



#vSAPCDSSStarterSet - Workshop Basics I Presentation Part II

From #SAPCommunity to #SAPCommunity



Agenda

- S/4HANA how to find standard CDS Views
- S/4HANA Embedded Analytics
- S/4HANA new Datamodel
- S/4HANA Compatibility Views
- Create Custom Multidimensional Report with CDS Views
- UI Annotations
- View Entitys (New with 2020)
- Call ABAP Function from CDS View



CDS DeepDive Agenda

- S/4HANA how to find standard CDS Views
- S/4HANA Embedded Analytics
- S/4HANA new Datamodel
- S/4HANA Compatibility Views
- Create Custom Multidimensional Report with CDS Views
- UI Annotations
- View Entitys (New with 2020)
- Call ABAP Function from CDS View



Where to find S/4HANA Standard CDS Views

The screenshot shows a browser window for the SAP Help Portal. The URL is https://help.sap.com/viewer/8308e6d301d54584a33cd04a9861bc52/2020.000/en-US/b3f9942dcf1a4bbea1eceeb947288f55.html?q=c_salesorderquery. The page title is "Analytics - Sales Order - SAP Help". The main content area displays the "Analytics - Sales Order" CDS View. A yellow banner at the top says "Highlighting results for 'c_salesorderquery'". Below it, the title "Analytics - Sales Order" is shown. A table provides details about the CDS View:

Technical Name	C_SalesOrderQuery
Business Role	SAP_BR_SALES_MANAGER: Sales Manager
Business Catalog	SAP_SD_BC_SALES_ANALYTICS: Sales - Analytics
Data Category	Query
Status	Released
Corresponding DataSource (for use in SAC and analytical clients)	2CCSDSLSORDHDRQRY

At the bottom, a note states: "This CDS view provides the pre-requisite for answering questions about sales orders at header level. Example business questions include: [redacted]". A feedback poll at the bottom right asks "Was this topic helpful?" with "Yes" and "No" options.

- <https://help.sap.com/viewer/8308e6d301d54584a33cd04a9861bc52/2020.000/en-US/5418de55938d1d22e10000000a44147b.html>

From Eclipse:

The screenshot shows the SAP Eclipse IDE interface with several windows open, demonstrating the development of ABAP objects.

Project Explorer: Shows the project structure with nodes like "ABAP_TRIAL_EN" and "S4H_400_jknaus_en". A red circle highlights the search icon in the toolbar.

CDS Navigator: Shows the "Z_VIEW_JK" object. A red circle highlights the search bar containing "C_SALESORDERQUERY".

Open ABAP Development Object: A modal window showing the search results for "C_SALESORDERQUERY". A red circle highlights the search term in the input field.

Code Editor: Displays the ABAP code for the "C_SALESORDERQUERY" view. A red oval highlights the section of code defining the view and its parameters. The code includes annotations like @ClientHandling.algorithm, @EndUserText.label, and @VDM.viewType.

```

1 @ClientHandling.algorithm: #SESSION_VARIABLE
2 @EndUserText.label: 'Analytics - Sales Order'
3 @VDM.viewType: #CONSUMPTION
4 @AccessControl.authorizationCheck: #PRIVILEGED_ONLY
5 @AbapCatalog: {
6   sqlViewName: 'CSDSLSORDHDRQRY',
7   compiler.compareFilter: true
8 }
9 @ObjectModel: {
10   usageType: {
11     dataClass: #MIXED,
12     serviceQuality: #D,
13     sizeCategory: #XL
14   }
15 }
16 @Analytics.query: true
17 @OData.publish: true
18
19 define view C_SalesOrderQuery
20 with parameters
21   @Consumption.defaultValue: 'M'
22   P_ExchangeRateType : kurst,
23   P_DisplayCurrency : vdm_v_display_currency
24 as select from I_SalesOrderCube(P_ExchangeRateType:$pa
25 {
26   //Key
27   key SalesOrder,

```

Bottom Status Bar: Shows "Read-Only" and "Smart Insert" status.



Dependency Analyzer

Screenshot of the Eclipse IDE showing the dependency analysis of a CDS View named `C_SALESORDERQUERY`.

The screenshot shows the Eclipse IDE interface with the following components:

- Project Explorer:** Shows the project structure with files like `ABAP_TRIAL_EN` and `S4H_400_jknaus_en`.
- Source Code Editor:** Displays the ABAP code for the `C_SALESORDERQUERY` CDS View.
- Context Menu:** A context menu is open over the code editor, with the "Open With" option highlighted. Other options include Data Preview, Activation Graph, Dictionary Log, Active Annotations, Annotation Propagation, and Dependency Analyzer.
- Dependency Analyzer View:** A table view on the right side of the interface lists the SQL relations and their corresponding object types and entity names.

SQL Relation	Object Type	Entity Name
	CDS View (STOB)	<code>C_SalesOrderQuery</code>
From	CDS View (STOB)	<code>I_SalesOrderCube</code>
From	CDS View (STOB)	<code>I_SalesDocument</code>
From	CDS View (STOB)	<code>I_SalesDocumentBasic</code>
From	Database Table (T...)	
Left Outer Join	Database Table (T...)	
Left Outer Join	Database Table (T...)	
Left Outer Join	CDS View (STOB)	<code>I_User</code>
From	Database Table (T...)	
Left Outer Join	CDS View (STOB)	<code>I_Customer</code>
From	Database Table (T...)	
Left Outer Join	CDS View (STOB)	<code>P_OpenSalesOrdersAnalytics</code>
From	CDS View (STOB)	<code>P_OpenSalesOrdersAnlyts</code>
From	CDS View (STOB)	<code>I_SalesDocumentExtdItem</code>
From	Database Table (T...)	
Left Outer Join	Database Table (T...)	
Left Outer Join	Database Table (T...)	
Left Outer Join	Database Table (T...)	



Data Preview

Raw Data | Show Log | Max. Rows: 10000

Filter pattern: 10000 ...result) Parameter SQL Console Number of Entries Select Columns Add filter

SalesOrd	SalesOrderTyp	DisplayCurren	N	comingSalesOrdersNetAmtInDC	NumberOf
0000004621	TA	USD	1	2967133.00	0
0000004622	TA	USD	1	2087997.75	0
0000004623	TA	USD	1	2087997.75	0
0000004624	TA	USD	1	2351740.75	0
0000004625	TA	USD	1	659357.50	0
0000004627	TA	USD	1	104229.10	0
0000004628	TA	USD	1	114652.70	0
0000004629	TA	USD	1	76087.45	0
			1	7295.60	0
			1	3126.85	0
			1	2307775.50	0
			1	1714353.75	0
			1	1868195.75	0
			1	1230808.75	0
			1	3296836.00	0
			1	1912161.00	0
			1	2637454.25	0

Open with Data Preview

Enter Parameter Values

Type: VDM_V_DISPLAY_CURRENCY : cuy(5) Description: Display Currency

P_EXCHANGERATETYPE: M

P_DISPLAYCURRENCY: USD

?

OK Cancel



SE38

```
REPORT Z_TEST_JK.  
data: ls_so type c_SALESORDERQUERY.  
select * from c_salesorderquery( p_Exchange  
RateType = 'M', p_DisplayCurrency = 'USD' )  
into @ls_so .  
  
endselect.
```



From ABAP

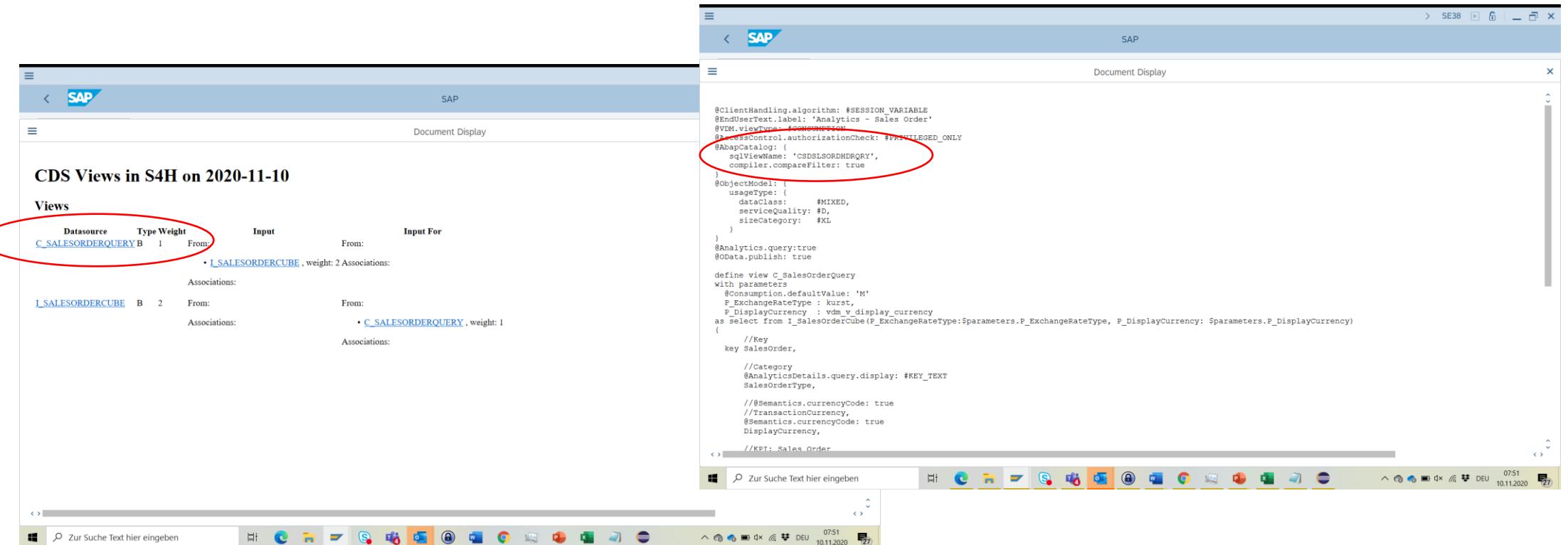
- Report RUTDDLSSHOW2

The screenshot shows the SAP SE38 interface with the title bar "Search for DDL sources with name and/or template". The main area displays ABAP code for a view named C_SALESORDERQUERY. A red oval highlights the line "@AbapCatalog: { sqViewName: 'CSDSLSORDHDRQRY', compiler.compareFilter: true }".

```
C_SALESORDERQUERY      A SAP      28.07.2020 23:36:39
@ClientHandling.algorithm: #SESSION_VARIABLE
@EndUserText.label: 'Analytics - Sales order'
@VDM.viewType: #CONSUMPTION
@AccessControl.authorizationCheck: #PRIVILEGED_ONLY
@AbapCatalog: {
    sqViewName: 'CSDSLSORDHDRQRY',
    compiler.compareFilter: true
}
@ObjectModel: {
    usageType: {
        dataClass:      #MIXED,
        serviceQuality: #D,
        sizeCategory:   #XL
    }
}
@Analytics.query:true
@Data.publish: true
define view C_SalesOrderQuery
with parameters
    @Consumption.defaultValue: 'M'
```

From ABAP

- Report RUTDDLSDEPENDENCIES



The screenshot shows two SAP windows side-by-side:

- CDS Views in S4H on 2020-11-10**: This window displays a list of CDS views. A red oval highlights the first entry, which is a view named **C_SALESORDERQUERY**. It has a type of **B** and a weight of **1**. The "Input For" section shows it is used by **I_SALESORDERCUBE**, which has a weight of 2.
- Document Display**: This window shows the source code of the **C_SALESORDERQUERY** view. A red oval highlights a specific section of the code where the **sqlViewName** is defined as **'CSDSLSORDHDRQRY'**.

```

@ClientHandling.algorithm: #SESSION_VARIABLE
@EndUserText.label: 'Analytics - Sales Order'
@VNM.viName: 'CSDSLSORDHDRQRY'
@SAPControl.authorizationCheck: #PRIVILEGED_ONLY
@AbapCatalog: {
    sqlViewName: 'CSDSLSORDHDRQRY',
    compiler.compareFilter: true
}
@ObjectModel: {
    usageType: {
        dataClass: '#MIXED',
        serviceQuality: #D,
        sizeCategory: '#XL'
    }
}
@Analytics.query:true
@Data.publish:true

define view C_SalesOrderQuery
with parameters
    @Consumption.defaultValue: 'M'
    @_ExchangeRateType : kurst,
    @_DisplayCurrency : vdw_v_display_currency
as select from I_SalesorderCube(P_ExchangeRateType:Sparameters.P_ExchangeRateType, P_DisplayCurrency: Sparameters.P_DisplayCurrency)
(
    //Key
    key SalesOrder,
    //Category
    @AnalyticsDetails.query.display: #KEY_TEXT
    SalesOrderType,
    //Semantics.currencyCode: true
    //TransactionCurrency,
    @Semantics.currencyCode: true
    DisplayCurrency,
    //KPI: Sales Order
)

```

SE16H CSDSLSORDHDRQRY



General Table Display

Database Connection: Outer Join Definition:

Table: Analytics - Sales Order
Text table:
Layout:
Maximum no. of hits: No texts
Grouping Minimum:
Maintain entries

CDS-Entität: DDL-Name:

Get Field: ↑ ↓

Selection Criteria

Fld name	O...	FrValue	To value	More	Group	Output	Total	Group	Sequence	Sort	Sort Type
Client											
Sales Order						<input checked="" type="checkbox"/>					
Sales Doc. Type						<input checked="" type="checkbox"/>					
Display Currency						<input checked="" type="checkbox"/>					
No. of Sales Orders						<input checked="" type="checkbox"/>					

Save Cancel



SE11 Data Dictionary

SAP Dictionary: Display View

DDL SQL View: CSDSLORDHDRQRY Active
Short Description: Analytics - Sales Order
DDL Source: C_SALESORDERQUERY

Attributes Table/Join Conditions View Flds Selection Conditions Maint.Status

View field	Table	Field	Key	Data elem.	Mod	DTyp	Length	Short description
MANDT	ISDSALESORDERHC	MANDT	<input checked="" type="checkbox"/>	MANDT	<input type="checkbox"/>	CLNT	3	Client
SALESORDER	ISDSALESORDERHC	SALESORDER	<input checked="" type="checkbox"/>	VDM_SALES_ORDER	<input type="checkbox"/>	CHAR	10	Sales Order
SALESORDERTYPE	ISDSALESORDERHC	SALESORDERTYPE	<input checked="" type="checkbox"/>	AUART	<input type="checkbox"/>	CHAR	4	Sales Document Type
DISPLAYCURRENCY	ISDSALESORDERHC	DISPLAYCURRENCY	<input checked="" type="checkbox"/>	VDM_V_DISPLAY_CURRENCY	<input type="checkbox"/>	CUKY	5	Display Currency
NUMBEROFINCOMING..	ISDSALESORDERHC	NUMBEROFINCOMING..	<input checked="" type="checkbox"/>	NMBR_OF_INCG_SLS_ORDS	<input type="checkbox"/>	INT8	19	Number of Incoming Sales Orders
INCOMINGSALESCORD..	DDDDLCURRTYPES	CURR19_2	<input checked="" type="checkbox"/>	INCG_SLS_ORDS_NET_AMT_IN_DC	<input checked="" type="checkbox"/>	CURR	19	Incoming Sales Orders Net Value In Display Currency
NUMBEROFPENSALE..	ISDSALESORDERHC	NUMBEROFPENSALE..	<input checked="" type="checkbox"/>	NMBR_OF_OPN_SLS_ORDS	<input type="checkbox"/>	INT8	19	Number of Open Sales Orders
OPNSOFORORDRELTD..	ISDSALESORDERHC	OPNSOFORORDRELTD..	<input checked="" type="checkbox"/>	OPN_ORDS_FOR_ORDRELINV_AMT_IDC	<input type="checkbox"/>	CURR	19	Open Sales Orders for Ord.Reltd Billing Net Amount IDC
OPNSLSORDSFORDEL..	ISDSALESORDERHC	OPNSLSORDSFORDEL..	<input checked="" type="checkbox"/>	OPN_ORD_FOR_DEL_AMT_IDC	<input type="checkbox"/>	CURR	19	Open Sales Orders for Deliveries Net Amt in Displ. Crcy
OPNSLSORDSFORINV..	ISDSALESORDERHC	OPNSLSORDSFORINV..	<input checked="" type="checkbox"/>	OPN_ORD_FOR_IPLAN_AMT_IDC	<input type="checkbox"/>	CURR	19	Open Sls Orders for Billing Plans Net Amt in Displ. Crcy
OPENSALESORDERSN..	DDDDLCURRTYPES	CURR19_2	<input checked="" type="checkbox"/>	OPN_ORD_AMT_IDC	<input checked="" type="checkbox"/>	CURR	19	Open Sales Orders Net Amount In Display Currency
CREATEDBYUSER	ISDSALESORDERHC	CREATEDBYUSER	<input checked="" type="checkbox"/>	ERNAME	<input type="checkbox"/>	CHAR	12	Name of Person who Created the Object

Generated DDL SQL views are only supported in limited way by SE11 [View details](#)



SE11 (2)

SAP Display Data Definition

Data Definition: C_SALESORDERQUERY Active

Properties Source Code

ADT-Link: adt://S4H/sap/bc/adt/ddic/ddl/sources/c_salesorderquery

```
1 @ClientHandling.algorithm: #SESSION_VARIABLE
2 @EndUserText.label: 'Analytics - Sales Order'
3 @VDM.viewType: #CONSUMPTION
4 @AccessControl.authorizationCheck: #PRIVILEGED_ONLY
5 @AbapCatalog: {
6   sqlViewName: 'CSDSLSORDHDRQRY',
7   compiler.compareFilter: true
8 }
9 @ObjectModel: {
10   usageType: {
11     dataClass:      #MIXED,
12     serviceQuality: #D,
13     sizeCategory:   #XL
14   }
15 }
16 @Analytics.query:true
17 @OData.publish: true
18
19 define view C_SalesOrderQuery
20 with parameters
21   @Consumption.defaultValue: 'M'
22   P_ExchangeRateType : kurst,
23   P_DisplayCurrency : vdm_v_display_currency
24 as select from I_SalesOrderCube(P_ExchangeRateType:$parameters.P_ExchangeRateType, P_DisplayCurrency: $parameters.P_DisplayCurrency)
25 {
26   //Key
27   key SalesOrder,
```

⚠ Data Definitions can only be edited using ADT in Eclipse



Fiori Launchpad

<https://saps4hsrv.westeurope.cloudapp.azure.com:8103/sap/bc/ui2/flp?sap-client=400&sap-language=EN#Shell-home>

A screenshot of the Fiori Launchpad interface. At the top, there's a navigation bar with links like My Home, Report Design, Analysis Path Framework Modeling, KPI Design, Query Design, Predictive Models, Procurement-Related Activities, Classification and Segmentation, and Supplier E. Below the navigation bar, there are several tiles. In the 'Report Design' section, there are two main tiles: 'Custom Analytical Queries' (with a gear icon) and 'View Browser Views' (with a monitor icon). Under 'Report Design', there are five smaller tiles labeled 'Create Reports', 'Configure Report', 'Report Workspace', 'Publish Report', and 'Create Report Evaluation', all marked as 'Obsolete'. In the 'Analysis Path Framework Modeling' section, there is one tile labeled 'APF Configuration Modeler' with a magnifying glass icon.

Requires Role SAP_BR_ANALYTICS_SPECIALIST



Fiori View Browser

The screenshot shows the SAP Fiori View Browser interface. At the top, there are navigation icons and a status bar indicating "Nicht sicher". The main title is "View Browser". Below the title, there are counts for different view types: 1 View, 0 Basic, 0 Composite, 1 Consumption, 0 Extension, and 0 Undefined. The main content area displays a table titled "Views (1) Standard". The table has columns for Favorite, Tags, Name, Description, Status, Application Component, Data Category, View Type, and Matched In. One row is visible, showing "C_SalesOrderQuery" as the name, "Analytics - Sales Order" as the description, "Released" as the status, "SD-ANA" as the application component, "Query" as the data category, and "Consumption" as the view type. Two specific elements are highlighted with red circles: the "Show Content" button in the header toolbar and the "Data Category" column header in the table.

Views (1) Standard							
Favorite	Tags	Name	Description	Status	Application Component	Data Category	View Type
<input checked="" type="checkbox"/>		C_SalesOrderQuery	Analytics - Sales Order	Released	SD-ANA	Query	Consumption

⇒ Show Content is not possible for all CDS Views
(Depends on attributes like Query)

Show Content (Multidimensional)

Journal Entry Item Browser - SAP | Design Studio | Analytics - Sales Order

Nicht sicher | saps4hsrv.westeurope.cloudapp.azure.com:8103/sap/bc/ui2/flp?#AnalyticQuery-analyze?XQUERY=2CCSDSLSORDHDRQRY&XSYSTEM=LOCAL&/sap-iapp-state=ASKQ8G45WH9NDRW4CMURD7WIA7XKX1LUZPAD9HKR

SAP Analytics - Sales Order

Standard * ▾

To show filters here, add them to the filter bar in Filters

Search  Pause

DIMENSIONS

- > Measures
- Acct Assmnt Grp C...
- Bill-to party
- Billing Block
- Billing Block Stat...
- Billing Date
- Billing Incomplin ...
- Billing Incomplin ...
- Business Area
- CCode to Be Billed
- Central Credit Ch...
- Changed On
- Confirmation Stat...
- Controlling Area
- Cost Center
- CostCtr Bus.Area

COLUMNS

- Measures
- Yr/Mo. of Creation

		No. of Sales Orders						
Sales Organization	Sales Organization Yr/Mo. of Creation	11.2015	12.2015	01.2016	02.2016	03.2016	04.2016	05.201
1010	Dom. Sales Org DE	5	1				1	
1710	Dom. Sales Org US	6	11	25	14	4.125	374	2
L100	Dom.Sales Org L100US							
Grand Total		11	12	25	14	4.125	375	2

ROWS

- Sales Organization

Jump To      

Show Prompts... 16
 Chart Settings... 1
 Swap Axes 84
 Totals... 85
 Information...

Information

Query Name
Analytics - Sales Order (2CCSDSLSORDHDRQRY)

InfoProvider Name
2CISDSALESORDERHC (2CISDSALESORDERHC)

Last Data Update
Nov 10, 2020, 9:11:12 PM

Variables
Exchange Rate Type: M
Display Currency: USD

Filters





<https://saps4hsrv.westeurope.cloudapp.azure.com:8103/sap/bc/ui2/flp?#AnalyticQuery-analyze?XQUERY=2CCSDSLSORDHDRQRY&XSYSTEM=LOCAL&/sap-iapp-state=ASKQ8G45WH9NDRW4CMURD7WIA7XKX1LUZPAD9HKR>

Fiori: Descriptions



Fiori: Attributes (Master Data)

SAP Analytics - Sales Order

Standard

Customer Classific.

Suframa Code

Account group

Group key

Deletion flag

Liable for VAT

DME indicator

Name 2

Alternative payer

Nielsen indicator

Rep's Name

Tax Jurisdiction

Address

City

Country

Fax Number

Industry

Language Key

Postal Code

Region

Search term

Street

Sold-To Party

Sales Org

Sort

Display

Attributes

Hierarchy

Totals

Suppress Zeros in Rows

Compact Display in Rows

Sales Organization

1010001

17100001

17100002

17100003

17100004

17100005

No. of Sales Orders

	Sales Organization	Sales Or.	11.2015	12.2015	01.2016	02.2016	03.2016	04.2016	05.2016	06.201
Total	1010	Dom. Sale	5	1				1	1	
Total	1710	Dom. Sale	3	11	23	5	727	97	22	
Total	1710	Dom. Sale	3	11	23	5	727	97	22	
Total	1710	Dom. Sale						605	49	
Total	1710	Dom. Sale						605	49	
Total	1710	Dom. Sale						591	31	
Total	1710	Dom. Sale						591	31	
Total	1710	Dom. Sale	3				3	398	30	
Total	1710	Dom. Sale					3	398	30	
Total	1710	Dom. Sale				2	6	883	71	
Total	1710	Dom. Sale				2	6	883	71	
Total	1710	Dom. Sale						917	70	
Total	1710	Dom. Sale						917	70	
Total	L100	Dom.Sale								
Total	L100	Dom.Sale								
Total	L100	Dom.Sale								

Zur Suche Text hier eingeben

21:56
10.11.2020



Fiori: Filters

The screenshot shows the SAP Fiori Analytics - Sales Order application. On the left, the dimensions pane is open, showing various filters like Sales Organization, Sales group, and Sales office. The columns pane is also visible. A modal dialog titled "Sold-To Party" is open, allowing the user to select from a list or define conditions. The "SELECT FROM LIST" tab is selected, displaying a table of items with columns for Key and Text. The table contains the following data:

Key	Text
1000010	BIKE COMPANY
1000020	Baker S
1000022	Bike and spare parts company 2
1000050	JOHN B
1000071	MKT C212
1000072	Bio Solutions ltd
10100001	Inlandskunde DE 1
10100002	Inlandskunde DE 2
10100003	Inlandskunde DE 3
10100004	Inlandskunde DE 4

At the bottom of the dialog, there is a message "No items selected". The "OK" and "Cancel" buttons are at the bottom right.

Including
Value Helps



Navigation (Semantic Object)

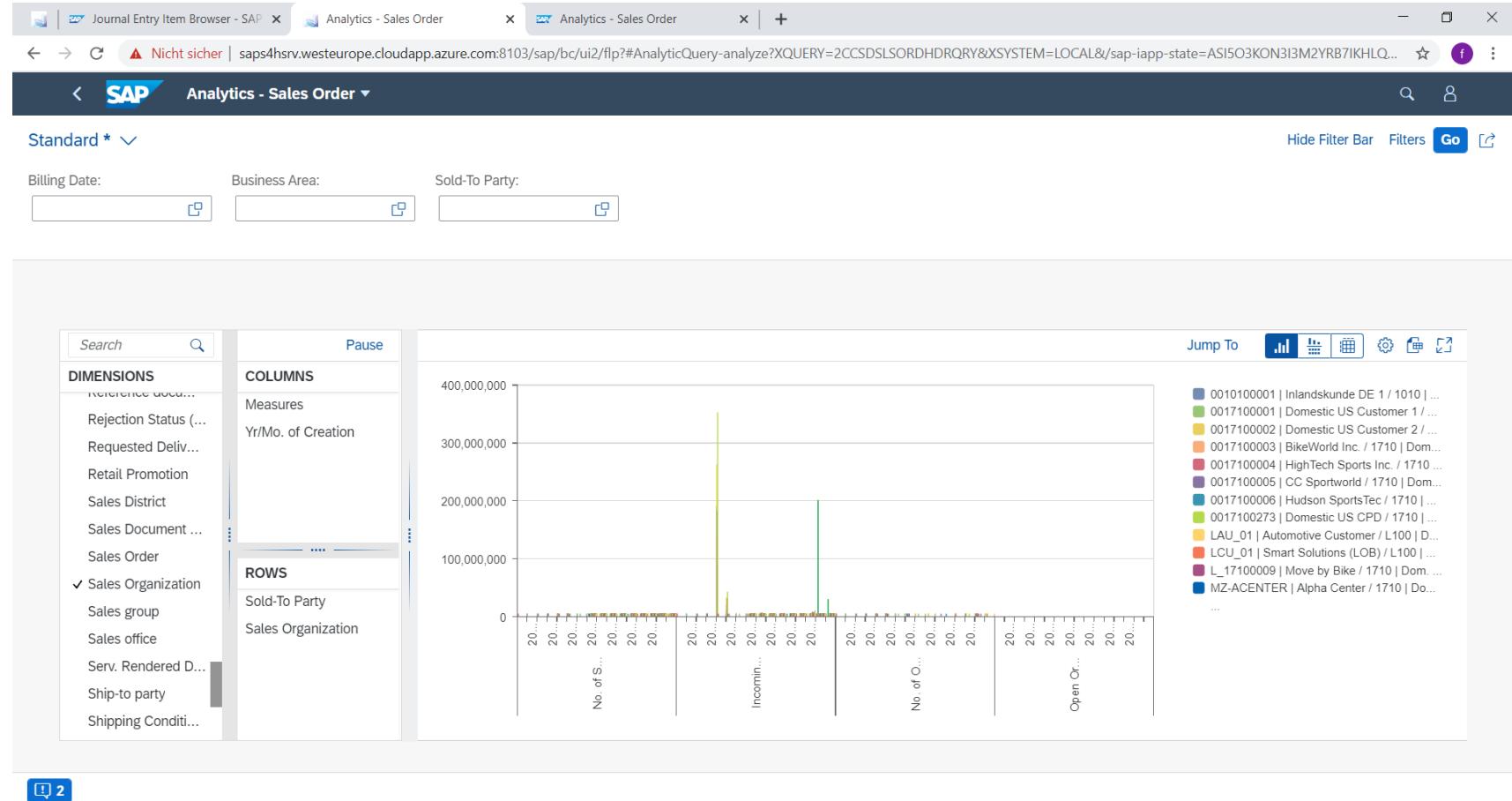
Screenshot of SAP Analytics - Sales Order interface showing a semantic object navigation.

The interface includes:

- Header: Journal Entry Item Browser - SAP, Analytics - Sales Order, Analytics - Sales Order, SAP Analytics - Sales Order.
- Toolbar: Standard * ▾, Hide Filter Bar, Filters, Go, Refresh.
- Filter Bar: Billing Date, Business Area, Sold-To Party.
- Table: A semantic object grid with columns for Sold-To Party, Sales Organization, Sales Order, and No. of Sales Order (11.2015, 12.2015). The table shows data for various customers and sales organizations across two time periods.
- Context Menu (displayed over the table):
 - Display Document Flow (selected)
 - Manage Posting Period Variants
 - Manage Posting Periods
 - Manage Posting Periods - Cost Accounting
- Bottom Navigation: Windows Start button, Search bar, Taskbar icons (File, Internet Explorer, File Explorer, Mail, OneDrive, Lock, Word, Google Chrome, Edge, Settings, Powerpoint, K, S, Task View), System tray (Speaker, Network, Battery, DEU 21:59 10.11.2020, 26).



Business Charts





Overview of Analytics Tools

A screenshot of a web browser displaying the SAP Help Center. The URL in the address bar is <https://help.sap.com/viewer/6b356c79dea443c4bbeaf0865e04207/2020.000/en-US/dd28bf545e91ee05e1000000a4450e5.html>.

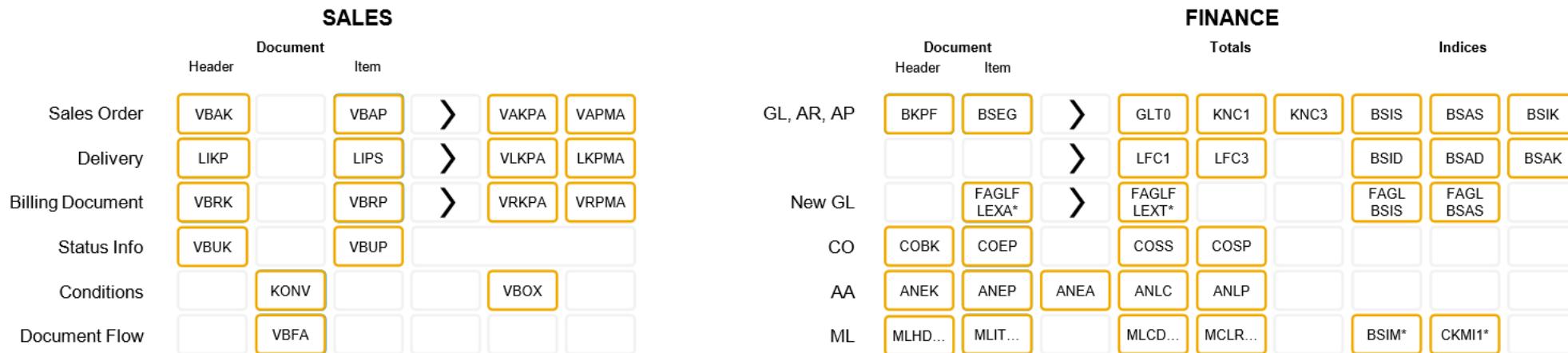
The page title is "Analytics" with "2020 Latest" and "English" dropdowns. The main content area has a dark header with a search bar and a "Create Custom PDF" button. The main content starts with a section titled "Analytics". It discusses SAP S/4HANA's support for embedded analytics through multidimensional reports and lists several analytical applications like View Browser, Query Browser, and APF-based apps. A sidebar on the left contains a "Table of Contents" with various links under the "Analytics" category. At the bottom right, there is a blue feedback box asking "Was this topic helpful?" with "Yes" and "No" buttons.

<https://help.sap.com/viewer/6b356c79dea443c4bbeaf0865e04207/2020.000/en-US/dd28bf545e91ee05e1000000a4450e5.html>

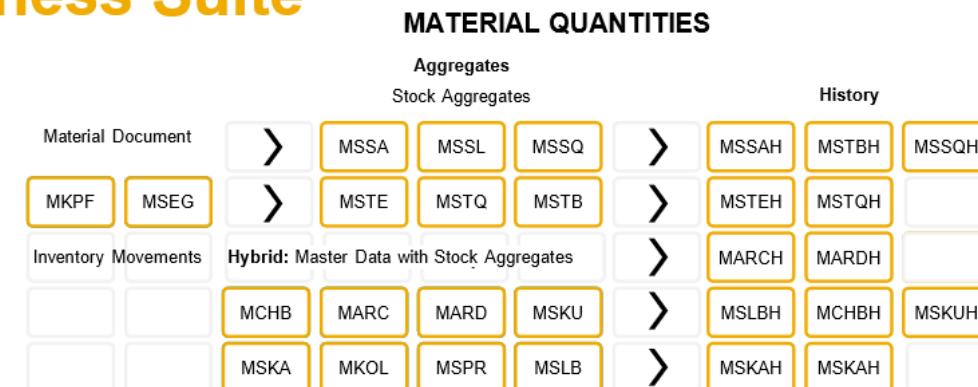
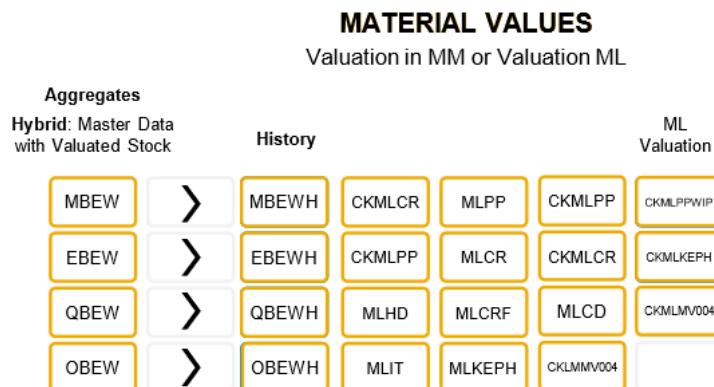
Old Data Model

SAP S/4HANA Architecture and Components

Simplified data model



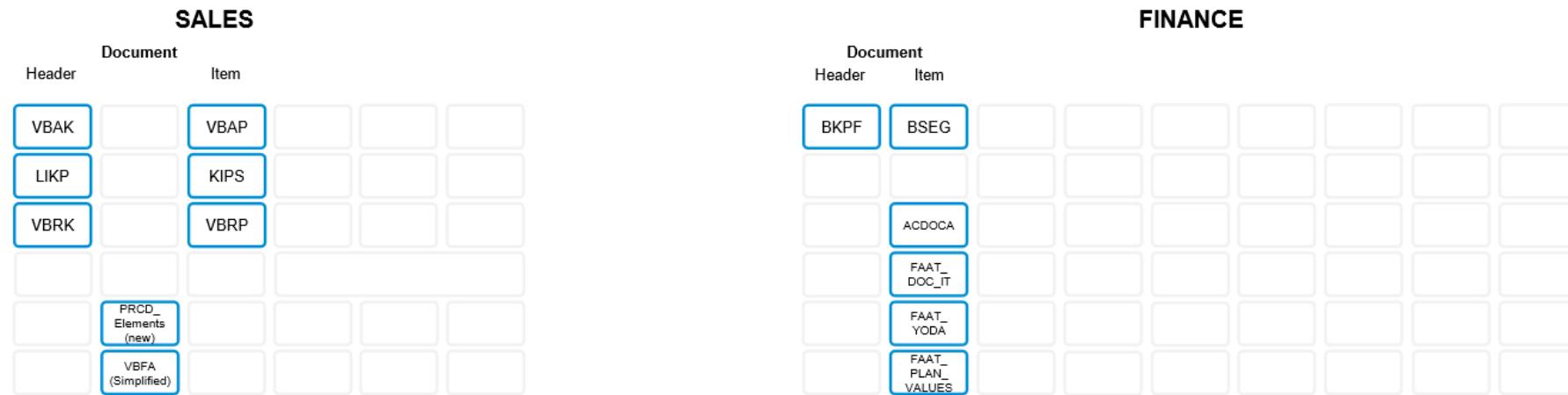
SAP Business Suite



New Data Model

SAP S/4HANA Architecture and Components

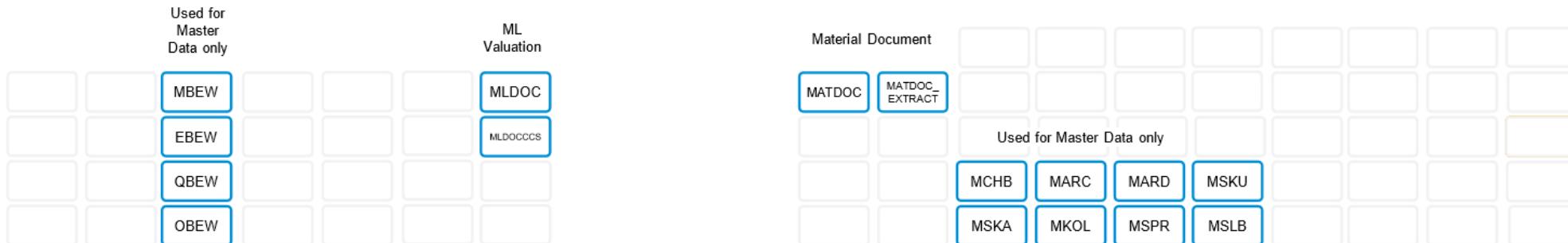
Simplified data model



MATERIAL VALUES

SAP S/4HANA

MATERIAL QUANTITIES





Compatibility Views

- V1:
 - table is replaced by a DB view (CDS) with the same name
 - Data is backed up during SUM in a table with suffix _BCK
 - Example BSAD, BSAD_BCK,
- V2:
 - Table still exists but selects are redirected to a new CDS
 - No inserts / updates to old table
 - COEP, V_COEP_ORI



