

Creating Geo model from Live HANA Calculation View

This document provides instructions for how to prepare a calculation view on a live HANA system with location dimensions for use in the SAP Analytics Cloud. These instructions do not apply to analytic views on live HANA systems. This document does not cover the general configuration and administration of live connectivity. For more information refer to the “Live Data Connection” section in the SAP Analytics Cloud Help.

To create a location enabled model from a live HANA calculation view, Location Data must be prepared through SAP HANA Studio. After creating a model based on the calculation view in SAP Analytics Cloud, you can add one or more location dimensions to map the Location Data imported from the live HANA system.

Feature Limitations

1. You cannot use models based on a Live HANA calculation view source to populate the Choropleth layer at this time. Support for this is planned with a future version of HANA system.
2. You cannot use Distance Filter, Distance Slider and Intersection Filter in SAP Analytics Cloud when working with models based on live HANA calculation views.

Pre-requisites

1. The live HANA system must be at least on SPS11 on 112.07 or higher or SPS12 on 122.03 or higher.
2. Your HANA system must be licensed for SAP HANA Spatial.
3. To use the Choropleth layer, you have to download Spatial Data Delivery Unit, **GEO CONTENT ANALYTICS CLD**, from SAP Service Marketplace.
4. The HANA system has to be configured with a valid Spatial Reference Identifier (SRID) used by SAP Analytics Cloud.

To add Spatial Reference Identifier (SRID) 3857

In the SAP HANA Studio console, run the following query:

```
CREATE SPATIAL REFERENCE SYSTEM "WGS 84 / Pseudo-Mercator" IDENTIFIED BY 3857
TYPE PLANAR
SNAP TO GRID 1e-4
TOLERANCE 1e-4
COORDINATE X BETWEEN -20037508.3427892447 AND 20037508.3427892447
COORDINATE Y BETWEEN -19929191.7668547928 AND 19929191.766854766
ORGANIZATION "EPSG" IDENTIFIED BY 3857
LINEAR UNIT OF MEASURE "metre"
ANGULAR UNIT OF MEASURE NULL
POLYGON FORMAT 'EvenOdd'
```



```

STORAGE FORMAT 'Internal'
DEFINITION 'PROJCS["Popular Visualisation CRS / Mercator",GEOGCS["Popular
Visualisation CRS",DATUM["Popular_Visualisation_Datum",SPHEROID["Popular
Visualisation
Sphere",6378137,0,AUTHORITY["EPSG","7059"]],TOWGS84[0,0,0,0,0,0,0],AUTHORITY[
"EPSG","6055"]],PRIMEM["Greenwich",0,AUTHORITY["EPSG","8901"]],UNIT["degree",
0.01745329251994328,AUTHORITY["EPSG","9122"]],AUTHORITY["EPSG","4055"]],UNIT[
"metre",1,AUTHORITY["EPSG","9001"]],PROJECTION["Mercator_1SP"],PARAMETER["cen
tral_meridian",0],PARAMETER["scale_factor",1],PARAMETER["false_easting",0],PA
RAMETER["false_northing",0],AUTHORITY["EPSG","3785"],AXIS["X",EAST],AXIS["Y",
NORTH]]'
TRANSFORM DEFINITION '+proj=merc +a=6378137 +b=6378137 +lat_ts=0.0
+lon_0=0.0 +x_0=0.0 +y_0=0 +k=1.0 +units=m +nadgrids=@null
+wktext +no_defs'

```

Task Overview

- [Prepare Location Data from SAP HANA Studio](#)
- [Create a model from SAP Analytics Cloud](#)
- [Create one or more Location Dimensions and map to the model](#)

Prepare Location Data from HANA Studio

In this section you will create a Location Data view that contains ST_GEOMETRY generated from the latitude and longitude information in your calculation view.

1. Identify the fact table that contains your latitude and longitude data. Open your calculation view in HANA Studio and check the name of the table under **Aggregation**.
2. Select a column that will be the unique identifier for each distinct location. This identifier will be referred to as **Location Identifier** in SAP Analytics Cloud. In this example, the Location Identifier is **FacilityID**. Set **FacilityID** as a key column in the calculation view. This is required to make it a valid model for use in SAP Analytics Cloud. Use an integer type for the best performance.

| Type | Key | Name | Label | Aggregation | Variable | Label Column | Hidden | Value help View/Table |
|------|-------------------------------------|----------------|------------|-------------|----------|--------------|--------------------------|-----------------------|
| | <input checked="" type="checkbox"/> | 1:2 FacilityID | FacilityID | | | | <input type="checkbox"/> | |
| | <input type="checkbox"/> | 1:2 Latitude | Latitude | | | | <input type="checkbox"/> | |
| | <input type="checkbox"/> | 1:2 Longitude | Longitude | | | | <input type="checkbox"/> | |
| | <input type="checkbox"/> | 1:2 Profit | Profit | Sum | | | <input type="checkbox"/> | |

3. Create a Location Data table. This table should contain two columns:

- Location Data identifier: ID column values from the **Location Identifier** column of your calculation view.
- Spatial data column: containing spatial data (for example **ST_GEOMETRY**) generated from your latitude and longitude data with SRID 3857.

Once the table is created set the Location Data identifier column as a primary key.

```
CREATE COLUMN TABLE "AnalyticSamples"."Vendor_LocationData" (
  "FacilityID_LD" INTEGER PRIMARY KEY, "Vendor" ST_GEOMETRY(3857));
```

```
UPSERT "AnalyticSamples"."Vendor_LocationData" ("FacilityID_LD")
SELECT "FacilityID" FROM "AnalyticSamples"."Vendor_Sales" GROUP BY
"FacilityID";
```

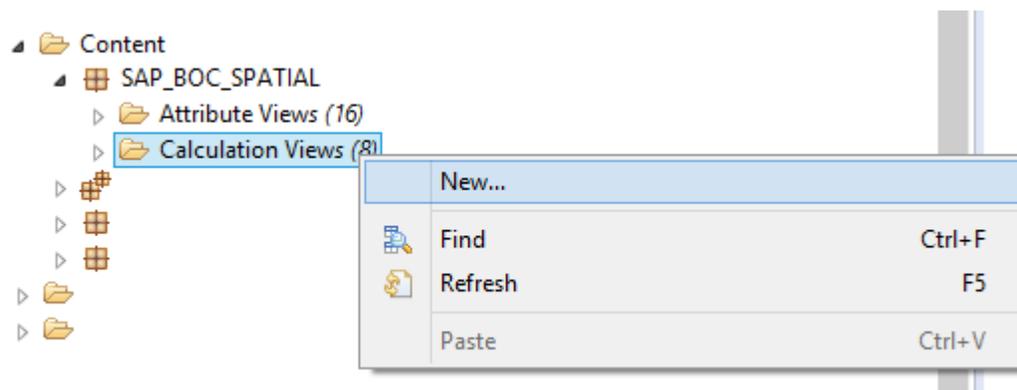
```
UPDATE "AnalyticSamples"."Vendor_LocationData"
SET "Vendor" = new ST_GEOMETRY('POINT(' || "Longitude" || ' ' || "Latitude" ||
')', 4326).ST_Transform(3857)
FROM (
SELECT MIN("Latitude") "Latitude",
MIN("Longitude") "Longitude", "FacilityID"
FROM "AnalyticSamples"."Vendor_Sales" GROUP BY "FacilityID"),
"AnalyticSamples"."Vendor_LocationData"
WHERE "FacilityID" = "FacilityID_LD";
```

Tip: At present, all column names across your calculation view and any Location Data view that will be joined with your calculation view have to be unique. To keep the column names unique:

- Add a “_LD” suffix or any other convention for location data identifier to make sure the ID fields have unique names.
- Use a unique name or use an appropriate naming convention for the ST_GEOMETRY column (**Vendor** is used in this example).

