S03 - Native HANA Modeling - Part 2

SAP Native HANA Modeling Fundamentals	1. SDA Remote Source & HANA Virtual Tables - Done
	2. HANA Calculation Views
	    1. Create Material Dim CV
	    2. Create Plant Dim CV
	    3. Create table function based Plant Dim CV
	    4. Create Sales Fact CV (Cube)
	    5. Renaming the Plant CV to Plant CV_DIM
	    6. Copy a CV from one Pkg to another
	    7. Move a CV from one Pkg to another
	    8. Create Cube with Star Join
	3. HANA DB Procedures
	4. HANA XS Job scheduler Config
	5. HANA Node types and purpose
		8th Aug: 8:30 AM - 10:30 AM

Q & A Session

Shakthi:

How to make different tables like MARA available at SAPHANADB schema to use them further?	Native HANA Modeling	02-Aug-20
Any reason for the first projection to not have the filters in CV? Can we change the default Projection with the projection with Filter?	Native HANA Modeling	02-Aug-20
When do we use 'Derived From Table' and 'Static List' option in Input Parameters?	Native HANA Modeling	02-Aug-20

Vijay:

CDS View based extractor's : Should we make a copy of the available extractor or we can use as-is provided by SAP? If we are going to use as-is, what if SAP changes the code. (We usually do the copy of HANA Live or VDM's built for operational reporting - atleast for private Views)

Via Extn CDS Views

Tobias

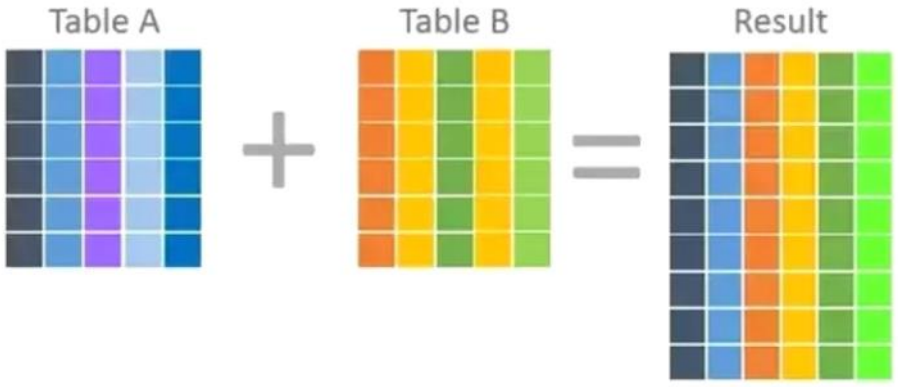
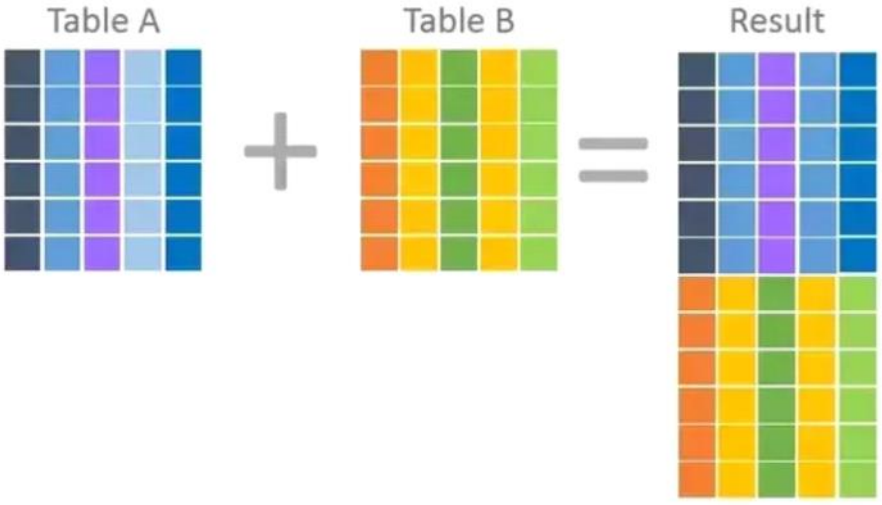
What is a tenant? What is the difference between a tenant and a schema?

Shikha

What is SQL view? And how is it different from CDS view? What are the Use cases of SQL view vs CDS view?

DDL Source (Code) - File (DDIC Object)
-> CDS View entity (not a DB object and not a DDIC object) - 3bubbles symbol
-> SQL View (DB Object) - DB View

Diff b/w Full Outer Join & Union

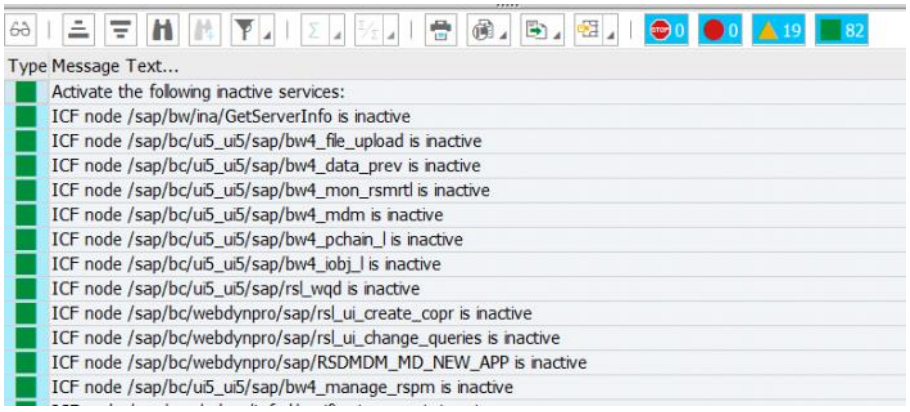
Thumb Rule	Join is used to combine columns from different tables, whereas union is used to combine rows.
Full Outer Join	
Union	

How to activate the BW/4HANA Cockpit

We have to first run a program to check which services are inactive:

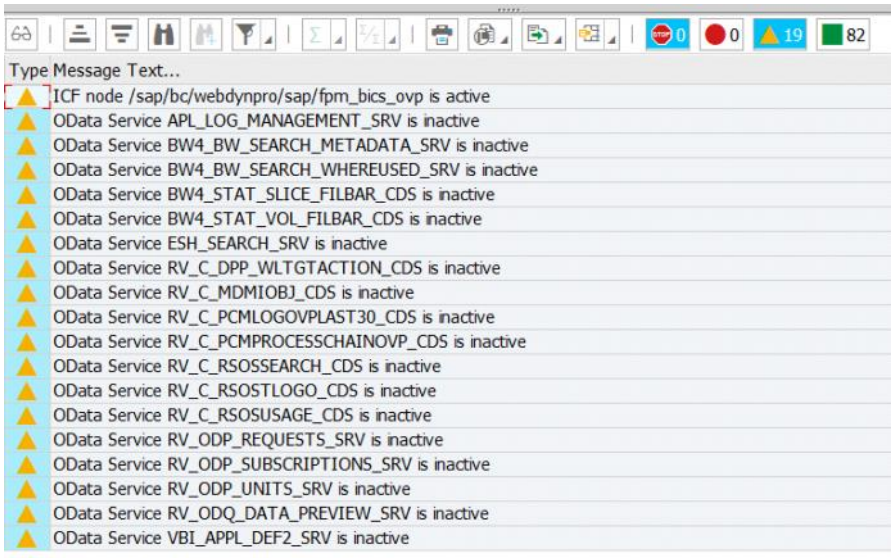
PGM	BW4_UI5_IFC_CONSISTENCY

Results example:



Type	Message Text...
	Activate the following inactive services:
	ICF node /sap/bw/ina/GetServerInfo is inactive
	ICF node /sap/bc/ui5_ui5/sap/bw4_file_upload is inactive
	ICF node /sap/bc/ui5_ui5/sap/bw4_data_prev is inactive
	ICF node /sap/bc/ui5_ui5/sap/bw4_mon_rsmrtl is inactive
	ICF node /sap/bc/ui5_ui5/sap/bw4_mdm is inactive
	ICF node /sap/bc/ui5_ui5/sap/bw4_pchain_l is inactive
	ICF node /sap/bc/ui5_ui5/sap/bw4_iobj_l is inactive
	ICF node /sap/bc/ui5_ui5/sap/rsl_wqd is inactive
	ICF node /sap/bc/webdynpro/sap/rsl_ui_create_copr is inactive
	ICF node /sap/bc/webdynpro/sap/rsl_ui_change_queries is inactive
	ICF node /sap/bc/webdynpro/sap/RSDMDM_MD_NEW_APP is inactive
	ICF node /sap/bc/ui5_ui5/sap/bw4_manage_rspm is inactive

