

SAP Note



3221290 - Internal Statistical Transaction is Rolled Back Due to Failure to Create a Temporary Table for Join Relocation

Version 8 Validity: 14.10.2022 - active

Language English

Header Data

Released On	14.10.2022 00:37:55 By Jinsol Kim (I533393)
Release Status	Released for Customer
Component	HAN-DB SAP HANA Database Display ACRF Content
Other Components	HAN-DB-SDA SAP HANA Smart Data Access
Priority	Correction with high priority
Responsible	Jinsol Kim (I533393)
Processor	Jinsol Kim (I533393)
Category	Program error
Relevant for Translation	No

Symptom

Every one hour error logs similar to the following are written into Indexserver trace:

```
[0000]{000000}[-1/-1] 0000-00-00 00:00:00.000000 e FedTrace      odbccaccess.cpp(03927) : ODBC error: At
/data/jenkins_prod/workspace/4gdlkp8wkf/s/federation/adapters/odbccaccess.cpp:1322:ExecuteDDL, connected: 1, state: S1000, code: 129, msg:
[SAP AG][LIBODBC:HDB SO][HDBODBC] General error;129 transaction rolled back by an internal error: cannot change this transaction's access
mode from read-only to update directly: please use "SET TRANSACTION READ WRITE" statement first, SId: xxxxxxxxxxxxxxxxx, SHash:
<statement_hash>
```

Checking SQL Plan Cache or historical thread information to find which transaction causes this error, either one of two statements below is returned:

```
SELECT STATEMENT_STRING FROM M_SQL_PLAN_CACHE WHERE STATEMENT_HASH = '<statement_hash>';
```

or

```
SELECT THREAD_DETAIL FROM _SYS_STATISTICS.HOST_SERVICE_THREAD_SAMPLES WHERE STATEMENT_HASH =
'<statement_hash>;'
```

=>

```
/* procedure: "_SYS_STATISTICS"."COLLECTOR_HOST_LOAD_HISTORY_HOST" line: 8 col: 2 (at pos 804) */
insert into _SYS_STATISTICS.HOST_LOAD_HISTORY_HOST_BASE (snapshot_id, server_timestamp,
site_id,CPU,DISK_SIZE,DISK_USED,HOST,MEMORY_ALLOCATION_LIMIT,MEMORY_RESIDENT,MEMORY_SIZE,MEMORY_TOTAL_RESIDENT,
MEMORY_USED,NETWORK_IN,NETWORK_OUT,SWAP_IN,SWAP_OUT,TIME) [...]
```

or

```
/* procedure: "_SYS_STATISTICS"."COLLECTOR_HOST_LOAD_HISTORY_SERVICE" line: 8 col: 2 (at pos 810) */
insert into _SYS_STATISTICS.HOST_LOAD_HISTORY_SERVICE_BASE (snapshot_id, server_timestamp,
site_id,ACTIVE_SQL_EXECUTOR_COUNT,ACTIVE_THREAD_COUNT,ADMISSION_CONTROL_ADMIT_COUNT,
ADMISSION_CONTROL_DEQUEUE_COUNT,ADMISSION_CONTROL_ENQUEUE_COUNT,ADMISSION_CONTROL_QUEUE_SIZE,
ADMISSION_CONTROL_REJECT_COUNT,ADMISSION_CONTROL_TIMEOUT_COUNT,ADMISSION_CONTROL_WAIT_TIME,
BLOCKED_TRANSACTION_COUNT,COMMIT_ID_RANGE,CONNECTION_COUNT,CPU, [...])
```

Other Terms

Smart Data Access (SDA), High Availability, System Replication, