

DECATHLON

# *PlanViz Hana*

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# ***What is PlanVisualizer?***

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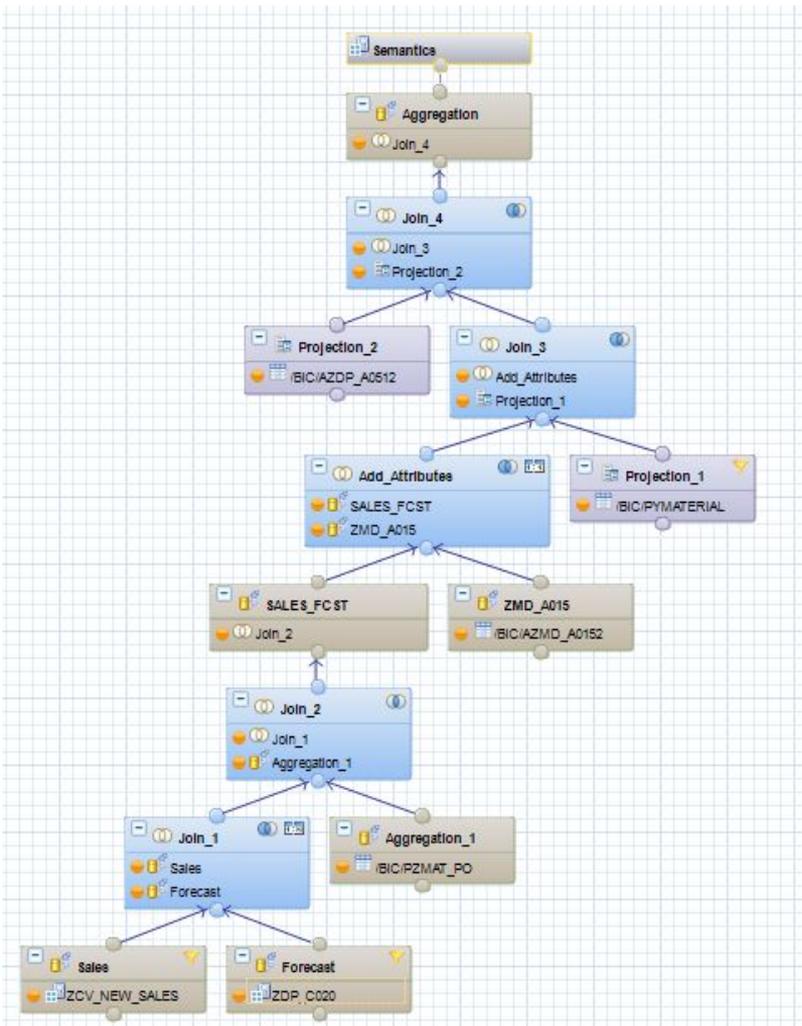
- PlanVisualizer is a performance tool for executing queries inside the HANA database. ( CV or SQL statement)
- It traces database execution and should not be confused with database explain plans.
- Useful for both simple SELECT statements and more complex ones involving code pushdown.

# Example CV ZDP\_CV024

Situation:

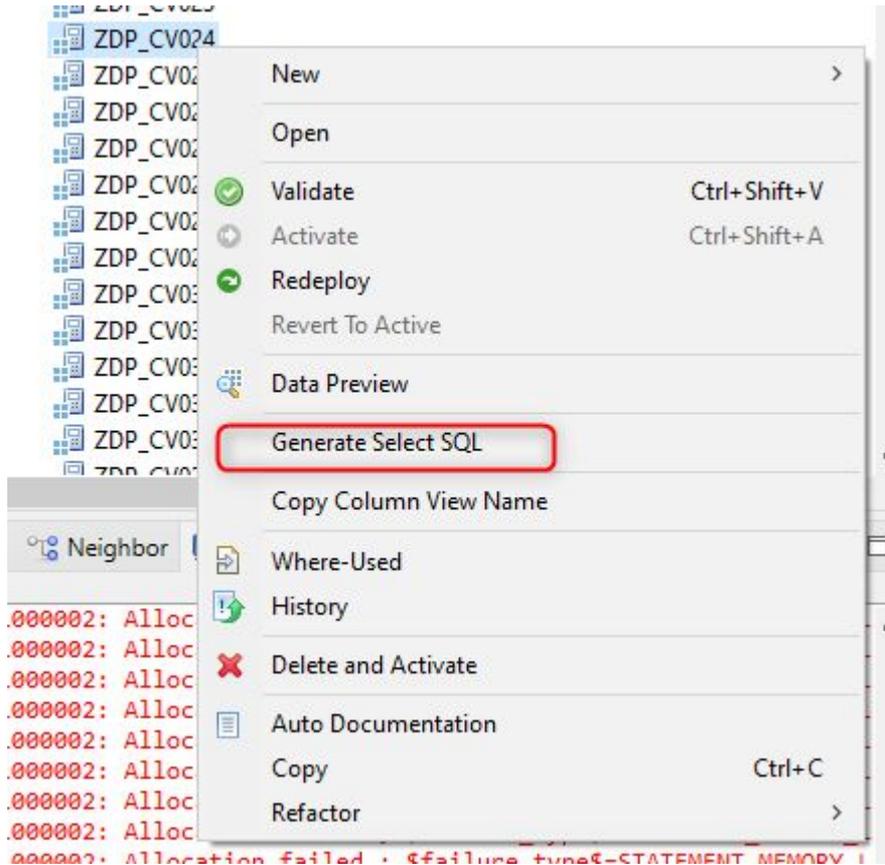
You need to analyze a calculation view because there are 2 major problems in the query:

- The query takes a long time to execute
- The query has only one line as output when it should have many more



# How to Create a Plan in HANA Studio (1st Method)

Right click on your CV and select "Generate Select SQL"



# How to Create a Plan in HANA Studio (1st Method)

the sql statement for the calculation view will be generated

```

SQL
SELECT
  "0SALESORG",
  "PUR_GROUP",
  "ZDP_WKSP",
  "0BASE_UOM",
  "0SALES_UNIT",
  "0PURCH_ORG",
  "0MATERIAL",
  "0CALYEAR",
  "0CALWEEK",
  "ABCKEY",
  "_BIC_ZMRPFLAG",
  "_BIC_ZMAT_STAT",
  "_BIC_YMMETAPE",
  "_BIC_ZAPOFLAG",
  "YPURCHORG",
  "YPU_GROUP",
  "ZDP_SFCM",
  "ZCALYEAR",
  sum("GAP") AS "GAP",
  sum("ZDP_SFCS") AS "ZDP_SFCS",
  sum("0RPA_RLQ") AS "0RPA_RLQ"
FROM "_SYS_BIC"."decath.DP/ZDP_CV024"('PLACEHOLDER' = ('$$purch_org_inp_param$$',
''<Enter Value>''))
GROUP BY "0SALESORG",
  "PUR_GROUP",
  "ZDP_WKSP",
  "0BASE_UOM",
  "0SALES_UNIT",
  "0PURCH_ORG",
  "0MATERIAL",
  "0CALYEAR",
  "0CALWEEK",
  "ABCKEY",
  "_BIC_ZMRPFLAG",
  "_BIC_ZMAT_STAT",
  "_BIC_YMMETAPE",
  "_BIC_ZAPOFLAG",
  "YPURCHORG",
  "YPU_GROUP",
  "ZDP_SFCM",
  "ZCALYEAR"

```

If your calculation view has input parameter don't hesitate to modify the sql here, we will put Z001

```

sum("GAP") AS "GAP",
sum("ZDP_SFCS") AS "ZDP_SFCS",
sum("0RPA_RLQ") AS "0RPA_RLQ"
FROM "_SYS_BIC"."decath.DP/ZDP_CV024"('PLACEHOLDER' = ('$$purch_org_inp_param$$',
''Z001''))
GROUP BY "0SALESORG",
  "PUR_GROUP",
  "ZDP_WKSP",
  "0BASE_UOM",
  "0SALES_UNIT",
  "0PURCH_ORG",
  "0MATERIAL",
  "0CALYEAR",
  "0CALWEEK",
  "ABCKEY",
  "_BIC_ZMRPFLAG",
  "_BIC_ZMAT_STAT",
  "_BIC_YMMETAPE",
  "_BIC_ZAPOFLAG",
  "YPURCHORG",
  "YPU_GROUP",
  "ZDP_SFCM",
  "ZCALYEAR"

