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Compatibility Views and SAP Landscape Transformation Replication Server



Typographic Conventions

Type Style	Description
<i>Example</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Textual cross-references to other documents.
Example	Emphasized words or expressions.
EXAMPLE	Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
Example	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE	Keys on the keyboard, for example, F2 or ENTER.

Document History

Version	Date	Change
1.0	2017-09-18	Initial Version
1.1	2017-11-09	Updated version to include note for Operational Data Provisioning (ODP) framework.
1.2	2018-08-01	Updated version to reflect information regarding SAP S/4HANA 1809 and higher.
1.3	2019-01-30	New chapter Synchronize Compatibility View Logic
1.4	2020-09-30	Updated version to include source systems using SAP S/4HANA 2020 and higher
1.5	2021-03-31	Updated version to include additional information about using the Data Provisioning feature to analyze the compatibility view logic.

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1 Introduction

1.1 SAP S/4HANA and Core Data Services

To take advantage of SAP HANA for application development, SAP introduced a new data modeling infrastructure known as core data services. With CDS, data models are defined and consumed on the database rather than on the application server. CDS also offers capabilities beyond the traditional data modeling tools, including support for conceptual modeling and relationship definitions, built-in functions, and extensions.

SAP S/4HANA takes advantage of the new capabilities provided by core data services, for example by using compatibility views, which are a variant of CDS views (a CDS view is a view of the ABAP Dictionary which is represented by the CDS entity.)

1.2 Compatibility Views

If a compatibility view is in place for a table, requests to access that table are redirected by the system to the compatibility view. Instead of reading directly from the table, the system reads data from the compatibility view. Whenever an application uses this table, data is not written to the table or to the compatibility view, but to the newly introduced tables which are part of the compatibility view.

Example

The following graphic depicts table COEP in an SAP S/4HANA system. In the SAP S/4HANA system, the table is redirected to the compatibility view V_COEP. In this example, if an application wants to use this table COEP, then table or the compatibility view V_COEP is not changed, but rather one of the underlying tables which are part of the compatibility view, for example ACDOCA.

