties*, choose *Maintain Communication Arrangement*. The SAP BW Bridge Cockpit opens.
2. In the communication arrangement, locate the section *Common Data*, and there, right next to the name of the communication system, choose *Display*. The communication system is displayed.
3. In the communication system, locate the section *Users for Outbound Connection* and locate the username.
4. Login to the on-premise source system.
5. Call transaction **su01** and check if the user has the authorization profile S\_BI-WHM\_RFC if the source system is an SAP BW or an SAP BW/4HANA system resp. authorization profile S\_BI-WX\_RFC for any other SAP source system, such as SAP ERP or SAP S/4HANA.

## 1.6.8.2.8 Result of the destination check: No RFC authorization for function module TH\_SERVER\_LIST.

This error message usually indicates that one of the prerequisites is not met in the on-premise source system. Implementing [2703850](#) should fix the issue. For more information, see [Add the SAP Datasphere Subaccount in the Cloud Connector \[page 19\]](#).



## 1.6.8.2.9 Result of the destination check: Access denied for RFC\_WALK\_THRU\_TEST on <virtual host>:<port>

### Context

When you check the source system several times, you can get this message and/or the message: "Access denied for RODPS\_REPL\_CONTEXT\_GET\_LIST on <virtual host>:<port>. Expose the function module in your Cloud Connector". In this case, you may have connected several Cloud Connectors to your SAP Datasphere tenant both using the same location ID. Connecting several Cloud Connectors to an SAP Datasphere tenant is possible, however, they must use different location IDs.

### Procedure

To identify the location ID maintained in the Cloud Connector, proceed as follows:

1. Logon to the Cloud Connector.
2. In the left-side menu of the administration UI, choose *Connector* from the navigation menu and check the section *Subaccount Dashboard*.
3. Locate the subaccount of your SAP Datasphere tenant. If you are not sure about the subaccount, logon to SAP Datasphere and locate the subaccount via ► *System* ► *Administration* ► *SAP Cloud Platform (SAP CP) Account* ► *Data Source Configuration* ▼.
4. The column *Location ID* indicates the location ID maintained in the Cloud Connector.

If you are not sure whether several Cloud Connectors have been connected to your SAP Datasphere tenant with the same location ID, set a location ID in the Cloud Connector which is likely to be unique – and adapt the communication system accordingly.

5. In the BW Modeling Tools, in the editor of the source system under *Specific Properties*, choose *Maintain Communication Arrangement*. The SAP BW Bridge Cockpit opens.
6. In the communication arrangement, locate the section *Common Data*, and there, right next to the name of the communication system, choose *Display*. The communication system is displayed.
7. In the communication system, locate the section *Technical Data*, and there, under *Cloud Connector*, maintain the location ID as *SCC Location ID*.

## 1.6.8.2.10 Access denied for RODPS\_REPL\_CONTEXT\_GET\_LIST on <virtual host>:<port>. Expose the function module in your Cloud Connector

### Context

When you check the source system several times, you can get this message and/or the message: "Result of the destination check: Access denied for RFC\_WALK\_THRU\_TEST on <virtual host>:<port>". In this case, you may have connected several Cloud Connectors to your SAP Datasphere tenant both using the same location ID. Connecting several Cloud Connectors to an SAP Datasphere tenant is possible, however, they must use different location IDs.

### Procedure

To identify the location ID maintained in the Cloud Connector, proceed as follows:

1. Logon to the Cloud Connector.
2. In the left-side menu of the administration UI, choose *Connector* from the navigation menu and check the section *Subbaccount Dashboard*.
3. Locate the subaccount of your SAP Datasphere tenant. If you are not sure about the subaccount, logon to SAP Datasphere and locate the subaccount via **System > Administration > SAP Cloud Platform (SAP CP) Account > Data Source Configuration**.
4. The column *Location ID* indicates the location ID maintained in the Cloud Connector.

If you are not sure whether several Cloud Connectors have been connected to your SAP Datasphere tenant with the same location ID, set a location ID in the Cloud Connector which is likely to be unique – and adapt the communication system accordingly.

