Shell Conversion Guide **PUBLIC**

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Shell Conversion Guide for SAP Datasphere, SAP BW Bridge

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Revision Log

Version	Date	Remarks
1.0	2022-04-04	Initial version of the Shell Conversion Guide for SAP Datasphere, SAP BW Bridge
1.1	2023-03-15	Updates for SAP Datasphere
1.2	2025-11-15	Minor corrections to the Shell Conversion Guide

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1 Shell Conversion Guide for SAP Datasphere, SAP BW Bridge

SAP Datasphere is SAP's offering for all data warehousing use cases. It combines data and analytics in a cloud solution that offers data integration, database, data warehouse, and analytics services. This enables customers to realize the full potential of a data-driven business. SAP Datasphere, SAP BW bridge is an option in SAP Datasphere. It offers SAP BW capabilities directly in the public cloud:

- The connectivity and business content for SAP BW-based data integration (extractors) from SAP ECC and SAP S/4HANA
- The SAP Business Warehouse layer for loading data with partitioning, monitoring, and error handling, all tailored to the needs of your company

The purpose of this document is to explain the end-to-end conversion process with which you can transition from your existing SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge.

→ Note

Naming Convention:

The term “conversion” will be used in connection with the overall process, whereas in connection with operations of the SAP BW bridge Transfer Tool the term “transfer” will be used.

1.1 Disclaimer

Converting an SAP BW or SAP BW/4HANA system to SAP Datasphere, SAP BW bridge is not a simple task. There is no "wizard" that magically converts everything. Instead, SAP provides a well-defined process to guide you through the renovation of your data warehouse. We have developed tools to automate this renovation where applicable and feasible, but they are not built or meant to fix badly designed models or clean-up neglected systems. In any conversion there is a need for manual interaction and re-design. The amount of such manual tasks varies from customer to customer and depends on the configuration and state of the SAP BW or SAP BW/4HANA system. For example, a conversion of newer systems that have been configured using SAP HANA-optimized objects and LSA++ from the beginning will be relatively easy. In contrast to that, a conversion of older systems that are running on non-SAP HANA databases, using out-of-date interfaces, legacy data models, and multiple redundant layers can become quite challenging.

It is therefore essential that you understand the differences between SAP BW or SAP BW/4HANA and SAP Datasphere, SAP BW bridge, and how to handle them, thoroughly analyze your existing system, estimate the complexity and duration of required tasks, properly plan all conversion activities, learn

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and practice to use the conversion tools, test the conversion processes ideally with a "copy of production", and actively manage changes to your business. It speaks for itself that good project management and skilled personnel will be required to execute a timely and efficient conversion of a complete SAP BW or SAP BW/4HANA system. If done right, your conversion to SAP Datasphere, SAP BW bridge will be very successful.

1.2 Business Scenarios

As an alternative to a new installation in SAP Datasphere, SAP BW bridge, SAP provides two paths for the conversion from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge, the so-called “Shell Conversion” and “Remote Conversion”. In the Shell Conversion, you can use the SAP BW bridge Transfer Cockpit to migrate selected data models into SAP Datasphere, SAP BW bridge. In the Remote Conversion you can in addition transfer and synchronize existing data sets.

This document covers the Shell Conversion to SAP Datasphere, SAP BW bridge. The Remote Conversion is covered in a separate document.

Shell Conversion is available for SAP BW systems based on SAP NetWeaver releases 7.30 to 7.51 (running on SAP HANA or Any-DB) and for SAP BW/4HANA 2021. It does not include the transfer and synchronization of existing data sets. Instead, you can choose to load data from original sources, or load data from the SAP BW or SAP BW/4HANA system used for metadata transfer.

1.3 Availability

General Availability

Shell Conversion is released for all customers and partners. Report incidents using the SAP Support Portal, component “**BW-B4H-CNV-SHL**”.

Cloud Data Center Availability

Check SAP Note 3117800 regarding availability of SAP Datasphere, SAP BW bridge in specific Cloud Data Centers.

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2 Getting Started

Read this guide carefully to get an overview of how to convert an existing or parts of an existing SAP BW or SAP BW/4HANA system to SAP Datasphere, SAP BW bridge.

This guide must be used together with the following documents:

- Simplification List for SAP Datasphere, SAP BW bridge
- User Guide for SAP BW Note Analyzer

You find more information about these documents and guides (including where to find them), as well as additional important documents and SAP Notes relevant for the conversion in the section **Documentation and SAP Notes for the Conversion**.

The section **Overview of the Conversion Process** provides information about the distinct phases of the conversion and the tools involved.

The section **Preparing the Conversion**, **Realizing the Conversion** provide details for those conversion phases.

2.1 Documentation and SAP Notes for the Conversion

Required Documents and SAP Notes

You require at least the following documents and SAP Notes.

Document	Available at	Comment
Simplification List for SAP Datasphere, SAP BW bridge	SAP Note 3154420	Lists the simplifications in comparison to the SAP Business Warehouse product family such as, simplified functions, merged database tables, and new data models.
Information/ Restrictions Note for SAP Datasphere, SAP BW bridge	SAP Note 3117800	Provides information about restrictions in SAP Datasphere, SAP BW bridge
User Guide for SAP BW Note Analyzer	User Guide for SAP BW Note Analyzer	Describes how to install and update the tools related to converting from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge

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SAP Datasphere, SAP BW bridge, System Sizing Note	SAP Note 2296290	Sizing tool for existing SAP BW or SAP BW/4HANA systems

SAP Notes for Shell Conversion

The following documents and SAP Notes are relevant for performing a shell conversion from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge.

Document	Available at	Comment
Conversion from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge	SAP Note 3141688	

SAP Notes for Operational Data Provisioning

The following documents and SAP Notes are relevant for integrating SAP and BW systems with SAP Datasphere, SAP BW bridge using Operational Data Provisioning (ODP).

Document	Available at	Comment
Operational Data Provisioning: Availability and Limitations	SAP Note 2481315	General ODP information also relevant for SAP BW bridge
Release of SAP Extractors for Operational Data Provisioning	SAP Note 2232584	See comment above
Operational Data Provisioning FAQ	SAP.com at Operational Data Provisioning (ODP) FAQ	See comment above

SAP Notes for Business Content

The following documents and SAP Notes contain general information about the Business Content available in SAP Datasphere, SAP BW bridge. SAP BW bridge provides a sub-set of BW4CONT / BW4CONTB.

Document	Available at	Comment
Release strategy for the ABAP add-on BW4CONT / BW4CONTB	SAP Note 2393067	SAP Datasphere, SAP BW bridge provides a sub-set of BW4CONT / BW4CONTB
Collective Note: SAP BW/4HANA Content (BW4CONT & BW4CONTB)	SAP Note 2785525	See comment above

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SAP BW/4HANA Content - Recommended SAP BW/4HANA support package and SAP Notes	SAP Note 2785708	See comment above

Additional Information and SAP Notes

The following table lists important additional documents and SAP Notes.

Document	Available at	Comment
Frequently Asked Questions	SAP Note 3117758	Answers to most common questions
Interfaces and Customer-Specific ABAP Development	SAP Note 2462639	Converting from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge might have an impact on customer-specific ABAP development. Custom Code Migration might be required. In addition to the points mentioned in the SAP Note, coding must be made “cloud ready”.
SAP Datasphere Community Page	SAP Datasphere Community Page	Including SAP Datasphere, SAP BW bridge
Getting Started with SAP Datasphere, SAP BW bridge	Getting Started	
Landing Page in SAP Help Portal for SAP BW bridge	SAP Datasphere, SAP BW bridge	
Landing Page in SAP Help Portal for SAP Datasphere	SAP Datasphere	See section for SAP BW bridge
SAP Community Blog	Conversion to SAP Datasphere: Conversion Paths and Cloud Transformation Steps	

2.2 Difference between SAP Datasphere, SAP BW bridge and SAP BW or SAP BW/4HANA

SAP Datasphere, SAP BW bridge is not a full SAP BW/4HANA component within SAP Datasphere, but it’s limited to the ABAP-based staging layer.

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This also means no support for the OLAP engine and functionality dependent on the OLAP engine, including features like non-cumulative key figures, analysis authorizations, planning, variables.

Queries of the source SAP BW or SAP BW/4HANA system will be made available as metadata in SAP Datasphere, SAP BW bridge, but will not be usable directly. A manual import wizard in SAP Datasphere is planned to support the transfer of BW Queries and relevant objects as SAP Datasphere artifacts. Reporting need to be set up with SAP Analytics Cloud on top of SAP Datasphere.

In addition, the SAP BW bridge environment is only intended for ODP-based source systems, which means that the connection scenarios only become available via Operational Data Provisioning (ODP), i.e., ODP - BW, ODP - SAP (Extractors), ODP - ABAP CDS Views (S/4HANA), and ODP - SLT.

It is not intended to allow ABAP application development beyond BW transformations in the public cloud. Customers would have to license and use the stand-alone version of SAP Business Technology Platform, ABAP Environment for that.

SAP GUI is not available; modeling is performed in the BW Modeling Tools in Eclipse whereas data and processes are administrated and monitored using a web-based cockpit accessible directly from SAP Datasphere monitoring.

Certain objects from SAP BW releases have stopped being supported with the switch to SAP BW/4HANA and have been replaced in most cases with new objects (e.g., InfoCubes by DataStore Objects (advanced), MultiProvider by CompositeProvider, etc.). These objects will be replaced during the Shell Conversion where possible.

For a more complete list of limitations and restrictions in SAP Datasphere, SAP BW bridge please refer to SAP Note 3117800.

→ Note

Be aware of potential additional requirements for SAP Analytics Cloud.

2.3 Overview of Conversion Process (Shell)

SAP provides a process for the conversion to SAP Datasphere, SAP BW bridge. This chapter gives an overview of the tools, the phases, and the activities involved in the process.

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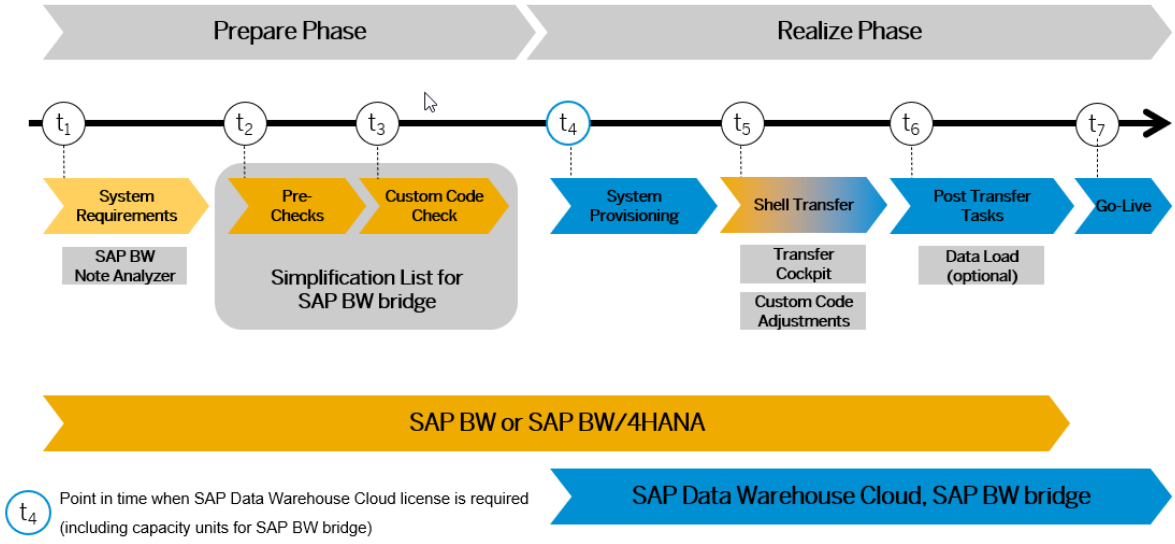

Figure 1: Basic Sequence for Shell Conversion to SAP Datasphere, SAP BW bridge

→ Recommendation

We recommend that you do the activities in the sequence shown in the figure and explained in the sections below.

2.3.1 Prepare Phase

Below you will find information regarding the preparation of an SAP BW bridge Shell Conversion.

Simplification List

To enable you to do an optimal planning of your path to SAP Datasphere, SAP BW bridge, we provide the Simplification List for SAP Datasphere, SAP BW bridge. The Simplification List is the complete collection of simplification items. It provides the key information by application or functional area about the simplifications in SAP Datasphere, SAP BW bridge. Each simplification item details the preparatory and follow-on steps that need to be considered for the conversion from a business and a technical point of view. Each item is available as an SAP Note that may contain additional information.

