

## Exercise 0 - Getting Started - Preparing your system

**Section Goal:** Load all required data & models that are the base line for the following exercises.

We have prepared a simple data model to analyze product sales for a prototypical company. For this exercise we will simply load some basic sales tables and their data via replication from SAP HANA Cloud and add a minimal data model by importing a data model file (aka: "[CSN import](#)"). This brings us quickly to the starting line of all subsequent exercises.

For better overview of the imported objects and their relationships & details, you'll also create an [entity-relationship model](#) and inspect the objects in the [impact & lineage analysis](#).

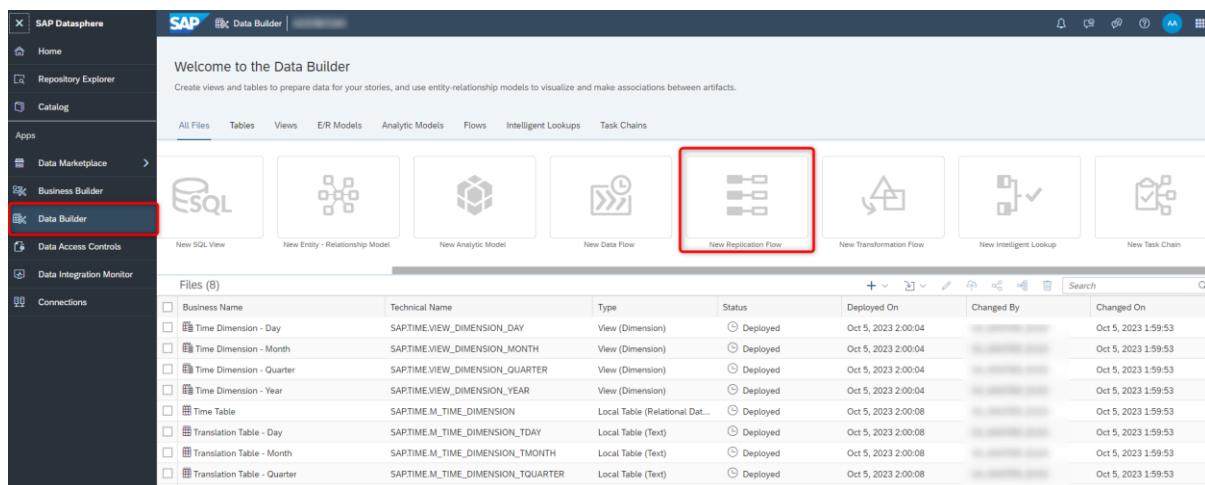
**⚠️** If you are not using an SAP academy system (TechEd 2023) or an SAP Guided Experience system (cp. [Exercise Requirements](#)), please jump to chapter **Steps in your own SAP Datasphere system**

### Steps in SAP Academy systems and SAP Guided Experience Systems

If your system is an SAP Academy system (URL contains "academy") or an SAP Guided Experience system (URL contains "guided-experience-datasphere") the following steps are for you

#### Use replication flow to import base tables of object model

- Select the menu option **Data Builder** on the left-hand side
- Select the option **New Replication Flow**



The screenshot shows the SAP Data Builder interface. On the left, there's a sidebar with various options like Home, Repository Explorer, Catalog, Data Marketplace, Business Builder, and Data Builder (which is highlighted with a red box). The main area has tabs for All Files, Tables, Views, E/R Models, Analytic Models, Flows, Intelligent Lookups, and Task Chains. Below the tabs, there are several icons: New SQL View, New Entity - Relationship Model, New Analytic Model, New Data Flow (which is highlighted with a red box), New Replication Flow (also highlighted with a red box), New Transformation Flow, New Intelligent Lookup, and New Task Chain. At the bottom, there's a table titled 'Files (8)' listing various database objects with columns for Business Name, Technical Name, Type, Status, Deployed On, Changed By, and Changed On. The table lists items such as Time Dimension - Day, Time Dimension - Month, Time Dimension - Quarter, Time Dimension - Year, Time Table, Translation Table - Day, Translation Table - Month, and Translation Table - Quarter, all deployed on Oct 5, 2023 at 2:00:04.

Business Name	Technical Name	Type	Status	Deployed On	Changed By	Changed On
Time Dimension - Day	SAPTIME.VIEW_DIMENSION_DAY	View (Dimension)	Deployed	Oct 5, 2023 2:00:04		Oct 5, 2023 1:59:53
Time Dimension - Month	SAPTIME.VIEW_DIMENSION_MONTH	View (Dimension)	Deployed	Oct 5, 2023 2:00:04		Oct 5, 2023 1:59:53
Time Dimension - Quarter	SAPTIME.VIEW_DIMENSION_QUARTER	View (Dimension)	Deployed	Oct 5, 2023 2:00:04		Oct 5, 2023 1:59:53
Time Dimension - Year	SAPTIME.VIEW_DIMENSION_YEAR	View (Dimension)	Deployed	Oct 5, 2023 2:00:04		Oct 5, 2023 1:59:53
Time Table	SAPTIME.M_TIME_DIMENSION	Local Table (Relational Dat...	Deployed	Oct 5, 2023 2:00:08		Oct 5, 2023 1:59:53
Translation Table - Day	SAPTIME.M_TIME_DIMENSION_TDAY	Local Table (Text)	Deployed	Oct 5, 2023 2:00:08		Oct 5, 2023 1:59:53
Translation Table - Month	SAPTIME.M_TIME_DIMENSION_TMONTH	Local Table (Text)	Deployed	Oct 5, 2023 2:00:08		Oct 5, 2023 1:59:53
Translation Table - Quarter	SAPTIME.M_TIME_DIMENSION_TQUARTER	Local Table (Text)	Deployed	Oct 5, 2023 2:00:08		Oct 5, 2023 1:59:53

- Create a new replication flow to import all relevant tables from source connection **HANA\_CLOUD** and container **DSP1\_OPENSAP** into target connection **SAP Datasphere**:

- Select source connection

It looks like you haven't added any data yet.

To start your replication flow, select a connection and a source object on the left side.

Select Source Connection    Select Source Container    Add Source Objects

- select HANA\_CLOUD as connection from which entities are to be replicated

Technical Name	Business Name	Type	Description
BW4_DWC	BW4_DWC	ABAP	
HANA_CLOUD	HANA_CLOUD	HANA	
HANA_EDW	HANA_EDW	HANA	
S4_HANA	S4_HANA	ABAP	

- select to import from source container **DSP1\_OPENSAP**

SAP Data Builder | AC57867U03 | New Replication Flow\*

**General**

HANA\_CLOUD (HANA) Select Container

Select Target Connection

Replication Flow Properties

Replication\_Flow\_1

**General**

Business Name: Replication Flow 1

Technical Name: Replication\_Flow\_1

Status: Not Deployed

**Run Status**

Status: Not Run Yet

To start your replication flow, select a connection and a source object on the left side.