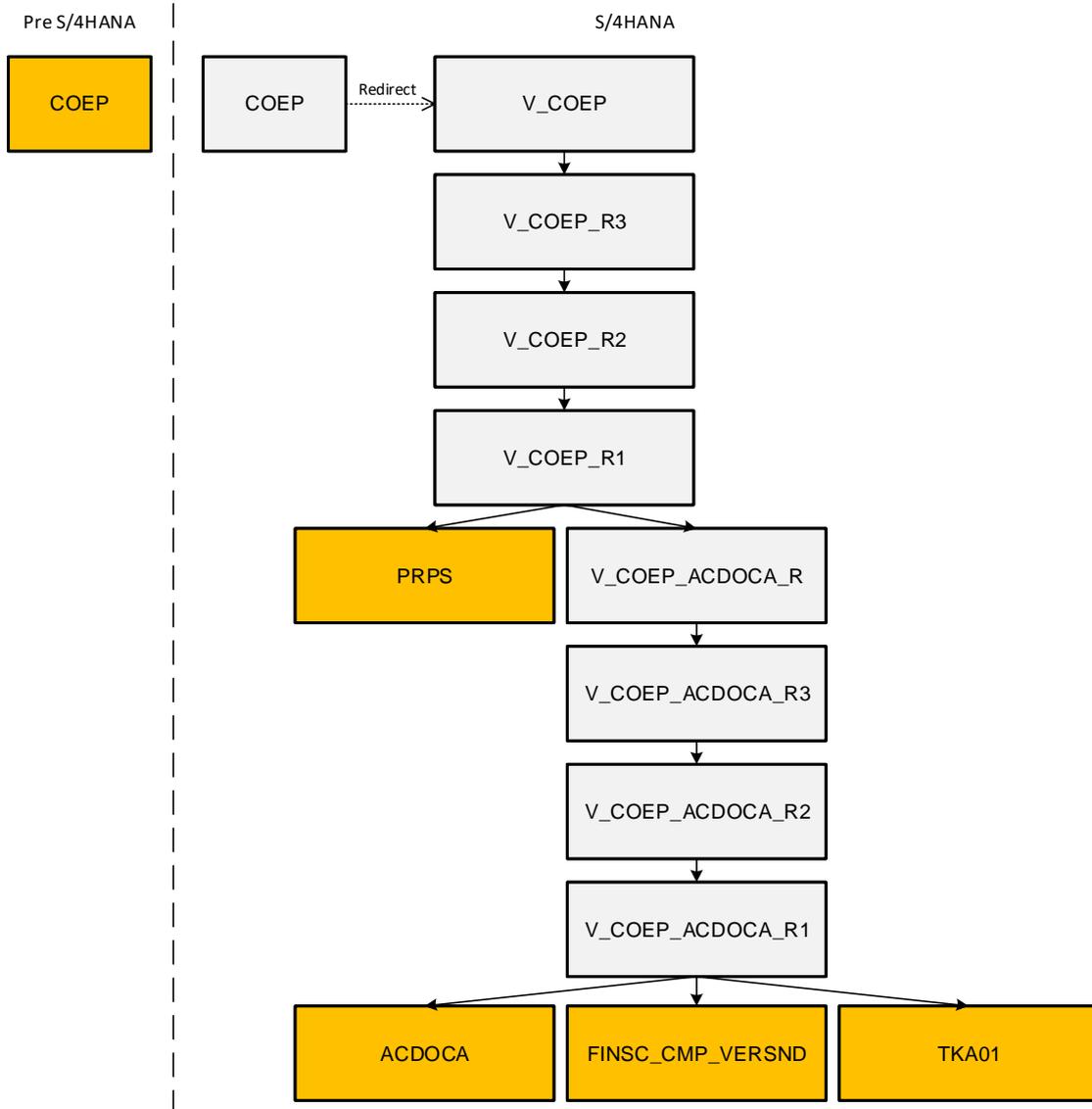


Figure 1 - Table COEP and Compatibility View V_COEP in SAP S/4HANA

2 Are Compatibility Views Relevant for my Replication Project?

When replicating data using SAP Landscape Transformation Replication Server, there are certain situations where compatibility views will become relevant for your project:

- You are using SAP Landscape Transformation Replication Server with a newly installed SAP S/4HANA system. Since certain tables in the SAP S/4HANA system use compatibility views, additional tables are now relevant for the replication process.
- You are using SAP Landscape Transformation Replication Server with a system that has been upgraded to SAP S/4HANA. After the upgrade, certain tables in the SAP S/4HANA system will use compatibility views. Replicating data from these tables will not work after the upgrade; additional tables are now relevant for the replication process.

2.1 Action Taken by SAP LT Replication Server

If compatibility views are relevant for your project, the action taken by SAP LT Replication Server depends on the SAP LT Replication Server versions used.

2.2 Situation 1

Source System	SAP LT Replication Server System
<ul style="list-style-type: none">• DMIS 2020 (SP00 or higher)• S/4HANA 2020 SP00 or higher	<ul style="list-style-type: none">• DMIS 2020 (SP00 or higher)• DMIS 2018 (SP04 or higher)• SAP S/4HANA 2020

If you are using one of the combinations outlined in the table above, then SAP LT Replication Server will identify the tables associated with the compatibility view and add these tables to the replication process.

In addition, SAP LT Replication Server will analyze the compatibility view logic and create the same logic in the target system.

Note

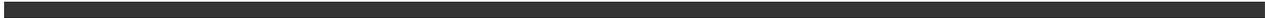
SAP LT Replication Server can create the compatibility logic in the target system if the subscription-based change data capture mechanism is used in the source system. A new configuration in the system will use this recording by default. If you switch the change data capture mechanism of the configuration to the legacy recording mechanism, then you will need to manually create the compatibility logic in the target system. Likewise, if the configuration was created when the SAP LT Replication system was using an older DMIS release and later the SAP LT Replication system was upgraded, then you will also need to manually create the compatibility logic in the target system.

2.3 Situation 2

Source System	SAP LT Replication Server System
<ul style="list-style-type: none">• DMIS 2020 (SP00 or higher)• DMIS 2018• DMIS 2011• S/4HANA 2020 SP00 or higher• S/4HANA 1809• S/4HANA 1909	<ul style="list-style-type: none">• DMIS 2011 (SP14 or higher),• DMIS 2018 (SP00-SP03)

If compatibility views are relevant for your project and you are using one of the combinations outlined in the table above, then SAP LT Replication Server will identify the tables associated with the compatibility view and add these tables to the replication process.

However in this situation it will be necessary to rebuild the logic of the compatibility view in the target system. For more information, see chapter 5.



3 Identifying Whether Compatibility Views are in Use

3.1 Existing Replication Projects

If you are currently running a replication project, and one of the participating systems is now using compatibility views (for example, after an upgrade), you can use SAP Landscape Transformation Replication Server functionality to identify whether any of the tables that are relevant for the replication process are using compatibility views.

In the SAP LT Replication Server Cockpit (transaction `LTRC`), you can use the expert function *Identify Redirected Tables After Source System Upgrade* to check whether tables that have the status *In Replication* are now redirected to a compatibility view.