You find the Simplification List as list of SAP Notes in SAP Note 3154420.

→ Note

You should read the Simplification List to get an overview of all the simplification items that are relevant for your specific conversion scope. When you have identified the simplification items relevant for your conversion scope, you also need to look at the relevant simplification SAP Notes themselves

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to get all the available information. The SAP Notes may contain more information than the Simplification List because they may have attachments and may reference other SAP Notes.

The simplification items are partly integrated with the pre-check and custom code check tools. These tools provide a detailed report about where the modeling and code of your SAP Business Warehouse system does not comply with the scope and data structures of SAP Datasphere, SAP BW bridge. However, currently the pre-check and custom code check tool do not cover all the simplification items so that you need to review the Simplification List carefully at the beginning of your conversion project to get an overview of all required tasks.

Before starting the realization phase of the conversion process, you must also do the following preparatory activities:

1. **System Requirements**

You need to be aware of system requirements, start releases and data volume. See the following sections for more information:

System Requirements

What's the Impact on Your System Landscape?

Supported Start Releases

2. **Pre-Checks**

These checks identify important steps you need to take to ensure that your system can be transferred and that your business and data warehouse processes can start running directly after the conversion process has been completed.

3. **Custom Code Migration**

The compatibility of custom code with SAP Datasphere, SAP BW bridge can be checked with program RS_B4HANA_CODE_SCAN which is included into SAP BW bridge Transfer Cockpit or can be accessed using transaction RSB4HCONV. It helps to analyze embedded custom code. For more information, see section Custom Code Analysis.

→ Note

It is highly recommended to combine the SAP Datasphere, SAP BW bridge conversion project with housekeeping activities for your existing custom code base. In particular, you need a consolidated view of productively used custom developments, and you should remove custom code that is no longer used.

We recommend that you do steps 2 and 3 in the prepare phase in the sequence listed above. It is, however, possible to do them independently or in parallel.

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→ Note

Custom Code in the form of routines used in DTPs and transformations will be transferred with the associated objects within the Shell Conversion.

Other custom code like classes or function modules will have to be transferred using abapGit, see e.g. SAP Community Blog Part 5: Using ABAPGit to Transfer On-Premise ABAP Source Code to SAP BW bridge

4. **General Preparation Activities**

In addition to the general preparation steps described above, you also need to do some cross-application preparations. For more information, see section General Application Preparations.

5. **Object-specific Preparation Activities**

In addition to the general preparations, you may also need to do some object-specific preparatory steps. These steps and their documentation are partly provided by the pre-checks and the custom code checks. For a complete overview of all necessary steps, see the Simplification List (mentioned above). For an overview of some important preparation steps, see section List of Object-Specific Preparations.

2.3.2 Realize Phase

After you have done the steps of the prepare phase, you continue with the activities of the realize phase.

→ Note

The shell conversion approach will work for any system with component SAP_BW release from 7.30 to 7.51 and any database platform that your system is running on and SAP BW/4HANA 2021 (also see section Supported Releases for Sending System).

1. **System Landscape**

The system landscape for the shell conversion involves a sender system, a receiver system, and one or more source systems. The main activities performed in the system landscape during a shell transfer include scope selection, transfer handling, and optionally load of historical data.

Sender System

The sender system is your existing SAP BW or SAP BW4/HANA system.

Receiver System

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The receiver system is the SAP Datasphere, SAP BW bridge tenant, where the new and optimized objects will reside.

During provisioning of the SAP BW bridge tenant, it can be decided whether development is enabled or not (flag “development enabled”) for this tenant. This property cannot be changed afterwards. The needed objects (metadata) can be transferred from the best suitable sender system (or multiple sender systems, but no overwrite or consolidation supported) into an SAP BW bridge tenant using the SAP BW bridge Shell Transfer only if “development enabled” is set to true for this tenant. In an SAP BW bridge tenant where “development enabled” is set to false, it is not possible to directly create objects. Therefore, objects are first transferred into a tenant with “development enabled” flag set to true and then (optionally) transported via gCTS into the target system.

The figure below shows a typical landscape and communication flow among the systems in a shell transfer for transition to SAP Datasphere, SAP BW bridge.

→ Note

For Shell Transfer an RFC connection between Sender and Receiver Systems is required. The setup is established using the Cloud Connector.

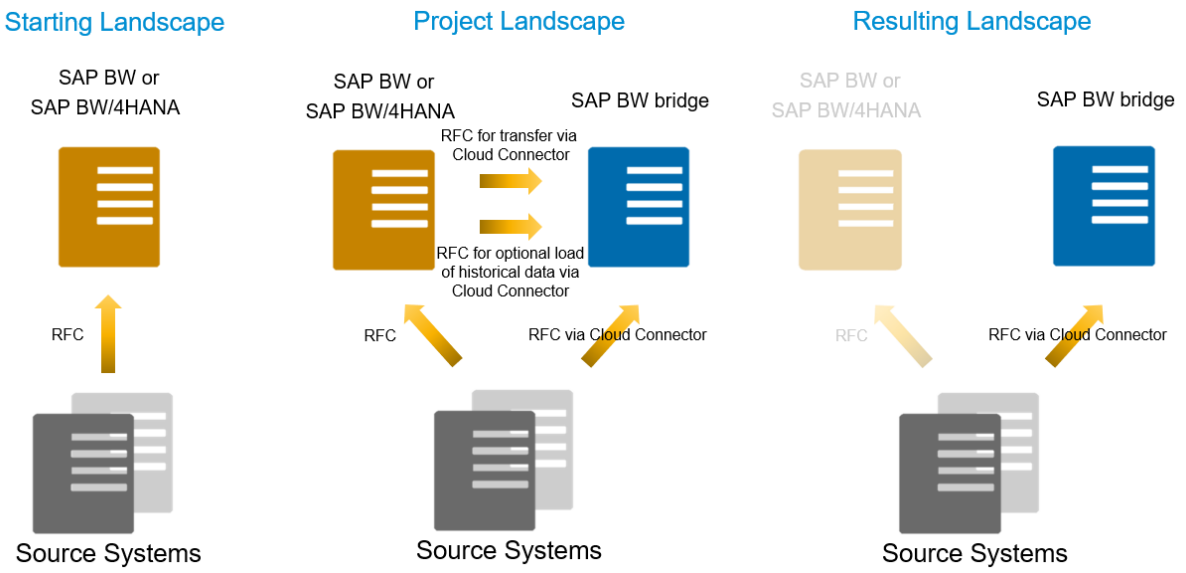

Figure 2: System Landscape for Shell Conversion

2. System Provisioning

If you have already provisioned an SAP Datasphere tenant, you can order capacity units for SAP Datasphere, SAP BW bridge. Details can be found in SAP Note 3134262 (Activation of BW bridge Feature in an existing SAP Datasphere tenant)

For first steps within SAP BW bridge, please have a look at the Getting Started document.

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Check SAP Note 3117800 regarding availability of SAP Datasphere, SAP BW bridge in specific Cloud Data Centers.

This is the beginning of a parallel run of the SAP BW or SAP BW/4HANA system and the SAP Datasphere tenant.

3. SAP BW bridge Transfer Cockpit

The SAP BW bridge Transfer Cockpit is a collection of tools also relevant for a Shell Transfer. The tools are grouped by prepare and realization phases. This includes the pre-check, sizing, code scan, and scope transfer tools to process objects that are not compatible with SAP Datasphere, SAP BW bridge.

The transfer of objects is done based on a given scope. A scope is a selection of data modeling and data flow objects in your system. You can use one or several objects as “start objects” to define the scope of a conversion run. For example, you can use a process chain or data flow object. The system will then collect all dependent objects to compose the scope of the transfer run.

The tool will transfer metadata objects in XML format via RFC from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge. During the import into SAP Datasphere, SAP BW bridge, the metadata objects will be converted to supported objects where necessary and possible.

Unlike to the SAP BW/4HANA Transfer, no transport requests must be imported into the receiver system for the BW metadata and the transfer logs can be found in the task list in the sender system. If custom ABAP objects like classes or function modules are to be transferred, they must be moved separately using abapGit. Also, a package and transport request – which were defined in SAP BW bridge – must be specified in the sender onto which the transferred objects will be assigned in the receiver.

Just to emphasize, neither master data nor transactional data are transferred at this time – for data transfer please see below “Data Transfer (Optional)”.

→ Note

The Transfer Cockpit is not able to convert legacy 3.x data flows (originating in SAP BW systems *before* release 7.0). Such 3.x data flows must be migrated to corresponding 7.x data flows before a conversion to objects compatible with SAP Datasphere, SAP BW bridge is possible.

See also section List of Object-Specific Preparations.

4. Custom Code Adjustments

Adjust your custom developments as identified during the Prepare Phase or when using the code scan in the SAP BW bridge Transfer Cockpit.

5. Data Transfer (Optional)

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Using a Shell Conversion, neither master nor transactional data are transferred during a scope transfer. The following data transfer options exist:

- Re-load data from original sources
- Load data from sender SAP BW or SAP BW/4HANA system

6. **Object-specific Follow-on Activities**

Some object-specific follow-on activities are required like adjusting security. For more information, see section List of Object-Specific Follow-On Activities.

2.4 Required Skills and Training

Converting an SAP BW or SAP BW/4HANA system to SAP Datasphere, SAP BW bridge is not a simple task. We recommend the following skills:

- Advanced knowledge and expertise in SAP BW or SAP BW/4HANA, and SAP Datasphere, SAP BW bridge
- Good knowledge of conversion to SAP Datasphere, SAP BW bridge (such as Simplification List, this Conversion Guide, data model changes related to the transition to SAP Datasphere, SAP BW bridge)

An instructor-led training course "SAP Datasphere: SAP BW Bridge" (DSPBW1) is available at SAP Training. see also the blog entry Enable yourself for SAP Datasphere, SAP BW bridge!.

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3 Preparing the Conversion

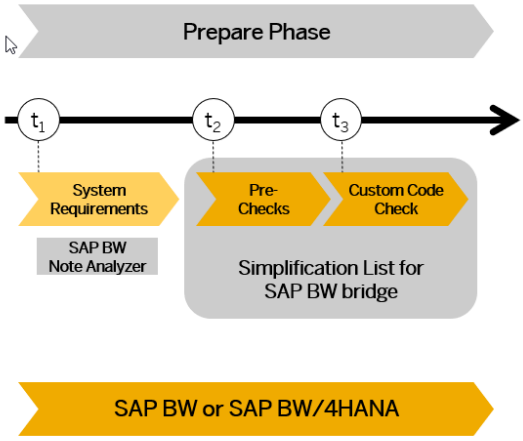

Figure 3: SAP BW bridge Conversion: Prepare Phase

For the transfer to SAP BW bridge, you must prepare an overall project plan and schedule the tasks. The preparation activities described in this section give you an idea of what is involved. For a brief overview of the process, see section Overview of Conversion Process (Shell).

3.1 System Requirements

At the beginning, basic prerequisites for doing a system conversion from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge need to be checked.

SAP Note 3117800 provides general information about SAP Datasphere, SAP BW bridge. SAP Note 3141688 contains systematic instructions, on how to prepare your system for a conversion.

3.2 What's the Impact on Your System Landscape?

When you convert your system to SAP Datasphere, SAP BW bridge, you may have to adapt further systems or components in your system landscape.

Frontend Tools

We do not provide direct access from a frontend tool to the SAP BW bridge space and hence all reporting must be performed accessing SAP Datasphere. Analysis Office does not yet have an integration with SAP Datasphere making it necessary to switch frontend tools. Customers who have built SAP Analytics Cloud stories on top of SAP BW or SAP BW/4HANA, using the live connectivity, have no option to switch the connection. Also, the live connectivity to SAP Datasphere may support different features. SAP Analytics Cloud customers will have to rebuild their stories on SAP Datasphere.

BW Modeling Tools

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It is recommended to use the latest version of the BW Modeling Tools to be able to use all SAP BW bridge functionalities.

3.3 Supported Releases for Sending System

For a shell conversion, the sending SAP BW or SAP BW/4HANA system needs to have a minimum release level. The following start releases are supported:

- SAP NetWeaver 7.3
- Enhancement Package 1 for SAP NetWeaver 7.3
- SAP NetWeaver 7.4
- SAP NetWeaver 7.5
- SAP NetWeaver 7.51
- SAP BW/4HANA 2021

→ Caution

Conversion of systems based on SAP NetWeaver **7.52** or higher is **not** supported! Therefore, we strongly recommend **not** to upgrade to these releases.

Shell conversions are independent of the database platform of your existing system (i.e., all supported database platforms are allowed; see **Product Availability Matrix**).