Compatibility View

SAP General Table Display

SE16H

Database Connection:

Table: **MSEG**

Text table:

Layout:

Maximum no. of hits: **500**

Proxy Object: **NSDM_V_MSEG**

Outer Join De

Document Segment: Material

No texts

Maintain entries

MSEG Compatibility View

- Example: Select on MSEG uses Compatibility CDS View (Proxy) to read data from MATDOC Table

SE11

Transparent Table: **MSEG** Active

Short Description: Document Segment: Material

Attributes Delivery and Maintenance **Fields** Input Help/Check Currency/Quantity Fields Indexes

M19(1)/600 Display Replacement Object for MSEG

Table: **MSEG**

Replacement Object: **NSDM_E_MSEG**

More ▾

- Cancel (F12)
- Table >
- Edit >
- Goto >
- Utilities >
- Extras >**
- Table Length...
- Global Search...
- Hierarchy Display (Ctrl+Shift+F12)
- Search Help for Table...
- Activation Type...
- Change/Display Table Category
- Enhancement Category...
- Replacement Object...
- Inverted Hash/Individual



Replacement Object

The screenshot shows a code editor window with the title bar "[S4Q] COEP X". A red oval highlights the title bar, and a red rectangular box highlights the line of code containing the replacement object definition.

```
1 @EndUserText.label : 'CO-Objekt: Einzelposten periodenbezogen'
2 @AbapCatalog.enhancementCategory : #EXTENSIBLE_CHARACTER_NUMERIC
3 @AbapCatalog.tableCategory : #TRANSPARENT
4 @AbapCatalog.deliveryClass : #A
5 @AbapCatalog.dataMaintenance : #LIMITED
6 @AbapCatalog.replacementObject : 'v_coep_view'
7 define table coep {
8     key include coep_key not null
9         @AbapCatalog.foreignKey.keyType : #KEY
10        @AbapCatalog.foreignKey.screenCheck : true
11        extend belnr :
12            with foreign key [0..*,1] cobk
13                where mandt = coep.mandt
14                    and kokrs = coep.kokrs
15                    and belnr = coep.belnr
```



V_COEP

SQ [S4Q] COEP D [S4Q] V_COEP [S4Q] V_COEP X

SQL Dependency Tree

SQL Name	SQL Relation	Object Type	Entity Name
▼ V_COEP		CDS View (STOB)	v_coep_view
▼ SELECT			
▼ COEP	From	Database Table (TABL)	
▼ UNION ALL			
▼ V_COEP_R3	From	CDS View (STOB)	V_Coep_R3_view
▼ V_COEP_R2	From	CDS View (STOB)	V_Coep_R2_view
▼ V_COEP_R1	From	CDS View (STOB)	V_Coep_R1_view
▼ V_COEP_ACDOCA_R	From	CDS View (STOB)	v_coep_acdoса_r_view
▼ V_COEP_ACDOCA_R3	From	CDS View (STOB)	v_coep_acdoса_r3_view
▼ V_COEP_ACDOCA_R2	From	CDS View (STOB)	V_Coep_Acdoca_R2_view
▼ V_COEP_ACDOCA_R1	From	CDS View (STOB)	V_Coep_Acdoca_R1_view
▼ ACDOCA	From	Database Table (TABL)	
▼ FINSC_CMP_VERSND	Inner Join	Database Table (TABL)	
▼ TKA01	Inner Join	Database Table (TABL)	
▼ PRPS	Left Outer Join	Database Table (TABL)	

<https://blogs.sap.com/2020/10/10/pitfalls-at-s-4hana-db-tables-with-replacement-object/>



Finance: ACDOCA

not everything in ACDOCA is there in BSEG

- Below postings contains the line items in ACDOCA table only and not in BSEG table (identified with document status as “U” in BSTAT field in BKPF table) for the database improvement, performance etc.:
 - Asset depreciation postings
 - Ledger specific postings
 - Foreign currency valuation postings
 - CO internal postings
-
- <https://blogs.sap.com/2020/08/03/what-a-universal-journal-table-acdoca-covers-and-what-not/>
 - <https://blogs.sap.com/2020/09/24/analytics-on-universal-journal-the-heart-of-sap-s-4hana/>

S/4HANA Embedded Analytics with CDS





DIMENSION

1. All dimensions must have an **@Analytics.dataCategory: #DIMENSION** classification in the header of the view.
2. Associations with texts and names are executed through annotation **@ObjectModel.text.element**.
3. Associations of external attributes are determined by foreign key using annotation **@ObjectModel.foreignKey.association**.
4. Dimensions with composite keys needs a definition of a single field as a representative key, this configuration is achieved through annotation **@ObjectModel.representativeKey**.
5. Annotation **@Semantics** helps to define text and address fields.

SELECT from physical Table

<https://blogs.sap.com/2018/03/18/create-an-analytical-model-based-on-abap-cds-views/>



CUBE

@Analytics.dataCategory: #CUBE

1. Associations of external attributes are determined by foreign key using annotation **@ObjectModel.foreignKey.association**.
2. **@DefaultAggregation** annotation should be placed before the fields determined as *measures*.
3. Annotation **@Semantics** helps to define text, currency, quantity and address fields.
4. All the associations are exposed in the bottom of the view to provide access to **Attributes** and **Texts** during the query consumption.

Select from DIMENSION

Test with /NRSRTS_ODP_DIS



QUERY

- **@Analytics.query: true**
- @VDM.viewType: #COMPOSITE
- Select from CUBE

@AnalyticsDetails.query.axis: #COLUMNS «Show in Column

@AnalyticsDetails.query.axis: #ROWS «Show in Row

@AnalyticsDetails.query.display: #KEY_TEXT “Show Text

- Test with /NRSRT



Set API State to released (C2-Query)

The screenshot shows the Eclipse IDE interface for ABAP development. The central part displays an ABAP code editor with the following code:

```
 1 @AbapCatalog.viewEnhancementCategory: [#NONE]
 2 @AccessControl.authorizationCheck: #CHECK
 3 @EndUserText.label: 'Z_VIEW_JK'
 4 //@AbapCatalog.preserveKey: true
 5 @DM.viewType: #BASIC
 6 @Metadata.ignorePropagatedAnnotations: true
 7 @ObjectModel.usageType:{  
    entity Z_VIEW_JK as select from vbak {  
        as vkorg,  
        as kunnr,  
        as TotalNetAmount,  
        as WAERK  
    }  
}
```

The Project Explorer view on the left shows a project named "S4H_400_jknaus_en" containing a local object "Z_VIEW_JK". A context menu is open over the "Z_VIEW_JK" entry, with the "API State" option highlighted. A submenu for "Contract C2" is also visible. The status bar at the bottom shows the path "JKNNAUS / 09.11.2020 / 17:25:36 /".

To the right, a modal dialog titled "Add Release Contract" is displayed, specifically the "API Release State" section. It shows the "Project" as "S4H_400_jknaus_en" and the "Data Definition" as "Z_VIEW_CONSUMPTION_JK". The "Release Contract" is set to "Use as Remote API (Contract C2)" and the "Release State" is set to "Released".



F4 Help and Attributes: Association (For example Customer Name)

```
define view Z_VIEW_BASIC_02_JK as select from vbak
    association[1..1] to I_Customer      as _Customer on $projection.kunnr =
    _Customer.Customer
{
    key vbeln as vbeln,
    vkorg as vkorg,
    vtweg as vtweg,
    @ObjectModel.foreignKey.association: '_Customer'
    kunnr,
    _Customer,
    @Semantics.amount.currencyCode: 'WAERK'
    netwr as TotalNetAmount,
    waerk as WAERK
}
```



/NRSRTS_ODP_DIS

ISDSALESORDER (Cube)

SAP Display TransientProvider Preview for Operational Data Provider

Save as Variant... More Exit

* ODP Context: ABAP_CDS ABAP Core Data Services

ODP Name: ISDSALESORDER Selection by Query

Version

Use Buffer
 Read Without Buffer

Debugging Options for Transient Provider

Name of the ODP for debug:
Name of the Field for debug:

Execute



Operational Data Provider ISDSALESORDER (TransientProvider Preview)



Set Focus

Standard Query

Details On/Off

Check Metadata



More

Find



Exit

TransientProvider 2CISDSALESORDER Time Stamp: 03.11.2020 18:16:36

ISDSALESORDER Sales Order

KEY

2CISDSALESORDER SALESORDER

CHAR(000010)