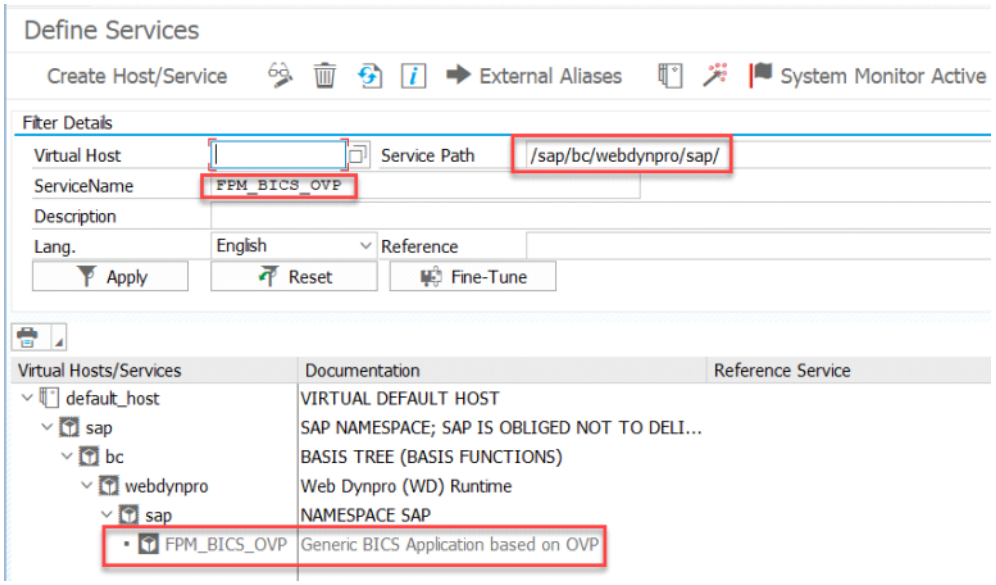
Check the warnings (Yellow): These services are inactive in your system.
We need to activate them via SICF tcode.



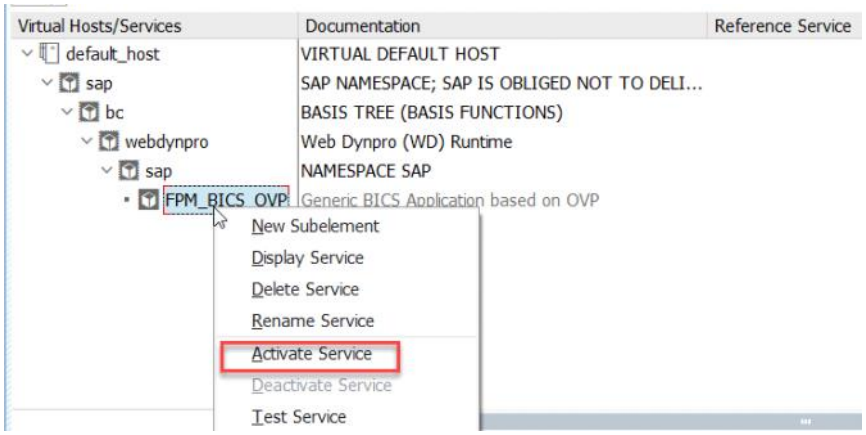
Type	Message Text...
	ICF node /sap/bc/webdynpro/sap/fpm_bics_ovp is active
	OData Service APL_LOG_MANAGEMENT_SRV is inactive
	OData Service BW4_BW_SEARCH_METADATA_SRV is inactive
	OData Service BW4_BW_SEARCH_WHEREUSED_SRV is inactive
	OData Service BW4_STAT_SLICE_FILBAR_CDS is inactive
	OData Service BW4_STAT_VOL_FILBAR_CDS is inactive
	OData Service ESH_SEARCH_SRV is inactive
	OData Service RV_C_DPP_WLTGTACTION_CDS is inactive
	OData Service RV_C_MDMIOBJ_CDS is inactive
	OData Service RV_C_PCMLOGOVPLAST30_CDS is inactive
	OData Service RV_C_PCMPROCESSCHAINOVP_CDS is inactive
	OData Service RV_C_RSOSSEARCH_CDS is inactive
	OData Service RV_C_RSOSTLOGO_CDS is inactive
	OData Service RV_C_RSOSUSAGE_CDS is inactive
	OData Service RV_ODP_REQUESTS_SRV is inactive
	OData Service RV_ODP_SUBSCRIPTIONS_SRV is inactive
	OData Service RV_ODP_UNITS_SRV is inactive
	OData Service RV_ODQ_DATA_PREVIEW_SRV is inactive
	OData Service VBI_APPL_DEF2_SRV is inactive

