

SAP Note

**3303499 - Indexserver Crash at ptime::qo::PhysicalOperator::cloneSubtree With "STACK OVERFLOW: SIGNAL 11 (SIGSEGV) caught"****Version 7** **Validity:**
10.05.2023 - active**Language** English

Header Data

Released On	10.05.2023 08:25:21	By Beate Groetschnig (I035208)
Release Status	Released for Customer	
Component	HAN-DB SAP HANA Database	Display ACRF Content
Priority	Correction with high priority	
Responsible	Jinsol Kim (I533393)	
Processor	Beate Groetschnig (I035208)	
Category	Program error	
Relevant for Translation	No	

Symptom

You observe Indexserver crashes with a call stack similar to the following:

```

0: void ptime::qo::support::(anonymous namespace)::copyFromToImpl<ptime::qo_Rel>
1: ptime::qo::TopologyInfoBase::cloneLogical
2: ptime::qo::PhysicalOperator::cloneWithLogical
3: ptime::qo::PhysicalOperator::cloneSubtree
4: ptime::qo::PhysicalOperator::cloneSubtree
5: ptime::qo::PhysicalOperator::cloneSubtree

[...]

```

```

774: ptime::qo::PhysicalOperator::cloneSubtree
775: ptime::qo::PhysicalOperator::cloneSubtree
776: ptime::qo::PhysicalOperator::cloneSubtree
777: ptime::qo_Clone::clone_phyop_subtree
778: ptime::qo_Rel::clone_single_tree_before_code_gen
779: ptime::QueryOptimizer::optimize_qo_plan
780: ptime::QueryOptimizer::optimize_plan
781: ptime::Query::compile_parse_tree
782: ptime::Query::_compile

```

[...]

Please note that the stack above shows many consecutive lines of function **"ptime::qo::PhysicalOperator::cloneSubtree"**.

Other Terms

stack overflow, scalar subquery, scalar udf

Reason and Prerequisites

Issue number 302818

Reason:

Due to a programming error in SAP HANA, stack overflow occurs instead of raising a preemptive exception when function **"ptime::qo::PhysicalOperator::cloneSubtree"** is called recursively, which leads to consume more memory than available.

Affected Releases:

- SAP HANA 1:
 - All revisions
- SAP HANA 2:
 - Revisions of SPS00 - SPS05
 - Revisions <= 067.00 (SPS06)

Prerequisites:

- Using excessive scalar subqueries of a similar pattern in the main query is likely to cause this issue

Solution

Apply one of the following SAP HANA Revisions:

- SAP HANA 2:
 - Revisions >= 067.01 (SPS06)
 - or higher
- or higher

Please make sure that upgrading the affected system to one of solution revisions above won't make the problematic query executable. The affected query will still fail (but with an exception instead of Indexserver crash).

Workaround:

- Avoid using scalar subqueries repeatedly. You might consider using a scalar UDF instead.

For example, assume that you have a query that contains many scalar subqueries of a similar pattern as follows:

```

WITH CTE AS (
    SELECT schema_name, table_name FROM M_CS_TABLES
), CTE2 AS (
    SELECT object_name, object_oid FROM objects JOIN CTE On object_name =
table_name
) SELECT

    SUM(CASE WHEN object_name = (SELECT distinct(table_name) FROM CTE where
schema_name = 'TEST' AND table_name = 'T1') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = (SELECT distinct(table_name) FROM CTE where
schema_name = 'TEST' AND table_name = 'T2') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = (SELECT distinct(table_name) FROM CTE where
schema_name = 'TEST' AND table_name = 'T3') THEN object_id ELSE 0 END),

    [...]

    SUM(CASE WHEN object_name = (SELECT distinct(table_name) FROM CTE where
schema_name = 'TEST' AND table_name = 'T698') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = (SELECT distinct(table_name) FROM CTE where
schema_name = 'TEST' AND table_name = 'T699') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = (SELECT distinct(table_name) FROM CTE where
schema_name = 'TEST' AND table_name = 'T699') THEN object_id ELSE 0 END)

FROM CTE2;