Tip: For SRID 3857, the official range of latitude values is from -85.05112877980659 to 85.05112877980659.

4. Create a calculation view based on the Location Data. This view is referred to as Location Data view and should be created under **Content > SAP_BOC_SPATIAL** package. The view must be under this package in order to be recognized by SAP Analytics Cloud when creating a location dimension. Please make sure the SAP HANA Info Access users are given proper privileges to access the content within this package.



Tip: When creating the calculation view, select **DIMENSION** as the **Data Category**.

New Information View

Create an Information View

Select the required view type and enter the details

Name:*

Label:

Package:*

View Type:

Copy From:

Subtype:

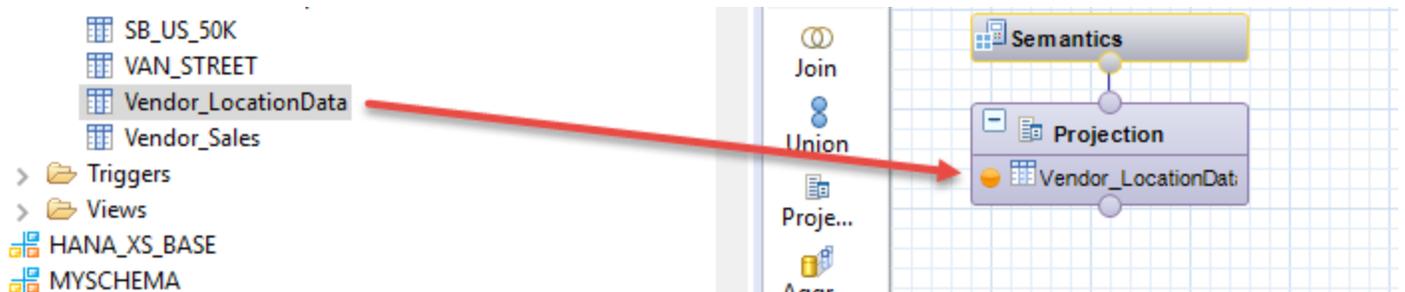
Calculation View

Type:

Data Category: With Star Join

Note: If you set the Data Category as Dimension, the default node is Projection.

- Once the calculation view is created, drag the Location Data table to the **Projection** node.



The screenshot displays the SAP HANA Studio interface for configuring a calculation view. On the left, the 'Scenario' pane shows a flowchart with three nodes: 'Semantics', 'Projection', and 'Vendor_LocationData'. The 'Details' pane shows the selected table 'HanaWrangle'.Vendor_LocationData with two columns: 'FacilityID_LD' and 'Vendor'. The 'Output' pane shows the columns 'FacilityID_LD: Vendor_LocationData.FacilityID_LD' and 'Vendor: Vendor_LocationData.Vendor'. The 'Properties' pane shows the 'Key' property for 'FacilityID_LD' set to 'True'.