```

# How to Create a Plan in HANA Studio (2nd Method)

The screenshot displays the SAP HANA Studio interface. On the left, the 'Scenario' pane shows a query plan diagram for 'decath.DP::ZDP\_CV024 P11 (ATOUBA09)'. The plan consists of several nodes: 'Join\_1', 'Aggregation\_1', 'Join\_2', 'SALES\_FCST', 'ZMD\_A015', 'Join\_2', 'Add\_Attributes', 'Projection\_1', 'Projection\_2', 'Join\_3', 'Join\_4', 'Projection\_2', 'Join\_4', 'Aggregation', and 'Semantics'. The 'Add\_Attributes' node is highlighted with a blue selection box.

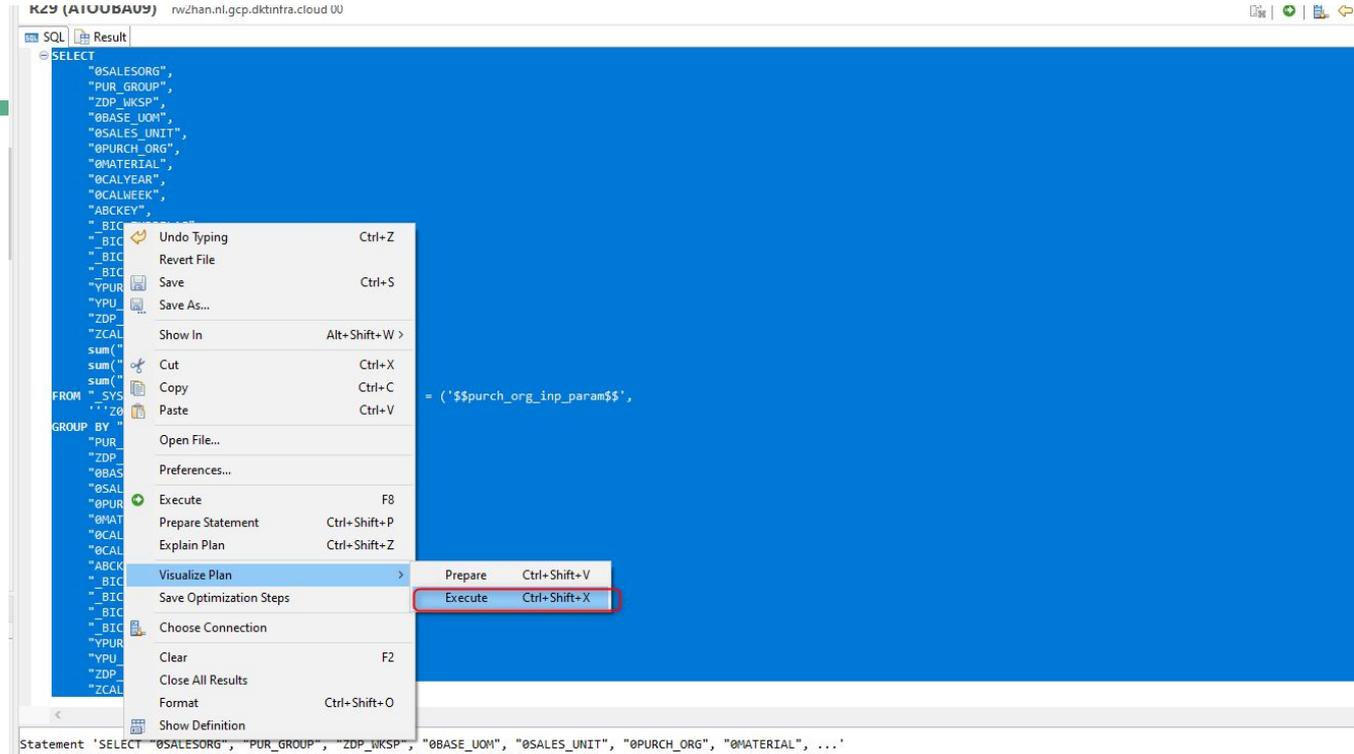
On the right, the 'Details' pane shows the structure of the table 'decath.posdt::ZCV\_NEW\_SALES'. A red arrow points to the 'Open in SQL Editor' button in the 'Out' section. Below this, the 'Columns' section lists various columns, and the 'Properties' section shows the table's metadata.