Sales Order

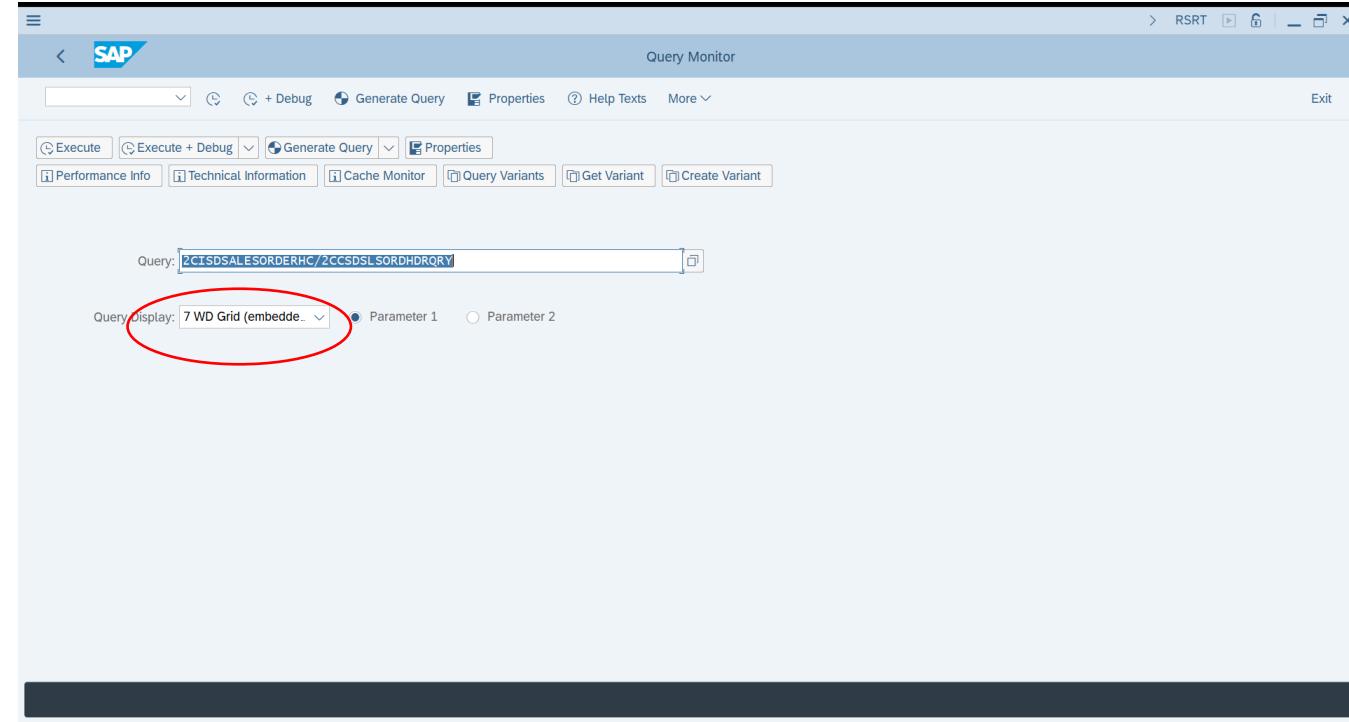

DATA

2CF8IQ0PSMNKXXE9S4S0S5BHTFM	ADDITIONALCUSTOMERGROUP5	CHAR(000003)	Customer group 5		
2CFB37NX3U9CCW999XYHWF41EFL	LASTCHANGEDBYUSER	CHAR(000012)	User Who Last Changed the Business Docum		
2CFK3RGDN7NEXN4LF6020MTUAQ1	CENTRALCREDITCHKTECHERRSTS	CHAR(000001)	Status of Technical Error SAP Credit Man		
2CFNOS4SKA1EWYMU18CB1DV6J3T	CUSTOMERTAXCLASSIFICATION8	CHAR(000001)	Tax Classification 8 for Customer		
2CFXB11VDRNSC54GMLREAZS16WG	SDPRICINGPROCEDURE	CHAR(000006)	Pricing Procedure in Pricing		
2CG9J2E3M2RDTEY7LY5ZLT41EQC	RETAILADDITIONALCUSTOMERGRP7	CHAR(000003)	Customer Group 7		
2CGDP1TL7WBXUTFV88CW4XIPWV5	ADDITIONALCUSTOMERGROUP1	CHAR(000003)	Customer group 1		
2CGDS2HBB34SQVA902WT5AJG66C	SHIPPINGCONDITION	CHAR(000002)	Shipping Conditions		
2CGE8MA1SSI21DLPHKCD5RWZ9H1	CORRESPNEXTERNALREFERENCE	CHAR(000012)	Your Reference		
2GG1NG6H3J2J520JKB099IFR40	CUSTOMERREBATEAGREEMENT	CHAR(000010)	Agreement (various conditions grouped to		
2GHOJ61ZC3Z0HSLF5P8B7BSI9X	OVERALLCHMLCMPLNCSTATUS	CHAR(000001)	Product Marketability Status		
2GMLHWHTZWERHWJVC9MNQ29LSU	INCOTERMSLOCATION1	CHAR(000070)	Incoterms Location 1		



Webdynpro (Queries)

- /NRSRT



https://saps4hsrv.westeurope.cloudapp.azure.com:8103/sap/bc/webdynpro/sap/fpm_bics_ovp?bsa_query=2CCSDLSORDHDRQRY&sap-client=400&sap-language=EN#



Webdynpro(2)

SAP Analytics - Sales Order

Generic BICS Application based on OVP

Navigation Panel

Standard * Go

* Exchange Rate Type: M (Standard translation at average...) * Display Currency: USD (US Doll...)

Data Analysis Graphical Display Query Information

<Standard Query View> Filter Sort Hierarchy Drilldown Display Measures Totals

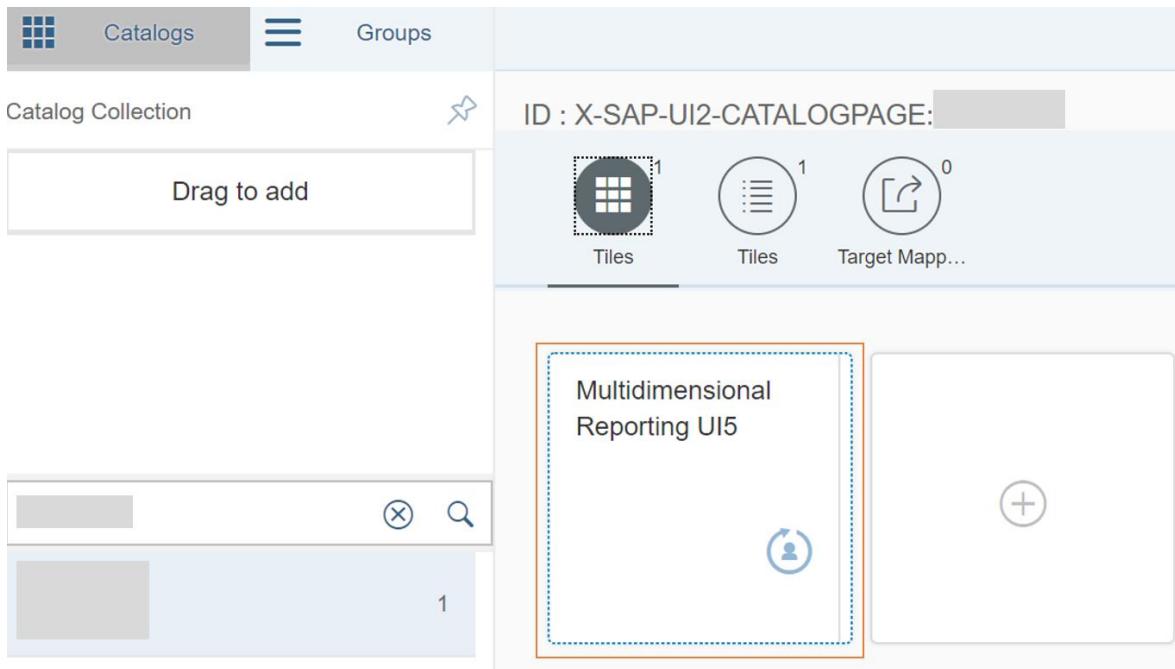
	Measures	No. of Sales Orders											
		Yr/Mo. of Crea...	11.2015	12.2015	01.2016	02.2016	03.2016	04.2016	05.2016	06.2016	07.2016	08.2016	09
Sales Organization													
1010	Dom. Sales Org...		5	1				1	1	1	1		
1710	Dom. Sales Org...		6	11	25	14	4.125	374	28	2.060	2.184		
L100	Dom.Sales Org...									5	2.262		
Overall Result			11	12	25	14	4.125	375	29	2.066	2.185		
											2.262		

SSO2 is not configured completely (see long text) [View details](#)

Create Custom Fiori Tile Multidimensional

- <https://blogs.sap.com/2018/07/11/how-to-create-custom-fiori-multidimensional-reporting-application-in-s4hana-on-premise/>
- [2623507 – Fiori Multidimensional Reporting in S/4 HANA onPremise using custom analytical queries](#)

Next, create Target mapping and set Intent/Target/General and Parameters as below.



The screenshot shows the SAP Fiori Catalogs interface. On the left, there's a sidebar with 'Catalogs' and 'Groups' tabs. Below that is a search bar and a 'Drag to add' area. The main content area has a header 'ID : X-SAP-UI2-CATALOGPAGE:' and three buttons: 'Tiles' (1), 'Tiles' (1), and 'Target Mapp...' (0). Below these buttons is a table with two rows. The first row has a blue dashed border and contains the text 'Multidimensional Reporting UI5' and a user icon. The second row is empty and has a plus sign icon. At the bottom right of the table is a small number '1'.

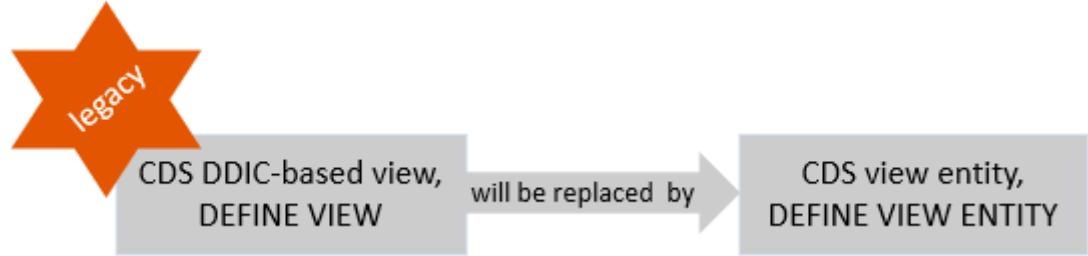
Intent/Target/General:

Name	Value
Semantic Object	<Set the same Semantic Object used in the title>
Action	<Set the same Action used in the title>
Application Type	SAPUI5 Fiori App
Title	<Title of the target mapping>
URL	/sap/bc/ui5_ui5/sap/FIN_DS_ANALYZE
ID	fin.acc.query.analyze
Device type	Check Desktop only

New with S/4HANA 2020/NW7.55

CDS View Entities

- No separate DDL and View



Differences:

- The view entity doesn't require the annotation `@AbapCatalog.sqlViewName`.
- The view entity doesn't require the annotation `@AbapCatalog.compiler.compareFilter: true`, because the filter is implicitly and automatically compared.
- The view entity doesn't require the annotation `@ClientHandling.algorithm`, since client handling takes place implicitly.
- The view entity doesn't require the annotation `@AbapCatalog.preserveKey: true`, because there's **no ABAP Dictionary** view attached to a CDS view entity.
- The view entity is defined using the statement `DEFINE VIEW ENTITY`.

<https://blogs.sap.com/2020/09/02/a-new-generation-of-cds-views-cds-view-entities>



View Entity

=> SE16H (currently) not possible

New Data Definition

Templates

Select one of the available templates.

Use the selected template

Define View Entity Defines a simple CDS view entity with one data source.

Define Root View Entity

Define View Entity with To-Parent Association

Define View

```
@AbapCatalog.viewEnhancementCategory: [#NONE]
@AccessControl.authorizationCheck: #CHECK
@EndUserText.label: '${ddl_source_description}'
@Metadata.ignorePropagatedAnnotations: true
@ObjectModel.usageType: {
    serviceQuality: #X,
    sizeCategory: #S,
    dataClass: #MIXED
}
define view entity ${ddl_source_name_editable} as select from ${data_source}
    ${data_source_elements}${cursor}
}
```

< Back Next > Finish Cancel

SAP

Datendefinition anzeigen

Datendefinition: Z_VIEW_JK aktiv

Eigenschaften Quelltext

ADT-Link: adt://S4H/sap/bc/adt/ddic/ddl/sources/z_view_jk/source/main

```
1 @AbapCatalog.viewEnhancementCategory: [#NONE]
2 @AccessControl.authorizationCheck: #CHECK
3 @EndUserText.label: 'Z_VIEW_JK'
4 @Metadata.ignorePropagatedAnnotations: true
5 @ObjectModel.usageType: {
6     serviceQuality: #X,
7     sizeCategory: #S,
8     dataClass: #MIXED
9 }
10 define view entity Z_VIEW_JK as select from mara {
11     matnr as matnr
12 }
```

Zur Suche Text hier eingeben



CDS Expert Tools

- /NSDDLAR
- Package SDUT
- To generate DDLs

Report	Usage
RUTDDLSANALYZE	Analysis of DDL Sources
RUTDDLSSHOW	Search for DDL sources with name and/or template
RUTDDLSSHOW2	CDS Source Display
RUTDDLSDEL	Delete the DDL Source and the generated view
RUTDDLSACT	Activates Set of DDL Sources

A screenshot of the SAP Fiori Analyze Tools interface. The top navigation bar shows the SAP logo and some buttons. The main area is titled "Analyze Tools" and contains a list of options. The first option, "Display system environment", is selected with a radio button. Other options include "Display DDL Source", "Check DDL Source", "Parse DDL Source", "Check Database Object", "Display Nametab", "Check Nametab", "Display Protocol", "Check Table Function", "Display STOB", "Check Dependency Rules", "Check Dynamic Cache", "Show and check ROOT/COMP relations", "Base Object Explorer", and "Scan and rename indices". At the bottom of the list is a large blue "Analyze" button.

<https://blogs.sap.com/2016/06/28/core-data-services-standard-utilities-reports/>



Call ABAP from CDS

- Table Function / AMDP

<https://blogs.sap.com/2020/05/19/cds-table-function-using-with-clause-improved-response-time/>

<https://blogs.sap.com/2020/07/21/leveraging-table-functions-within-cds-views-in-s-4hana/>

- Code Exits (Virtual Element)

<https://blogs.sap.com/2020/05/11/abap-code-exits-in-cds-views/>

```
define view zv_sflight_cds
  as select from sflight
{
...
  seatsmax_f,
  seatsocc_f,
  @ObjectModel.readOnly: true
  @ObjectModel.virtualElement: true
  @ObjectModel.virtualElementCalculatedBy: 'ABAP:ZCL_CDS_FUNCTION'
  cast( " as abap.char(255)) as text
```



Anhang: Generate Fiori



Application Studio

The screenshot shows the SAP Business Application Studio interface. The title bar indicates the application is running in a browser with the URL `b8086685trial.eu10cf.trial.applicationstudio.cloud.sap/index.html#ws-xn76n`. The main window displays the "New Project From Template" wizard. On the left, a sidebar shows a file tree with projects like "cds_fiori", "cds_fiori2", and "project1". The central area is titled "Select Template and Target Location" and features three template cards:

- SAP Fiori elements application**: Accelerate the generation of your SAP Fiori elements application using a wizard-style approach combined with any of the provided floorplans. [More Information](#)
- Start cds_fiori**
- Start cds_fiori Mock**

A "Next >" button is visible at the bottom of the wizard.



Fiori Elements List Report Object Page

The screenshot shows the SAP Business Application Studio interface with the title bar "SAP Business Application Studio" and "App Title". The URL in the address bar is "b8086685trial.eu10cf.trial.applicationstudio.cloud.sap/index.html#ws-xn76n".

The left sidebar shows project navigation with sections like RUN CONFIGURATION, cds_fiori, cds_fiori2, and project1. The main area displays the "New Project From Template" wizard, currently on the "Floorplan Selection" step. The steps are:

- Select Template and Target Location
- Floorplan Selection** (highlighted)
- Data Source and Service Selection
- Entity Selection
- Project Attributes

The "Floorplan Selection" section includes a note: "Choose the floorplan for your application." and a question: "Which type of SAP Fiori elements application do you want to create?".

Three options are listed:

- List Report Object Page**: Create an SAP Fiori elements application based on the SAP Fiori List Report and Object Page floorplans. A preview image shows a table with columns like "Name", "Age", and "Address".
- Worklist**: Create an SAP Fiori elements application based on the SAP Fiori Worklist floorplan. A preview image shows a grid of cards with icons and text.
- Analytical List Page**: Create an SAP Fiori elements application based on the SAP Fiori Analytical List Page floorplan. A preview image shows a chart with bars and data tables.

At the bottom are "Back" and "Next >" buttons, and a status bar at the bottom indicates "Targeting CF b8086685trial/dev" and "0▲4".



Select ODATA

SAP Business Application Studio x App Title x How to Build Master Detail Fiori / + b8086685trial.eu10cf.trial.applicationstudio.cloud.sap/index.html#ws-xn76n

SAP Business Application Studio

New Project From Template

File Edit Selection View Go Debug Terminal Help

RUN CONFIGURATI... cds_fiori Start cds_fiori Start cds_fiori Mock Start cds_fiori Local
cds_fiori2 Start cds_fiori2 Start cds_fiori2 Mock Start cds_fiori2 Local
project1 Start project1 Start project1 Mock Start project1 Local

Data Source and Service Selection

Configure the data source and select a service.

Data source * Connect to an OData Service

OData v2 service URL * http://saps4hsrv.westeurope.cloudapp.azure.com:8003/sap/opu/odata/sap/Z_V

Service username * JKNAUS

Service password *

Back Next

Targeting CF b8086685trial/dev 0 4 2

[http://saps4hsrv.westeurope.cloudapp.azure.com:8003/sap/opu/odata/sap/Z_VIEW_CONSUMPTION_03_JK_CDS/?\\$format=xml](http://saps4hsrv.westeurope.cloudapp.azure.com:8003/sap/opu/odata/sap/Z_VIEW_CONSUMPTION_03_JK_CDS/?$format=xml)



ODATA: Main Entity

The screenshot shows the SAP Business Application Studio interface. The title bar indicates the application is running in a browser with tabs for "SAP Business Application Studio", "App Title", and "How to Build Master Detail Fiori". The main area displays the "New Project From Template" dialog. On the left, a sidebar lists project templates: "cds_fiori" (with "Start cds_fiori", "Start cds_fiori Mock", "Start cds_fiori Local"), "cds_fiori2" (with "Start cds_fiori2", "Start cds_fiori2 Mock", "Start cds_fiori2 Local"), and "project1" (with "Start project1", "Start project1 Mock", "Start project1 Local"). The central panel shows a step-by-step process: "Select Template and Target Location" (highlighted), "Floorplan Selection", "Data Source and Service Selection", "Entity Selection" (selected), and "Project Attributes". Under "Entity Selection", the "Main entity" dropdown is set to "Z_VIEW_CONSUMPTION_03_JK" and the "Navigation entity" dropdown is set to "None". At the bottom are "Back" and "Next >" buttons, and a status bar at the bottom indicates "Targeting CF b8086685trial/dev" and "0▲4".



