

3523400 - Overview of the compatibility view topic in the context of SAP HANA (SAP S/4HANA)

Component: HAN-DB (SAP HANA > SAP HANA Database), Version: 2, Released On: 29.10.2024

Symptom

You experience one or some of the following issue.

Transaction code SE16/SE16N related:

- [1602869](#) - Bad performance when using transaction SE16 or SE16N to browse data
- [3251583](#) - Performance issues when viewing database views from SE16 or SE16N
- [2595627](#) - Accessing table from SE16/SE16N shows different results to SAP HANA database

Memory related:

- [3239943](#) - SQL error "SQL code: 4" occurred while accessing table "< >" occurs when querying large SAP technical tables
- [3127377](#) - Accessing COSP, COSS, COEP and COVP via SE16 will cause "column store error: search table error: [9] Memory allocation failed "SQL dbsl rc: 99"

Or combination of the previously mentioned symptoms:

- [2793263](#) - Executing SE16 or SE16N Transaction Against S/4HANA Compatibility View Runs Long or Leads to Composite Out-of-Memory (OOM)

Topic summary SAP Knowledge Base Article, which refers many topic related SAP Knowledge Base Articles together, to put the information in context and help understanding the behaviors and root cause of the relevant issues and the side effects.

"Image/data in this KBA is from SAP internal systems, sample data, or demo systems. Any resemblance to real data is purely coincidental."

Environment

- SAP HANA, platform edition
- SAP S/4HANA

Resolution

What background information we need to know?

- With the change of the S/4HANA, new structure has been implemented.
- The main purpose of the compatibility views (compat views) to **keep alive some core legacy processes** (transactions, reports) which comes from the old world (Pre S/4HANA world).
- Compatibility views are required to map tables from the old world (so called ECC) to tables of the new (S/4HANA) world **so that old coding can still work without changes.**

What are compatibility views?

Compatibility views in SAP HANA database are special views provided to ensure backward compatibility with older versions of SAP systems. These views act as an abstraction layer over the actual database tables and provide a way to access data in a format that is consistent with previous versions of the database schema. This allows applications that were developed for older versions of SAP HANA to continue to function without modification, even after the underlying database schema has been updated or changed.

Compatibility views are typically used during migration or upgrade projects, where it is important to maintain the functionality of existing applications while transitioning to a newer version of the SAP HANA database. They help to minimize the impact of database changes on application code, reducing the need for extensive code modifications and testing.

To understand the logic behind compatibility views, check the following resources that explain the necessary details.

- [2000002](#) - FAQ: SAP HANA SQL Optimization - - > 25. How can compatibility view accesses be tuned?

"Compatibility views (or shorter: compat views) are required to map tables from the old world (e.g. COSS) to tables of the new S/4HANA world (e.g. ACDOCA) so that old coding can still work without changes. This mapping is typically rather complex, involving a lot of views and dependencies, so there is a significant risk that there are performance

regressions compared to the former plain table access. You can identify compatibility view accesses using SQL: "HANA_SQL_SQLCache_SpecialStatements" (STATEMENT_CLASS = 'COMPAT_VIEW') available via SAP Note 1969700."

- [Compatibility Views and SAP Landscape Transformation Replication Server](#) - - > 1.2 Compatibility Views

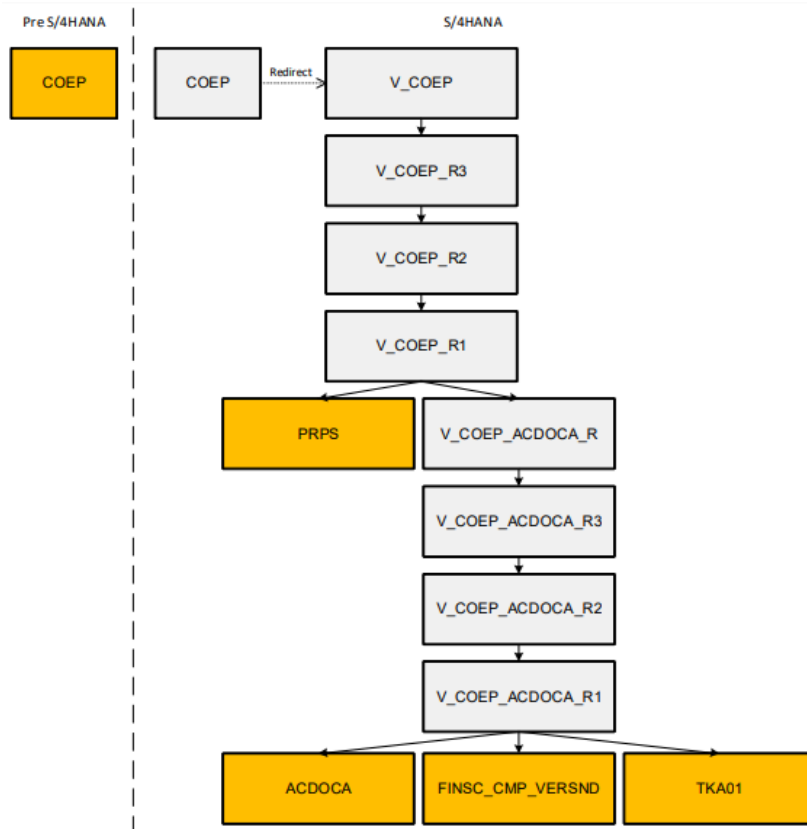


Figure 1 - Table COEP and Compatibility View V_COEP in SAP S/4HANA

What are the issues which can be experienced because of the compatibility views usage?