4 Adding the Newly Identified Tables to the Replication Process

The newly identified tables that are associated with the compatibility view are relevant for the replication process. There are the following two options for adding the table to the replication process:

- Option 1: Add the newly identified tables (in transaction `LTRC`) and start the replication process for these tables.
- Option 2: Stop the replication process for the table and restart it. SAP LT Replication Server will identify the tables associated with the compatibility view and add these tables to the replication process. If the table is very large, you can avoid an initial load of the table itself by just adding the newly identified tables associated with the compatibility view (as described in option 1).

Note

If you are replicating data using the Operational Data Provisioning (ODP) Framework, you need to add the relevant tables using the SAP BW system.

5 Recreating Compatibility Logic in the Target System

5.1 Situation 1

Source System	SAP LT Replication Server System
<ul style="list-style-type: none"> DMIS 2020 (SP00 or higher) S/4HANA 2020 SP00 or higher 	<ul style="list-style-type: none"> DMIS 2020 (SP00 or higher) DMIS 2018 (SP04 or higher) SAP S/4HANA 2020

You can use the *Data Provisioning* feature in the SAP LT Replication Server Cockpit (transaction `LTRC`) to analyze the compatibility view logic and create the same logic in the target system. For example, you can see how table COEP is analyzed in the screenshot below.

The screenshot displays the SAP LT Replication Server Cockpit interface. At the top, there are navigation buttons: Analyze Actions, Validate Actions, Schedule Actions, Reset Actions, and Info. Below this, the 'Object Name' field is set to 'COEP'. A toolbar with various icons is visible. The main area contains a table with the following columns: Object Name, Object Type, Can Be Created, Can Be Loaded, Can Be Replicated, Current Status, Action, and Edit A... The table lists several objects, including CDS Views and Tables, with their respective properties and actions.

Object Name	Object Type	Can Be Created	Can Be Loaded	Can Be Replicated	Current Status	Action	Edit A...
v_coep_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
COEP	Table	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Action	Perform Initial Load	
V_Coep_R3_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
V_Coep_R2_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
V_Coep_R1_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
PRPS	Table	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No Action	Start Replication (Including Initial Load)	
v_coep_acdoca_r_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
v_coep_acdoca_r3_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
V_Coep_Acdoca_R2_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
V_Coep_Acdoca_R1_view	CDS View	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No Action	Create View	
ACDOCA	Table	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No Action	Start Replication (Including Initial Load)	
FINSC_CMP_VERSND	Table	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No Action	Start Replication (Including Initial Load)	
TKA01	Table	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	No Action	Start Replication (Including Initial Load)	

At the bottom of the screenshot, there is a 'Messages' section with the following message:
 • Table COEP is redirected to compatibility view V_COEP_VIEW

5.2 Situation 2

Source System	SAP LT Replication Server System
<ul style="list-style-type: none"> • DMIS 2020 (SP00 or higher) • DMIS 2018 • DMIS 2011 • S/4HANA 2020 SP00 or higher • S/4HANA 1809 • S/4HANA 1909 	<ul style="list-style-type: none"> • DMIS 2011 (SP14 or higher), • DMIS 2018 (SP00-SP03)

or

Source System	SAP LT Replication Server System
<ul style="list-style-type: none"> • DMIS 2018 • DMIS 2011 • S/4HANA 1809 • S/4HANA 1909 	<ul style="list-style-type: none"> • DMIS 2020 (SP00 or higher) • DMIS 2018 (SP04 or higher) • SAP S/4HANA 2020

SAP LT Replication Server will create the tables associated with the compatibility view in the target system but will not create the views in the target system. You need to manually create the views and link the tables to the views in the target system.

Consider the example in section 1.2. SAP LT Replication Server will create the tables PRPS, COEP, ACDOCA, TKA01, and FINSC_CMP_VERSND in the target system, but will not create the views V_COEP, V_COEP_R1 and so on. You will need to manually create the views and link table COEP to the view V_COEP.

6 Additional Information About CDS Views

The limitations and steps described in this document are generally also applicable to CDS views. The manual steps described above should also work for CDS views. However, it is important to note that CDS views may contain additional logic which needs to be taken care of when recreating the view in the target system.

If you are using SAP S/4 HANA 2020 (or higher) or DMIS 2020 or DMIS 2018 (SP04 or higher) in the SAP LT Replication system, and if you are using SAP S/4 HANA 2020 (or higher) or DMIS 2020 in the source system, you can use the Data Provisioning function in transaction `LTTRC` to analyze the CDS views and start the transfer of data for CDS views .

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