Select Source Connection Select Source Container Add Source Objects

Select Container

Search

Container

- /DSP1\_OPEN SAP
- > HANA\_CLOUD(HANA)
- > ANA160
- > DA262
- > DSP1\_OPEN SAP** (highlighted with a red box)
- > DWC\_DEMO
- > FAILED\_RECORDS
- > HC\_DEMO
- > HC\_DEV
- > PAL\_STEM\_TFIDF
- > SAP\_PA\_APL
- > SFLIGHT
- > SYS
- > SYSHDL
- > SYSHDL\_HDLTA\_CONTAINER

Select Cancel

SAP Data Builder | AC57867U03 | New Replication Flow\*

**General**

HANA\_CLOUD (HANA) Select Container

Select Source Connection Select Source Container Add Source Objects

It looks like you haven't added any data yet.

To start your replication flow, select a connection and a source object on the left side.

Select Source Connection Select Source Container Add Source Objects

Replication Flow Properties

Replication\_Flow\_1

**General**

Business Name: Replication Flow 1

Technical Name: Replication\_Flow\_1

Status: Not Deployed

**Run Status**

Status: Not Run Yet

-select target connection SAP Datasphere

**Select Target Connection**

Technical Name	Business Name	Type	Description
SAP Datasphere	SAP Datasphere	HANA	Local Repository
HANA_CLOUD	HANA_CLOUD	HANA	
HANA_EDW	HANA_EDW	HANA	

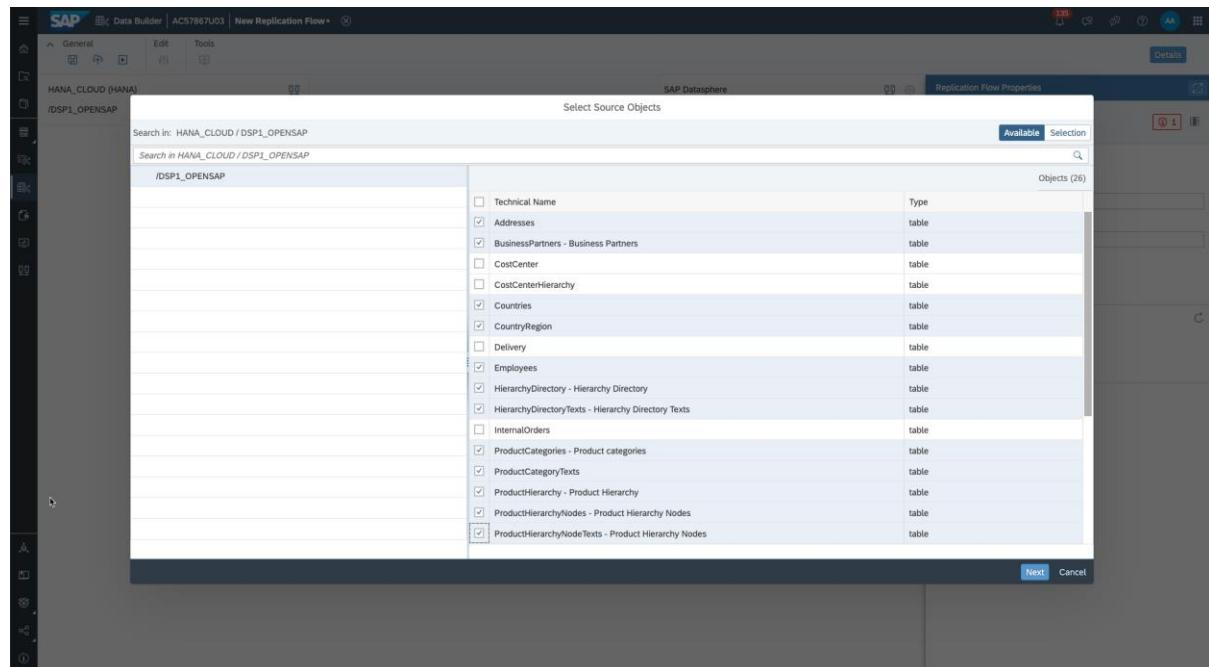
- launch selection of source objects to replicate

**Select Target Connection**

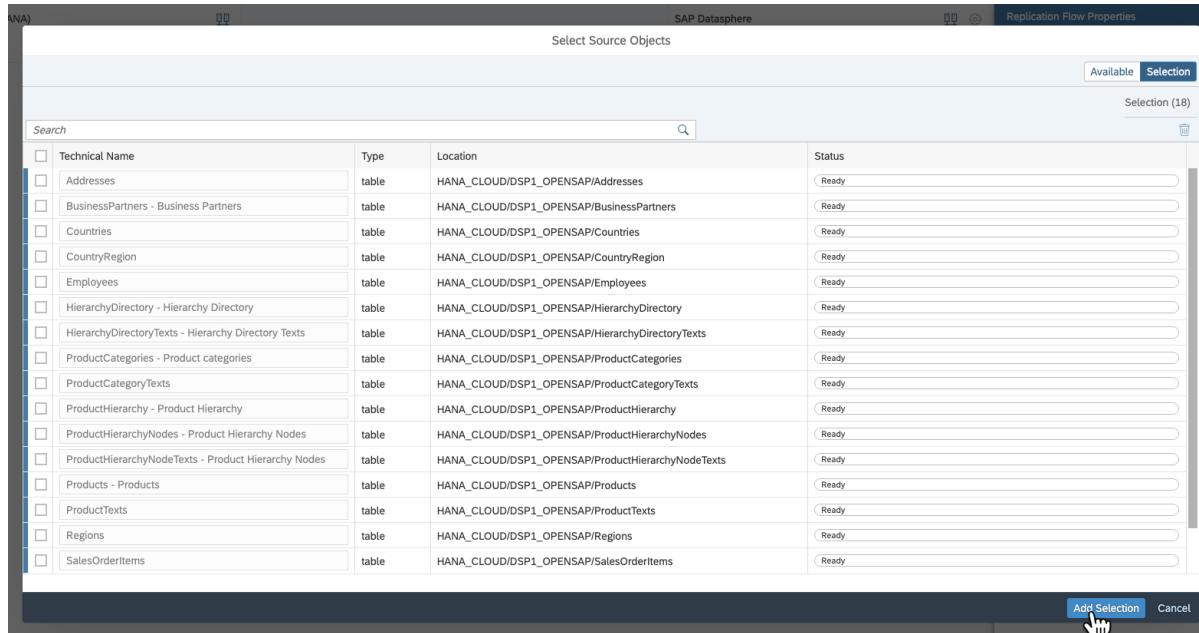
**Add Source Objects**

- Select the following 16 source objects:

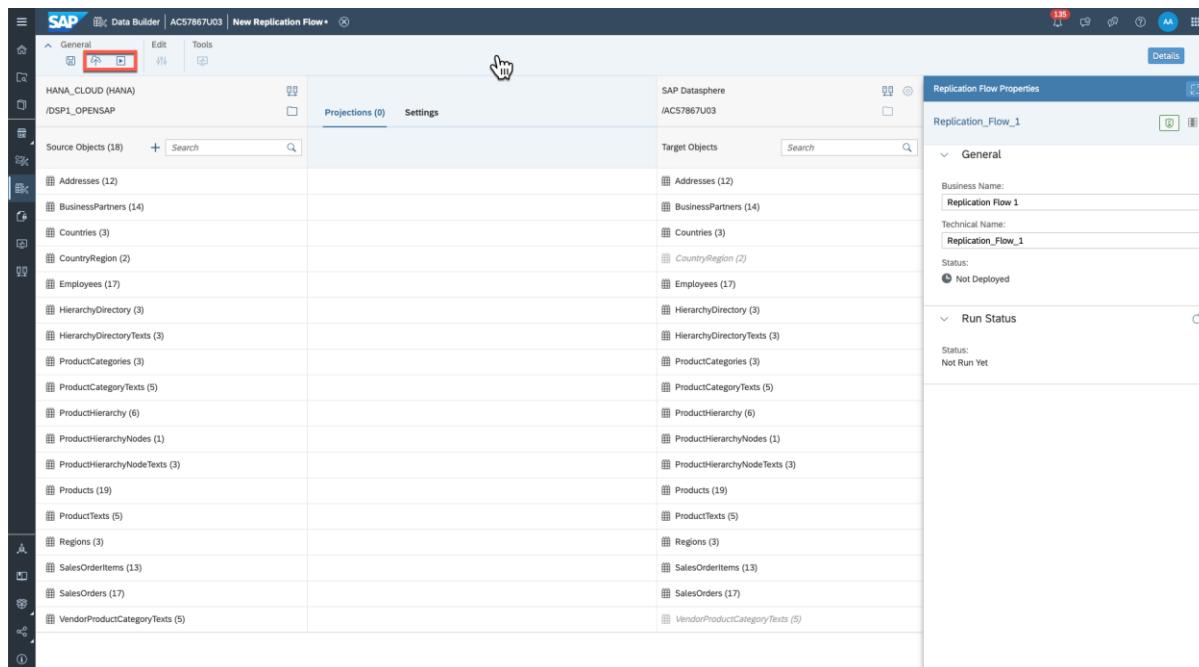
- Addresses
- BusinessPartners - Business Partners
- Countries
- Employees
- HierarchyDirectory - Hierarchy Directory
- HierarchyDirectoryTexts - Hierarchy Directory Texts
- ProductCategories - Product Categories
- ProductCategoryTexts
- ProductHierarchy - ProductHierarchy
- ProductHierarchyNodes - Product Hierarchy Nodes
- ProductHierarchyNodesTexts - Product Hierarchy Nodes
- Products - Products
- ProductTexts
- Regions
- SalesOrderItems
- SalesOrder - Sales Orders



- Confirm the next dialog



- Your screen should now look like this



- Now choose **Deploy** button (top-left of screen) to save and render your replication flow ready to use. Save the flow as **RF\_Initial\_Load**
- Once your RF is deployed, click the **Run** button (top-left of screen). This allows your local repository to house the source tables you imported from HANA Cloud. Once the run is

finished, your final screen will look like this:

The screenshot shows the SAP Data Builder interface with the title bar "Data Builder | AC57867U03 | RF\_Initial\_Load". The left pane displays a list of source objects from "INTERIM\_HANA\_CLOUD (HANA)" and target objects in "SAP Datasphere". The right pane shows the "Replication Flow Properties" for the flow "RF\_Initial\_Load", with sections for General, Run Status, and a preview area.

Source Objects	Target Objects
/DSP1_OPENSAF	SAP Datasphere
Source Objects (16)	Target Objects (Search)
Addresses (12)	Addresses (12)
BusinessPartners (14)	BusinessPartners (14)
Countries (3)	Countries (3)
Employees (17)	Employees (17)
HierarchyDirectory (3)	HierarchyDirectory (3)
HierarchyDirectoryTexts (3)	HierarchyDirectoryTexts (3)
ProductCategories (3)	ProductCategories (3)
ProductCategoryTexts (5)	ProductCategoryTexts (5)
ProductHierarchy (6)	ProductHierarchy (6)
ProductHierarchyNodes (1)	ProductHierarchyNodes (1)
ProductHierarchyNodeTexts (3)	ProductHierarchyNodeTexts (3)
Products (19)	Products (19)
ProductTexts (5)	ProductTexts (5)
Regions (3)	Regions (3)
SalesOrderItems (13)	SalesOrderItems (13)
SalesOrders (17)	SalesOrders (17)

### Generate time data (only in SAP Guided Experience systems)

**⚠** During SAP TechEd 2023, skip the step of generating time data. System setup scripts have taken care of it. Continue on to chapter *Import data model as CSN* below.

If you are doing this exercise outside of SAP TechEd 2023 on an SAP Guided Experience system (i.e. the URL contains "guided-experience-datasphere"), you need to do the following steps

- Launch Space Management

- Go to section *Time Data* and click *Create Time Tables & Dimensions*

The screenshot shows the SAP Datasphere interface with the following details:

- Left Sidebar (Space Management):** Contains links for Home, Repository Explorer, Apps (Data Marketplace, Business Builder, Data Builder, Data Access Controls, Data Integration Monitor, Connections), and Space Management.
- Header:** SAP Datasphere, Space Management, JF\_TMP, Time Data (selected).
- Time Data Section:**
  - Time Tables and Dimensions:** Shows a message: "Changes in this section will be deployed immediately." Below it says "Create time tables and dimensions to use in your models and stories." and "No time tables and dimensions have been created." A red box highlights the "+ Create Time Tables and Dimensions" button.
  - Auditing:** Shows Space Audit Settings. It includes a note: "Audit logs can consume a large amount of storage." Another note: "Be aware that disabling an audit policy (read or change operations) will result in the exporting them before you disable the audit policy." Two checkboxes are present: "Enable Audit Log for Read Operations" (unchecked) and "Enable Audit Log for Change Operations" (unchecked). Both have a "Keep Logs for" field set to 7 Days.

- In the resulting popup, click *Create*

JF\_TMP ×

### Create Time Tables and Dimensions

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#### Time Table Settings

Business Name *	Technical Name		
<input type="text" value="Time Table"/>	<input type="text" value="SAP.TIME.M_TIME_DIMENSION"/>		
From Year *	To Year *	Calendar Type	Granularity
<input type="text" value="1900"/>	<input type="text" value="2050"/>	<input type="text" value="Gregorian"/>	<input type="text" value="Day"/>

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#### Time Dimensions

←

Year Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Year"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_YEAR"/>
Quarter Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Quarter"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_QUARTER"/>
Month Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Month"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_MONTH"/>
Day Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Day"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_DAY"/>

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#### Translation Tables

Translation Table for Quarters	
Business Name *	Technical Name
<input type="text" value="Translation Table - Quarter"/>	<input type="text" value="SAPTIME.M_TIME_DIMENSION_TQUART..."/>
Translation Table for Months	
Business Name *	Technical Name
<input type="text" value="Translation Table - Month"/>	<input type="text" value="SAPTIME.M_TIME_DIMENSION_TMONTH..."/>

Create Cancel

- Wait till the confirmation message "Time data created" appears
- Leave *Space Management* and open *Data Builder*

**Import data model as CSN**

- Once replication flow's run has completed, download the object model description (aka "CSN file") from Github [[link](#)]
- Go back to the main screen of **Data Builder** and import the object model file via **+ > Import Objects from CSN/JSON file**

The screenshot shows the SAP Data Builder interface. In the center, there is a table titled 'Files (25)' listing various objects. At the top right of the table, there is a toolbar with several icons. One of these icons, which looks like a document with a plus sign, is highlighted with a red box and a red arrow pointing to it. This icon corresponds to the 'Import Objects from CSN/JSON file' option mentioned in the text.