Example of activating service via SICF:

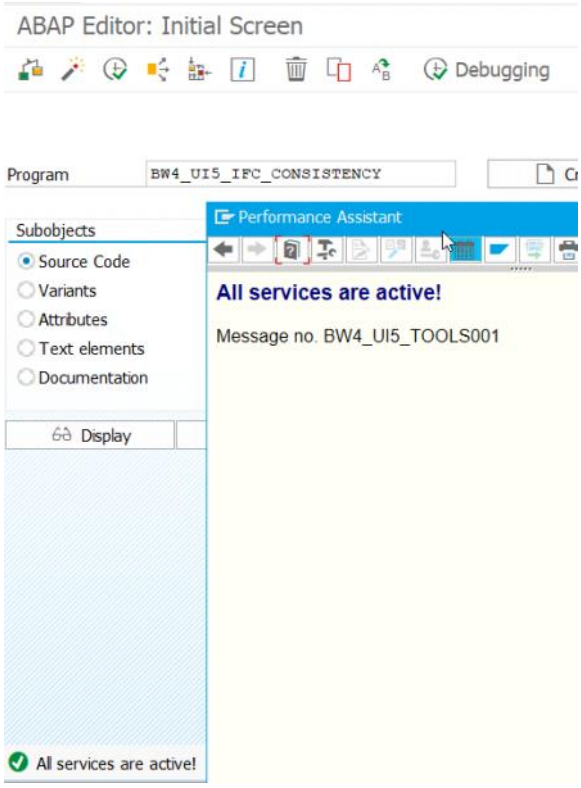
Provide the path and service name: the service will be greyed out since it's inactive



From the context menu (right click), select 'Activate service:



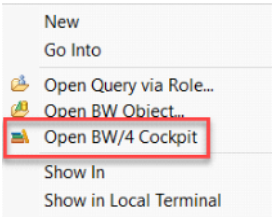
Once all services are activated, run the consistency check again and this time it should provide a message - 'All services are active' :



Now you need to log off (Close Project) and log back in (Open project and double click to login), for the change to take effect.

Now, we have 2 ways to verify:

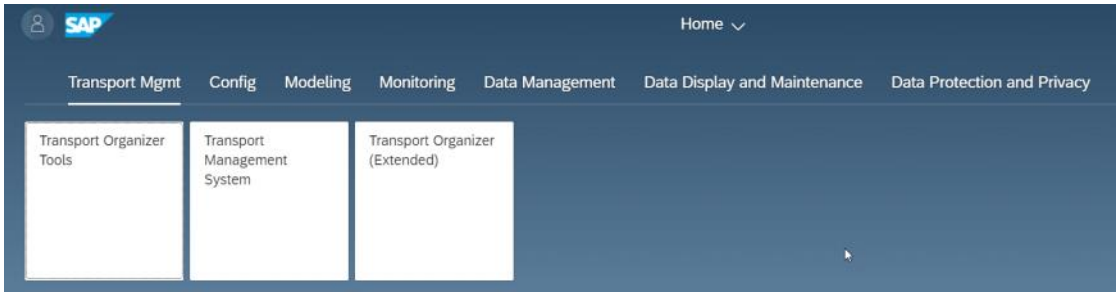
1. From the context menu of the project, you should get an option to open the 'BW/4HANA Cockpit':



2. You can also click on the option on the top menu bar:

This option will ask you choose the project and it'll list only those projects (connections) which has all services activated.

