SAP BW Modernization Webinar Series Session 6 – Part 2

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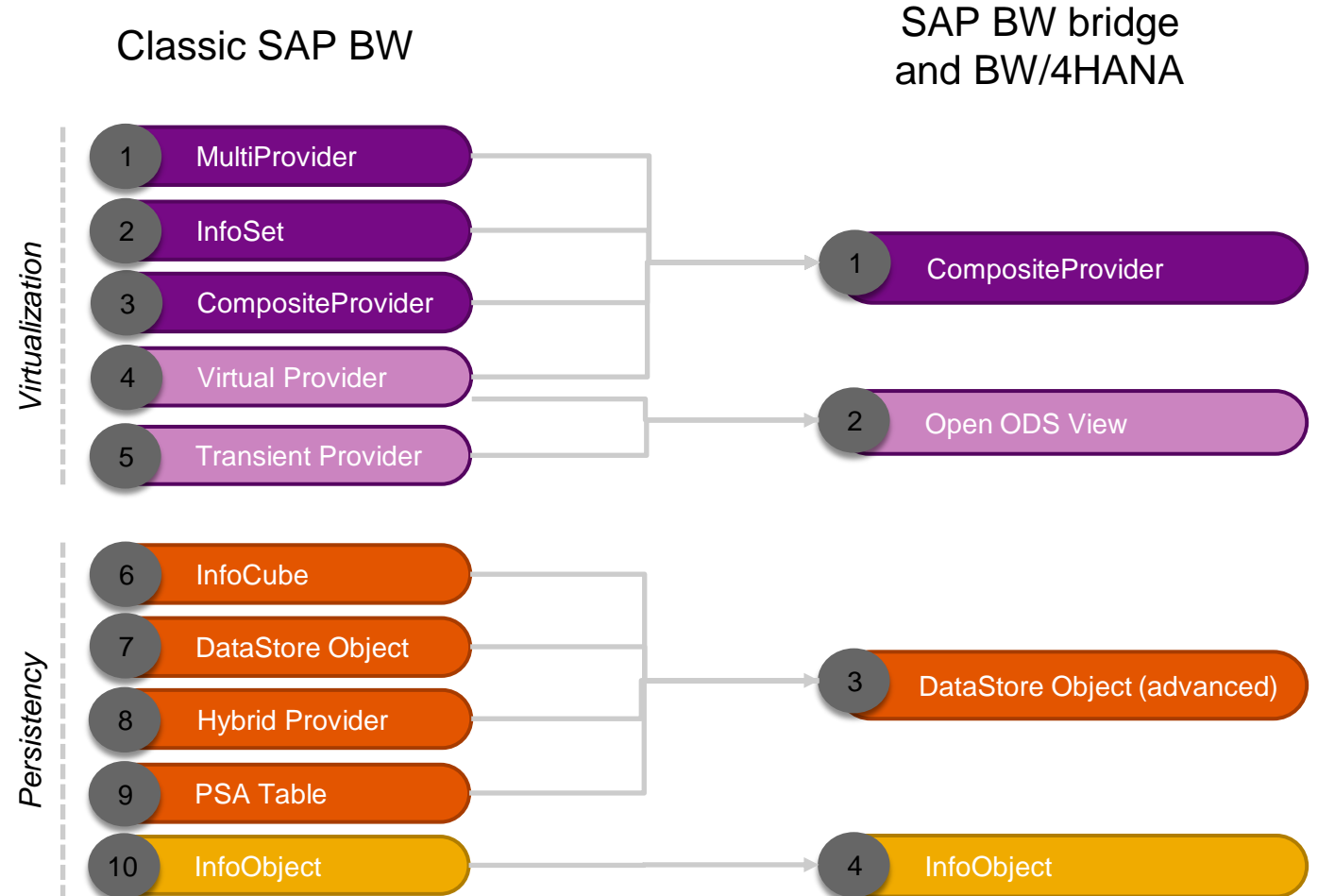
SAP Datasphere, SAP BW bridge
Simplified Data Modelling

- Simplification of modelling object types (*)

- No complex data structures (extended star schema)

- Field or InfoObject based modelling

- Greater control of data persistency and virtualization

Classic SAP BW

SAP BW bridge
and BW/4HANA

Virtualization

1	MultiProvider
2	InfoSet
3	CompositeProvider
4	Virtual Provider
5	Transient Provider

| 1 | CompositeProvider |
| 2 | Open ODS View |

Persistency

6	InfoCube
7	DataStore Object
8	Hybrid Provider
9	PSA Table
10	InfoObject

| 3 | DataStore Object (advanced) |
| 4 | InfoObject |

* See SAP Note 3154420 - *Simplification List for SAP Datasphere, SAP BW Bridge* for details

SAP Datasphere, SAP BW bridge
Transfer tooling enablement

SAP note 3141688 is the central note for conversions to BW bridge and describes detailed information regarding the conversion paths. It contains a .zip file with .xml files for each conversion path.