```

The query above can be rewritten using a scalar UDF "3303499_TEST" as follows:

```

CREATE OR REPLACE FUNCTION "3303499_TEST" (x nvarchar(255), y nvarchar(255))
RETURNS result nvarchar(255)
AS BEGIN

    SELECT distinct(object_name) INTO result FROM objects WHERE schema_name = :x and
object_name = :y;

END;

WITH CTE AS (
    SELECT schema_name, table_name FROM M_CS_TABLES
), CTE2 AS (
    SELECT object_name, object_oid FROM objects JOIN CTE On object_name =
table_name
) SELECT

    SUM(CASE WHEN object_name = "3303499_TEST" ('TEST', 'T1') THEN object_id ELSE
0 END),
    SUM(CASE WHEN object_name = "3303499_TEST" ('TEST', 'T2') THEN object_id ELSE
0 END),
    SUM(CASE WHEN object_name = "3303499_TEST" ('TEST', 'T3') THEN object_id ELSE
0 END),

    [...]

```

```
SUM(CASE WHEN object_name = "3303499_TEST" ('TEST', 'T698') THEN object_id
ELSE 0 END),
SUM(CASE WHEN object_name = "3303499_TEST" ('TEST', 'T699') THEN object_id
ELSE 0 END),
SUM(CASE WHEN object_name = "3303499_TEST" ('TEST', 'T700') THEN object_id
ELSE 0 END),

FROM CTE2;
```

Validity

Software Component	From Rel.	To Rel.	And Subsequent	
HDB	1.00	1.00		
	2.00	2.00		

Support Packages & Patches

Support Package Patches

Software Component	Support Package	Patch Level
SAP HANA DATABASE 2.0	SP067	000001

References

This document refers to:

SAP Notes

3128366 HAN-DB [Known issues detected in SAP HANA 2 SPS06](#)
2945435 HAN-DB [Known issues detected in SAP HANA 2 SPS05](#)
2784704 HAN-DB [Known issues detected in SAP HANA 2 SPS04](#)
2628684 HAN-DB [Known issues detected in SAP HANA 2 SPS03](#)
2525424 HAN-DB [Known issues detected in SAP HANA 2 SPS02](#)
2462139 HAN-DB [Known issues detected in SAP HANA 2 SPS01](#)
2432112 HAN-DB [Known issues detected in SAP HANA 2 SPS00](#)
2380229 HAN-DB [SAP HANA Platform 2.0 - Central Note](#)
2325090 HAN-DB [Known issues detected in SAP HANA 1 SPS12](#)
2265103 HAN-DB [Known issues detected in SAP HANA 1 SPS11](#)
2184212 HAN-DB [Known issues detected in SAP HANA 1 SPS10](#)
2093754 HAN-DB [Known issues detected in SAP HANA 1 SPS09](#)
2066225 HAN-DB [Known issues detected in SAP HANA 1 SPS08](#)

ServiceNow Case

This document is referenced by:

Customer Incident (1)

Number	Year	Title	Status	Processor	Customer Number	Customer Name
0000193323	2023	HANA DB crash occurs when executing query.vvisual.plan	Restricted	Jinsol Kim	0000289563	Daewoo Shipbuilding & Marine Engine

SAP Notes (3)

- 3312883 HAN-DB [SAP HANA 2 SPS06 Revision 067.01](#)
- 3325921 HAN-DB [Indexserver Crash at ptime::codegen_so2l::gen_code with an Error "STACK OVERFLOW: SIGNAL 11 \(SIGSEGV\) caught"](#)
- 3304554 HAN-DB [Indexserver Crash at ptime::PlanInfoTemplate\(\) with an Error "STACK OVERFLOW: SIGNAL 11 \(SIGSEGV\) caught"](#)

ServiceNow Case (1)

Number	Year	Text	Status	Processor	Customer Number	Customer
0000193323	2023	HANA DB crash occurs when executing query.vvisual.plan	Closed	Jinsol Kim (I533393)		