Property	Value
Name	ZCV_NEW_SALES
Label	ZCV_NEW_SALES
Package	decath.posdt
Enable History	false
Client Column	



# How to Create a Plan in HANA Studio

Select All your SQL statements right click, visualize Plan , click on execute



# The Consistency Check

R29 (ATOUBA09) nvzhan.nl.gcp.dktinfra.cloud : 30015

Executed [15 293,842 ms]

**Overview** Executed Plan

Time	
Compilation	0,03 ms
Execution	15.2 s

Dominant Operators	
Name	Execution Time
Basic Predicate	2.7 s (18,14%)
Basic Predicate	2.7 s (18,02%)
Basic Predicate	2.4 s (16,27%)

Distribution	
Number of Nodes	1
Number of Network Transfers	0

Context	
SQL Query	SELECT "OSALESORG", "PUR_GROUP", "...
System	szxdh1hans4:30003
System Version	2.00.072.00.1690304772
System Compile Type	rel
Memory Allocated	13,4 GByte(s)

Data Flow	
Number of Tables Used	11
Result Record Count	119177

Timeline Operator List Tables Used Performance Trace Network History Job Log

Job Type	System	User	Submitted At	Status
Activation	R29	ATOUBA09	Tue Jun 25 04:41:30 EDT 2024	Completed with errors L...
Redeployment	R29	ATOUBA09	Tue Jun 25 04:40:55 EDT 2024	Completed with errors L...
Activation	R29	ATOUBA09	Tue Jun 25 04:39:48 EDT 2024	Completed successfully
Activation	R29	ATOUBA09	Tue Jun 25 03:27:15 EDT 2024	Completed successfully
Redeployment	R29	ATOUBA09	Tue Jun 25 03:27:05 EDT 2024	Completed successfully

# Plan Overview

Executed [15 293,842 ms]

 Overview  Executed Plan

## Time

Compilation	0,03 ms
Execution	15.2 s

## Dominant Operators

Name	Execution Time <sup>ⓘ</sup>
Basic Predicate	2.7 s (18,14%)
Basic Predicate	2.7 s (18,02%)
Basic Predicate	2.4 s (16,27%)

## Distribution

Number of Nodes	1
Number of Network Transfers	0

## Context

SQL Query	SELECT "0SALESORG", "PUR_GROUP", "...
System	szxdh1hans4:30003
System Version	2.00.072.00.1690304772
System Compile Type	rel
Memory Allocated	13,4 GByte(s)

## Data Flow

Number of Tables Used <sup>ⓘ</sup>	11
Result Record Count	119177

# Tables Used List



Showing 11 item(s)

Table Name	Location	Partition	Max. Entries Processed	Number of Accesses	Max. Processing Time
SAPANWR01./BIC/AZDP_A0201	szxdh1hans4:30003	n/a	1	10	1,214
SAPANWR01./BIC/AZRT_A0062	szxdh1hans4:30003	n/a	0	39	1,871
SAPANWR01./BIC/AZRT_A0102	szxdh1hans4:30003	n/a	33 554 436	824	3 256,837
SAPANWR01./BIC/AZRT_A0061	szxdh1hans4:30003	n/a	0	52	0,835
SAPANWR01./BIC/PYMATERIAL	szxdh1hans4:30003	n/a	33 554 436	94	3 256,837
SAPANWR01./BIC/AZDP_A0202	szxdh1hans4:30003	n/a	28 765 333	1 482	4 434,930
SAPANWR01./BIC/PZMAT_PO	szxdh1hans4:30003	n/a	33 554 436	86	3 256,837
ATOUBA09./BIC/AZMD_A0152	szxdh1hans4:30003	n/a	119 177	3	592,672
SAPANWR01./BIC/AZMD_A0152	szxdh1hans4:30003	n/a	119 177	24	349,146
SAPANWR01./BIC/AZDP_A0512	szxdh1hans4:30003	n/a	119 177	8	165,567
ATOUBA09./BIC/AZDP_A0512	szxdh1hans4:30003	n/a	119 177	3	592,672