See the following table for minimum and recommended support package level:

Scenario	Release	Minimum Support Package	Recommended Support Package
Pre-Checks			
SAP NetWeaver	7.3	08	**08 or higher**
SAP NetWeaver	7.3 EhP 1	05	**05 or higher**
SAP NetWeaver	7.4	09	**09 or higher**
SAP NetWeaver	7.5	05	**05 or higher**
SAP NetWeaver	7.51	08	**08 or higher**
SAP BW/4HANA	2021	00	**00 or higher**
Shell Conversion – Sending System			
SAP NetWeaver	7.3	10	**10 or higher**
SAP NetWeaver	7.3 EhP 1	10	**10 or higher**
SAP NetWeaver	7.4	09*)	**12 or higher**
SAP NetWeaver	7.5	05	**05 or higher**
SAP NetWeaver	7.51	08	**08 or higher**
SAP BW/4HANA	2021	00	**00 or higher**

*) exceptional usage with increased manual implementation effort

If your system is below the minimum level, you will not be able to install or run the Shell Conversion. The further away your system is from the recommended level, the more SAP Notes must be implemented to prepare the system for a scenario.

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→ Recommendation

To reduce manual effort and the number of SAP Notes to be implemented, deploy the *latest* available Support Package Stack.

3.4 Supported Releases for Receiving System

The tools required to perform a shell conversion are included in Release 2202 of SAP Datasphere, SAP BW bridge.

Scenario	Release
SAP Datasphere, SAP BW bridge	**2202 or higher**

3.5 Supported Source Systems

3.5.1 SAP Source Systems – Minimum Release Requirements

There are minimum release requirements for SAP source systems that can be connected to SAP Datasphere, SAP BW bridge. These requirements are based on the availability of the Operational Data Provisioning framework (ODP) for SAP systems.

For details check SAP Notes 1521883 and 1931427 and SAP Help page.

The following ODP Contexts are supported:

1. ODP - SAP

You can use Operational Data Provisioning (ODP) to connect an SAP system, such as an SAP ECC or SAP S/4HANA system, as the source system to the SAP Datasphere, SAP BW bridge. Communication is performed using RFC. DataSources are provided for use in SAP Datasphere, SAP BW bridge using the ODP context for DataSources (extractors) (SAP).

Scenario	Release	Minimum Support Package	Recommended Support Package
SAP Source System, ODP Context SAP			
SAP NetWeaver	7.0	24	**Latest**
SAP NetWeaver	7.0 EhP 1	09	**Latest**
SAP NetWeaver	7.0 EhP 2	08	**Latest**
SAP NetWeaver	7.3	08	**Latest**
SAP NetWeaver	7.3 EhP 1	05	**Latest**
SAP NetWeaver	7.4	02	**Latest**
SAP NetWeaver	7.5	00	**Latest**
SAP BW/4HANA	1.0	00	**Latest**
SAP BW/4HANA	2.0	00	**Latest**
SAP BW/4HANA	2021	00	**Latest**

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The DataSources must be released for data provisioning using Operational Data Provisioning. For information about releasing SAP DataSources and customer defined DataSources for Operational Data Provisioning, see SAP Note 2232584.

2. ODP - BW

The Operational Data Provisioning framework allows you to make use of the ODP source system to use the same technology for a data mart scenario between SAP BW or SAP BW/4HANA systems and SAP Datasphere, SAP BW bridge.

Scenario	Release	Minimum Support Package	Recommended Support Package
SAP Source System, ODP Context BW			
SAP NetWeaver	7.0	36	**Latest**
SAP NetWeaver	7.0 EhP 1	19	**Latest**
SAP NetWeaver	7.0 EhP 2	19	**Latest**
SAP NetWeaver	7.3	17	**Latest**
SAP NetWeaver	7.3 EhP 1	20	**Latest**
SAP NetWeaver	7.4	05	**Latest**
SAP NetWeaver	7.5	00	**Latest**
SAP BW/4HANA	1.0	00	**Latest**
SAP BW/4HANA	2.0	00	**Latest**
SAP BW/4HANA	2021	00	**Latest**

For SAP BW releases 7.0 to 7.31, a limited set of InfoProviders is supported, see e.g., SAP Note 2481315.

3. ODP ABAP - CDS

The ODP context for ABAP CDS views (ABAP_CDS) is used to provide ABAP Core Data Services views (ABAP CDS views) with the corresponding analytics annotations for use in SAP Datasphere, SAP BW bridge.

This allows you to access ABAP CDS view from SAP S/4HANA and SAP S/4HANA Cloud. If the ABAP CDS view contains the required annotations, you can use the view for full extraction and data access or for delta extraction.

Scenario	Release	Minimum Support Package	Recommended Support Package
SAP Source System, ODP Context ABAP_CDS			
For Full Extraction			
SAP NetWeaver	7.4	08	**Latest**
SAP NetWeaver	7.5	02	**Latest**
SAP BW/4HANA	1.0	00	**Latest**
SAP BW/4HANA	2.0	00	**Latest**
SAP BW/4HANA	2021	00	**Latest**
For Delta Extraction			

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SAP NetWeaver	7.5	05	**Latest**
SAP BW/4HANA	1.0	01	**Latest**
SAP BW/4HANA	2.0	00	**Latest**
SAP BW/4HANA	2021	00	**Latest**

4. ODP - SLT

Using the operational data provisioning infrastructure and trigger-based replication of SAP Landscape Transformation Replication Server (SLT Replication Server), you can transfer data from SAP systems to the SAP BW bridge system in real-time. SLT Replication Server is a provider for the operational data provisioning infrastructure. It can make tables from SAP sources available as delta queues. SAP BW bridge can be a subscriber to this delta queue and can access the data replicated using the operational data provisioning infrastructure for further processing.

The prerequisites with regard to the minimum release of the SLT Replication Server and the DMIS Add-On installed on the SLT Replication Server as well as the source system can be found in SAP Help.

→ Recommendation

To reduce manual effort and the number of SAP Notes to be implemented, deploy the *latest* available Support Package Stack.

3.5.2 Other Source Systems

Other source systems than the above are not supported in SAP Date Warehouse Cloud, SAP BW bridge. Data extraction from those has to be performed via interfaces provided by SAP Datasphere, see also SAP Notes 3077420 and 3077382. Data has then to be consolidated in SAP Datasphere.

3.6 Sizing Check

It is essential to properly size your new SAP Datasphere, SAP BW bridge system. Sizing is performed using a program which is available via SAP Note 2296290. This SAP Note and its attachment contain more information about sizing.

→ Note

Even if your SAP BW system is already running on SAP HANA or you run an SAP BW/4HANA system, it is strongly recommended to run the sizing report. All SAP Datasphere specifics are considered by the sizing report when using the option “Perform DWC Bridge Sizing”.

SAP Datasphere, SAP BW bridge is intended only for staging purposes. For reporting purposes, data is exposed to SAP Datasphere. Therefore, checking whether the Datasphere tenant is adequately sized is required as well.

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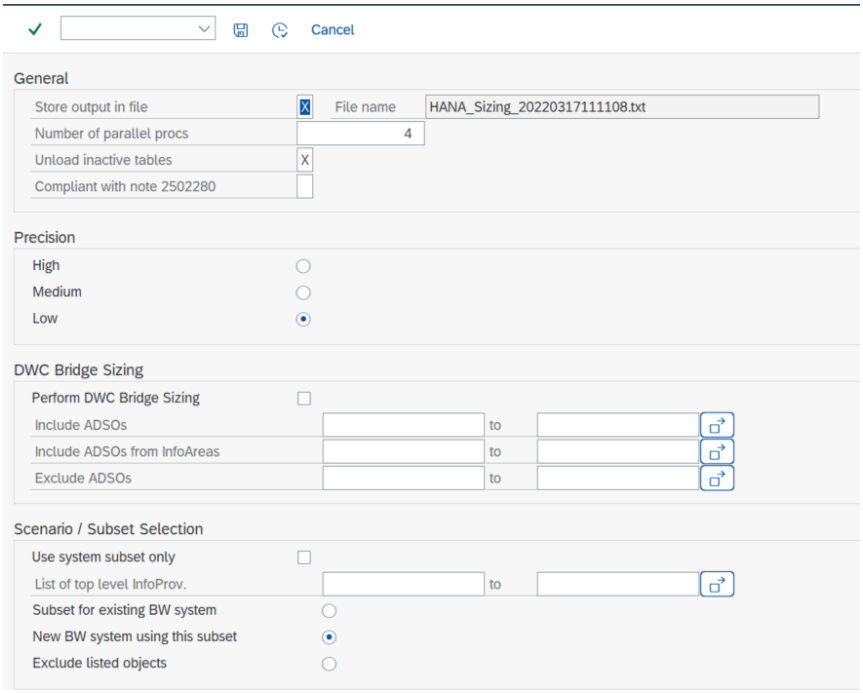
1. Start the Transfer Cockpit (transaction RSB4HCONV)
2. Select “Run Sizing Report”[1]
3. Turn on option “Perform DWC Bridge Sizing”
4. This activates a new section “DWC Bridge Sizing”:



5. Schedule the tool using Program → Execute in Background

3.7 System Installation and Preparations

In general, several activities are required to prepare your landscape for a conversion to SAP Datasphere, SAP BW bridge. The following chapters provide an overview. Details are described in the appendix (see section Landscape Preparation).

3.7.1 Sender System

For the shell conversion option, update your SAP BW or SAP BW/4HANA system using SAP BW Note Analyzer (see instructions given in SAP Note 3141688),

The same applies to source systems connected to your original system in case you want to transfer source system related objects.

[1] Program /SDF/HANA_BW_SIZING

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3.7.2 Receiver System

The preparations in the receiver system will be explained in the Execute Phase, as we assume SAP BW bridge, or even SAP Datasphere, will be provisioned at the latest possible point in time to minimize costs.

If the receiver system is already provisioned, you can perform the tasks in the subsections of section Provisioning of SAP Datasphere, SAP BW Bridge System already in advance.

3.7.3 Source Systems

SAP Source Systems

SAP Source Systems - including SAP BW systems that you want to use as a source for SAP Datasphere, SAP BW bridge – must be compatible with Operational Data Provisioning (ODP, see SAP Note 2473145). Also, all DataSources must be released for ODP.

1. Verify that all required source systems are compatible with ODP in general (see section Supported Source Systems).
2. Update the ODP functionality in all source systems using SAP BW Note Analyzer (see instructions given in SAP Note 3141688 and details in Appendix Landscape Preparation).
3. Release all required SAP DataSources for ODP (see SAP Note 2232584).
4. Release generic DataSources for ODP (see SAP Note 2350464).

Other Source Systems

All other source systems cannot be connected to SAP Datasphere, SAP BW bridge and therefore must be connected directly to SAP Datasphere.

3.8 Scope Identification and Check

The conversion from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge does not happen in one go. It is rather performed in several sprints. Each sprint is based on a selection of a specific scope, a set of SAP BW objects, for example a data flow, that can be transferred together in a consistent way. The combination of all scope selections (sprints) defines what configuration will be transitioned to SAP Datasphere, SAP BW bridge.

For Shell Conversions, SAP BW objects that are not used anymore can simply be ignored. You just identify the scope based on what objects are required for your new Datasphere, SAP BW bridge system.

Procedure

1. Start the Task Manager (transaction STC01).

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2. Select the following task lists corresponding to your conversion path:

Task List	Description
SAP_BW4_TRANSFER_CHECK_CLOUD_SHL	Collect and check BW objects whether they are compatible to SAP BW/4HANA for shell conversion

3. Run the task list.
4. Select the scope of objects you want to check. You must define at least one start object. The system will then collect all dependent objects.
5. The second task will then display a table of all objects with compatibility status and recommended conversion steps (if necessary). This allows you to get a good overview of the required conversion scope and potential incompatibilities that need to be resolved before a scope transfer can be successful.

3.9 Pre-Checks

3.9.1 Pre-Check Overview

SAP supports your conversion project by providing pre-checks that identify some important steps you need to take to ensure your system is compatible with the conversion process.

Perform these checks before starting the realization phase to have enough time to solve any issues before starting the conversion processes.

Pre-checks are shipped to customers that want to convert to SAP Datasphere, SAP BW bridge in the form of SAP Notes. Customers can use these pre-checks to find out what mandatory steps they must carry out before converting to SAP Datasphere, SAP BW bridge. The results list the points that need to be addressed before attempting the conversion process.

3.9.2 Installing Pre-Checks

Follow the instructions provided in SAP Note 2575059 and use the SAP BW Note Analyzer to install the pre-check tools (see Appendix Landscape Preparation for more details). Make sure to use the latest version of this SAP Note and regularly check for updates of the attached XML files. Implement and run the SAP BW Note Analyzer in your development system or any system that will serve as a Sender System for a Shell Conversion.

If the SAP BW bridge Transfer Cockpit is installed, you can also check if the tools are up-to-date directly in the SAP BW bridge Transfer Cockpit.

Procedure

1. Start the Transfer Cockpit (transaction RSB4HCONV).
2. Select “Check Transfer Tool Revision”:

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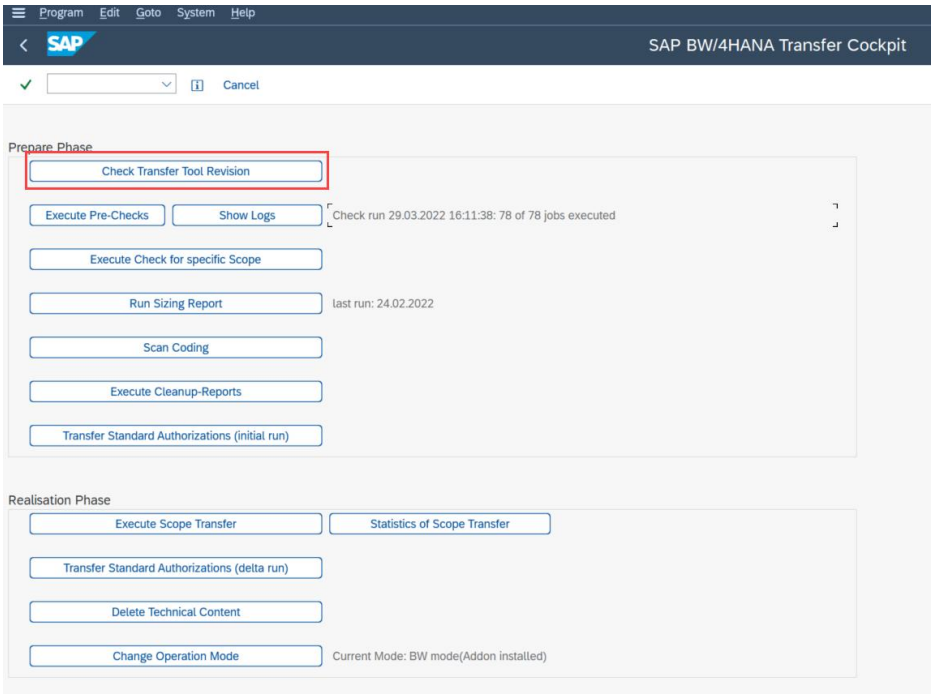


3. The system will download SAP Note 2844852 and compare it to the installed revision of the transfer tools. A popup message will be shown, should a newer version be available.

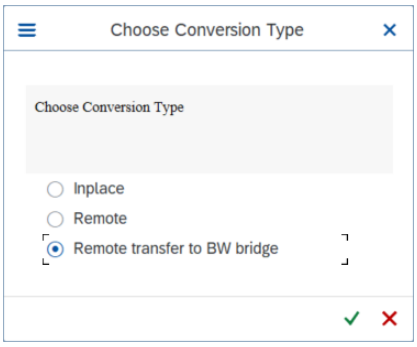
3.9.3 Performing Pre-Checks

Prerequisites

You have installed the pre-checks in your SAP BW system. You need authorization for authorization objects S_RS_B4H.

Procedure

1. Start the Pre-Checks directly by executing program RS_B4HANA_RC (in transaction SE38). When prompted chose conversion type “Remote transfer to BW bridge”.



If not already performed, a check can be started by pressing “Execute full check (F8)”.

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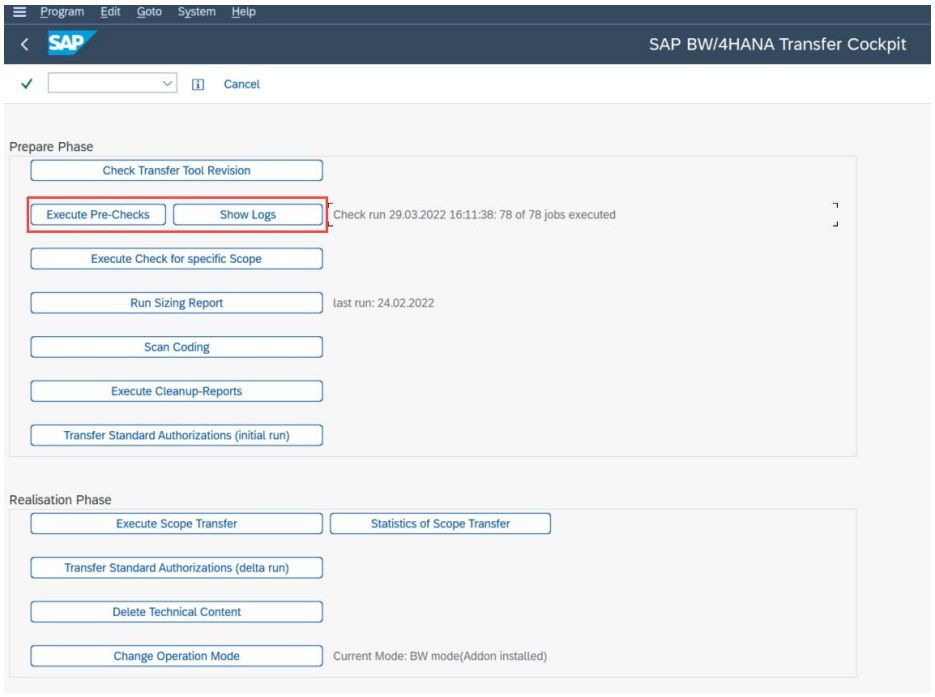
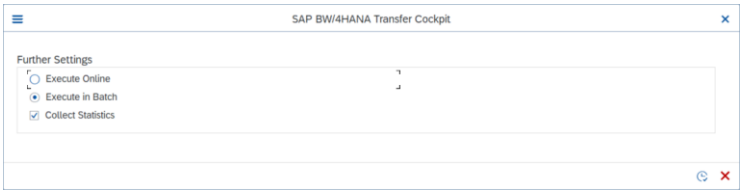
2. Alternatively, if installed, you can also use the SAP BW bridge Transfer Cockpit (transaction RSB4HCONV, report RS_B4HANA_CONVERSION_CONTROL).
   Select “Execute Pre-Checks”:



   Select “Execute in Batch” and turn on the option to collect statistics (online execution will work for small to medium size systems).



The pre-check program determines which objects are compatible with SAP Datasphere, SAP BW bridge and which objects are not available in SAP Datasphere, SAP BW bridge and can be automatically converted, deleted, or need manual adjustments. The pre-check then provides links to the documentation of the corresponding Simplification Items (i.e., the matching SAP Notes).

Pre-Check Messages and Their Meanings

After the job for the pre-check program has been finished, the job log can be analyzed (select “Show Logs”). The result of the Pre-Check can be verified, selecting the conversion type “Remote transfer to BW bridge”.

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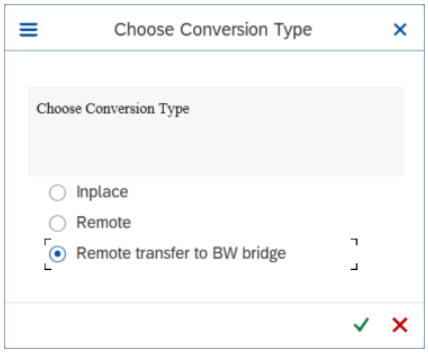
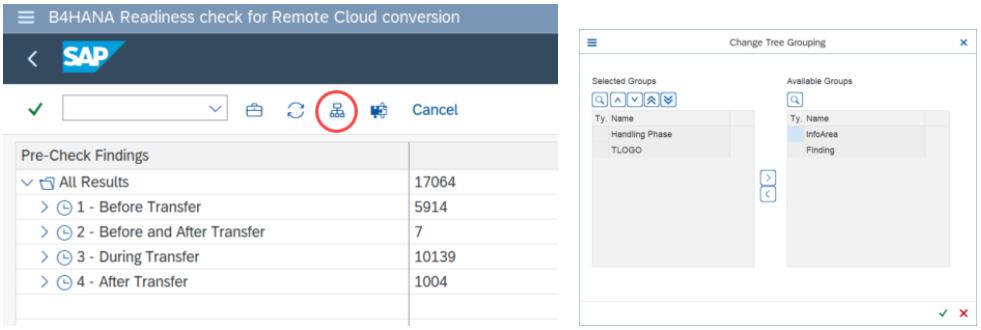
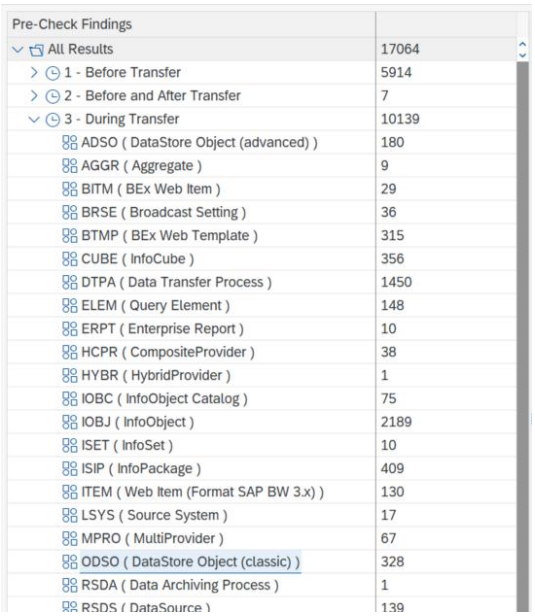


The result can be displayed in different structures, the grouping /sorting can be adapted by pressing “Change grouping structure (Shift+F1)”



Grouping / sorting criteria are Handling phase, TLOGO, InfoArea and Finding.

Per TLOGO-object the number of objects involved and required actions are listed:



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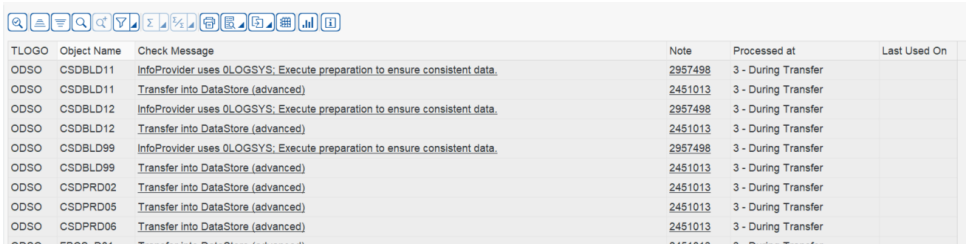

TLOGO	Object Name	Check Message	Note	Processed at	Last Used On
ODSO	CSDBLD11	InfoProvider uses 0LOGSYS; Execute preparation to ensure consistent data.	2957498	3 - During Transfer	
ODSO	CSDBLD11	Transfer into DataStore (advanced)	2451013	3 - During Transfer	
ODSO	CSDBLD12	InfoProvider uses 0LOGSYS; Execute preparation to ensure consistent data.	2957498	3 - During Transfer	
ODSO	CSDBLD12	Transfer into DataStore (advanced)	2451013	3 - During Transfer	
ODSO	CSDBLD99	InfoProvider uses 0LOGSYS; Execute preparation to ensure consistent data.	2957498	3 - During Transfer	
ODSO	CSDBLD99	Transfer into DataStore (advanced)	2451013	3 - During Transfer	
ODSO	CSDPRD02	Transfer into DataStore (advanced)	2451013	3 - During Transfer	
ODSO	CSDPRD05	Transfer into DataStore (advanced)	2451013	3 - During Transfer	
ODSO	CSDPRD06	Transfer into DataStore (advanced)	2451013	3 - During Transfer	

The messages in the result of the ~~Readiness Check~~Pre-Check refer to SAP Notes. These notes explain the reason why objects are listed here and how to deal with them. Also have a look at the Simplification List.

→ Tip

DataStore objects (advanced) might appear in the pre-check log although they are available in SAP Datasphere, SAP BW bridge. In such case, DataStore objects (advanced) are still using the old request management and must be processed by the Scope Transfer Tool. For details, see the corresponding SAP Note 2487023.

→ Tip

Evaluate all BW objects to determine if they are used productively. Removing obsolete BW objects from the system will decrease the time needed to analyze objects for compatibility with SAP Datasphere, SAP BW bridge and reduce the effort needed to convert them.

3.10 Custom Code Analysis

To support you in detecting custom code that needs to be adapted for the move to SAP Datasphere, SAP BW bridge, SAP is providing a Code Scan Tool. For example, you can verify, if custom code embedded in transformations will be compatible with the SAP Datasphere, SAP BW bridge data structures and scope. For more information, see details related to custom code within SAP Help and in SAP Note 2462639.

→ Tip

Perform a custom code evaluation to determine which custom code is used productively and identify unused objects. Retiring and removing obsolete custom code from the system can reduce the custom code that needs to be analyzed and potentially adjusted.

1. Start the Code Scan by executing program RS_B4HANA_LOG_DISPLAY (in transaction SE38). You will receive the following screen:

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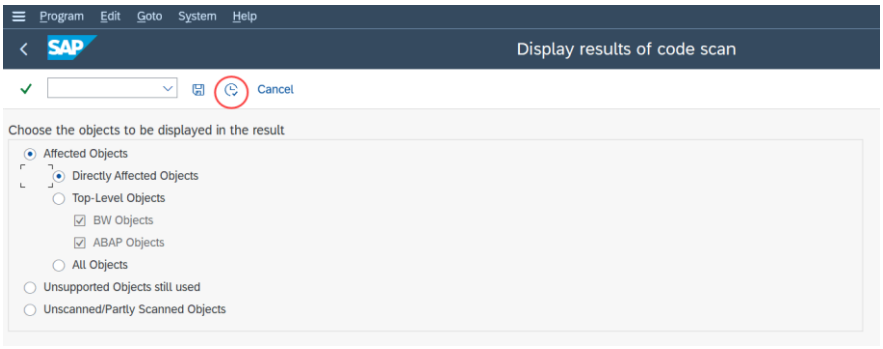
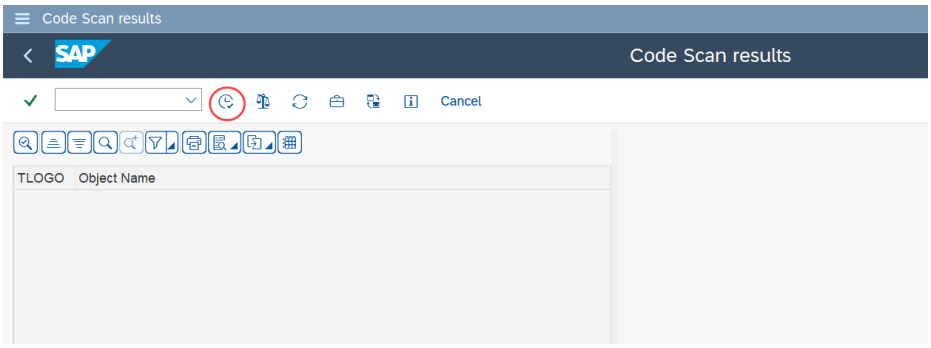
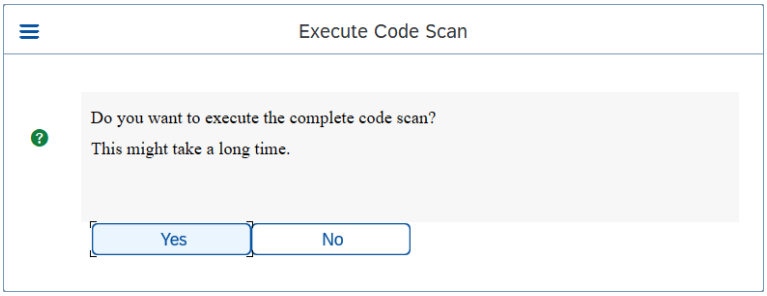
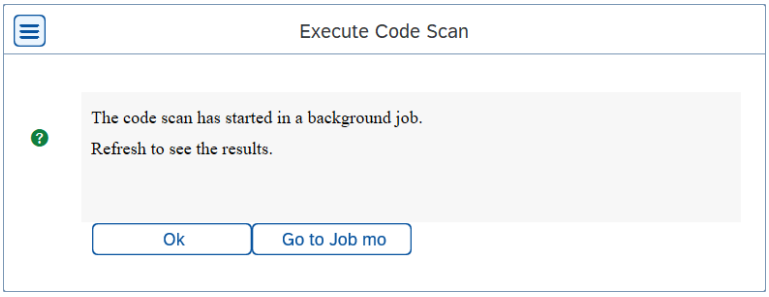


2. Perform a selection for the object to be shown in the result and press “Execute (F8)”. If no previous run exists, the result will be empty.



3. To execute a run press run “Run Code Scan (F8)” and you will receive the following pop-ups:





4. After refresh, you will get a list of objects with details:

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You will be able to see more details pressing the “Detail log” button in the column “Message” and to re-scan a specific object by pressing “Scan single object again (F6)” e.g., after it has been adapted.

During these code scans so called XREF entries are written to table RSB4HANAXREF that contain usage information about the coding. In the transfer process you will have the option to create a separate transport request for the required objects.

3.11 General Application Preparations

Before starting conversion activities, you need to do the preparatory activities described in the next sections.

3.11.1 Security

Using the SAP BW bridge Transfer Cockpit requires certain authorizations. The required authorizations are listed in section Perform a Scope Transfer.

In the receiver system the communication user has automatically all required authorizations based on the chosen communication scenario.

3.12 List of Object-Specific Preparations

The list below contains important application-specific preparatory steps – before a shell conversion is possible – and where to find their documentation.

→ Note

This list contains an overview of important steps, but it is not necessarily complete. You find the complete list of conversion-relevant items in the Simplification List, as explained in the overview.

Preparatory Tasks per Application Area		Reference
3.x Data Flows	3.x DataSources / InfoPackages	SAP Note 2470352

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	Transfer Rules Update Rules 3.x InfoSources 3.x Communication Structures 3.x Transfer Structures	
InfoObjects	Long Material Numbers	SAP Notes 2422224 and 2635167
InfoCubes	HANA-Optimizations, Audit Function	SAP Note 2443489
DataStore Objects (classic)	HANA-Optimizations	SAP Note 2451013
MultiProviders	Inconsistent InfoObject Mapping (can also be corrected during a scenario transfer, therefore only an optional preparation task)	SAP Note 2444718
Source Systems	ODP Readiness of SAP and SAP BW Source Systems	SAP Note 2473145
Documents	No transfer of documents attached to meta data objects or master/transaction data using shell conversion	

If any of the listed objects exist in your system, check the corresponding SAP Notes for required preparatory steps. For example, InfoCubes in SAP BW on HANA must be HANA-optimized before they can be converted to DataStore Objects (advanced).

Connections to SAP and BW Source Systems must be established in the receiver system before the transfer and conversion of objects can be performed.

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4 Realizing the Shell Conversion

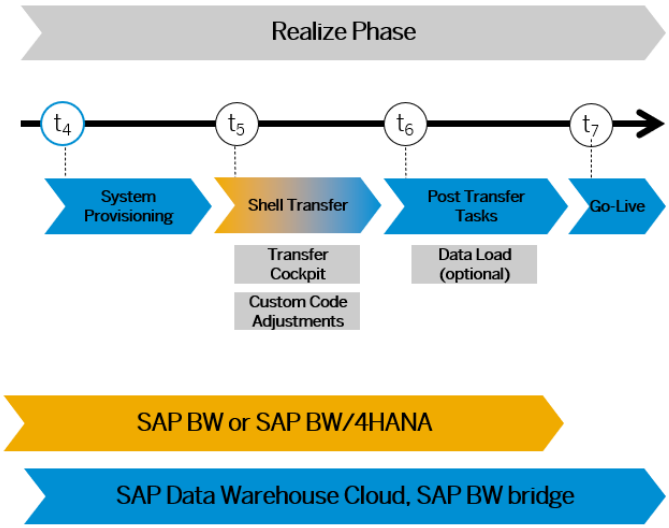

Figure 4: SAP BW bridge Conversion: Realize Phase

After the preparation phase, you start with the realization of the shell conversion to SAP Datasphere, SAP BW bridge by adding capacity units to your SAP Datasphere tenant, using the SAP BW bridge Transfer Cockpit, and making custom code adjustments. Optionally, you can load data from the sender SAP BW or SAP BW/4HANA system or from the original sources. For a brief overview of the entire process, see section Overview of Conversion Process (Shell).

→ Note

You find the general follow-on steps in this guide; you get the object-specific follow-on steps with the pre-check and custom-code checks and with the Simplification List for SAP Datasphere, SAP BW bridge. Some of the most important application-specific preparation steps are also listed in the section List of Object-Specific Preparations.

4.1 Provisioning of SAP Datasphere, SAP BW Bridge System

In the following we assume that an SAP Datasphere tenant is already provisioned and only SAP BW bridge needs to be added. Beside this, a Cloud Connector is required (see minimal version requirement) which is used for connecting the Sender System for the Shell Conversion as well as for connecting the source systems. In addition, software components, development packages, and transports must be created.

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4.1.1 Activate SAP Datasphere, SAP BW bridge

To activate SAP BW bridge, you must order capacity units for SAP Datasphere, SAP BW bridge. Details can be found in SAP Note 3134262 (Activation of BW Bridge Feature in an existing SAP Datasphere tenant).

A description of the first steps to be performed in SAP BW bridge can be found in the guide Getting Started with SAP Datasphere, SAP BW Bridge in SAP Help Portal.

4.1.2 Install / Update Cloud Connector

To connect the sender system via RFC to your SAP BW bridge tenant, a Cloud Connector must be set up 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.

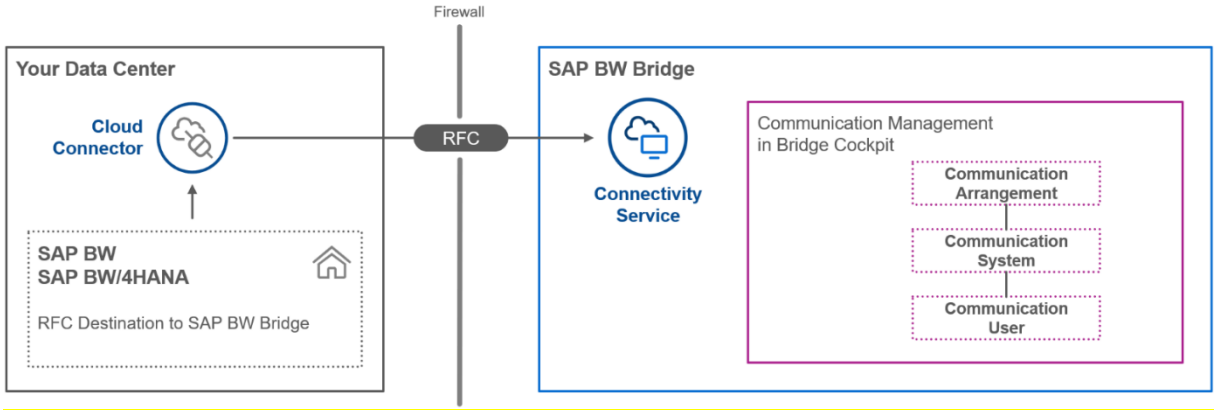

Figure 5: RFC Connectivity between Sender System and SAP BW bridge

4.1.3 Connect the Sender System to SAP BW bridge

The sender system must be connected to the SAP BW bridge tenant using the following steps:

Add the SAP Datasphere Subaccount in the Cloud Connector

Before connecting the sender system to your SAP BW bridge tenant, you must add the SAP Datasphere subaccount to the Cloud Connector. See SAP Help for detailed instructions.

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

The sender system must be able to call the SAP BW bridge tenant via RFC. Therefore, a service channel must be added in the Cloud Connector. See SAP Help for detailed instructions.

Create a 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, such as the user for inbound communication.

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The sender system must be created as communication system in the SAP BW bridge tenant:

1. Log on to the SAP BW bridge Cockpit. See SAP Help for detailed instructions.
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**. We recommend choosing *MIGRATE_<SID>* as System Name, e.g., *MIGRATE_KST* if the SID of the sender system is KST.
5. Under **Technical Data**, maintain the following values:
   a. Enter an arbitrary name as **Host Name**.
   b. Set 443 as **Port**.
6. Under **Users for Inbound Communication**, click (Add) to maintain the user that is used for the inbound communication in the SAP BW bridge tenant. Select an existing user or click New User to create a new user. Please note, when creating an RFC connection in the sender system, a length restriction of 12 characters applies.
   The required authorizations are automatically granted to this user when creating the communication arrangement (see below). The authorizations are pre-defined by SAP in the communication scenario used by the communication arrangement.
7. Save the new communication system.

Create a Communication Arrangement in the SAP BW Bridge Tenant

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.
A communication arrangement for the migration scenario must be created in the SAP BW bridge tenant:

1. Log on to the SAP BW Bridge Cockpit.
2. In the **Communication Management** section, select the app **Communication Arrangements**.
3. Click **New** to add a new Communication Arrangement.
4. In the **New Communication Arrangement** dialog, enter the following values:
   a. Open the value help for **Scenario** and choose the predefined communication scenario SAP_COM_0691 (SAP DWC BW Bridge - Migration Integration).
   b. Discard the proposal for the **Arrangement Name**. Instead, use the technical name of the source system as **Arrangement Name** and choose **Create**.
5. 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** in the communication system,
   - the required **Inbound Services**.

   The User for Inbound Communication automatically receives the authorization profile predefined by SAP in the communication scenario, i.e., the authorizations required to invoke the RFC call from the sender system.
6. Save the new communication arrangement.

Create an RFC Destination in the Sender System

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During shell transfer, when maintaining the scope of the transfer in the task list, you must choose an RFC destination pointing to the receiving SAP BW bridge tenant. This RFC destination must be created in the sender system:

1. Log in to the sender system.
2. Call transaction SM59.
3. Choose **Create** to create a new RFC connection.
4. In the **Create Destination** dialog, enter a name for the RFC **Destination** and choose **RFC connection to ABAP system** as **Connection Type**.
5. Under **Description**, enter a meaningful description.
6. 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**.
7. 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**.
8. Save the new RFC destination.
9. Perform a **Connection Test** to check if the RFC destination works as expected. Check the settings of the involved firewalls with your infrastructure team if the connection test is failing.

4.1.4 Create a Software Component, an ABAP Package, and Transport Requests

In SAP BW bridge, unlike SAP NetWeaver BW or SAP BW/4HANA, objects cannot be initially created in the temporary package $TMP - this package does not exist in the SAP BTP ABAP environment.

Important: In SAP BW bridge, new objects **must be assigned to a transportable development package at the time of creation**!

In SAP BW bridge, transport requests are required for creating and transporting objects (refer to this blog for details) as well as for the transfer using the SAP BW bridge Transfer Cockpit. In context of a Shell Conversion project, two transport requests are needed:

- A **transportable** change request for transferred objects
- A **local** change request for generated artifacts

It is important to assign the communication inbound user to both transport requests!

Follow the steps below to set up your SAP BW bridge tenant accordingly:

1. **Create Software Component and Development Package**

   Follow the instructions in Create Software Components to set up a software component and a development package - **this step is mandatory before proceeding!**

2. **Identify the Communication User**

   a. Log in to the **SAP BW Bridge Cockpit**.

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b. In the **Communication Management** section, open the app **Maintain Communication Users**.

c. Locate the user maintained as **User for Inbound Communication** in the communication system you've created before in chapter 4.1.3.

d. Note the **User ID** of that user. The user ID starts with CC followed by a ten-digit number. You'll need this user ID in steps 4f and 5f.

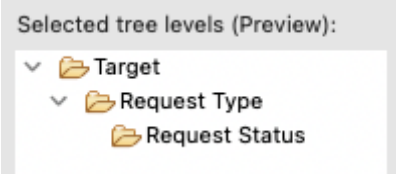
3. **Access and Configure the Transport Organizer View**

a. Start **BW Modeling Tools**.

b. Log in to the **ABAP Cloud Project**.

c. Navigate to the **Transport Organizer** view. If the view is not visible, go to Window > Show > Other…, expand the folder ABAP, and double-click the Transport Organizer view.

d. In the **Transport Organizer** view, right-click the name of the **ABAP Cloud Project** and select **Configure Tree**. Ensure that the selected tree levels are configured as shown in the screenshot and confirm the dialog.



4. **Create a Transportable Change Request**

This is needed for the objects you transfer from the sender system.

a. In the **Transport Organizer** view, right-click the name of the **ABAP Cloud Project** and select **New Transport Request**.

b. In the **New Transport Request** dialog:

i. Ensure that **Request Type** is set to **Workbench.**

ii. Enter a meaningful **Short Description**.

iii. Next to the field **Target**, click **Browse**.

iv. In the **Select Transport Target** dialog, select the transport target representing your software component. Click **OK**.

v. Click **Finish**.

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c. Locate the new transport request in ***[ABAP Cloud Project Name] > [Target]*** **> Workbench > Modifiable** view and expand it.

d. Right-click the task belonging to the new transport request and select **Change Type To** > **Development/Correction**.

e. Right-click the task again and select **Change Owner**.

f. In the **Change Owner** dialog, in the field **New Owner**, enter the **User ID** of the inbound communication user you have noted in step 2d. Click **OK**.

5. **Create a Local Change Request** (non-transportable)

   This is needed for the ABAP classes that are locally generated when activating transformations with custom ABAP code, DTPs with filters using custom ABAP Code, or InfoObjects with transfer routines.

   a. In the **Transport Organizer** view, right-click the name of the **ABAP Cloud Project** and select **New Transport Request**.

   b. In the **New Transport Request** dialog:

      i. Ensure that **Request Type** is set to **Workbench.**

      ii. Enter a meaningful **Short Description**.

      iii. Leave the field **Target** empty.

      iv. Click **Finish**.

   c. Locate the new local change request in ***[ABAP Cloud Project Name]*** **> Local Change Requests** > **Workbench** > **Modifiable** and expand it.

   d. Right-click the task belonging to the new local change request and select **Change Type To** > **Development/Correction**.

   e. Right-click the task again and select **Change Owner**.

   f. In the **Change Owner** dialog, in the field **New Owner**, enter the **User ID** of the inbound communication user you have noted in step 2d. Click **OK**.

For best practices on software components, check SAP Note 3130759.

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4.1.5 Create Source Systems

As a prerequisite for performing a shell conversion, you must create new Source System connections in SAP BW bridge for all data flows that you want to transfer that contain source system dependent objects.

For example, if your SAP BW system is connected to an SAP ERP system using an *SAP Source System*, then you must create an *ODP Source System* to the same SAP ERP system in SAP Datasphere, SAP BW bridge.

The detailed steps can be found in the chapter Preparing Connectivity for SAP BW Bridge - SAP Help Portal of the Getting Started document.

The matching is performed when executing the transfer in the SAP BW bridge Transfer Cockpit.

4.2 Updating System Landscape using SAP BW Note Analyzer

It is necessary to update the sender system to the latest version of the SAP BW bridge Transfer Cockpit. This is achieved by running SAP BW Note Analyzer with the corresponding XML file and implementing all required SAP Notes. For more details, see section Specific Procedure for Shell Conversion.

→ Note

SAP is continuously updating the tools required for conversion. Therefore, it is highly recommended to update the SAP BW bridge Transfer Cockpit on a regular basis by running SAP BW Note Analyzer with the most recent XML files attached to SAP Note 3141688.

4.3 List of Object-Specific Conversion Activities

The following sections of this guide describe object-specific conversion tasks. Prerequisite is that all preparation tasks (especially, items listed in section Source Systems) have been completed.

Conversion Tasks per Application Area		Reference
Data Acquisition	SAP Source Systems BW Source Systems S-API DataSources	Convert using Transfer Cockpit
Data Warehousing	InfoCubes DataStore Objects (classic) InfoSets MultiProviders	Convert using Transfer Cockpit

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All other objects	Redesign or Delete

4.4 Object Transfer Using Scope Transfer Tool

4.4.1 General Features

This section describes how to transfer – and if needed convert – data models and data flows to HANA-optimized objects that are compatible with SAP Datasphere, SAP BW bridge by using the Scope Transfer Tool. The Transfer Tool is launched with transaction RSB4HCONV and selecting “Execute Scope Transfer”.

Alternatively, call transaction STC01 and run the following task list:

Task List	Description
SAP_BW4_TRANSFER_CLOUD_SHELL	Tasks for Activities to be performed in sender system of SAP BW bridge shell transfer

Features

Object types that are not available in SAP BW bridge are replaced by other object types or features. The following table lists the object types that are not available anymore and can be converted using the Transfer Cockpit, together with their successors and the Simplification Item (see the corresponding SAP Notes for details and limitations regarding each object type):

Previous Object Type	Successor Object Type (Optimized for SAP HANA)	Simplification Item
DataStore object (classic)	DataStore object (advanced)	SAP Note 2451013
DataStore object (advanced) with old request management	DataStore object (advanced) with new request management	SAP Note 2487023
InfoCube	DataStore object (advanced)	SAP Note 2443489
MultiProvider	CompositeProvider	SAP Note 2444718
InfoSet	CompositeProvider	SAP Note 2444912
Sematic Partitioned Object: InfoCube or DataStore object (classic)	Sematic Group of DataStore object (advanced)	SAP Note 2472609
Old CompositeProvider (COPR)	CompositeProvider (HCPR)	SAP Note 2442062

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BW and SAP Source System	ODP Source System	SAP Note 2473145
InfoPackage and PSA	Data Transfer Process + DataStore object (advanced)	SAP Note 2464367

The following object types will be automatically adjusted during a scope transfer:

Object Type / Feature	Adjustments
DataSource	• Adjust according to changes of source systems • Replace export DataSources (8*) used in SAP BW source system with ODP-BW source system and DTP
Data Transfer Process	• Source and target of DTP • Replace Error DTP with Data Transfer Intermediate Storage (DTIS). The DTP is set to inactive during scope transfer and the DTIS is created when the DTP is re-activated after conversion to SAP BW/4HANA (handled automatically by the post conversion task list).
DataFlow	• Replace objects with corresponding successors
Process Chain / Process Variants	• Replace InfoPackages with DTPs • Replace Activation of classic DSO with advanced DSO • Replace Delete PSA Requests, Request Compression, and Delete Change Log, with Clean-up for advanced DSO • Replace APD Processes with “dummy” process chains as place-holders for the APD Transfer Tool
Transformations	• Source and target of transformation • Lookup of DataStore objects • Runtime properties might be changed, please check SAP Note 3385829

Documentation

You can find a detailed documentation of the tasks performed during a scope transfer in the system (transaction STC01, task list SAP_BW4_TRANSFER_CLOUD_SHELL), see entry in column “Help” when the task list run is generated.

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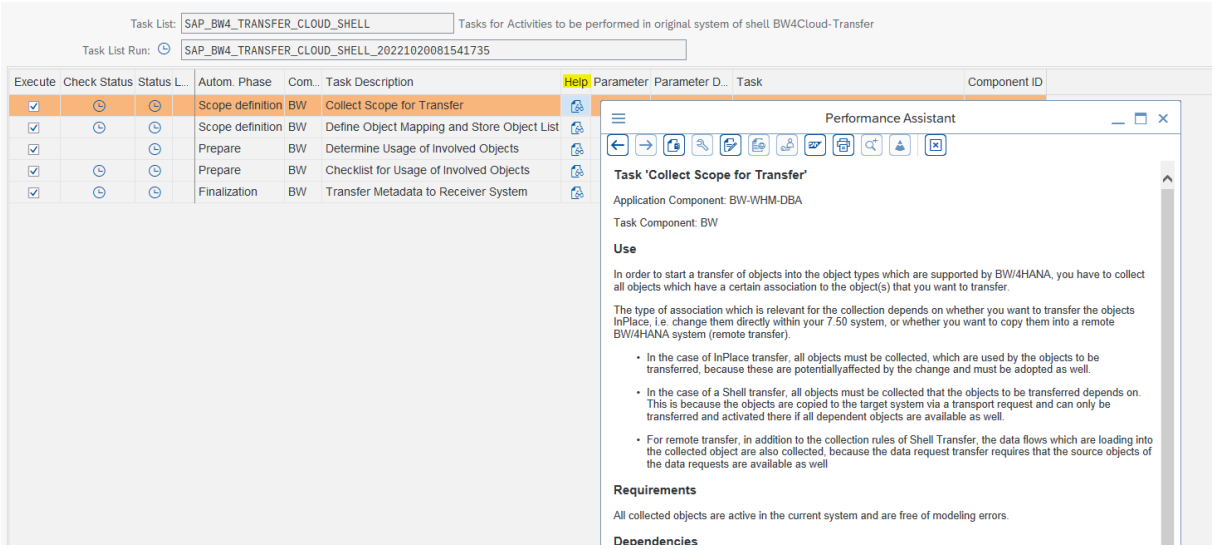


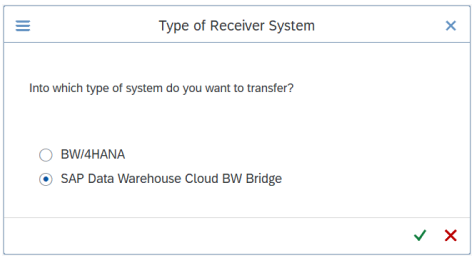
4.4.2 Perform a Scope Transfer

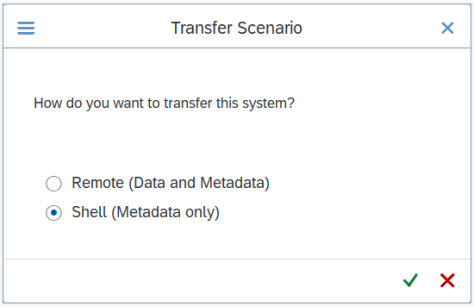
Prerequisites

You need authorization for authorization objects S_RS_B4H, S_TC, S_RFC, and S_RFC_ADM. You also need authorization to read any object selected for the transfer.

Procedure

1. Start the SAP BW bridge Transfer Cockpit using transaction RSB4HCONV, “Execute Scope Transfer”. Select “SAP Datasphere BW Bridge” as type of receiver system:





2. Select “Shell (Metadata only)” to continue.

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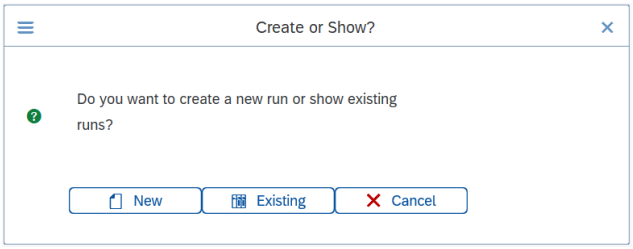
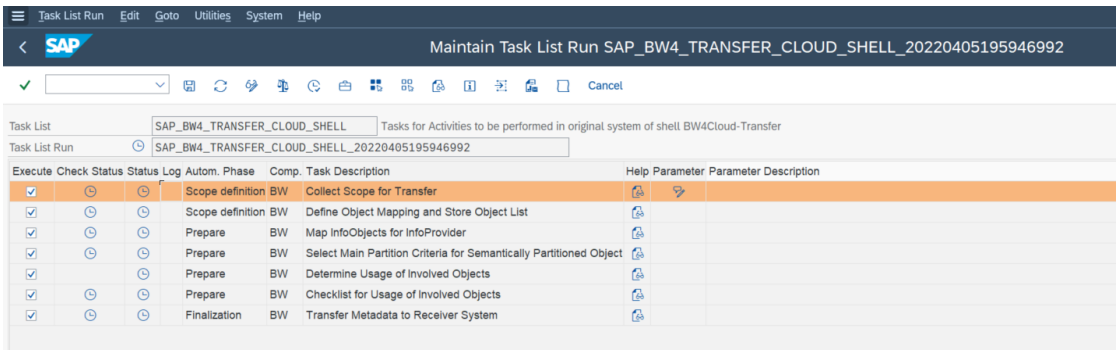


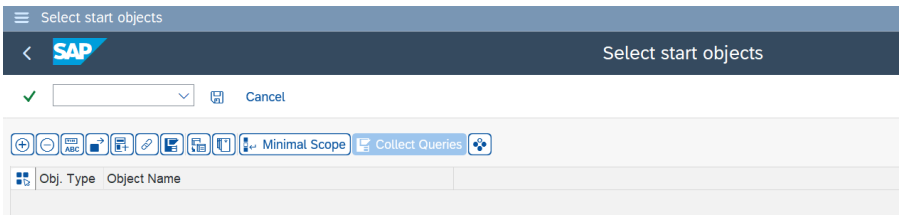
Choose whether you want to create a new conversion run or show the results of a previous transfer.

→ Tip

If you run multiple transfers, it makes sense to create variants using well thought out naming conventions. This will later help to distinguish between various transfer runs.

3. For each transfer run, you first must select the scope i.e., which objects should be transferred, by pressing the “Parameter” button.





4. Select "Add New Object" and search for the objects you want to use as a starting point for determining the transfer scope:

→ Note

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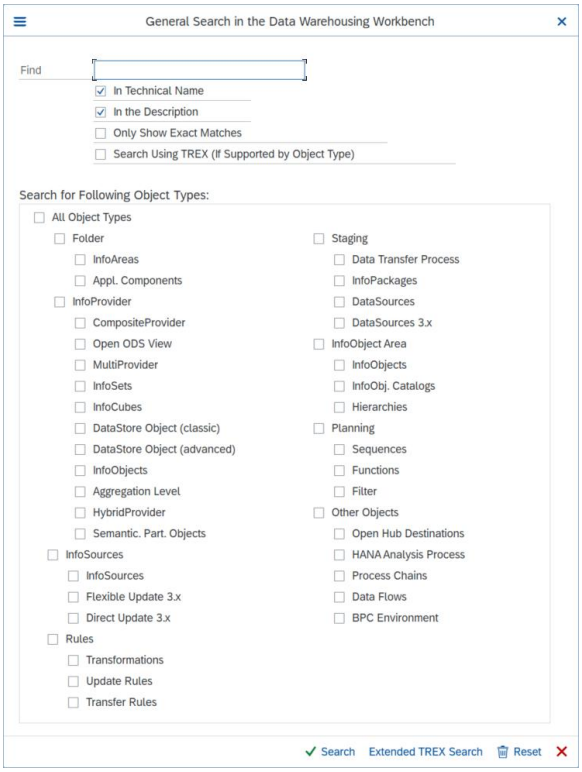
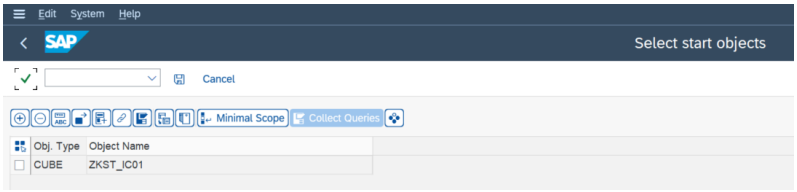
At least one object must be included in the list. Also, an object can be included in only one open task list run. Trying to process an object that is included already in another task list run, will lead to an error and you will have to finalize the other task list run first before the object can be included again in a scope selection.





Alternative way to populate the scope list:

- Manually entering objects. The system will ask for object type (TLOGO) and name.

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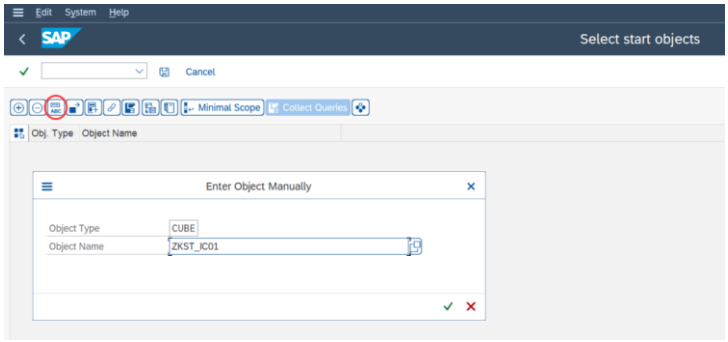
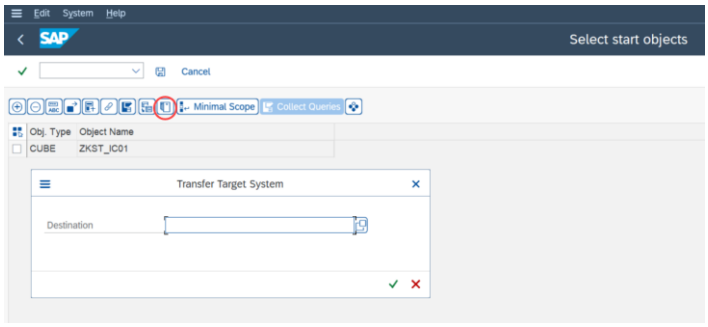


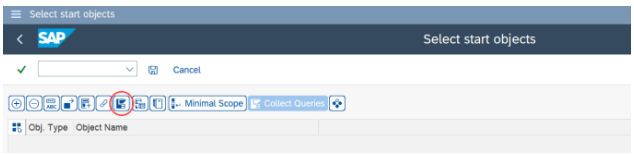
To limit the scope to the least number of objects based on dependencies, you can select “Minimal scope”. This option allows to separate the transfer of the reporting layer from the transfer of the staging layer.
You must also specify the receiver system for the shell transfer. Select or enter the RFC destination of the SAP BW bridge system, see section Connect the Sender System to SAP BW bridge:



Special features within the scope selection:

- Select “Add All Data Warehouse Objects”

In case all BW objects must be transferred to the receiver system this option enables you to select all objects without selecting them data model by data model.



- Select “Add All Queries”

In order to select all queries as a starting point for a scope selection and transfer this option can be used.

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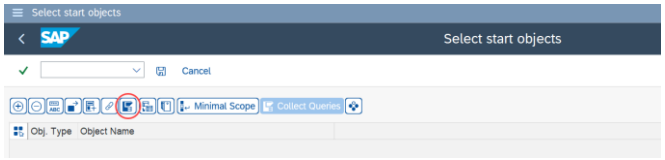
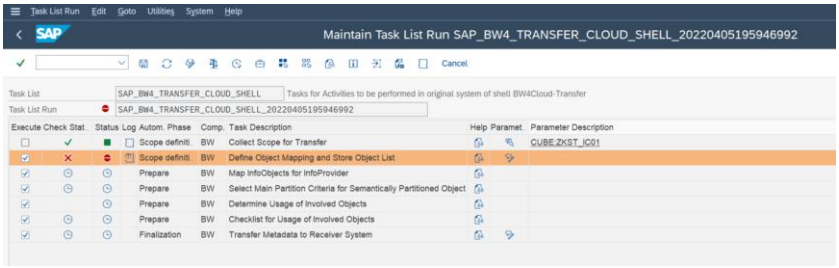


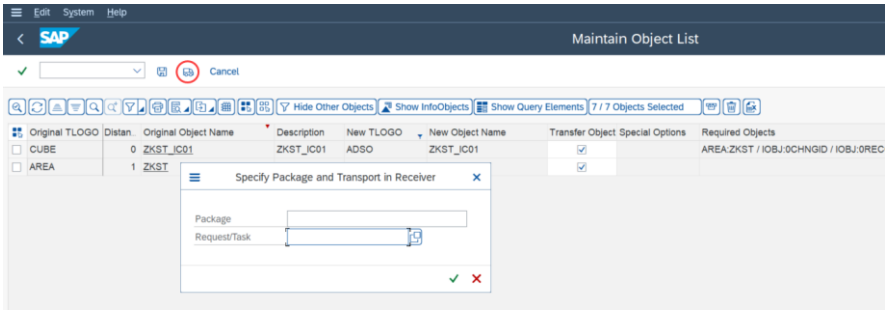
5. Save your selection and return to the task list.

6. Continue the task list run by selecting “Execute”.

   The task list will continue and stop at the next step.



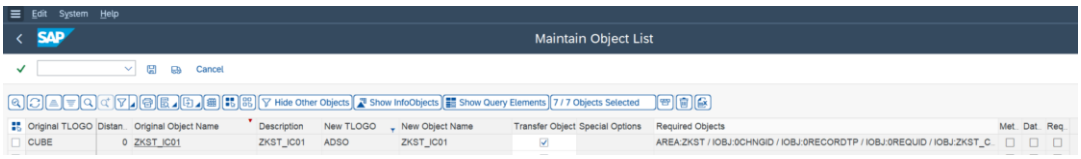
7. Assign Receiver Package and Transport



   Enter the ABAP Package and the Transport Request / Task that you have defined in section [Create Software Component(s), ABAP Package(s) and Transport Request(s)].

8. Define the object mapping.

   Example of object list and mapping: InfoCube mapped to DataStore object (advanced):



   You can select and deselect objects for the transfer using a checkbox.

   Particular cases:

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a. For classic DataStore Objects or InfoCubes that contain navigation attributes and there is at least one query, the transfer requires the introduction of a new CompositeProvider. You can specify the name of the CompositeProvider.
b. For standard DataStore Objects, you can select in the “Special Options” column whether to transfer the full change log or minimize the change log i.e., take over only requests relevant for delta processing.
c. For processes containing a Persistent Staging Area (PSA), you have the option to convert the PSA into a DataStore Object (advanced) or to ignore the PSA. You can specify the name of the DataStore Object (advanced).
d. When selecting S-API DataSources for the first time, you have the option to provide a name for the ODP Source System.
e. For steps in process chains, which are not available (i.e., obsolete) in SAP BW/4HANA, you can select in the “Special Options” column whether to delete these steps or not. The before and after steps are automatically reconnected to keep the process chain intact.