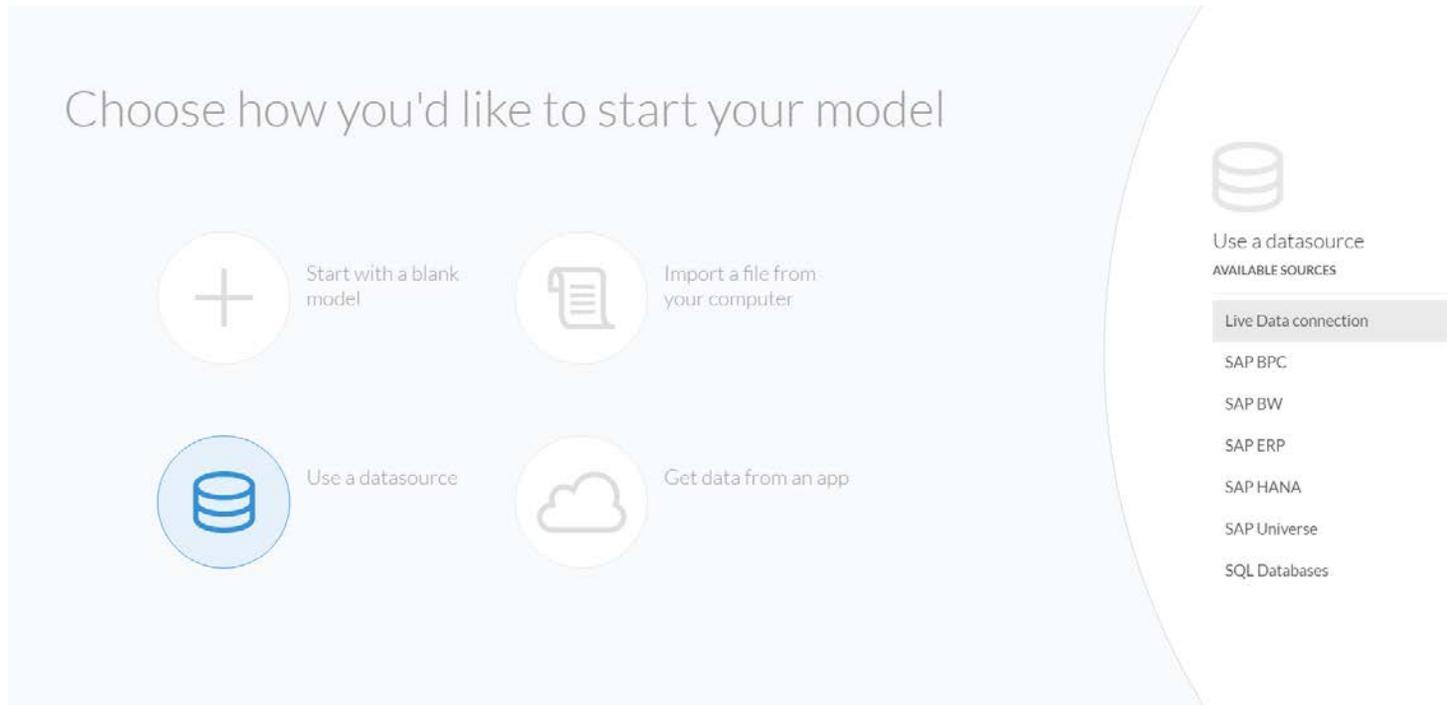
| Property | Value |
|---------------------|---------------------------|
| Name | FacilityID_LD |
| Label | FacilityID_LD |
| Mapping | "HanaWrangle".Vendor_L... |
| Length | |
| Scale | |
| Data Type | INTEGER |
| Key | True |
| Drill Down Enabl... | True |
| Label Column | False |
| Hierarchy Defaul... | |
| Info Object | |
| Keep Flag | False |
| Semantic Type | |

- Project the columns from the Location Data table to the Location Data view and set the **Location Data Identifier** column as a key column. In this example, it is FacilityID_LD. Select the **Projection** node, then double-click each column in the **Details** pane to make it display in the **Output** pane. Select the **Location Identifier** column, then set the **Key** to **True** in the **Properties** pane.
- Save and activate the calculation view.

Create a model from SAP Analytics Cloud

In this section you will use an imported calculation view to create a SAP Analytics Cloud model. You can create the model before or after preparing the Location Data in SAP HANA Studio.

1. From within SAP Analytics Cloud, navigate to **Modeler > Models > Use a datasource**. Choose to start a model from **Live Data connection**.



2. Select the system for your Live Data Connection. Enter valid credentials in the **Set Credentials** dialog.
3. Select the calculation view of your data as your data source and give the model a name and a description.