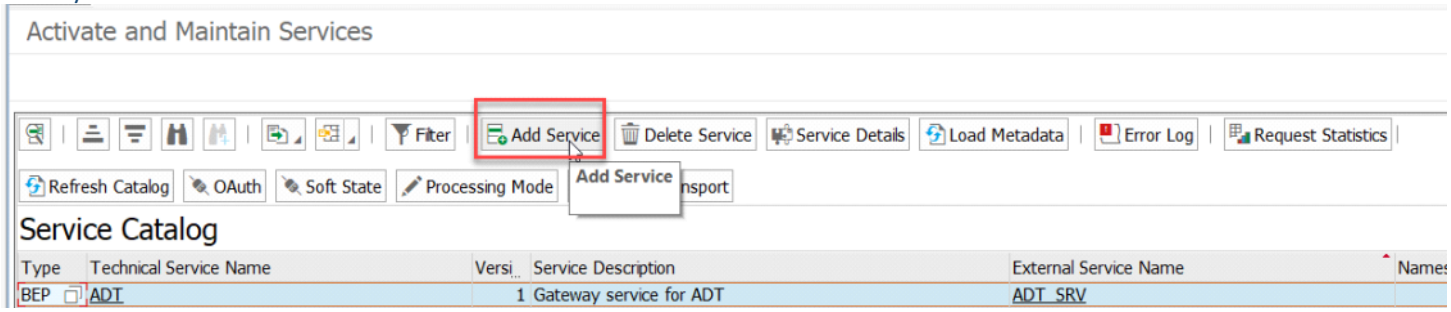
Both option should now be successfully launching the BW/4HANA Cockpit.

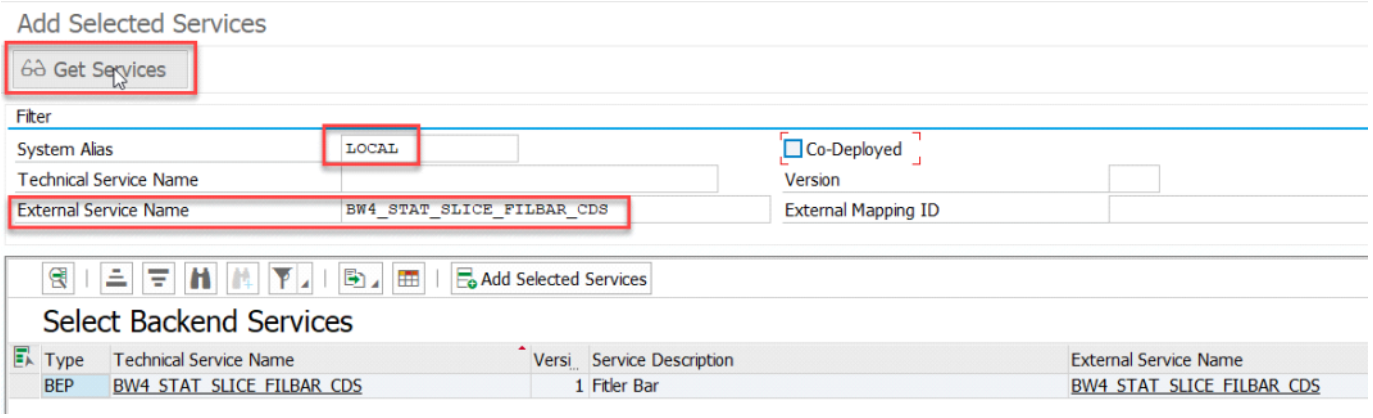


If you have any Odata service missing then you need to add that service via a different path:

SPRO->SAP Gateway->Odata Channel->Administration->General Settings->Activate and Maintain Services

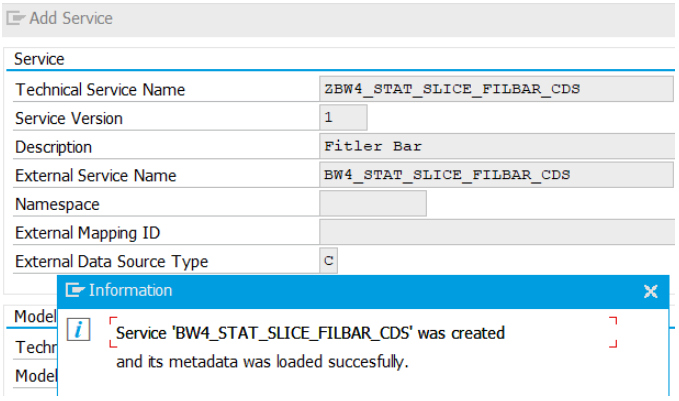
There you need to add the service:



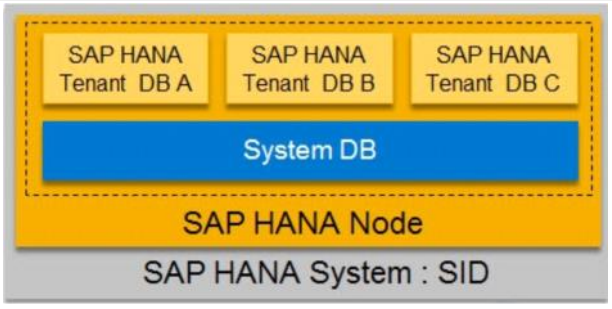
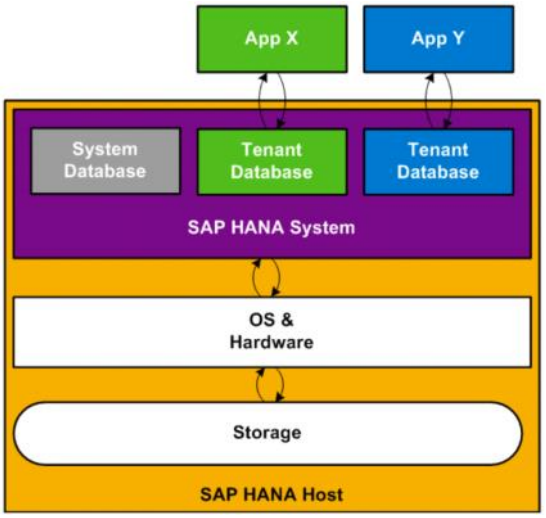
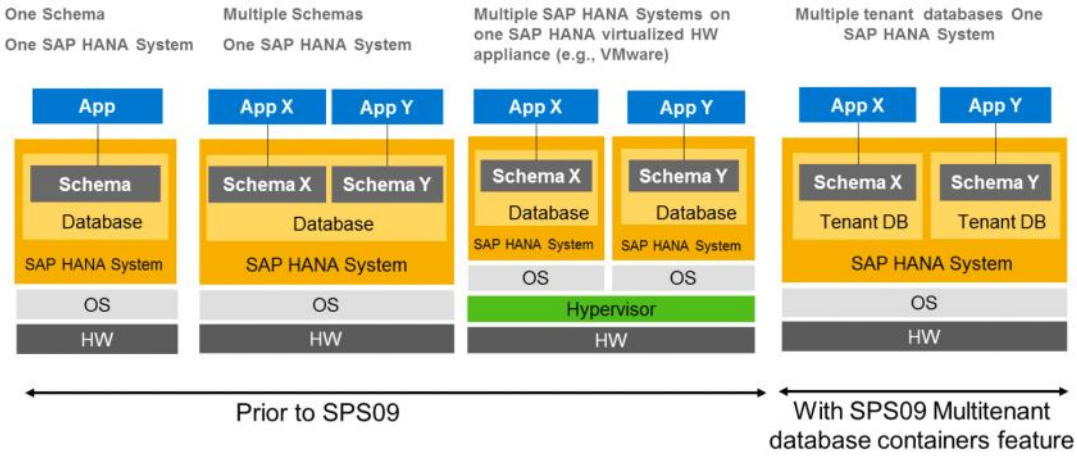