9. Create a transport for selected ABAP coding.

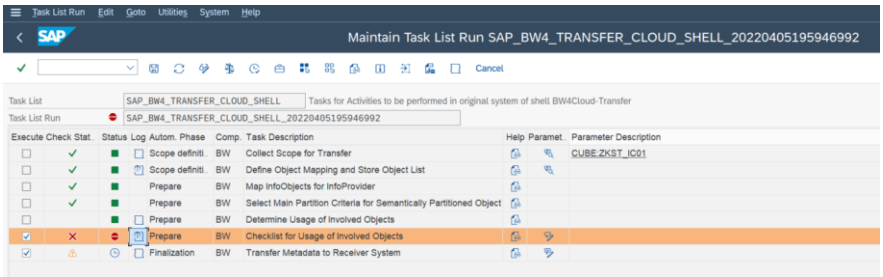
   In case the scope contains ABAP objects (based on XREF entries written during a code scan run) you have the option to assign them to a transport request in the sender. This ensures that you have a complete list of required ABAP objects that can be transferred via abapGit. Note that reports (R3TR PROG) are not supported.

10. Save your mapping and return to the task list.

11. Continue the task list run by selecting “Execute”.

    The task list will continue.

12. The task list will stop at the end of the prepare phase.



Maintain the parameters to view, adjust, and confirm usage of the involved objects in custom coding, Business Add-ins (BAdIs), or authorizations.

→ Tip

Conversion of classic to advanced DataStore Objects generates so called “compatibility

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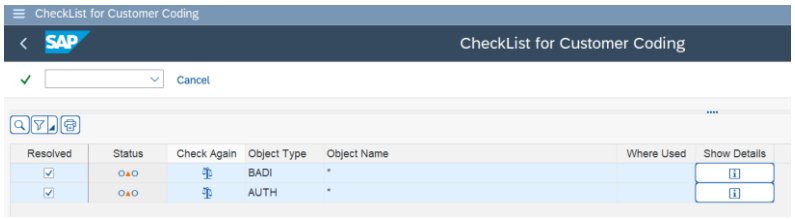
views” for the activation queue and active data table of the classic DataStore object. This will reduce the effort to adjust custom coding. SAP Note 2539205 is required.



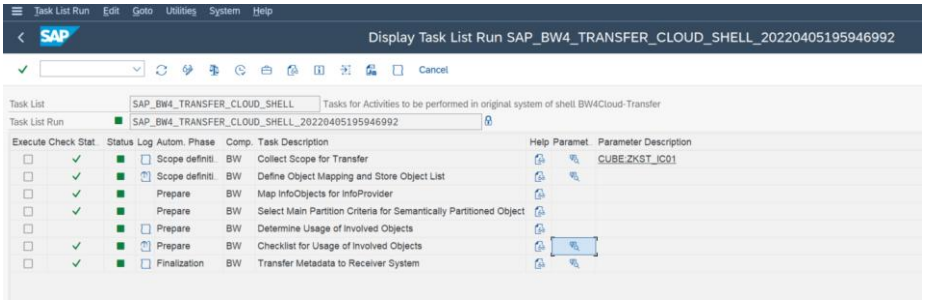
You have to check all occurrences and mark them as “resolved” in order to continue.

→ Note

If you do not resolve issues in custom code, this might lead to syntax errors and prevent the successful activation of the transferred objects.

13. Continue the task list run by selecting “Execute”.

14. The task list run will finish with the transfer of the collected metadata into the receiver cloud system via RFC call (in XML format).



You can find the description of the individual tasks in task list when pressing the button “Show Task Documentation” in the column “Help”.

Next Steps

You can monitor previous task list runs using the Task List Monitor (transaction STC02).

4.5 Custom Code Adjustments

For more information, see details related to custom code analysis and necessary adjustments when converting to SAP BW bridge, see SAP Note 2462639.

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→ Note

In a shell conversion, custom developments can be transported from SAP BW or SAP BW/4HANA to the SAP BW bridge receiver system using abapGit. This might lead to syntax errors when importing the transports (for example, if standard SAP objects are references that do not exist in SAP BW bridge). You will either have to adjust the code in the sender system (for example, comment out the code in question) or ignore the errors and adjust the code in the receiver system.

Process variants of process type ABAP are no longer supported and must be replaced by an own process type, for which a sample implementation is planned to be delivered with SAP BW bridge version 2205.

4.6 Data Transfer (Optional)

Using a Shell Conversion, neither master nor transactional data are transferred during a scope transfer. The following data transfer options exist:

- Re-load data from original sources
- Load data from sender SAP BW or SAP BW/4HANA system

For each DataStore object (advanced), you can select a different option and decide whether to load the complete historical data or only a subset.

4.7 List of Object-Specific Follow-On Activities

The list below contains important object-specific follow-on steps and where to find their documentation.

→ Note

This list contains an overview of important steps you may need to do after the conversion process, but it is not complete. You find the complete list of conversion-relevant items in the Simplification List, as explained in the overview.

Follow-on Tasks per Application Area		Reference
Security	Adapt user roles to the new authorization concept available in SAP BW bridge	Security Aspects of SAP BW bridge

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As SAP BW bridge is intended as a Staging Layer, queries must be “re-build” in SAP Datasphere. A manual import wizard SAP Datasphere is planned to support the transfer of BW Queries and relevant objects as SAP Datasphere artifacts.

Accordingly, also no analysis authorizations exist in SAP BW bridge. They must be set up in SAP Datasphere via Data Access Control (DAC).

Authorizations in SAP BW bridge do exist only on InfoArea and Source System level, see also Business Role Templates - SAP Help Portal. Therefore, an adjustment of user roles must be performed to reflect this change.

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5 Appendix

5.1 Landscape Preparation

5.1.1 General Procedure

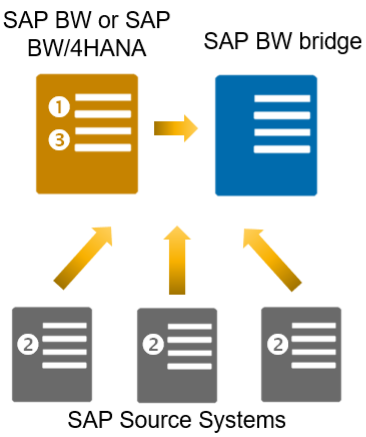
Complete landscape preparation and installation process is supported by the SAP BW Note Analyzer. For more detailed instructions on how to use the Note Analyzer, see the “User Guide for SAP BW Note Analyzer” at User Guide for SAP BW Note Analyzer.

The SAP BW Note Analyzer provides a clear and consistent process to update a particular component of SAP BW or SAP BW/4HANA without implementing support packages. The Note Analyzer is used to install all tools and updates required for a successful conversion from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge (Pre-check, Transfer Cockpit, required ODP updates).

Procedure

1. Open SAP Note 3141688.
2. Download the ZIP file attached to this SAP Note. It includes the most recent code for the SAP BW Note Analyzer as well as the content (XML files) for all installation scenarios.
3. Implement the SAP BW Note Analyzer in all development systems of your landscape.
4. Create a Remote Function Call Connection to SAP (if not available already).
5. Run SAP BW Note Analyzer in each system with the content (XML file) corresponding to the installation scenario (see following sections).
6. To complete an installation scenario, all traffic lights in the result of the Note Analyzer must be green. In case of yellow or red lights, follow the given instructions.

5.1.2 Specific Procedure for Shell Conversion



Preparation Phase

❶ Install Pre-check in sender SAP BW or SAP BW/4HANA system

❷ Install ODP updates in each SAP source system

Realization Phase

❸ Install Transfer Cockpit in sender SAP BW or SAP BW/4HANA system

Complete installation process is supported by the SAP BW Note Analyzer

Install Pre-check Tool and ODP Updates in Preparation Phase

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❶ For SAP BW systems with SAP NetWeaver releases from 7.30 to 7.51 or SAP BW/4HANA 2021, use XML SAP_BW4HANA_**Readiness_Check**_[last_update].xml attached to SAP Note 2575059.

❷ For source systems connected to SAP BW or SAP BW/4HANA, use **Source_System**_for_SAP_BW4HANA_[last_update].xml

Install Transfer Cockpit and Perform a Shell Conversion in Realization Phase

❸ For SAP BW systems with SAP NetWeaver releases from 7.30 to 7.51 acting as a sending system for a shell conversion, use SAP_BW4HANA_**Shell_Conversion_(Original_System)**_[last_update].xml

For SAP BW/4HANA 2021 acting as a sending system for a shell conversion, use SAP_BW4HANA_**Shell_Conversion_(From_BW4_System)**_[last_update].xml

5.2 Change Management

5.2.1 General Procedure

An on-premise system landscape consists of at least two, typically three tiers of systems: development, test, and production systems. SAP Datasphere, SAP BW bridge consists typically of only development and production environments. In addition, SAP BW bridge does not allow to create metadata objects in a productive system. Therefore, the following process is recommended.

5.2.2 Change Management for Shell Conversion

Before performing the Shell Conversion, the relevant systems that will serve as sender systems have to be identified. Typically, this is the on-premise development system, but in exceptional cases, application specific developments might have been performed in the quality system or even directly in the production system, therefore these might also serve as sender systems.

The Shell Conversion begins by running the task list in the sender SAP BW system. Objects that are part of the scope selection are transferred via RFC to SAP BW bridge, created (and if necessary and possible, converted to supported objects), and recorded on a transport request in the receiver system. This approach covers also coding used in transformations. Other custom code like classes or function modules will have to be transferred separately using abapGit.

After releasing those transport requests, the SAP BW bridge development system can be used to deploy these objects to the SAP BW bridge production system. These transports are then based on git-enabled CTS (gCTS).

Repeat the above process until all scenarios you have identified are transferred from SAP BW or SAP BW/4HANA to SAP Datasphere, SAP BW bridge.

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5.3 Additional Tools

This chapter describes programs that can be used in certain situations, for example, to reset a task list run.

5.3.1 Reset Remote Task List Run

Program	RS_B4HANA_TRANSFER_REM_RESET
Scope	A task list run
Purpose	The program remotely deletes in the receiver system the generated objects and the data transfer control entries and resets the METADATA flags.
Conditions	The SAP BW bridge Transfer Cockpit run must still be active (which is always the case unless another sender has started transfer into the same receiver).

5.3.2 Terminate transfer mode

Program	RS_B4HANA_TRANSFER_REM_END
Scope	A finalized scope transfer
Purpose	During the SAP BW bridge Shell Conversion, the SAP BW bridge system is in a transfer mode. This report is used to terminate the transfer mode at the end of the Shell Conversion.
Conditions	Scope transfer has been finished in receiver system.

5.3.3 Check and repair inconsistencies

Task list RS_B4H_CHK_CLEANUP provides essential consistency checks (Check and repair inconsistencies, Check and delete obsolete programs, Cleanup RSOOBJXREF).

5.4 Data Storage Security

During a shell conversion, the SAP BW bridge Transfer Cockpit does not create or store any sensitive data. Only metadata is transferred from the SAP BW or SAP BW/4HANA system to the SAP BW bridge tenant.

5.5 Traces and Log Files

SAP BW bridge Transfer Cockpit does not create any trace files. However, it writes information into the SAP application log for each activity in the task list run. These logs show which user executed a given activity at what time, and for which systems.

You can access the application log directly (transaction SLG1), from the task list framework (transaction STC02), or from the process monitor of the SAP BW bridge Transfer Cockpit.

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5.6 SAP Product Support

In case of any issues with the SAP BW bridge Transfer Cockpit or related conversion processes, contact SAP Product Support on Product Support.

If you create an incident report, use the following components:

Shell Conversion: **BW-B4H-CNV-SHL**

5.7 New Features

We have documented new developments in the What's New Section for SAP BW bridge in SAP Help Portal:

What's New in SAP Datasphere, SAP BW bridge - SAP Help Portal

5.8 Online Documentation

Related information in online documentation:

SAP Datasphere Documentation:
SAP Datasphere

SAP BW bridge Documentation:
SAP Datasphere, SAP BW bridge

SAP Product Support:
Product Support

5.9 Additional Information

Please check the following helpful links (also applicable to SAP BW bridge Conversion).

Note implementation:
Note implementation for BW/4 conversion - SAP NetWeaver Business Warehouse - Community Wiki

Collection behavior:
BW/4HANA conversion: Scope Collection behavior - SAP NetWeaver Business Warehouse - Community Wiki

0LOGSYS and 0SOURCESYSTEM:

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[Aspects for Infoobject 0LOGSYS and/or 0SOURSYSTEM - SAP NetWeaver Business Warehouse - Community Wiki]

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