For the enablement of the transfer tooling to BW bridge (for Shell and Remote Conversions), it is necessary to identify and upload the corresponding .xml files which contain the required SAP notes to be implemented. There are many notes involved and SAP BW Note Analyzer can be used to support those notes implementation/updates in an automated way. The Note Analyzer report is also included in the .zip file.

The following files are the relevant ones for the enablement and usage of the Shell and Remote Conversions.

Name	
SAP_BW4HANA_Conversion_SAP_BW_750_2023-07-31.xml	
SAP_BW4HANA_Pre_Checks_2023-07-31.xml	
SAP_BW4HANA_Remote_Conversion_(From_BW4_System)_2023-07-31.xml	
SAP_BW4HANA_Remote_Conversion_(Original_System)_2023-07-31.xml	
SAP_BW4HANA_Shell_Conversion_(From_BW4_System)_2023-07-31.xml	
SAP_BW4HANA_Shell_Conversion_(Original_System)_2023-07-31.xml	
Source_System_for_SAP_BW4HANA_2023-07-31.xml	
Z_SAP_BW_NOTE_ANALYZER.txt	

SAP Datasphere, SAP BW bridge
Conversion paths – Note Analyzer

.xml files to be imported:

Name	
SAP_BW4HANA_Conversion_SAP_BW_750_2023-07-31.xml	
SAP_BW4HANA_Pre_Checks_2023-07-31.xml	
SAP_BW4HANA_Remote_Conversion_(From_BW4_System)_2023-07-31.xml	
SAP_BW4HANA_Remote_Conversion_(Original_System)_2023-07-31.xml	
SAP_BW4HANA_Shell_Conversion_(From_BW4_System)_2023-07-31.xml	
SAP_BW4HANA_Shell_Conversion_(Original_System)_2023-07-31.xml	
Source_System_for_SAP_BW4HANA_2023-07-31.xml	
Z_SAP_BW_NOTE_ANALYZER.txt	

to be used for:

✓ Remote Conversion
the sender system is on BW/4HANA

✓ Remote Conversion
the sender system is on BW 7.x

✓ Shell Conversion
the sender system is on BW/4HANA

✓ Shell Conversion
the sender system is on BW 7.x

✓ Shell and Remote Conversions
all Source Systems connected to the sender system

SAP Datasphere, SAP BW bridge

Shell Conversion – Metadata transfer

Option 1:
PSA-ADSO replacement

Option 2:
Skip PSA

Sender System (e.g. SAP BW 7.5)		
InfoCube	DataStore (Advanced)	DataStore (Advanced)
DataStore (Classic)	DataStore (Advanced)	DataStore (Advanced)
PSA	DataStore (Advanced) *	
DataSource	DataSource	DataSource