Business Name	Technical Name	Type	Status	Changed On
RF_Initial_Load	RF_Initial_Load	Replication Flow	Deployed	Oct 6, 2023 11:05:47
SalesOrders	SalesOrders	Local Table (Relational...)	Deployed	Oct 6, 2023 11:08:52
SalesOrderItems	SalesOrderItems	Local Table (Relational...)	Deployed	Oct 6, 2023 11:08:40
Regions	Regions	Local Table (Relational...)	Deployed	Oct 6, 2023 11:08:29
ProductTexts	ProductTexts	Local Table (Relational...)	Deployed	Oct 6, 2023 11:08:18
Products	Products	Local Table (Relational...)	Deployed	Oct 6, 2023 11:08:05
ProductHierarchyNodeTexts	ProductHierarchyNodeTexts	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:55
ProductHierarchyNodes	ProductHierarchyNodes	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:51
ProductHierarchy	ProductHierarchy	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:41
ProductCategoryTexts	ProductCategoryTexts	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:29

- You will be prompted to select the objects you want to import. Select the objects with the status of “Ready to Import” and click **Import CSN File**.
- When prompted, if you want to reimport existing objects, choose to not reimport them, i.e. **Click No**
- Once those objects are imported, you'll need to deploy them. Select all object that are not yet deployed and deploy them

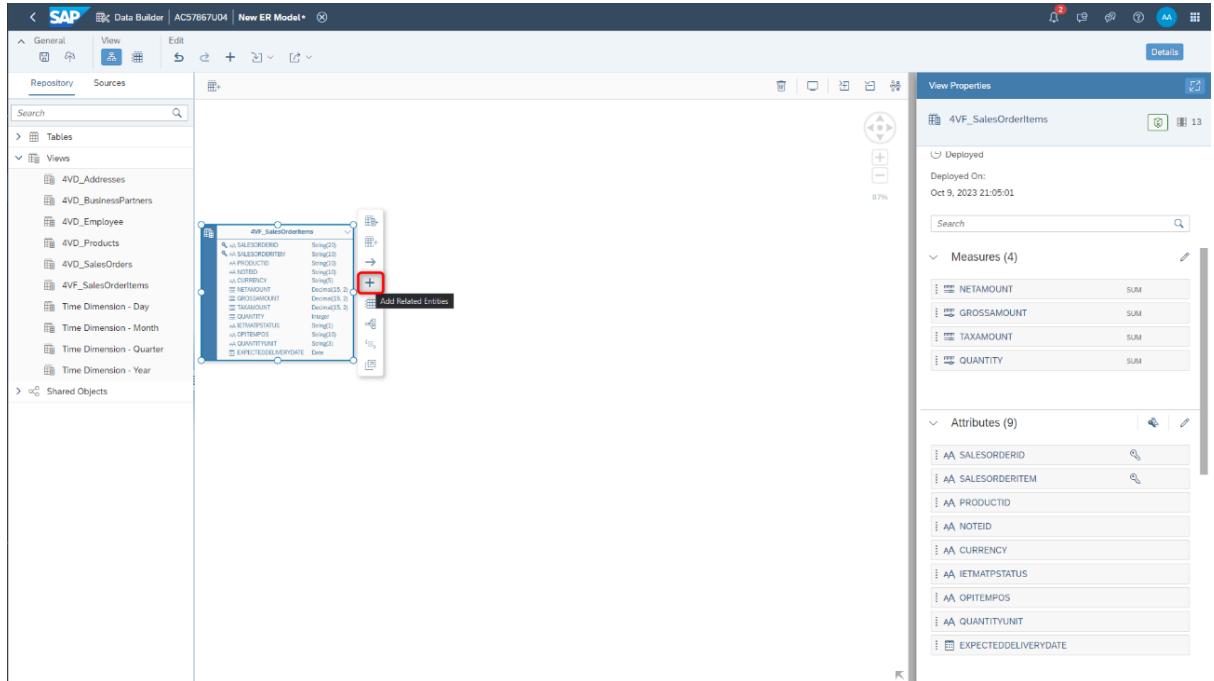
The screenshot shows the SAP Data Builder interface again. In the center, there is a table titled 'Files (31)' listing various objects. In this list, several objects have checkboxes checked next to them. A red box and a red arrow highlight the 'Deployed On' column header, indicating that the user should select all objects that are not yet deployed. The objects listed include various views, dimensions, and tables, such as 4VD\_Addresses, 4VD\_BusinessPartners, 4VD\_Employee, 4VD\_Products, 4VD\_SalesOrders, 4VF\_SalesOrderItems, and Addresses.

Business Name	Technical Name	Type	Status	Deployed On	Changed By	Changed On
RF_Initial_Load	RF_Initial_Load	Replication Flow	Deployed	Oct 6, 2023 11:09:09	AC57867U03	Oct 6, 2023 11:05:47
4VD_Addresses	4VD_Addresses	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_BusinessPartners	4VD_BusinessPartners	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_Employee	4VD_Employee	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_Products	4VD_Products	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_SalesOrders	4VD_SalesOrders	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VF_SalesOrderItems	4VF_SalesOrderItems	View (Fact)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
Addresses	Addresses	Local Table (Relational...)	Changes to Deploy	Oct 6, 2023 11:06:04	AC57867U03	Oct 6, 2023 11:11:16