Generated Fiori:

A screenshot of the SAP Business Application Studio interface. The title bar shows "SAP Business Application Studio" and "App Title". The main content area displays a Fiori application titled "How to Build Master Detail Fiori". The application consists of a table with two columns: "Sales document" and "Sales document". The table contains 18 rows of data, each with a "Sales document" value and a corresponding row number. The data is as follows:

Sales document	Sales document
20000006	L1 >
20000007	L1 >
20000008	L1 >
20000009	L1 >
40000000	L1 >
70000003	L1 >
1	10 >
2	10 >
4	10 >
9	10 >
10	10 >
21	10 >
4343	10 >
4682	10 >
4695	10 >
8616	10 >
7	10 >

The bottom of the screen shows the Windows taskbar with various pinned icons and system status information.



Master / Detail in Fiori with association

```
2 @AbapCatalog.sqlViewName: 'ZRMER_POCD$'
3 @AbapCatalog.compiler.compareFilter: true
4 @AbapCatalog.preserveKey: true
5 @AccessControl.authorizationCheck: #CHECK
6 @EndUserText.label: 'PO header-item details for
master-detail fiori application'
7
8 @OData.publish: true
9 define view zrmer_po_cds as select from ekko as
header
0 association[0..*] to ekpo as _ITEM on header.ebeln =
1 _ITEM.ebeln {
1   key ebeln as purchase_order,
1     lifnr as vendor,
2     ekorg as purchase_org,
1     bedat as doc_date,
3     _ITEM
1 }
4
1
5
```

<https://blogs.sap.com/2020/05/22/create-a-fiori-application-to-perform-crud-operations-with-sap-fiori-elements-and-bopf-framework-in-s-4-system-using-cds-annotations/>

<https://sapcodes.com/2020/05/12/fiori-elements-cds-view-with-ui-annotations/>

<https://blogs.sap.com/2018/04/04/create-an-analytical-list-page-using-abap-cds-views-and-annotations/>

<https://blogs.sap.com/2019/11/07/developing-app-with-sap-fiori-elements-list-report-page-object-page-using-cds-view-and-annotations-abap-programming-model-on-sap-s-4-hana./>



@ui.lineItem @ui.identification

16. Add the UI annotations

`@UI.lineItem
@UI.identification`

With the appropriate
attributes to the

SalesOrderItemUUID
SalesOrderUUID
SalesOrderItem
Product
CurrencyCode
GrossAmount
Quantity

fields

```
10@UI: {  
11    lineItem: [ { label: 'Sales Order Item', position: 10, importance: '#HIGH' },  
12    identification:[ { label: 'Sales Order Item', position: 10 } ]  
13}  
14 SalesOrderItem;  
15  
16@UI: {  
17    lineItem: [ { label: 'Product', position: 30, importance: '#MEDIUM' } ],  
18    identification:[ { label: 'Product', position: 30 } ]  
19}  
20 Product;  
21  
22@UI: {  
23    identification:[ { label: 'Currency', position: 60 } ]  
24}  
25 CurrencyCode;  
26  
27@UI: {  
28    lineItem: [ { label: 'Amount', position: 50, importance: '#MEDIUM' } ],  
29    identification:[ { label: 'Amount', position: 50 } ]  
30}  
31 GrossAmount;  
32  
33@UI: {  
34    lineItem: [ { label: 'Quantity', position: 40, importance: '#MEDIUM' } ],  
35    identification:[ { label: 'Quantity', position: 40 } ]  
36}  
37 Quantity;  
38}
```



@search.searchable

21. Add the @Search

```
@Search.searchable: true
```

annotation to the header
and to the SalesOrder and
Customer fields.

```
5
6  @OData.publish: true
7
8  @Metadata.allowExtensions: true
9
10 @Search.searchable: true
11
12 define view Zs4h_C_Slsorder_Tp_999
13   as select from Zs4h_I_Slsorder_Tp_999 as SalesOrder
14
15 /* Composition associations */
16 association [0..*] to Zs4h_C_Slsorderitem_Tp_999 as _Item
17   on _Item.SalesOrderUUID = SalesOrder.SalesOrderUUID
18
19 {
20   //Zs4h_I_SlsOrder_Tp_999
21   key SalesOrderUUID,
22
23@   @Search.defaultSearchElement: true
24   @Search.fuzzinessThreshold: 0.7
25   SalesOrder,
26
27@   @Search.defaultSearchElement: true
28   @Search.fuzzinessThreshold: 0.7
29   Customer,
30
31   OverallStatus,
```



@UI.selectionField

26. Add the

`@UI.selectionField`

annotation to the fields

SalesOrder

Customer

```
12 annotate view Zs4h_C_Slsorder_Tp_999 with
13 {
14
15   @UI.hidden: true
16   SalesOrderUUID;
17
18@  @UI: {
19    lineItem: [ { label: 'Sales Order', position: 10, importance: #HIGH } ],
20    identification:[ { label: 'Sales Order', position: 10 } ],
21    selectionField: [ { position: 10 } ][red box]
22  }
23  SalesOrder;
24
25@  @UI: {
26    lineItem: [ {label: 'Customer', position: 20, importance: #MEDIUM } ],
27    identification: [ { label: 'Customer', position: 20 } ],
28    selectionField: [ { position: 20 } ][red box]
29  }
30  Customer;
31
```



Anhang Annotations



serviceQuality

ObjectModel.usageType.serviceQuality	<p>This annotation reflects the quality of the service that results from the CDS view. Using this annotation, the consumer is able to decide whether or not the annotated CDS view fits the demanded response time and the throughput requirements.</p> <p>Each CDS view can be assigned to one of the following quality categories:</p> <ul style="list-style-type: none">A: The annotated CDS view may be consumed within the business logic for high volume transactions or in background processing.B: The annotated CDS view may be consumed within business logic for transactions or in background processing.C: The annotated CDS view may be consumed from the UI in transactions for single object retrieval.D: The annotated CDS view may be consumed in analytical reporting.X: The annotated CDS view is used to push down the application's code to SAP HANA DB. <p>Scope: [VIEW]</p>
--------------------------------------	---



sizeCategory

ObjectModel.usageType.sizeCategory

The size category enables the consumer of a service to estimate the possible results set. It reflects the set of data that has to be searched through to compute, for example, the number of rows in the results set by using a count(*) function in a CDS view.

You can assign one of the following size categories, which specifies the expected number of data sets (rows) in a production customer system:

S: < 1000

M: < 100.000

L: < 10.000.000

XL: < 100.000.000

XXL: >= 100.000.000

Scope: [VIEW]



View Type

VDM.viewType	<p>Defines the type of a VDM view</p> <p>Scope: #TABLE FUNCTION, #VIEW</p> <p>Evaluation Runtime (Engine): None - Used for SAP internal structuring and interpretation of the CDS views</p> <p>Values:</p> <table border="1"><thead><tr><th>Value</th><th>Description</th></tr></thead><tbody><tr><td>BASIC</td><td>views that form the core data basis without data redundancies.</td></tr><tr><td>COMPOSITE</td><td>views that provide data derived and/or composed from the BASIC views.</td></tr><tr><td>CONSUMPTION</td><td>views that serve for specific application purposes and may be defined based upon public interface (for example, BASIC and COMPOSITE) views.</td></tr></tbody></table>	Value	Description	BASIC	views that form the core data basis without data redundancies.	COMPOSITE	views that provide data derived and/or composed from the BASIC views.	CONSUMPTION	views that serve for specific application purposes and may be defined based upon public interface (for example, BASIC and COMPOSITE) views.
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Online Help: All CDS Annotations

- <https://help.sap.com/viewer/cc0c305d2fab47bd808adcad3ca7ee9d/7.5.9/en-US/c2dd92fb83784c4a87e16e66abeeacbd.html>

A screenshot of a web browser displaying the SAP Online Help documentation. The URL in the address bar is <https://help.sap.com/viewer/cc0c305d2fab47bd808adcad3ca7ee9d/7.5.9/en-US/fc596c7cb366440a84f9d41f7710d6ca.html>.

The left sidebar shows a Table of Contents with sections like Develop, Extend, Common Tasks, Reference, and CDS Annotations. Under CDS Annotations, the 'Analytics Annotations' section is expanded, and 'AnalyticsDetails Annotations' is selected, highlighted with a blue background.

The main content area is titled 'AnalyticsDetails Annotations'. It describes the annotations used to specify multidimensional layout, sequence of variables, and aggregation behavior for views where `@Analytics.query : true`. It includes sections for 'Scope and Definition' and 'Usage'.

In the 'Usage' section, there is a table:

Annotation	Meaning
<code>AnalyticsDetails.exceptionAggregationSteps.exceptionAggregationBehavior</code>	Usually, the default aggregation determines how measures are aggregated in all dimensions. In some cases different aggregation behavior is needed for a special element of a dimension (dimension of a cube). Caution: The default aggregation behavior cannot be defined in the query. It needs to be defined on the cube layer. Note: Example: A measure "Inventory" can be summed up for the different plants and different time periods – according to time the last or average value may be relevant.

A blue banner at the bottom right asks 'Was this topic helpful?' with 'Yes' and 'No' buttons.