Sender System (e.g. SAP BW 7.5)   Receiver System (SAP BW bridge)
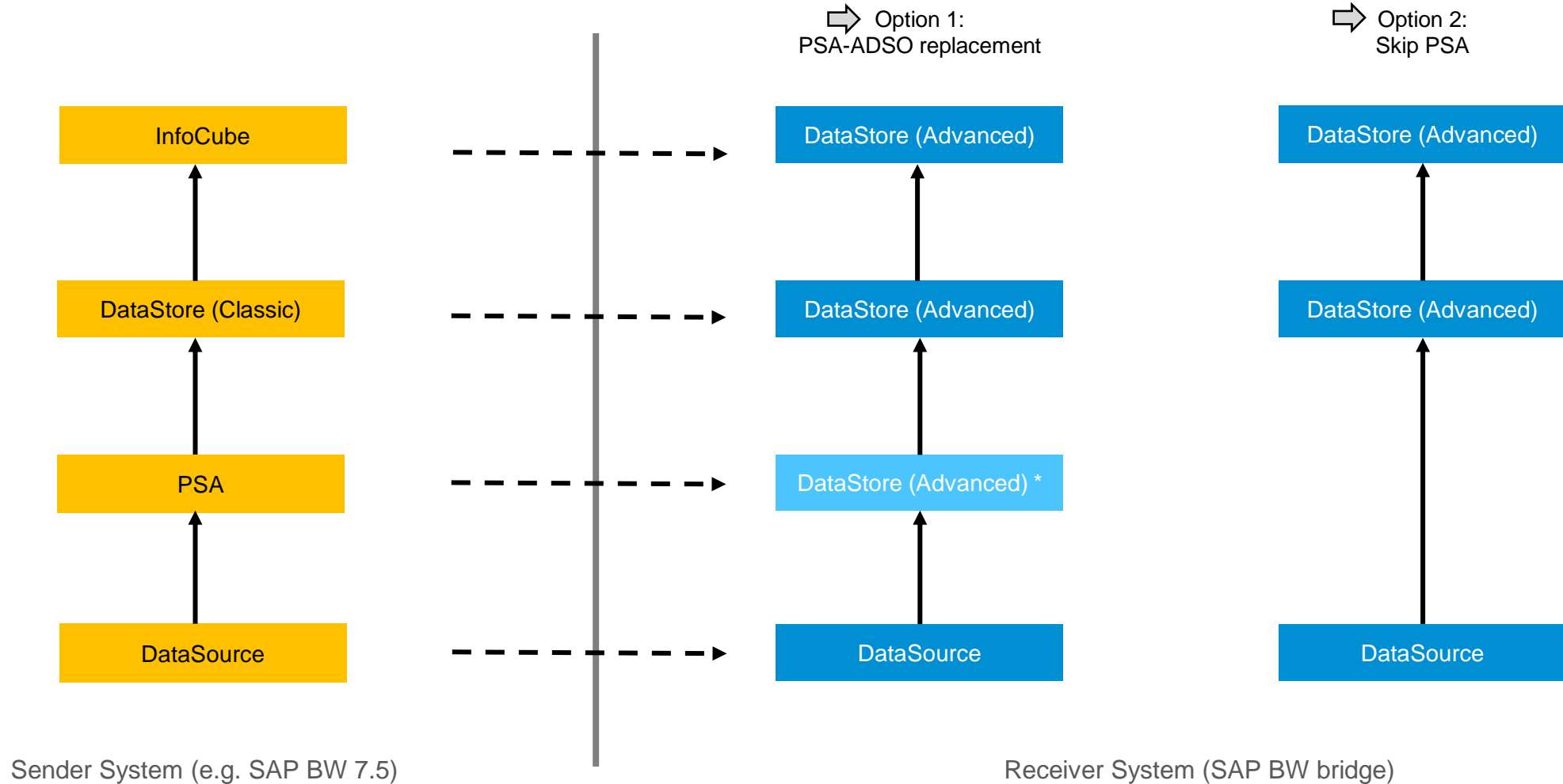
 * Whether the PSA needs to replaced by and ADSO or can be skipped, it depends on certain conditions – please see SAP Note 2949412.

** The Metadata transfer follows the same logic for both Shell and Remote Conversions. The business data automated transfer is supported by the Remote Conversion.

SAP Datasphere, SAP BW bridge
Shell Conversion Task Lists

SAP_BW4_TRANSFER_CHECK_CLOUD_SHELL

Maintain Task List Run SAP_BW4_TRANSFER_CHECK_CLOUD_SHL_20231020144308								

Task List   SAP_BW4_TRANSFER_CHECK_CLOUD_SHL Collect and Check BW objects whether they are compatible to BW Bridge
Task List Run   🕐 SAP_BW4_TRANSFER_CHECK_CLOUD_SHL_20231020144308453

Ex.	C.	St.	Lo.	Autom. Phase	Comp.	Task Description	H.	Pa.	Parameter Description
☑	🕐	🕐		Scope definition	BW	Collect Scope for Transfer	📄	📝	
☑	🕐	🕐		Scope definition	BW	Define Object Mapping and Store Object List	📄		

⇨ Task list to validate and check the objects in scope to be transferred, in terms of consistency, dependencies and SAP BW bridge readiness

SAP_BW4_TRANSFER_CLOUD_SHELL

Maintain Task List Run SAP_BW4_TRANSFER_CLOUD_SHELL_20231023113331392								

Task List   SAP_BW4_TRANSFER_CLOUD_SHELL   Tasks for Activities to be performed in original system of shell BW4Cloud–Transfer
Task List Run   🕐 SAP_BW4_TRANSFER_CLOUD_SHELL_20231023113331392