# Selection Operators and Semi-Join

Timeline Operator List Tables Used Performance Trace Network History Job Log

Showing 4351/4351 items

<< >> Apply Filter Clear Filter Hide Aggregation

Filter:	Physical	Offset [ms]	Exec Tim...	CPU Tim...	Operator Name	Tables Processed	Input Rows	Output Rows	O/I Ratio	Input Bytes	Output Bytes	APF	CP	Node ID	Local
	Search	Between (	Greater	Greater	Search	Search	Greater	Greater	Greater	Greater	Greater	Great	St	Search	Search

Aggregation:	Physical	Offset [ms]	Exec Tim...	CPU Tim...	Operator Name	Tables Processed	Input Rows	Output Rows	O/I Ratio	Input Bytes	Output Bytes	APF	CP	Node ID	Local
In Filter:	none	none	max	sum	none	none	max	max	max	max	max	max	n	none	none
Rest:			5 184	358 077			52 500 784	33 554 436		2 353 253 180	671 089 300	20			

Operator List:	Physical	Offset [ms]	Exec Tim...	CPU Tim...	Operator Name	Tables Processed	Input Rows	Output Rows	O/I Ratio	Input Bytes	Output Bytes	APF	CP	Node ID	Local	
	X	5 250	42	535	BwPopAggregatePa...	/BIC/AZRT_A0102	52 500 784	1 311 893	0	2 353 253 180	57 684 690	13	-	X2_plan584591_szx	dh1han...	szxdf
	X	109	156	0	Basic Predicate	/BIC/AZDP_A0202	28 765 333	3 991 162	0,1	n/a	n/a	1	-	cs_plan1309_szx	dh1han...	szxdf
	X	109	169	0	Basic Predicate	/BIC/AZDP_A0202	28 765 333	3 991 162	0,1	n/a	n/a	1	-	cs_plan1309_szx	dh1han...	szxdf
	X	100	193	0	Basic Predicate	/BIC/AZDP_A0202	28 281 113	3 859 042	0,1	n/a	n/a	1	-	cs_plan1366_szx	dh1han...	szxdf
	X	100	226	0	Basic Predicate	/BIC/AZDP_A0202	28 281 113	3 859 042	0,1	n/a	n/a	1	-	cs_plan1366_szx	dh1han...	szxdf
	X	364	133	0	Basic Predicate	/BIC/AZDP_A0202	23 020 468	3 200 424	0,1	n/a	n/a	1	-	cs_plan1312_szx	dh1han...	szxdf
	X	364	199	0	Basic Predicate	/BIC/AZDP_A0202	23 020 468	3 200 424	0,1	n/a	n/a	1	-	cs_plan1312_szx	dh1han...	szxdf
	X	110	143	0	Basic Predicate	/BIC/AZDP_A0202	22 903 527	3 171 796	0,1	n/a	n/a	1	-	cs_plan1300_szx	dh1han...	szxdf
	X	110	179	0	Basic Predicate	/BIC/AZDP_A0202	22 903 527	3 171 796	0,1	n/a	n/a	1	-	cs_plan1300_szx	dh1han...	szxdf
	X	110	135	0	Basic Predicate	/BIC/AZDP_A0202	22 792 328	3 128 346	0,1	n/a	n/a	1	-	cs_plan1297_szx	dh1han...	szxdf
	X	110	163	0	Basic Predicate	/BIC/AZDP_A0202	22 792 328	3 128 346	0,1	n/a	n/a	1	-	cs_plan1297_szx	dh1han...	szxdf
	X	98	155	0	Basic Predicate	/BIC/AZDP_A0202	21 857 866	3 456 560	0,2	n/a	n/a	1	-	cs_plan1315_szx	dh1han...	szxdf
	X	98	141	0	Basic Predicate	/BIC/AZDP_A0202	21 857 866	3 456 560	0,2	n/a	n/a	1	-	cs_plan1315_szx	dh1han...	szxdf





# Summary



- PlanViz is crucial for performance analysis in HANA.
- Key points discussed: creating plans, consistency checks, overview, tables used, selection operators, semi-join, timeline tool, and details of executed plans.
- Emphasis on understanding and influencing execution plans.