5. In the BW Modeling Tools, in the editor of the source system under *Specific Properties*, choose *Maintain Communication Arrangement*. The SAP BW Bridge Cockpit opens.
6. In the communication arrangement, locate the section *Common Data*, and there, right next to the name of the communication system, choose *Display*. The communication system is displayed.
7. In the communication system, locate the section *Technical Data*, and there, under *Cloud Connector*, maintain the location ID as *SCC Location ID*.

## 1.6.8.2.11 COMM\_FAILURE: Invalid RFC protocol (for details see note 875767#)

### Context

This error message may indicate that the communication system uses the option *Fast Serialization* in the *RFC Settings*. However, the source system does not support fast serialization. SAP Note [2418683](#) describes the minimum kernel patch levels that support fast serialization.

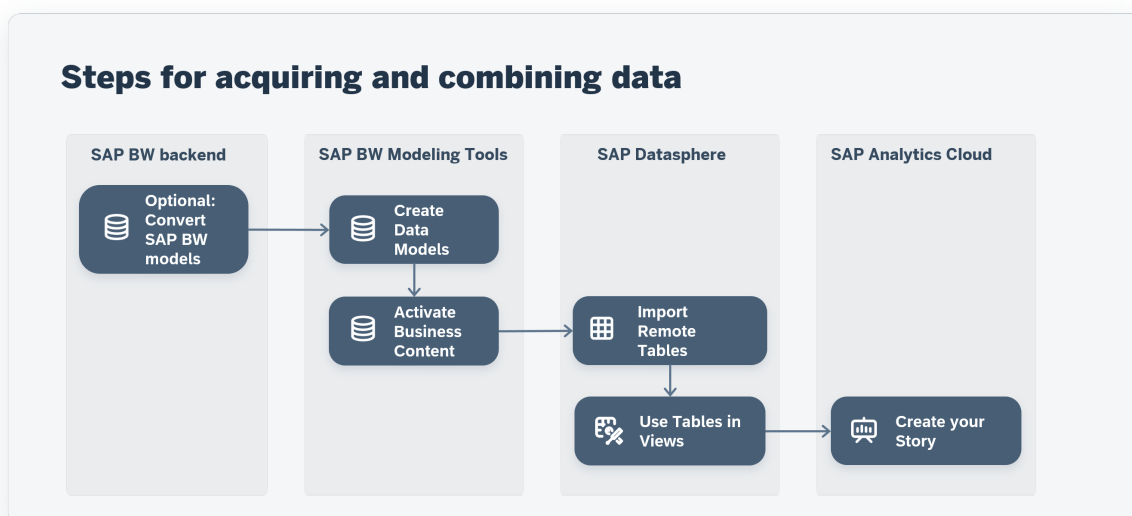
To solve the issue, you may check if the kernel of the source system can be upgraded to a patch level that supports fast serialization. If that is not possible, proceed as follows:

### Procedure

1. In the BW Modeling Tools, in the editor of the source system under *Specific Properties*, choose *Maintain Communication Arrangement*. The SAP BW Bridge Cockpit opens.
2. In the communication arrangement, locate the section *Common Data*, and there, right next to the name of the communication system, choose *Display*. The communication system is displayed.
3. In the communication system, go to the section *RFC Settings* and uncheck the option *Fast Serialization*.
4. Save your changes.

## 1.7 Acquiring and Combining Data

You can now start acquiring data and combine it in SAP BW bridge.



You can use the SAP BW bridge persistency layer for modeling and loading data with partitioning, monitoring, and error handling, all tailored to the needs of your company. SAP BW bridge also allows you to convert SAP BW objects including metadata into SAP BW bridge models and import them to SAP Datasphere.

For more information, see::

- [Remote Conversion Runbook](#)
- [Conversion Guide \(Shell Conversion\)](#)
- [Data Acquisition](#)
- [Data Modeling](#)

### Note

If you load data for InfoObject OMATERIAL, it may be necessary to adapt the customizing settings for material numbers in transaction OMSL. In that case, log an incident on component DWC-BWB and provide the needed settings. See SAP Note [3302765](#) for more information.

You can then build entities in the Data Builder and combine the SAP BW bridge data models with SAP Datasphere data. In the Business Builder, business users can define objects with a more semantic approach on top of these entities. Having thus prepared your data, it can then be consumed by SAP Analytics Cloud and other analytics clients. For more information, see [Acquiring Data in the Data Builder](#) and [Modeling Data in the Business Builder](#).

## Procedure

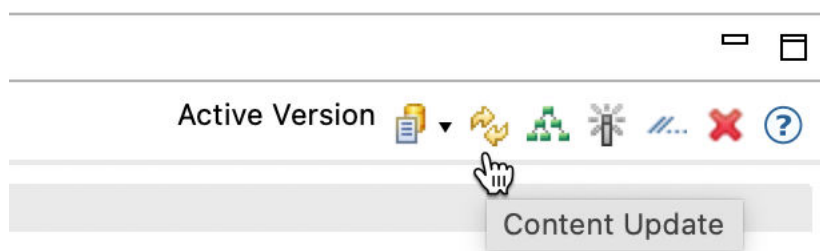
1. You can use the SAP BW Modeling Tools to create InfoObjects, DataStore objects, and CompositeProviders, or you can convert SAP BW models. For more information, see [SAP BW Modeling Tools](#).
2. You can activate SAP BW bridge content objects and tailor them to meet your requirements. For more information, see [Use SAP BW Bridge Content \[page 45\]](#).
3. You can import these objects from SAP BW bridge into SAP Datasphere. For the detailed step by step procedure, see [Importing Entities with Semantics from SAP BW/4HANA or SAP BW Bridge](#). For background information, see [Importing SAP BW Bridge Objects into SAP Datasphere \[page 46\]](#).
4. You can use these remote tables in the target space as sources for SAP Datasphere models.
5. You can use these remote tables as sources in transformation flows. In transformation flows, you can apply transformations (such as a join), and output the result in a target table. You can also load delta changes (including deleted records) from a remote table to a target table. For more information, see [Additional Information About Remote Tables](#).

## 1.8 Use SAP BW Bridge Content

You can use preconfigured SAP BW bridge objects, which are delivered in SAP BW bridge Content.

### Prerequisites

To allow collection of source system dependent objects during content activation such as DataSources and SAP BW bridge transformations with a DataSource as source, you must create content versions by choosing [Content Update](#) in the source system.



See SAP Note [2433354](#) for more information.

The content update starts a BW job. To monitor the progress of this job, open the view [BW Jobs](#) in BW Modeling Tools. If the [BW Jobs](#) view is not visible, go to ► [Window](#) ► [Show](#) ► [Other...](#) ►, expand the folder [Business Warehouse](#), and double-click the view [BW Jobs](#).

Other prerequisites are mentioned in the respective content areas.

### Procedure

1. Log in to the SAP BW bridge tenant in the BW Modeling Tools.
2. Go to the [Content Explorer View](#).  
If the Content Explorer view is not visible, go to ► [Window](#) ► [Show](#) ► [Other...](#) ►, expand the folder [Business Warehouse](#), and double-click the [Content Explorer](#) view. For more information, see [Content Explorer View](#).
3. Select the SAP BW bridge Content objects which you would like to use.
4. Drag the selected objects from the Content Explorer view to the Content Install view. Here, you can transfer and activate them. For more information, see [Content Install View](#).