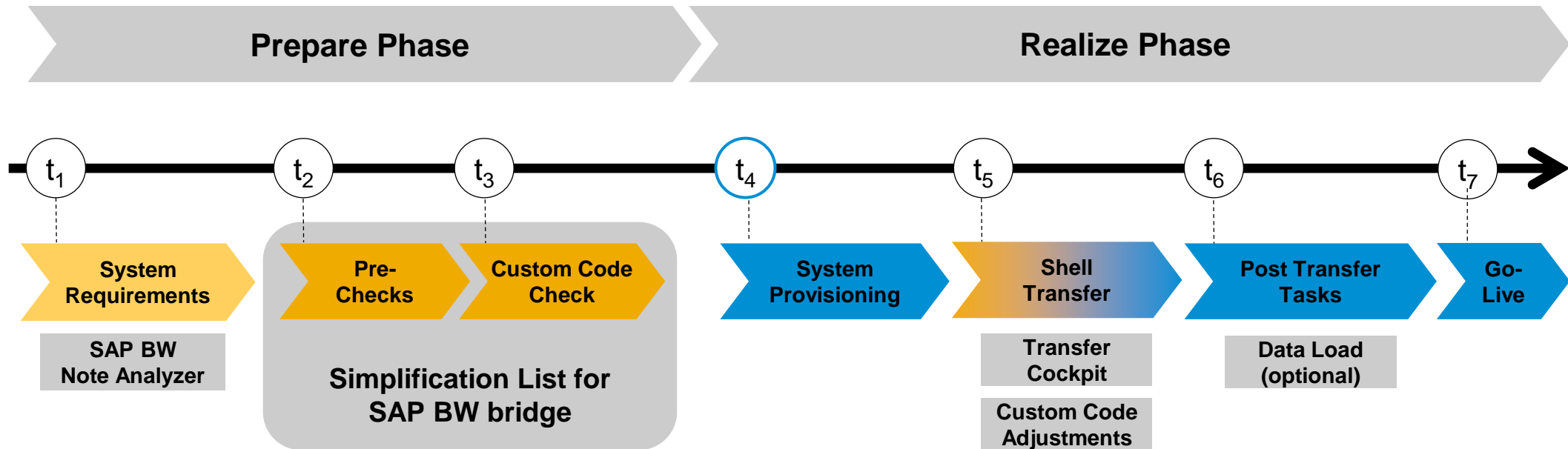| Ex.	C.	St.	Lo.	Autom. Phase	Comp.	Task Description	H.	Pa.	Parameter Description
☑	🕐	🕐		Scope definition	BW	Collect Scope for Transfer	📄	📝	
☑	🕐	🕐		Scope definition	BW	Define Object Mapping and Store Object List	📄		
☑	🕐	🕐		Prepare	BW	Map InfoObjects for InfoProvider	📄		
☑	🕐	🕐		Prepare	BW	Select Main Partition Criteria for Semantically Partitioned Object	📄		
☑		🕐		Prepare	BW	Determine Usage of Involved Objects	📄		
☑	🕐	🕐		Prepare	BW	Checklist for Usage of Involved Objects	📄		
☑	🕐	🕐		Finalization	BW	Transfer Metadata to Receiver System	📄		

⇨ Task list to collect the objects (*) in scope (only metadata) and transfer them to SAP BW bridge. During the transfer, the objects conversion takes place.

* Queries are collected by the task list and can be imported as entities into Datasphere (Model Transfer). See Entity Import & Model transfer for single query – SAP BW bridge
* ABAP code is migrated via ABAP Git

SAP Datasphere, SAP BW bridge

Shell Conversion Basic Sequence

Prepare Phase

Realize Phase

t_1 · t_2 · t_3 · t_4 · t_5 · t_6 · t_7

System Requirements

Pre-Checks

Custom Code Check

System Provisioning

Shell Transfer

Post Transfer Tasks

Go-Live

SAP BW Note Analyzer

Simplification List for SAP BW bridge

Transfer Cockpit

Custom Code Adjustments

Data Load (optional)