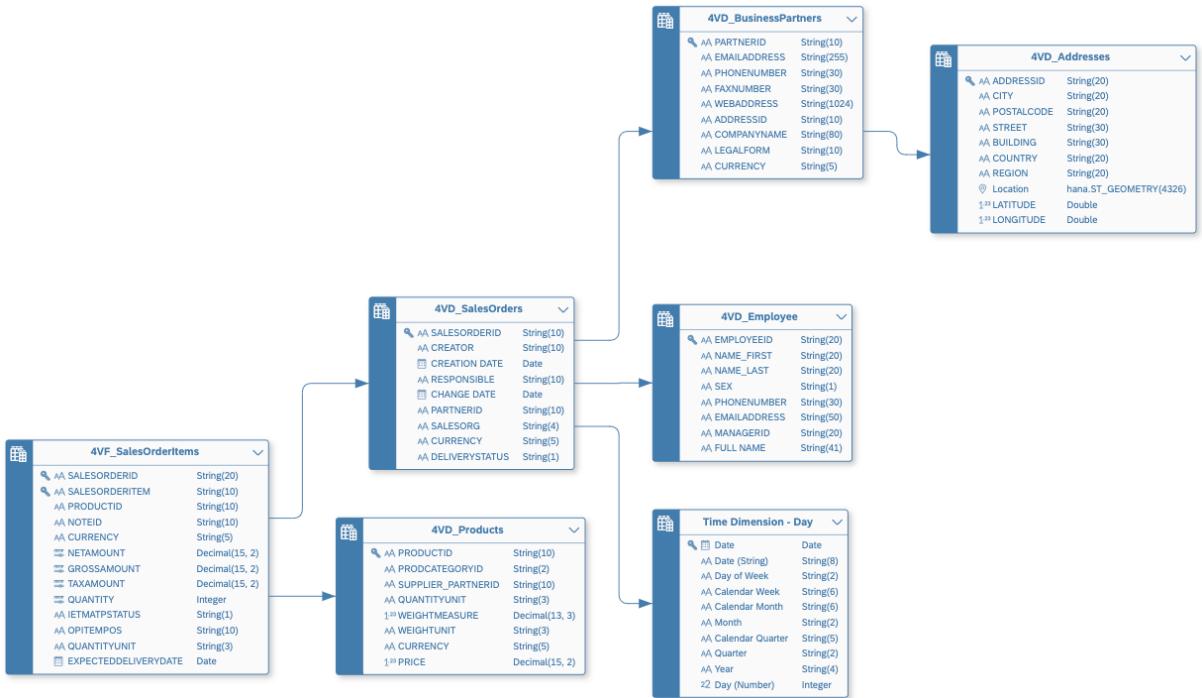
Now you have all the tables, their data and a minimal data model ready in the system. You should now start crafting your entity-relationship model.

## Create entity-relationship model

- On the **Data Builder** screen, select on the **E/R Models** tab, and click on the **New Entity – Relationship Model**
- Within the **Repository** section (left panel), under **Views**, you will find the entities necessary to create your initial ER model.
- Drag the **4VF\_SalesOrderItems** entity onto the canvas
- To add related entities, click on the entity and select the “+” sign. In the subsequent dialog choose to add all related entities and confirm.



- Select all the related entities for **4VF\_SalesOrderItems**; you will add the additional related entities using the same method until your ER looks like this



- Deploy** your model and name it **4EM\_Overview\_Simple**
- To inspect all entities, select each one and inspect the View Properties panel on the right side of the screen. This gives details on their properties like semantic usage, columns, measures & attributes (only for **4VF\_SalesOrderItems**), semantic types as well as associations (also visible in the ER model itself).
- You can also preview the data of an entity by clicking on the entity and clicking on the **Preview Data** button on the top left after you selected a node on the canvas.
- You can also view the impact & lineage graph of an entity by clicking on the **Impact and Lineage Analysis** button that exists on every node. Note that the subsequent popup makes a differentiation between data lineage and dependency lineage (cp. [SAP Help Documentation](#)).

### Steps in all other SAP Datasphere systems

**⚠** During SAP TechEd 2023, the following chapter can be skipped. Continue down below with [Summary](#)

If your system is NOT an SAP academy system or an SAP Guided Experience system, you can still run all exercises as long as you have another SAP Datasphere system at your disposal. There are no requirements with regards to connected backends.

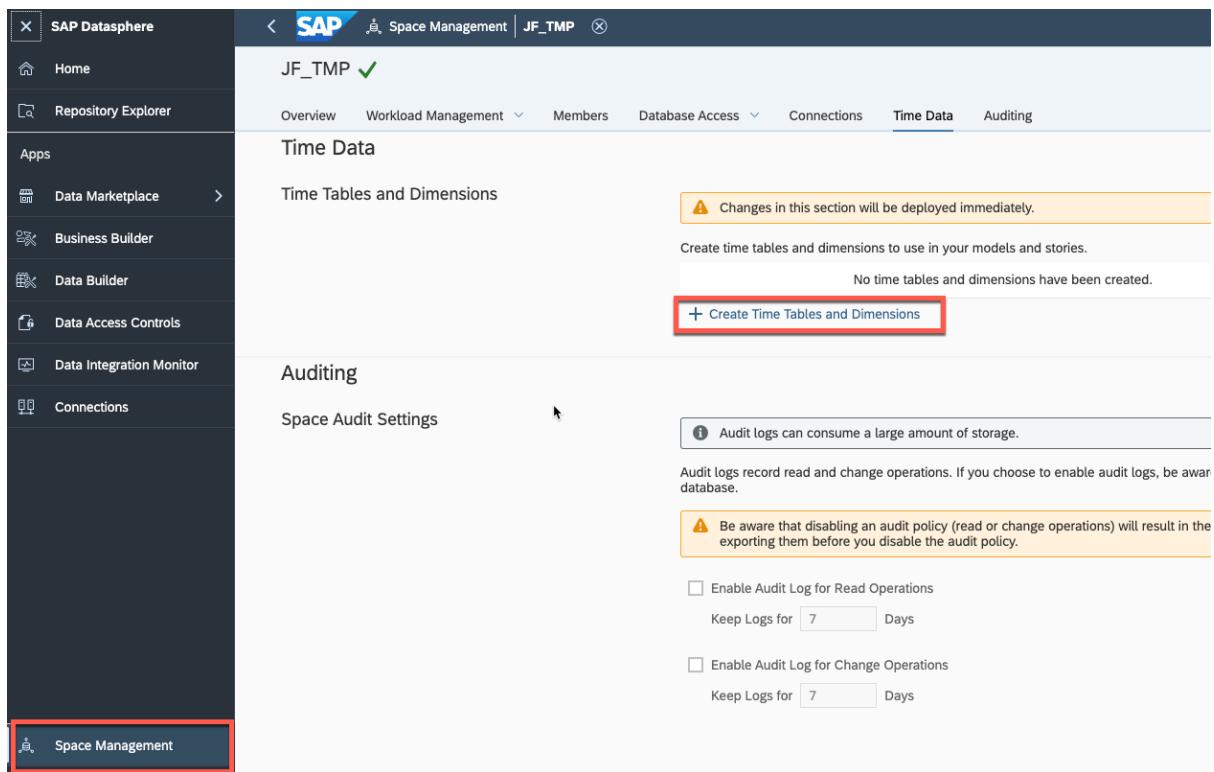
**⚠** [Exercise #4 - Currency Conversion](#) requires a connected SAP NetWeaver system that contains the required currency conversion tables. If you have no SAP NetWeaver system connected, you'll only be able to do all exercises *except for exercise #4*.

Since the required HANA backend is not available to bring the respective data for our exercises, you'd need to load all data manually via CSV. Mid-term, we'll allow loading the data from SAP Data Marketplace.

## Generate time data

In this step, we generate a helper dimension containing time data and its properties.