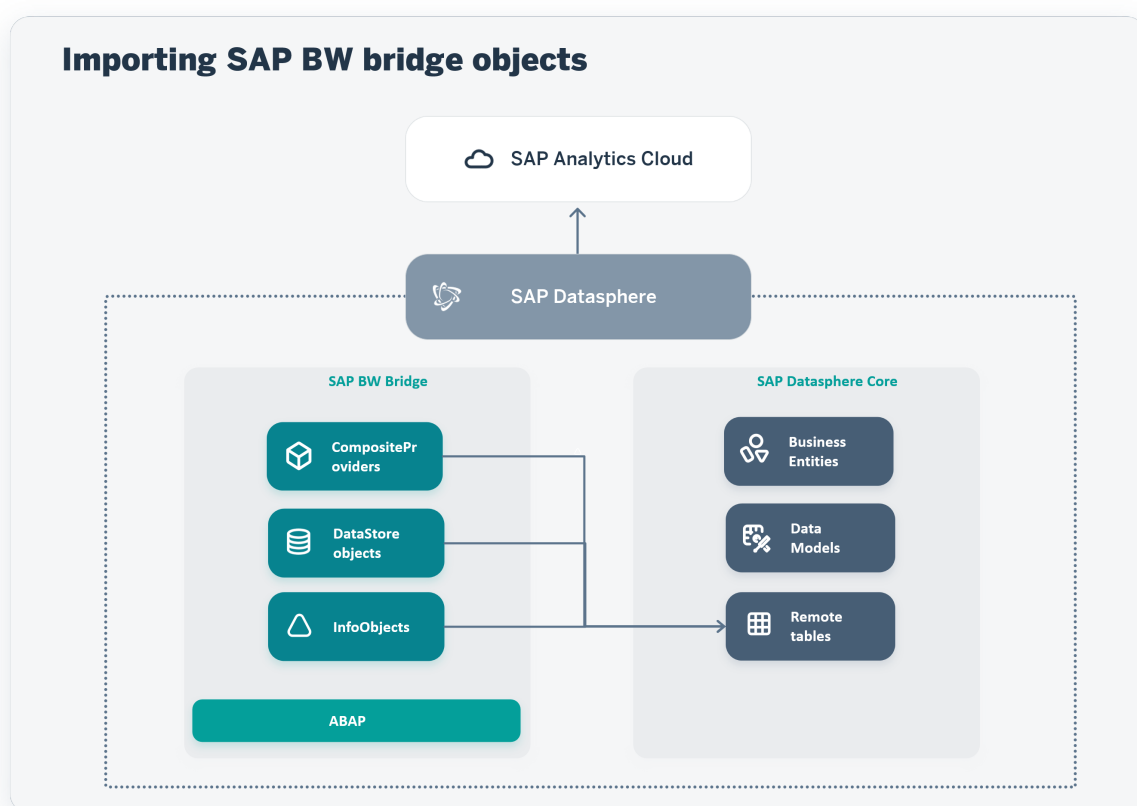
## 1.9 Importing SAP BW Bridge Objects into SAP Datasphere

You can use SAP BW bridge to model objects and import them into SAP Datasphere.

You can load data from your SAP BW bridge connection. The wizard creates Business Builder and Data Builder entities (along with all the objects on which they depend) in SAP Datasphere.

For the detailed step by step procedure, see [Importing Entities with Semantics from SAP BW/4HANA or SAP BW Bridge](#).

The following graphic illustrates the process:



### Prerequisites

An SAP BW bridge instance has been provisioned. In the process, the system generates an SAP BW bridge space, and an SAP BW bridge connection within that space.

### SAP BW Bridge Space

In this space, an SAP BW bridge connection is being generated. You can connect only one SAP BW bridge system to SAP Datasphere.

The main purpose of this space is to expose the shared remote tables to other spaces.

When you import the SAP BW bridge models into SAP Datasphere, these entities are shared with another space in order to use them as sources for SAP Datasphere models. In the SAP BW bridge space, you cannot create any SAP Datasphere models. Once the entities are imported, you can consume them in the target space they were shared with, and create views, data flows, etc. on top of them.

## SAP BW Bridge Connection

In the SAP BW bridge space, a SAP BW bridge connection is being generated. Technically, it comprises two connections:

- An HTTP ABAP connection to retrieve metadata from the SAP BW bridge
- A SAP HANA smart data access connection to retrieve the data from the SAP BW bridge

You can only display the connection. Here, you can copy the SAP BW service key, which you will need to enter when you create an SAP BW bridge project in the SAP BW Bridge Modeling Tools. For more information, see [Copy the SAP BW Service Key \[page 11\]](#).

The connection type SAP BW bridge connection doesn't show up in any other space, it cannot be modified, and you cannot create such a connection yourself.

## Monitoring SAP BW Bridge

For monitoring SAP BW bridge, administrators can use the [Remote Tables](#) monitor , the [Remote Queries](#) monitor , and the [SAP BW Bridge Cockpit](#).

### Remote Tables Monitor

In SAP Datasphere you can use the [Remote Tables](#) monitor to copy data for remote tables that have been deployed in your space into SAP Datasphere, and you can monitor the replication of the data. For more information, see [Replicating Data and Monitoring Remote Tables](#) .

### Remote Queries Monitor

In the [Remote Queries](#) monitor , you can track the queries sent to your remote connected source systems for your space. For more information, see [Monitoring Remote Queries](#).

### SAP BW Bridge Cockpit



You can navigate to the SAP BW Bridge Cockpit for additional monitoring options. For more information, see [Apps at a Glance](#).

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