Create Model From Live Data Connection

Select Live Data Connection & Data Source

System *

LHiew

Data Source *

Search



VENDORSALES

New Model

Name *

VendorSales

Description

OK

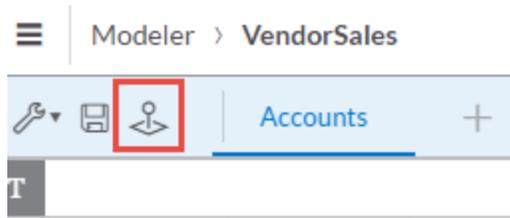
Cancel

After the model is imported successfully, this model can be used for all visualizations except geo maps.

Create one or more Location Dimensions and map to the model

In this section, you will create Location Dimension(s) for the model.

1. In the **Data View** of the model, select the **Create a Location Dimension** icon shown below:



Tip: If the icon does not display, confirm that you selected the correct model. If the icon displays but is disabled, check that the target HANA system meets the minimum HANA version requirements specified in the Pre-requisites section of this document and contact your HANA administrator.

2. From **Create Location Dimension** dialog, map the Location Identifier from your calculation view with the Location Data identifier from your Location Data view containing your spatial data.

- **Location Identifier** is the key column in your calculation view that contains analytic data.
- **View Name** is the Location Data view.
- **Location Dimension Name** is automatically generated from your Location Data view.
- **Identifier for Mapping** is the key column of your Location Data view.

Create Location Dimension

i Map the Location Identifier from the current model to the location data identifier.

Location Identifier + 🗑️

FacilityID ▼

Location Data

View Name

VENDOR_LOCATIONVIEW ▼

Location Dimension Name

Vendor

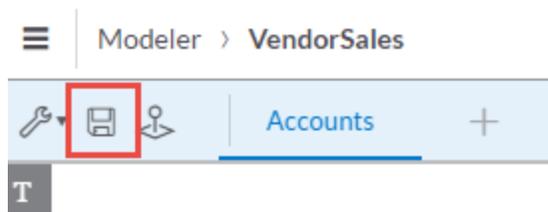
Identifier for Mapping

FacilityID_LD ▼

OK Cancel

Tip: At present, all column names across your calculation view and any Location Data view that will be joined with your calculation view have to be unique. If an error due to non-unique names is displayed, contact the person who prepared the Location Data in SAP HANA Studio.

3. Save the model.



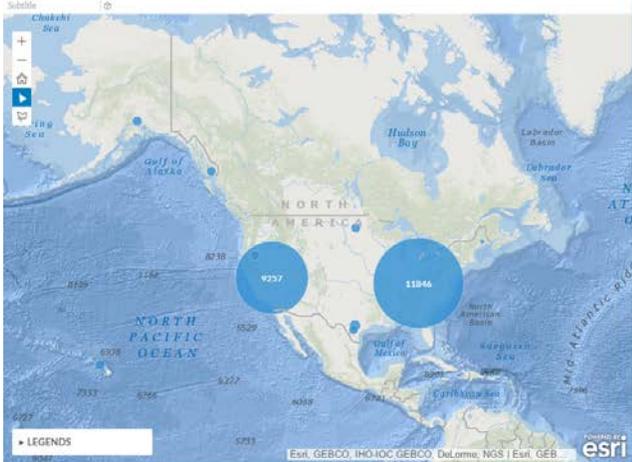
The model is now ready for consumption. Create a story and visualize the location data in a map.



Page 1

Vendor

Subtile



LEGENDS

Esri, GEBCO, IHO-IOC GEBCO, DeLorme, NGS | Esri, GEB

BUILDER

Layer 1 +

Data Source: VendorSales

LAYER TYPE: Bubble Layer

LOCATION DIMENSION: Vendor

BUBBLE COLOR: + Add Measure

BUBBLE SIZE: + Add Measure

CLUSTER PROPERTIES

OK