- Launch Space Management
- Go to section *Time Data* and click *Create Time Tables & Dimensions*



The screenshot shows the SAP Datasphere interface. On the left, there's a sidebar with various links: Home, Repository Explorer, Data Marketplace, Business Builder, Data Builder, Data Access Controls, Data Integration Monitor, and Connections. The 'Space Management' link is highlighted with a red box. The main content area is titled 'JF\_TMP ✓' and has tabs for Overview, Workload Management, Members, Database Access, Connections, Time Data (which is selected), and Auditing. Under 'Time Data', it says 'Time Tables and Dimensions'. There's a warning message: 'Changes in this section will be deployed immediately.' Below it, it says 'Create time tables and dimensions to use in your models and stories.' and 'No time tables and dimensions have been created.' A red box highlights the '+ Create Time Tables and Dimensions' button. Under 'Auditing', there's a note: 'Audit logs can consume a large amount of storage.' and another warning: 'Be aware that disabling an audit policy (read or change operations) will result in the exporting them before you disable the audit policy.' There are two checkboxes for audit logs: 'Enable Audit Log for Read Operations' (Keep Logs for 7 Days) and 'Enable Audit Log for Change Operations' (Keep Logs for 7 Days).

- In the resulting popup, click *Create*

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### Create Time Tables and Dimensions

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#### Time Table Settings

Business Name *	Technical Name		
<input type="text" value="Time Table"/>	<input type="text" value="SAP.TIME.M_TIME_DIMENSION"/>		
From Year *	To Year *	Calendar Type	Granularity
<input type="text" value="1900"/>	<input type="text" value="2050"/>	<input type="text" value="Gregorian"/>	<input type="text" value="Day"/>

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#### Time Dimensions

█

Year Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Year"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_YEAR"/>
Quarter Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Quarter"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_QUARTER"/>
Month Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Month"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_MONTH"/>
Day Dimension	
Business Name *	Technical Name
<input type="text" value="Time Dimension - Day"/>	<input type="text" value="SAP.TIME.VIEW_DIMENSION_DAY"/>

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#### Translation Tables

Translation Table for Quarters	
Business Name *	Technical Name
<input type="text" value="Translation Table - Quarter"/>	<input type="text" value="SAPTIME.M_TIME_DIMENSION_TQUART..."/>
Translation Table for Months	
Business Name *	Technical Name
<input type="text" value="Translation Table - Month"/>	<input type="text" value="SAPTIME.M_TIME_DIMENSION_TMONTH..."/>

Create Cancel

- Wait till the confirmation message "Time data created" appears
- Leave *Space Management* and open *Data Builder*

**Import data model as CSN**

- Once replication flow's run has completed, download the object model description (aka "CSN file") from Github [[link](#)]
- Go back to the main screen of **Data Builder** and import the object model file via **+ > Import Objects from CSN/JSON file**

Welcome to the Data Builder

Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts.

All Files Tables Views E/R Models Analytic Models Flows Intelligent Lookups Task Chains

New Entity - Relationship Model New Analytic Model New Data Flow New Replication Flow New Transformation Flow New Intelligent Lookup New Task Chain

Files (25)

Business Name	Technical Name	Type	Status	Changed On
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ProductHierarchyNodeTexts	ProductHierarchyNodeTexts	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:55
ProductHierarchyNodes	ProductHierarchyNodes	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:51
ProductHierarchy	ProductHierarchy	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:41
ProductCategoryTexts	ProductCategoryTexts	Local Table (Relational...)	Deployed	Oct 6, 2023 11:07:29
RF_Initial_Load	RF_Initial_Load	Replication Flow	Deployed	Oct 6, 2023 11:07:18

Import CSV File Import Objects from CSN/JSON File Import Entities Import Remote Tables

- You will be prompted to select which objects you want to import. Select all objects with the status of “Ready to Import” and click **Import CSN File**.
- When prompted, if you want to reimport existing objects, choose to not reimport them, i.e. **Click No**
- Once those objects are imported, you’ll need to deploy them. Select all object that are not yet deployed and deploy them

Welcome to the Data Builder

Create views and tables to prepare data for your stories, and use entity-relationship models to visualize and make associations between artifacts.

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New Entity - Relationship Model New Analytic Model New Data Flow New Replication Flow New Transformation Flow New Intelligent Lookup New Task Chain

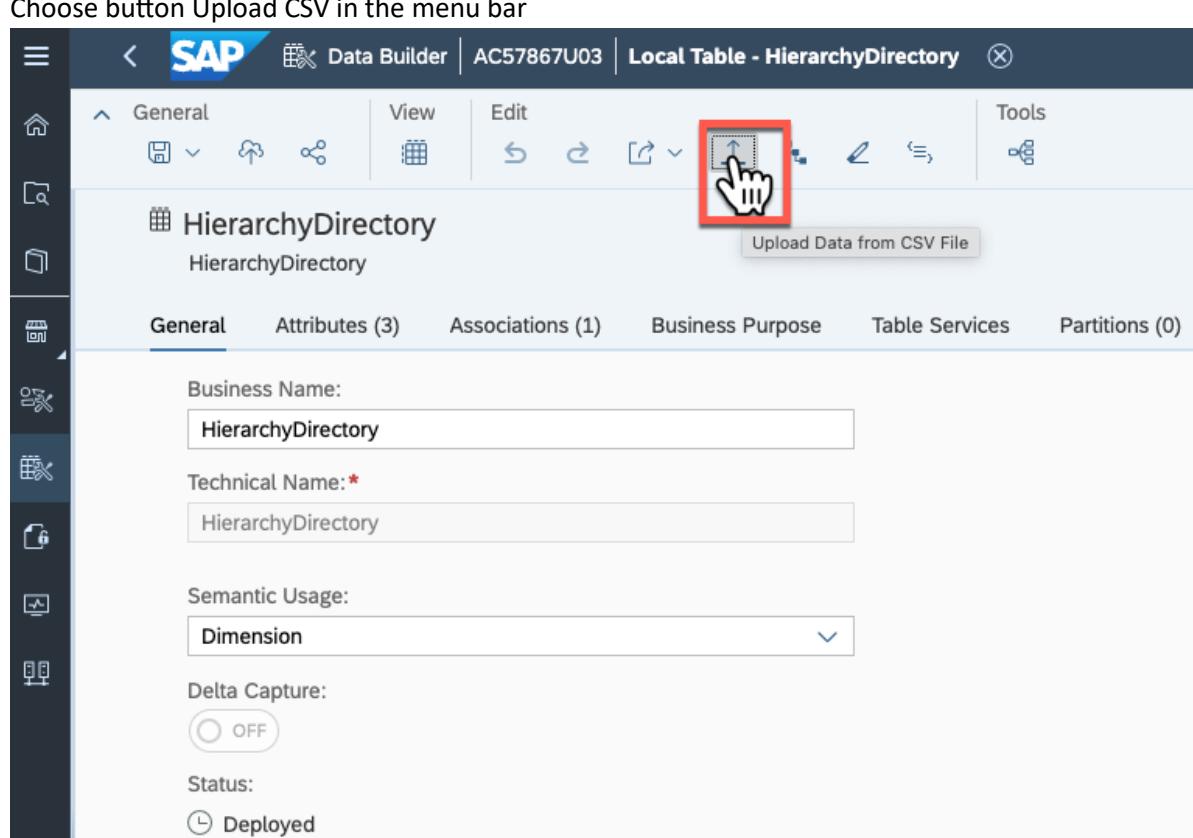
Files (31)