- performance regression
- longer execution times
- out of memory (OOM) events

Which optimizations can be used in case of compatibility views (central knowledge)?

Typical tuning approaches in context of compatibility views.

- [2000002](#) - FAQ: SAP HANA SQL Optimization - - > 25. How can compatibility view accesses be tuned?

Which optimizations can be used in case of compatibility views (Finance [FI] and Controlling [CO])?

Some documents listed here, also can be find in the previous point (central knowledge).

- [2408083](#) - FAQ: Data Model of S/4HANA Finance Data Migration
- [2575530](#) - Performance after Upgrade to S/4 HANA in Accounting
- [2602107](#) - Using compatibility views in custom programs in SAP S/4HANA
(referred documents: [2185026](#), [2219527](#), [2221298](#), [2572477](#))

Which optimizations can be used in case of compatibility views (Materials Management [MM] and Inventory Management [IM])?

Some documents listed here, also can be find in the previous point (central knowledge).

- [2206980](#) - Material Inventory Managment: change of data model in S/4HANA
- [3163754](#) - S/4HANA: History stock tables within the new data model for Inventory Management
- [2713495](#) - S/4HANA: Performance issues in custom code when using the obsolete stock data model

See Also

- SAP Community - [Some interesting Facts of Compatibility Views in SAP BW/4HANA and SAP S/4HANA](#)
- SAP Community - [Finding the right CDS Extractor in SAP S/4HANA](#)

Keywords

SAP, HANA, S/4HAN, S4HANA, compatibility, compat, view, views, map, mapping, legacy, SE16, SE16N, OOM, performance, outofmemory, out-of-memory, out of memory, memory, allocation, failed, ANEA, ANEK, ANEP, ANLC, BSAD, BSID, BSAK, BSIK, BSAS, BSIS, COEP, COSP, COSS, COVP, V_COEP, V_COVP, FAGLFLEX, FMGLFLEX, GLTo, JVGLFLEX, PSGLFLEX, MARC, MARD, MARDH, MBEW, MBEWH, MBVMBEW, MCHB, MCHBH, MKPF, MSEG, NSDM_V_MARC, NSDM_V_MARD, NSDM_V_MARDH, NSDM_V_MCHB, NSDM_V_MCHBH, NSDM_V_MKPF, NSDM_V_MSEG

Attributes

Key	Value
Other Components	SAP HANA > SAP HANA Database > SAP HANA DB Engines (HAN-DB-ENG)
Requires Action	0

Products

Products
SAP HANA, platform edition all versions
SAP S/4HANA all versions

This document refers to

SAP Note/KBA	Component	Title
3251583	HAN-DB-PERF	Performance issues when viewing database views from SE16 or SE16N
3239943	HAN-DB-PERF	SQL error "SQL code: 4" occurred while accessing table "< >" occurs when querying large SAP technical tables
3127377	HAN-DB	Accessing COSP, COSS, COEP and COVP via SE16 will cause "column store error: search table error: [9] Memory allocation failed "SQL dbsl rc: 99"
2595627	HAN-DB-ENG	Accessing table from SE16/SE16N shows different results to SAP HANA database
2000002	HAN-DB-PERF	FAQ: SAP HANA SQL Optimization
1602869	BC-DB	Bad performance when using transaction SE16 or SE16N to browse data
3163754	MM-IM-GF	S/4HANA: History stock tables within the new data model for Inventory Management
2793263	HAN-DB	Executing SE16 or SE16N Transaction Against S/4HANA Compatibility View Runs Long or Leads to Composite Out-of-Memory (OOM)
2713495	MM-IM-GF	S/4HANA: Performance issues in custom code when using the obsolete stock data model
2602107	FI-GL	Using compatibility views in custom programs in SAP S/4HANA
2575530	CO-OM	Performance after Upgrade to S/4 HANA in Accounting
2408083	FIN-MIG	FAQ: Data Model of S/4HANA Finance Data Migration
2206980	MM-IM-GF-MIG	Material Inventory Managment: change of data model in S/4HANA

This document is referenced by

SAP Note/KBA	Component	Title
3560749		Accessing Records for MKPF Table in SAP S/4HANA