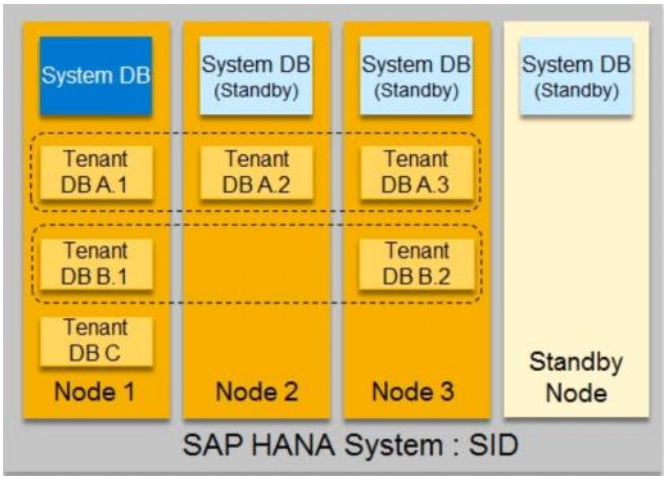
Once you click on the service name listed, you need to assign package and then click ok...the message that service is successfully added, will be displayed.

Voila!...this is how you activate the Odata services and make that beautiful BW/4H Cockpit work!



Database Tenant

Definition	SAP HANA supports multiple isolated databases in a single SAP HANA system. These are referred to as tenant databases. An SAP HANA system is capable of containing more than one tenant database. A system always has exactly one system database, used for central system administration, and any number of tenant databases (including zero). With SPS09, SAP HANA added support for multiple tenant databases in one SAP HANA system for production use. We call this feature, “Multitenant database containers”.
Pictorial Depiction	  
Usage	SAP HANA system with multitenant database containers feature can contain multiple tenant databases. All tenant databases in the same system share the same system resources (memory and CPU Cores). However, each tenant database is fully isolated with its own database users, catalog, repository, persistence (data files and log files) and database services so that for example, you can run both SAP Business Suite and SAP Business Warehouse (BW) in one SAP HANA system.
System DB and Tenant DB	You use the system database to create, drop, start, stop tenant databases and perform database administration activities (backup/recovery, system replication) for all tenant databases at once.
Scale Out Scenario	In a scale out scenario, a tenant database can span across multiple SAP HANA nodes


System DB
System DB (Standby)
System DB (Standby)
System DB (Standby)
Tenant DB A.1
Tenant DB A.2
Tenant DB A.3
Tenant DB B.1
Tenant DB B.2
Tenant DB C
Node 1
Node 2
Node 3
Standby Node
SAP HANA System : SID

Requirement for Plant Address

- Plant Address is different based on validity.
- Pick the plant address based on current date.
- Current date should be between 'Valid From' & 'Valid To'.
- Date should be restricted based on user provided date not current date.
  Input Parameters

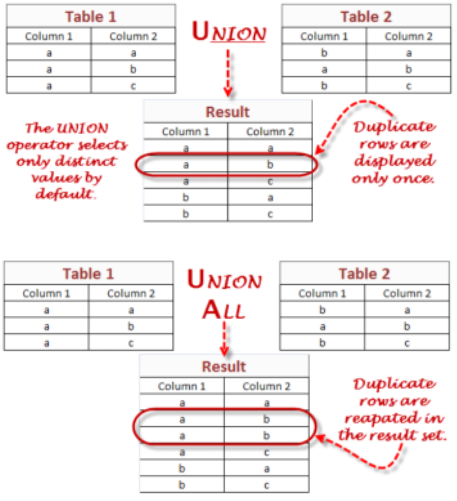
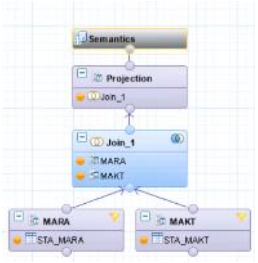
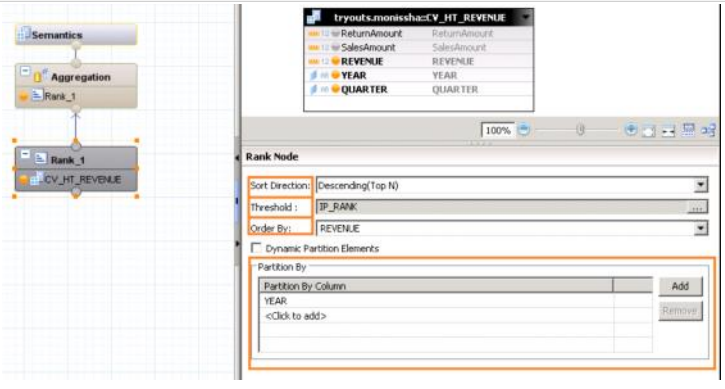
Time based join - Temporal Join