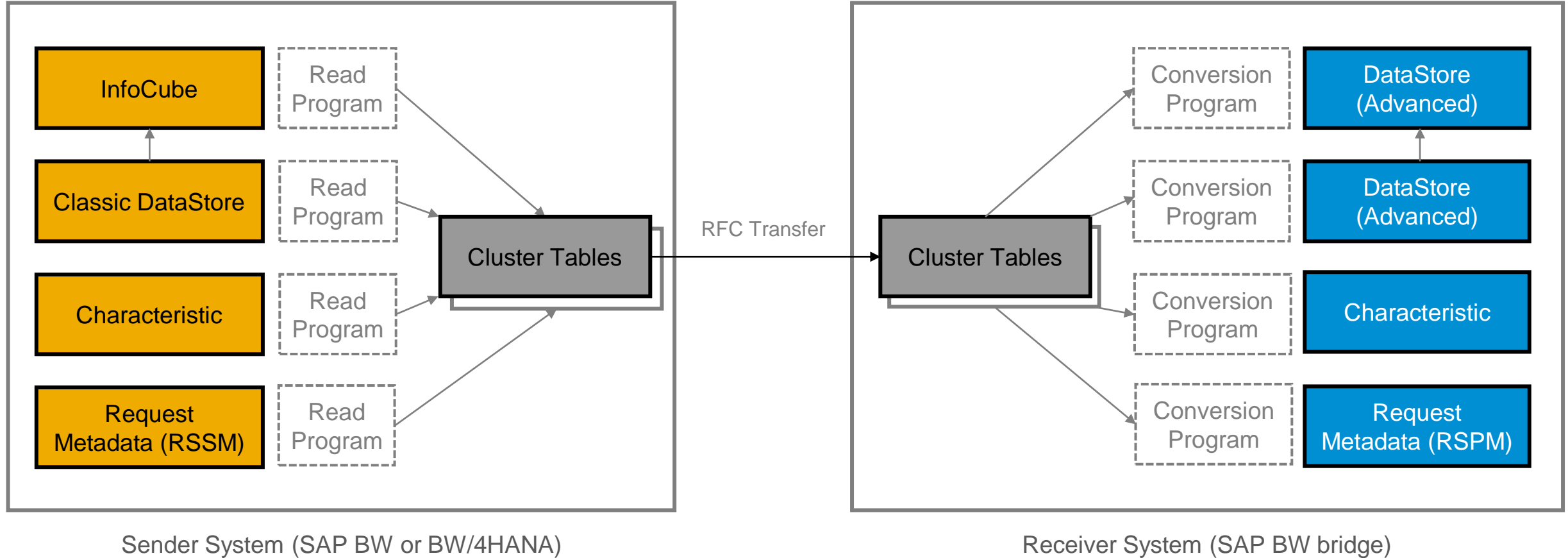**SAP BW or SAP BW/4HANA**

SAP Datasphere, SAP BW bridge

t_4 Point in time when SAP Datasphere license is required
(including capacity units for SAP BW bridge)
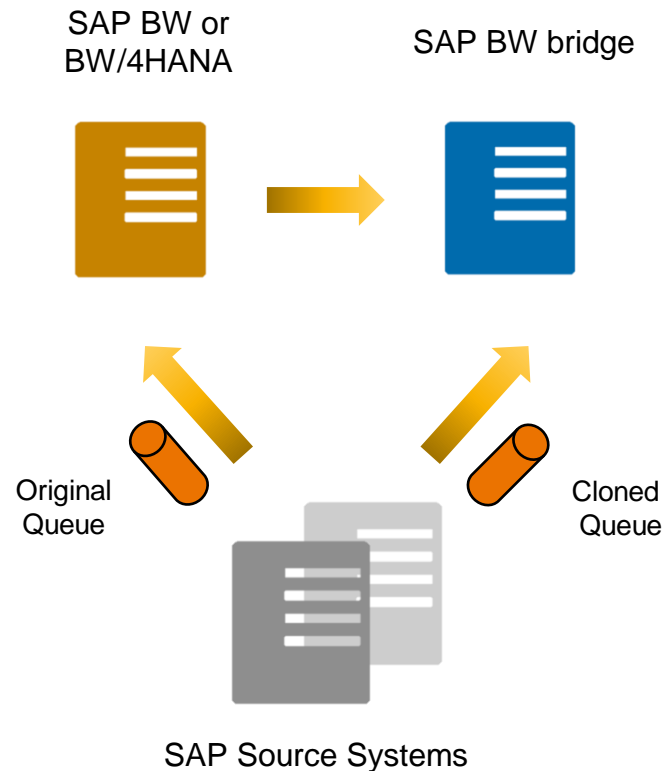
Shell Conversion Guide for SAP Datasphere, BW bridge

SAP Datasphere, SAP BW bridge
Remote Conversion – data transfer logic

Sender System (SAP BW or BW/4HANA)

Receiver System (SAP BW bridge)

SAP Datasphere, SAP BW bridge

Remote Conversion – delta queue cloning and synchronization

SAP BW or BW/4HANA

SAP BW bridge

Original Queue

Cloned Queue

SAP Source Systems

Scope

- Enable the SAP BW bridge system to use same source systems (remote connection)
- Prepare to easily bring the new SAP BW bridge system in a consistent state regarding data loading
- Minimal downtime of original SAP BW or SAP BW/4HANA system
- Parallel operation (temporarily) of both systems

Key Features of Remote Conversion

- Automatic delta queue cloning
- Checks for consistent delta states
- Automatic synchronization of both delta queues
- No downtime in productive source systems

SAP Datasphere, SAP BW bridge
Remote Conversion Task Lists

SAP_BW4_TRANSFER_CHECK_CLOUD_RMT

⇨ Task list to validate and check the objects in scope to be transferred, in terms of consistency, dependencies and SAP BW bridge readiness (*)

SAP_BW4_TRANSFER_CLOUD_REMOTE

⇨ Task list to collect the objects in scope (metadata + data) and transfer them to SAP BW bridge. During the transfer, the objects and data conversion take place.

* The scope collection for the Remote Conversion is less flexible than the Shel Conversion one because of the business data and request mapping associations.

