Leveraging HANA Graphical Modeling for Analytic Reports

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Agenda

Why graphical view modelling
Features of graphical view modeling
New modeling environment
How to get there
Demo: Simple modeling example
Why graphical view modeling
Use **graphical modeling** to **structure** large development projects, foster **communication** about development objects, achieve **good performance**, automatically **benefit** from future **improvements**
Features of graphical view modelling
Close integration with

- SQLScript via table function nodes
- Graph scenarios
- Spatial scenarios
- Data Warehousing Foundation
- SQL hierarchies
Calculation Views offer close coupling to internal optimizations

- push-down of filters
- join-pruning
- union-pruning
- column pruning
SAP HANA View Modeling with SAP Web IDE for SAP HANA – Analysis of Models

Improve performance using

Performance Analysis Mode

Debug View Mode
Get detailed insight into your models by

- model outline
- auto documentation
- lineage analysis
- various data preview options

SAP HANA View Modeling with SAP Web IDE for SAP HANA – Insight into Data and Models
Make use of various OLAP features

- Restricted columns
- Calculated columns
- Currency conversion
- Temporal joins
- Ranking
- Star joins
- Anonymization
Make use of various OLAP features

- Input parameters
- Hierarchies
- History tables

Client handling

Analytic Privileges

Masking
New Features in Web IDE (Selection)

Table function nodes that can be integrated into data flow
Masking of sensitive columns
Set operations
Reuse of defined currency conversion settings (reference / copy)
Different accuracy settings for currency conversion
More flexible filters and setting of keep flag
Improved data insight tools

For more details see: Live Expert Series: What’s New in SAP HANA 2.0 SPS 02
Anonymizing data (k-anonymity, differential privacy)
Non-equijoin
More referential join options
SQL hierarchy functions
Extract parameters from base view
Additional currency conversion options
Multi-join
Union pruning configuration dialog
Graph and hierarchy preview

For more details see: Live Expert Series: What’s New in SAP HANA 2.0 SPS 03
New Features in Web IDE (SPS04)

Model-based parallelization
Flexible ranking
Influence processing flow by session variables
Fuzzy search
K-anonymity enhancements
New Features in Web IDE (SPS04)

SQL hierarchy enhancements
Schema based synonym creation
Tailored mapping display
Improved search functionality
Convert column name to uppercase
New Features in Web IDE (SPS04)

Swapping order in minus nodes
Navigate to included view
Hyperlink metadata
Pending deployment indication
New modelling environment
Unified Development Environment

SAP HANA Studio – Modeler Eclipse-perspective
• focus is on HANA View modeling

SAP HANA Studio – Development Eclipse-perspective
• supports application and database design-time artifacts and offers repository functionality

SAP HANA Web-based Development Workbench
• supports application and database design-time artifacts

SAP Web IDE for SAP HANA
• new Development tooling platform for SAP HANA
• modeling
  – uses interface framework of SAP Web IDE
  – runs in browser (no separate installation of client tool needed)
  – deploys via new HANA deployment infrastructure
• examples of other artifacts with graphical editors in Web IDE: CDS, NDSO

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2714742 - SAP Web IDE for SAP HANA 2.0 SPS 04 - Central Release Note
2396214 - Transition to SAP HANA Extended Services Advanced and SAP HANA Cockpit
- Fading out XS Classic and HANA Studio
2465027 - Deprecation of SAP HANA extended application services, classic model and SAP HANA Repository
Comprehensive graphical modeling tools for streamlined development
Benefits of New Development Environment

- **Strategy**
  - Proposed new environment for modeling and developing (SAP Note 2465027)
  - Supports move into cloud environment

- **Power**
  - New development features only made available in new development environment
  - Industry-standard versioning tool (Git)

- **TCO**
  - Common development environment for various development artifacts
  - No local development tool installations needed anymore (also no additional open ports needed)
  - Good integration with automation tools (e.g., Gerrit, SAP Note 2287418)
  - Better activation performance and better parallel development

- **Security**
  - High-isolation of development and developed artifacts: more control about data visibility (“open” vs. “restricted” container in same system) and less interference between developers
HANA Deployment Infrastructure (HDI)

Graphically modeled artefacts that are **not** supported in HDI

- Attribute View
- Analytic View
- Script-based Calculation View
- XML-based classical analytic privileges

- Attribute View
- Script-based Calculation Views
- XML-based classical analytic privileges
How to get there
Calculation View: Unified Artifact

Attribute View

Script-based Calculation Views

Analytic View

Graphical Calculation Views
Steps into the New Environment

Before HANA 2.0 SPS02  
HANA 2.0 SPS03

Attribute Views, Analytic Views, Script-based Calculation Views, Classical Analytic Privileges

SAP HANA Studio  
Migrate

Graphical Calculation Views, SQL Analytic Privileges

Operating System  

ZIP-File  
for details see blog

ZIP-File  
for details see documentation
SAP HANA Studio Migration

Open "Quick View".

