**Data Integration and Data Flow Modeling with SAP Data Warehouse Cloud**

ANA365

Exercises  
Jascha Kanngiesser / SAP SE

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Thank you for participating in this hands-on session about Data Integration and Data Flow Modeling with SAP Data Warehouse Cloud! The session is divided into three main parts:

1. Space creation and connection setup
2. Data loading and modeling
3. Data visualization

# Systems

For working your way through the hands-on materials you need access to a SAP Data Warehouse Cloud tenant. Depending on whether you join the live session or watch the session on demand or replay the materials at a later point in time, different systems and credentials can be used.

Participating live

In case you are reading this manual while participating in the live session during the SAP TechEd 2020 program, you can use any of the following three tenants for participating in this hands-on session:

* EMEA region: <https://dwc-teched2020.us10.hcs.cloud.sap>
* APJ region: <https://dwc-teched2020.eu10.hcs.cloud.sap>
* NA region: <https://dwc-teched2020.ap10.hcs.cloud.sap>

To receive login credentials please send an e-mail to [jascha.kanngiesser@sap.com](mailto:jascha.kanngiesser@sap.com?subject=Please%20share%20login%20credentials%20for%20session%20ANA365%20-%20Data%20Flow) mentioning the session ID and the tenant you would like to log in to.

On Demand

In case you are working on this hands-on materials after the live session you cannot use any of the three tenants listed above. Instead, you need to get yourself a SAP Data Warehouse Cloud trial tenant here: <https://saphanajourney.com/data-warehouse-cloud/trial/>

You need to set up all the required connectivity yourself, including the Data Provisioning Agent, uploading certificates, creating the data sets in the remote sources (or uploading the data sets to SAP Data Warehouse Cloud).

Please note that the exercise below is written for attending the live session. Therefore, for example the user credentials and tenant information might not match in case you are following the materials later on demand. In this case please substitute any live session-specific information with the individual information available to your in your trial tenant.

| Explanation | Screenshot |
| --- | --- |
| 1. Make sure you have the login credentials available to you. You should have received a username like saptechedana365+**xyz**@sapcom and a password. Replace the value **xyz** with the number assigned to you. |  |
| 1. Let’s get going – first part! | As mentioned above, this session consists of three main areas: Creating your space and required connections, load the data and build your data models and visualizing the results. Let’s get started with creating your space and setting up the required connectivity. |
| 1. Click on the menu bar to expand the navigation menu. |  |
|
| 1. Select Space Management in the bottom left corner. |  |
| 1. Hit the Create Space + - button in the top right corner to create a new space. |  |
| 1. Enter a Space Name and Space ID. Make sure that at least the Space ID follows the syntax ANA365\_<your three-digit number>. Then hit Create to create your space. |  |
| 1. Reduce the space size in the Overview section at the top. Make sure to specify both the Disk (GB) and In-Memory (GB) storage assignment as 0,1 (GB). |  |
| 1. Hit Save in the top right corner to sabe your changes. |  |
| 1. Head on to the Users section and hit the Add button on the right to add yourself to your space. |  |
| 1. Search for your user ANA365\_<your three digit number> in the dialog, select your user and hit Add to close the dialog. |  |
| 1. Head on to the Connections (Local Connections) section and hit the + - button to créate a new connection. |  |
| 1. Select the Google Cloud Storage tile. |  |
| 1. Or use the filter and search for Google Cloud storage in case you cannot find it in the list of connections. |  |
| 1. Enter a meaningful business name and technical name as well as a useful description. |  |
| 1. Hit Next Step to navigate to the next screen. |  |
| 1. Enter the Project as flash-ocean-262507 |  |
| 1. Enter the root path as /product-reviews-01/ |  |
| 1. Download the key gcs-key.json from the assets folder in the Github repository here: <https://github.com/SAP-samples/teched2020-ANA365/assets/step-17> | **tbd** |
| 1. Hit the Browse button next to the Key entry field and select the downloaded file. |  |
| 1. Hit Create Connection to finish the dialog. |  |
| 1. Select the created connection from the list of connections and hit the Validate Connection button on the right. |  |
| 1. Make sure that the connection is valid for data flow building in the toast message show non the bottom of the screen. |  |
| 1. Hit the + button again to créate another connection. |  |
| 1. This time select the SAP BW connection. |  |
| 1. In case you cannot find it, search for SAP BW in the filter bar. |  |
| 1. Enter a meaningful business name and technical name as well as a descriptive description. |  |
| 1. Make sure that the right Data Provisioning Agent is selected. The ending (in this case us10) should match the tenant you are logged in to. |  |
| 1. Hit Next Step. |  |
| 1. Fill out the Connection Details. Use ld2529 as the Application Server. |  |
| 1. Enter Client 100. |  |
| 1. Enter Systen Number 20. |  |
| 1. Enter user CLOUDCON with password Teched2020 |  |
| 1. Hit Create Connection to finish the dialog. |  |
| 1. Select the newly created SAP BW connection and again hit the Validate Connection button on the right. |  |
| 1. Make sure that the toast message on the bottom of the screen mentions that the connection can be used in the view builder. |  |
| 1. Head on to the Database Access (Database Users) section. Hit the Create button to create a new database user. |  |
| 1. Enter a meaningful Database User Name suffix and make sure to select the Enable Data Ingestion checkbox in the Privileges section. Then hit Create to close the dialog. |  |
| 1. Make sure to copy the Host Name, Port, Database User Name and Password to a safe place, for example your local notes on Mac or Notepad on Windows. Then hit Close to finish the user creation. |  |
| 1. The created database user should be shown with status **Active**. |  |
| 1. Congratulations! | You successfully created your space and created connections to a non-SAP source, Google Big Query! Also you integrated a SAP BW system and enabled your space to get connected to external SQL clients! Before we continue with the second parts, let’s quicky make sure that the space is still empty. |
| 1. Before we start loading data into our space, hit the Monitor Space button in the top right corner. |  |
| 1. Make sure that the space does not yet contain any data. |  |
| 1. Hit Edit Space in the top right corner to navigate back to the Management of your Space. |  |
| 1. Now it’s time to prep your space with some data! | As part of the second section of this hands-on we will equip your space with all the required data and setup the data models. We will ingest some data via an external SQL client (SAP HANA Database Explorer, but can be any client actually), replicate data from some of the data sets available in the SAP BW source, upload a flat file, use the Data Flow to ETL-like move data from Google Cloud Storage into your space and combine the locally available data from these different steps with some data we access virtually from the SAP BW system. |
| 1. Navigate back to the Database Access section and select the Database User you created. |  |
| 1. Hit the Open Database Explorer button on the right. This takes you to the SAP HANA Database Explorer website. |  |
| 1. Within the SAP HANA Database Explorer you can execute DML and DDL statements to create tables or views or insert table into tables. |  |
| 1. Hit the + button in the top left corner. |  |
| 1. From the Database Type select SAP HANA Database. |  |
| 1. Enter the information copied earlier to a safe place when creating the database user like the Host Name, Port, Database User and Password. |  |
| 1. Make sure to check the Save password (stored in the SAP HANA secure store) and Connect to the database securely using TLS/SSL (prevents data eavesdropping) options. Uncheck the Verify the server’s certificate using the trusted certificate below option. |  |
| 1. Hit the OK button to add the database to your list of databases. |  |
| 1. Right-click the newly created database and select Open SQL Console. |  |
| 1. Get the SQL statements from the folder in the Github repository to create and fill the table that holds the Sales Orders: <https://github.com/SAP-samples/teched2020-ANA365/assets/step-51> | **Tbd** |
| 1. Open the create-sales-orders.sql file and copy over the content in the SQL console opened in the SAP HANA Database Explorer. |  |
| 1. Hit the green Execute button to create the Sales Order table. |  |
| 1. Make sure that the table was created correctly by checking the log. |  |
| 1. Empty the SQL console by removing the executed statements. |  |
| 1. Open the insert-sales-orders.sql file and copy over the SQL to fill the table you just created. |  |
| 1. Again hit the green Execute button and check the log for the successful execution. |  |
| 1. Congratulations! | You just used an external tool to connect to your SAP Data Warehouse Cloud space via SQL, created a table and inserted data! This is one example how you can use actually any external 3rd party tool, for example also open source applications like DBeaver, to connect to your SAP Data Warehouse Cloud space from the outside and ingest data using SQL. This way you can for example integrate your SAP Data Warehouse Cloud tenant in your already existing ETL processes. |
| 1. Head back to your SAP Data Warehouse Cloud tenant and navigate to the Data Builder. |  |
| 1. Select your space. |  |
| 1. From the list of tiles select the Import CSV File tile. |  |
| 1. Get the required CSV file SalesOrderItems.csv from the Github repository: <https://github.com/SAP-samples/teched2020-ANA365/assets/step-65> Hit the Select Source File button and select the SalesOrderItems.csv file you just downloaded. |  |
| 1. Leave all options as is and hit the Upload button. |  |