SAP Datasphere, SAP BW bridge
Remote Conversion Cockpit and Datasphere integration
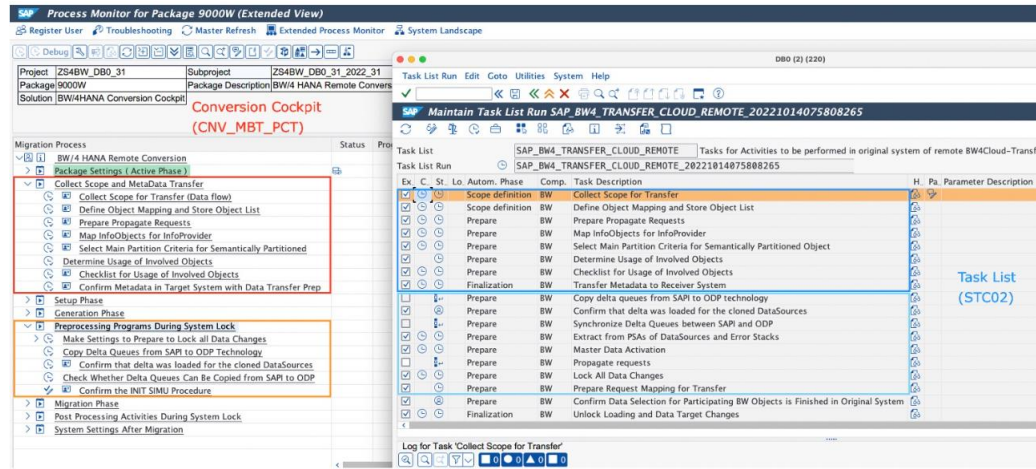
The Conversion Cockpit contains the sequence of all activities considering the end-to-end transfer process and can be accessed via the transaction CNV_MBT_PCT.

It is the main control interface and central point of access of the Remote Conversion. Differently from the Shell Conversion, which process is fully controlled by the Task List (transaction STC02). The integration between the Task List and the Conversion Cockpit ensures there is a direct link between the metadata and the business data (collection and transfer).
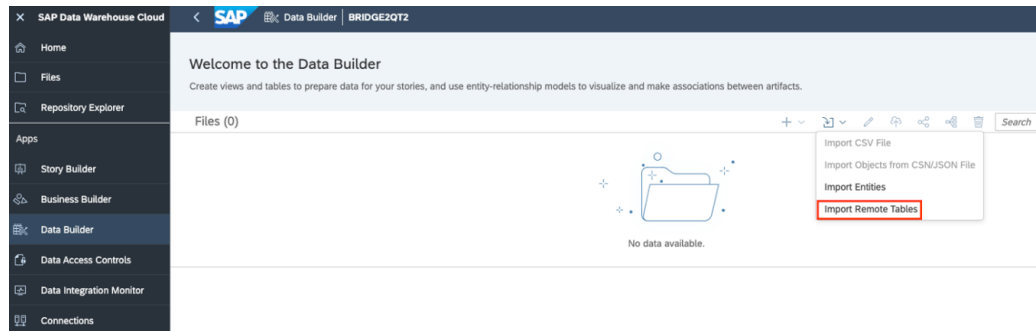
For the tables which were in the scope and had their corresponding data transferred to BW bridge through the Remote Conversion, they can now be imported as remote tables via the SAP Datasphere Data Builder.

SAP Datasphere, SAP BW bridge
Remote Conversion Basic Sequence

Prepare Phase

Realize Phase

t_1 t_2 t_3 t_4 t_5 t_6 t_7

System Requirements

Pre-Checks

Custom Code Check

System Provisioning

Remote Transfer

Post Transfer Tasks

Go-Live

SAP BW Note Analyzer

Simplification List for SAP BW bridge

DMIS add-on (Sender)

Transfer Cockpit

Custom Code Adjustments

SAP BW or SAP BW/4HANA

SAP Datasphere, SAP BW bridge

t_4 Point in time when SAP Datasphere license is required (including capacity units for SAP BW bridge)

Remote Conversion Runbook for SAP Datasphere, BW bridge

SAP Datasphere, SAP BW bridge
Conversion Paths

	Shell Conversion	Remote Conversion
Supported releases	From BW 7.3 to 7.5 on HANA or any DB, and from BW/4HANA 2021.	From BW 7.3 to 7.5 on HANA or any DB, and from BW/4HANA 2021.
Add-ons	Not required.	Requires DMIS.
System provisioning	Datasphere, BW bridge system provisioning required (receiver system).	Datasphere, BW bridge system provisioning required (receiver system).
Metadata transfer	Supported (Transfer Cockpit).	Supported (Transfer Cockpit).
Business data transfer	Not supported. Data loads are required after the Metadata transfer.	Supported (Conversion Cockpit). No data loads required.
Delta queues	Should be reinitialized after the Metadata transfer.	Automatically cloned and synchronized. No initialization required.
Complexity	Lower from transfer perspective as it involves only the Metadata.	Higher as it involves Metadata + Business data transfer.
Consolidation scenarios	Supported (may require a combination of Shell and Remote).	Supported (may require a combination of Shell and Remote).
Carve-out	Supported for Metadata.	Supported for Metadata (less flexible) and Business data (filters).

SAP Datasphere, SAP BW bridge
Conversion paths – decision factors

Shell Conversion

- Automated Metadata transfer
- More flexible scope collection
- Accelerated greenfield approach
- No add-on required
- Data reloads and inits required

Remote Conversion

- Automated Metadata + data transfer
- Automated delta queues clone
- Higher complexity
- DMIS add-on required
- Parallel systems operation option
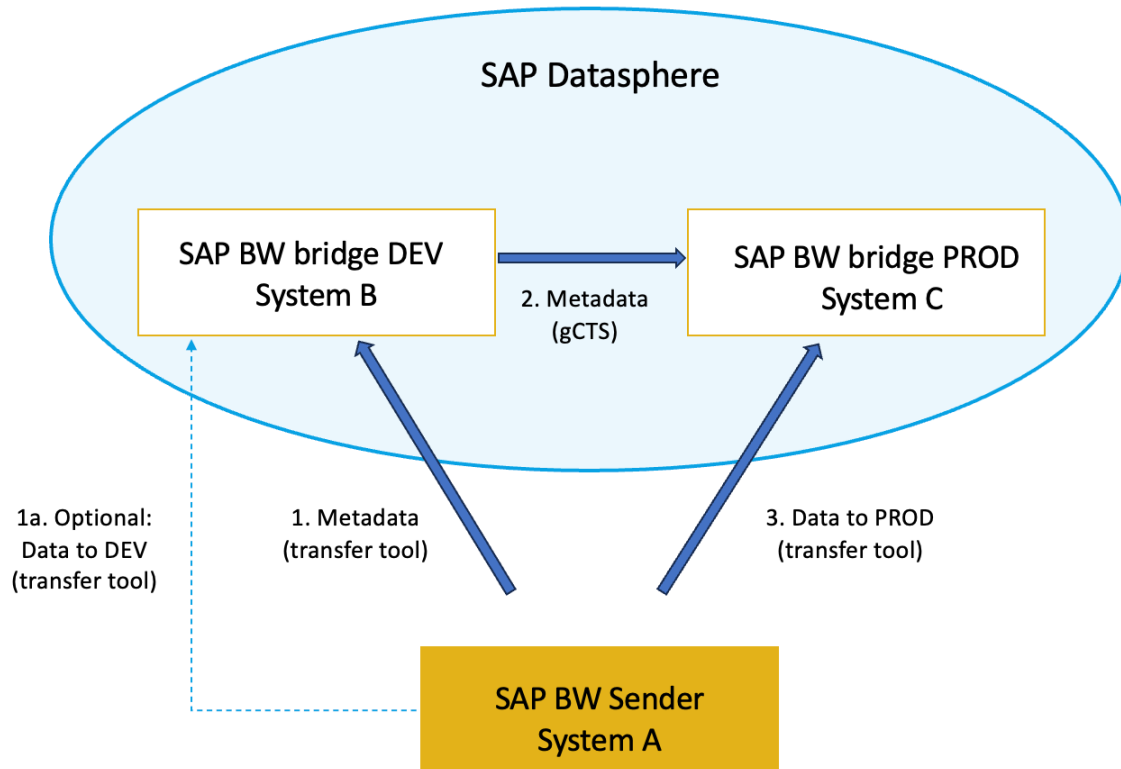
BW or BW/4HANA → **BW bridge**

Decision Factors

✓ Data volume

✓ Number of objects

✓ Number of BW systems

✓ Number of Source systems

✓ Source systems dependencies

✓ Readiness Check results

✓ Timelines and resources

SAP Datasphere, SAP BW bridge
Metadata and Business data transfer to a 2-tier landscape

SAP Datasphere

SAP BW bridge DEV
System B

2. Metadata
(gCTS)

SAP BW bridge PROD
System C

1a. Optional:
Data to DEV
(transfer tool)