Business Name	Technical Name	Type	Status	Deployed On	Changed By	Changed On
RF_Initial_Load	RF_Initial_Load	Replication Flow	Deployed	Oct 6, 2023 11:09:09	AC57867U03	Oct 6, 2023 11:05:47
4VD_Addresses	4VD_Addresses	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_BusinessPartners	4VD_BusinessPartners	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_Employee	4VD_Employee	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_Products	4VD_Products	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VD_SalesOrders	4VD_SalesOrders	View (Dimension)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
4VF_SalesOrderItems	4VF_SalesOrderItems	View (Fact)	Not Deployed		AC57867U03	Oct 6, 2023 11:11:16
Addresses	Addresses	Local Table (Relational...)	Changes to Deploy	Oct 6, 2023 11:06:04	AC57867U03	Oct 6, 2023 11:11:16

## Upload data into the tables

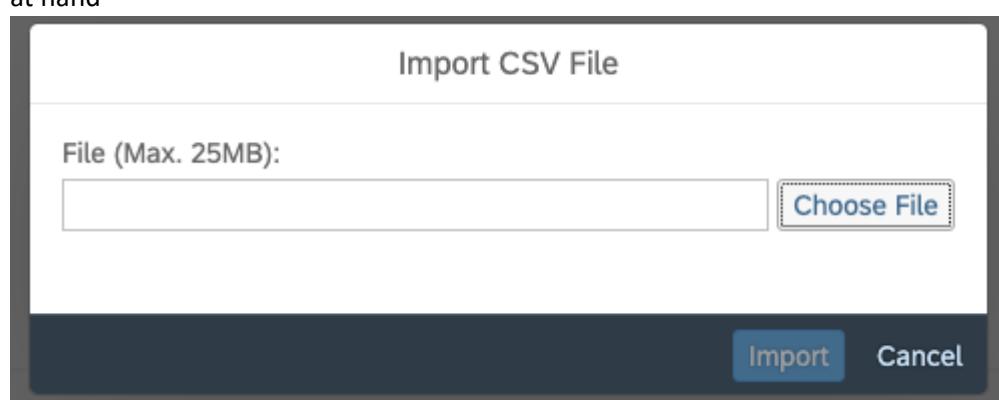
You'll need to upload data into all tables from CSV files. For SAP TechEd & Guided Experience, the respective data could be loaded from a connected SAP HANA Cloud system, but since your space has no connection to it, you'll need to provide the data manually

- Download the [zip file containing all CSVs from Github](#)
- Extract the zip file into some folder on your hard drive
- In Data Builder, choose tab Tables. This will filter the object list on the tables only
- For each and every table in the list (puh, yes, this is painful 😱), do the following steps
  - Open table by clicking on its name in Data Builder
  - Choose button Upload CSV in the menu bar

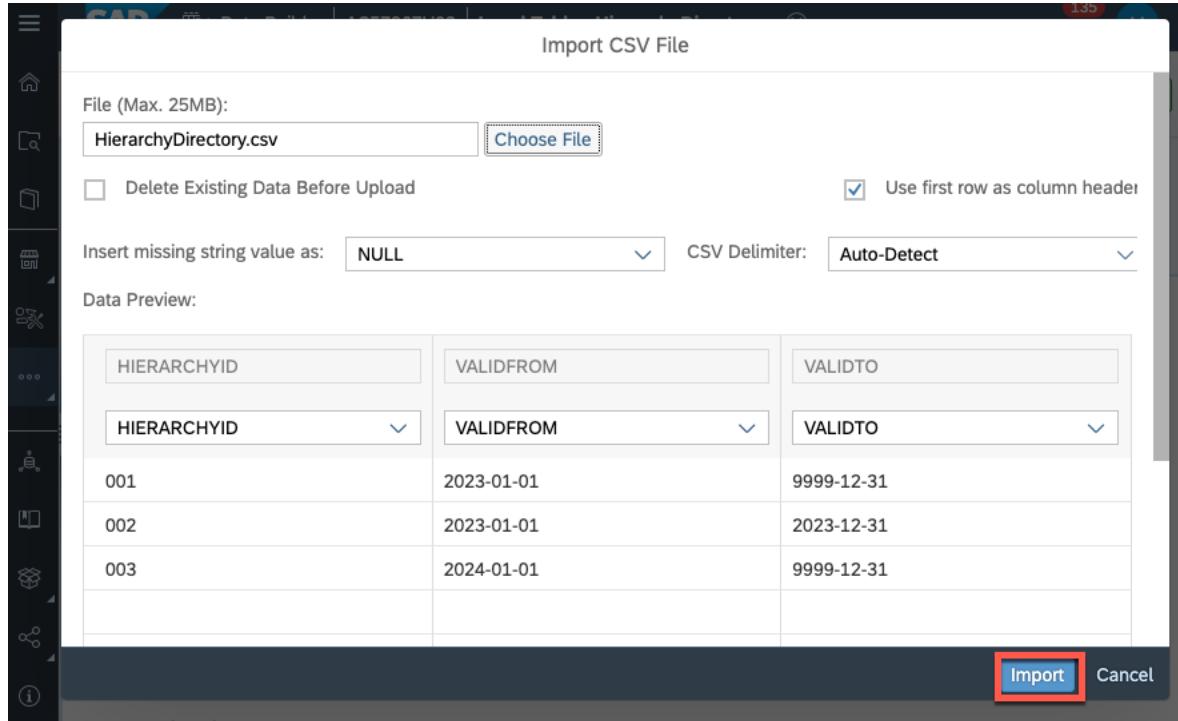


The screenshot shows the SAP Data Builder interface. The title bar reads "SAP Data Builder | AC57867U03 | Local Table - HierarchyDirectory". The left sidebar has a tree view with "HierarchyDirectory" selected. The main area shows the "General" tab for "HierarchyDirectory". The "Business Name:" field contains "HierarchyDirectory". The "Technical Name:" field contains "HierarchyDirectory". The "Semantic Usage:" dropdown is set to "Dimension". The "Delta Capture:" switch is off. The "Status:" is "Deployed". The toolbar at the top has a "Upload Data from CSV File" button, which is highlighted with a red box.