T001W-MADT = ADRC.CLIENT
And T001W-ADRNR = ADRC.ADDRNUMBER
And Current Date between ADRC.DATE_FROM and ADRC.DATE_TO

Table Function (Code)

1. Temporal Join in Dimension CVs.
2. Access Row tables
3. Loops

HANA Nodes and Purpose

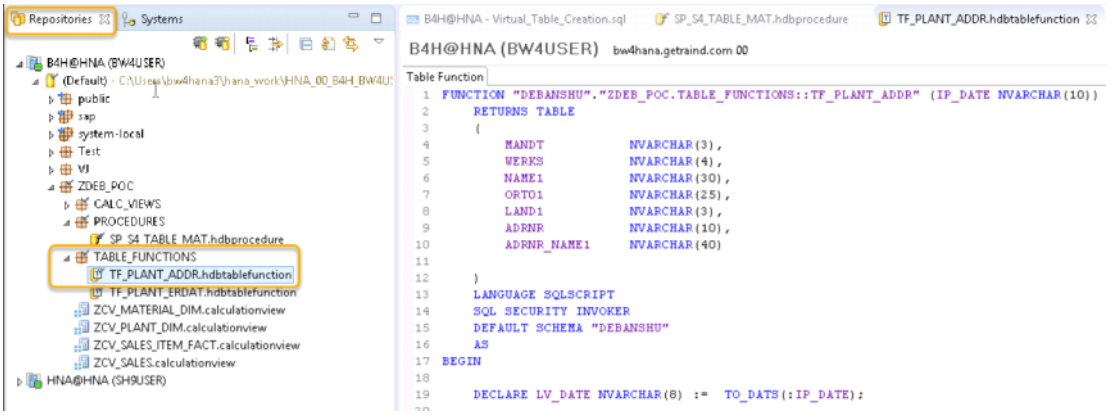
Projection	Selecting subset of column for the list of columns	
Union	Combining 2 tables with similar structure. E.g. Actuals + Plan	 Assignment: HANA UNION Node is a UNION or UNION_ALL?
Join	Combining 2 tables with different structure but one Or more common column E.g. We have ID in one column and we need text from another column.	
Rank	Top N records based on a condition. E.g. Need top 10 customer for each Year based on Sales Qty	

Aggregation	Sum the measures (Sum, Min, Max)		Assignment: WHAT HAPPENS IF I Use aggregation node in dimension CV?

In a Nutshell:

Node Type	Use Case
Projection	To filter data or obtain a subset of required columns from a data source
Aggregation	To summarize measures by grouping them together by attribute columns values
Join	To query data from two or more data sources
Union	To combine the data from two or more data sources
Star Join	To join attributes to the very last step of a *CUBE With Star Join* Calculation view
Rank	To order the data for a set of partition columns and select only the top 3/4/…/n elements

HANA Table functions

What is a table function	▪ Replacement for Script-based CVs. ▪ Is a repository object - meaning will be accessible via 'Development Perspective' only. ▪ Acts like a regular table. ▪ Can we used in SQL console or HANA CV. ▪ Allows for complex coding. ▪ File gets created with extension - '.hdbtablefunction' 
Table Function Scenario	JOIN CONDITION (TEMPORAL JOINS) MANDT = MANDT ADRNR = ADDRNUMBER AND CURRENT_DATE BETWEEN VALID_FROM AND VALID_TO