1. Metadata
(transfer tool)

3. Data to PROD
(transfer tool)

SAP BW Sender
System A

Preparation tasks in System B

- Create a Software Component
- Clone the Software Component into System B
- Create a development package
- Create the transport request
- Add the migration user
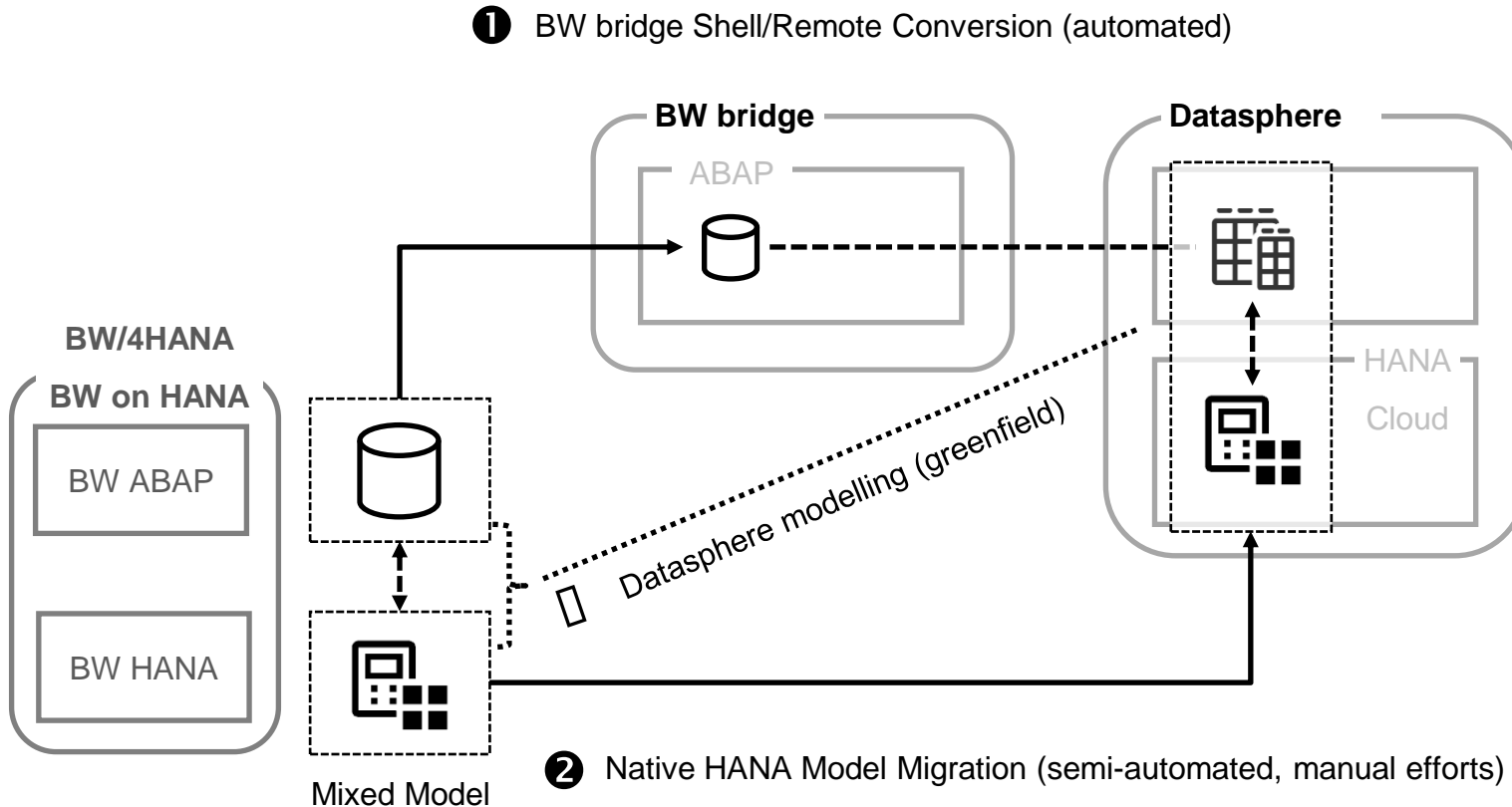- Set Communication Arrangements

Preparation tasks the System C

- Clone the Software Component into System C

Data transfer

1. Transfer the metadata from System A to System B
   - Transfer the data from System A to System B (optional)
2. Transport the metadata from System B to System C via (gCTS)
   - Release all tasks of the transport request in System B
   - Pull the Software Component into System C
3. Transfer the data from System A to System C
4. Import as Remote Tables into Datasphere

For details, see the blogs:

How to Transport in an SAP BW Bridge System Landscape

SAP Datasphere, BW bridge: How to transfer data from SAP BW or BW/4HANA to a 2-tier tenant landscape using the Remote Conversion

SAP Datasphere, SAP BW bridge
Mixed Models - migration options and modeling

❶ BW bridge Shell/Remote Conversion (automated)

BW bridge

ABAP

Datasphere

HANA Cloud

BW/4HANA

BW on HANA

BW ABAP

BW HANA

Datasphere modelling (greenfield)

Mixed Model

❷ Native HANA Model Migration (semi-automated, manual efforts)

1. Automated transfer of BW objects to BW bridge via the transfer tooling (*)
   - Shell Conversion
   - Remote Conversion

2. Separate semi-automated migration of native HANA models and deployment to HANA Cloud
   - Migration of HANA Repository models to HDI with XS Migration Assistant
   - Deployment of (on premise) HDI models to Datasphere HANA Cloud instance via Business Application Studio or Cloud Foundry

3. New implementation of the BW-HANA data models via Datasphere modelling (greenfield)
   - Data Builder, Analytical Model, Replication Flow

* BW InfoProviders consuming directly from native HANA models can't be transferred to BW bridge and need to be manually implemented/modelled in Datasphere.