- In the prompt to "Import CSV File", find the file that has the same name as the table at hand



- In the resulting dialog, all columns should automatically be matched and all you need to do is confirm with "Import". If for any reason you need to repeat the step and upload again, ensure to check "Delete Existing Data Before Upload" to avoid duplicate key errors



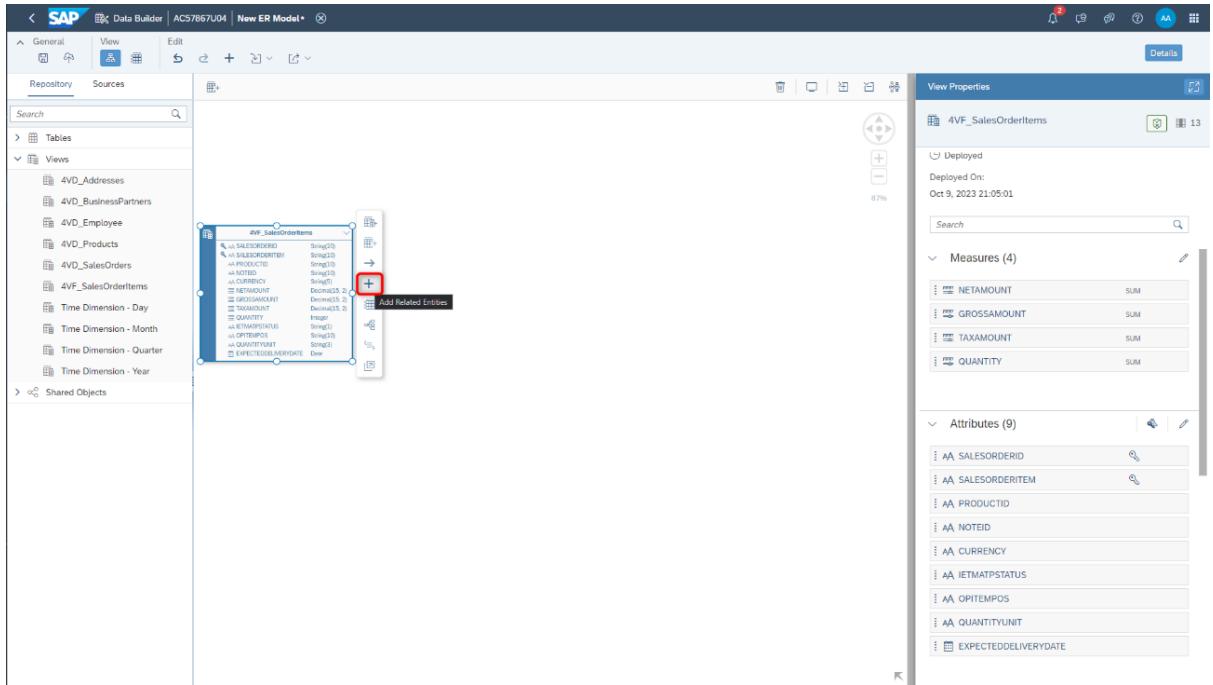
- Ensure that you have indeed uploaded data for all tables. If yes, the fun can now start 🎉

Now you have all the tables, their data and a minimal data model ready in the system. You should now start crafting your entity-relationship model.

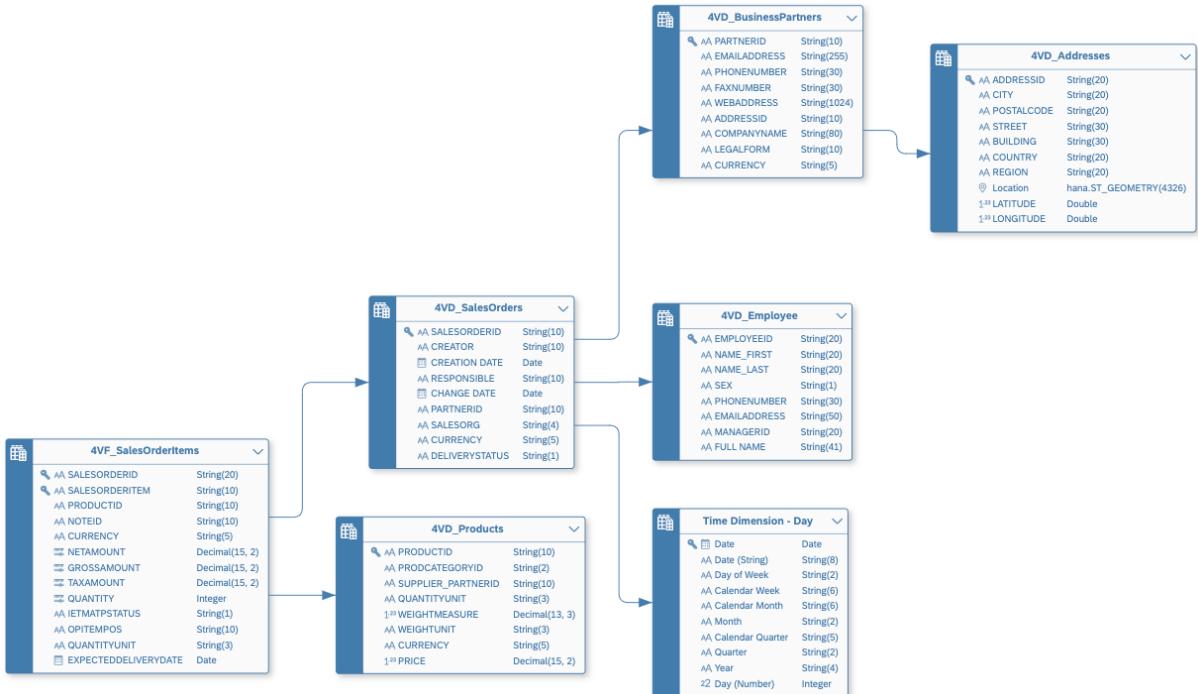
### Create entity-relationship model

- On the **Data Builder** screen, select on the **E/R Models** tab, and click on the **New Entity – Relationship Model**
- Within the **Repository** section (left panel), under **Views**, you will find the entities necessary to create your initial ER model.
- Drag the **4VF\_SalesOrderItems** entity onto the canvas

- To add related entities, click on the entity and select the “+” sign. In the subsequent dialog choose to add all related entities and confirm.



- Select all the related entities for **4VF\_SalesOrderItems**; you will add the additional related entities using the same method until your ER looks like this



- Deploy** your model and name it **4EM\_Overview\_Simple**
- To inspect all entities, select each one and inspect the View Properties panel on the right side of the screen. This gives details on their properties like semantic usage, columns, measures & attributes (only for **4VF\_SalesOrderItems**), semantic types as well as associations (also visible in the ER model itself).

- You can also preview the data of an entity by clicking on the entity and clicking on the **Preview Data** button on the top left after you selected a node on the canvas.
- You can also view the impact & lineage graph of an entity by clicking on the **Impact and Lineage Analysis** button that exists on every node. Note that the subsequent popup makes a differentiation between data lineage and dependency lineage (cp. [SAP Help Documentation](#)).

## Summary

Now that you have your data and data model uploaded, we can continue with the core of session's exercises.

Continue to - [Exercise 1 - Create Analytic Model](#)