SAP Note

3304554 - Indexserver Crash at ptime::PlanInfoTemplate() with an Error "STACK OVERFLOW: SIGNAL 11 (SIGSEGV) caught"

Version 2 **Validity:** 10.05.2023 - active **Language** English

Header Data

Released On	10.05.2023 08:28:49 **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:

[...]

10: ptime::Proc_insert_parallel::execute_dynamic
11: ptime::Proc_insert_parallel::operator
13: ptime::Query::execute
14: ptime::PlanInfoTemplate
15: ptime::PlanInfoTemplate
16: ptime::PlanInfoTemplate
17: ptime::PlanInfoTemplate
18: ptime::PlanInfoTemplate

[...]

687: ptime::PlanInfoTemplate
688: ptime::PlanInfoTemplate
689: ptime::PlanInfoTemplate
690: ptime::Proc_plan::operator
691: ptime::Query::_execute

[...]

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

Other Terms

stack overflow, scalar subquery, scalar udf

Reason and Prerequisites

Issue number 303288

Reason:

Due to a programming error in SAP HANA, stack overflow occurs instead of raising a preemptive exception when function "**ptime::PlanInfoTemplate**" 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 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 "3304554_TEST" as follows:

CREATE OR REPLACE FUNCTION "3304554_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 = "3304554_TEST" ('TEST', 'T1') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = "3304554_TEST" ('TEST', 'T2') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = "3304554_TEST" ('TEST', 'T3') THEN object_id ELSE 0 END),

    [...]

    SUM(CASE WHEN object_name = "3304554_TEST" ('TEST', 'T698') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = "3304554_TEST" ('TEST', 'T699') THEN object_id ELSE 0 END),
    SUM(CASE WHEN object_name = "3304554_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

3303499	HAN-DB	Indexserver Crash at ptime::qo::PhysicalOperator::cloneSubtree With "STACK OVERFLOW: SIGNAL 11 (SIGSEGV) caught"
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

This document is referenced by:

Customer Incident (1)

Number	Year	Title	Status	Processor	Customer Number	Customer Name
0001092500	2023	Indexserver restarted	Confirmed automatica		0000239068	Signet Group Services US Inc

SAP Notes (3)

3318159	HAN-DB	SAP HANA 2 SPS05 Revision 059.09
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"

ServiceNow Case (1)

Number	Year	Text	Status	Processor	Customer Number	Customer
0001092500	2023	Indexserver restarted	Closed	Lucjan Chmura (I826744)	0000239068	Signet Group Services US Inc (00002