Select "Migrate".

Choose source objects for migration.

Select a migration type and a folder to save the migration job log.

- Attribute views and analytic views to calculation views.
- Script-based calculation views to graphical calculation views and table functions.
- Classical XML-based analytic privileges to SQL analytic privileges.
SAP HANA Studio Migration Example (1)

Source artefacts

- foundation
  - China
    - Attribute Views (3)
    - Analytic Views (2)
    - Calculation Views (1)
  - EU
  - GB
    - Attribute Views (3)
  - India
    - Attribute Views (2)
    - Analytic Views (4)
  - US
    - Attribute Views (3)
    - Analytic Views (4)

Start migration

Select type of artefacts

- Migrate

Migrate Objects
Select a migration type and a folder to save the migration job log.

- Attribute views and analytic views to calculation views.
  Select if you want to migrate existing attribute views or analytic views in a package to standard graphical calculation views.

- Script-based calculation views to graphical calculation views and table functions.

- Classical XML-based analytic privileges to SQL analytic privileges.
SAP HANA Studio Migration Example (2)

Source artefacts

Calculation Views are not listed because they are irrelevant for migration

individual views can be selected
SAP HANA Studio Migration Example (3)

Job status

Migration log

Migration Summary:

<table>
<thead>
<tr>
<th>Migration</th>
<th>Total Objects</th>
<th>Success</th>
<th>Failures</th>
<th>Need actions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>57</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Attribute views and analytic views to calculation views.

Migrated artefacts

- migratedArtefacts
  - foundation
    - China
      - Calculation Views (3)
    - EU
      - Calculation Views (3)
    - GB
      - Calculation Views (3)

- foundation.EU:AN
  - Calculation View
    - migratedArtefacts.foundation.China:AT1
    - Calculation View
    - migratedArtefacts.foundation.China:AT2
    - Calculation View
    - migratedArtefactsfoundation.China:AT3
  - Calculation View
    - migratedArtefacts.foundation.EU:AN
    - Calculation View
    - migratedArtefactsfoundation.EU:AN

- foundation.EU:AN
  - Calculation View
    - migratedArtefactsfoundation.China:AT1
    - Calculation View
    - migratedArtefactsfoundation.China:AT2
    - Calculation View
    - migratedArtefactsfoundation.China:AT3
  - Calculation View
    - migratedArtefactsfoundation.EU:AN

Success
- Object migrated successfully
- No filters defined on columns in this calculation view.
Migration into XSA (Example continued)

Invoke XSA Migration Assistant

./xs-migration --zip --target-dir Target DU,org

Migration Report

Migration is running
Import migrated views into workspace (Example finished)
Migrating to Calculation Views
Further information

- general migration steps are discussed in this blog and here
- see attachment of SAP Note 2325817 for potential issues

BW contexts:
- generate only Calculation Views as external views: 2236064
- integration with HDI: 2463312
- access to BW objects: 2723506
Migration into XSA

Migration documentation

- SAP HANA XS Advanced Migration Guide
- SAP HANA XS Migration Assistant 1 SAP Note 2493252

SAP HANA XS Advanced Migration Guide

This document refers to...

SAP HANA XS Migration Assistant 1

Other Terms

HANA 2.0, HAN, HXS, Migration, XS Advanced, XS Classic

Reason and Prerequisites

SAP HANA Extended Application Services (EAS), advanced scale, (PaaS) provides a comprehensive platform for the development and execution of native data-intensive applications (DIA) that can be used in SOA technologies. The XS Advanced is a platform for developing applications that can be deployed on the SAP Cloud Platform, which supports several programming languages and execution environments, for example, Java and node.js. The classic XS Java application (XSJ) is supported and is a framework running in the Node.js container.

HANA 2.0 VS. XS Advanced Migration Assistant 1

Solution

SAP HANA XS Advanced Migration Assistant 1 for SAP HANA 2.0 SP02 is a statistic client component. Either for new installations or for upgrades, just select the corresponding SOC, "XS Advanced Migration 1" from Software Download Center at https://service.sap.com/software-

Following features have been changed or added since SP01+

- Migration integration (changed)
- Integration of classic XS application to XS advanced in semantic code using the XS Advanced Migration Assistant
- (ITA note: changed)

A new option is available to execute the XS Advanced Migration Assistant, which produces output that does not include information about permissions defined in business artifacts or role artifacts that are used to enable public access to system targets.

- Migration framework (newly implemented, new)
- Migration framework (newly implemented, new)

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Your channel for submitting ideas to improve the SAP HANA Platform

Submit your Improvement Requests

Vote for other valuable Improvement requests

Development will review all Improvement Request that have more than 10 votes

Suitable requests are built into a future release
Thank you!

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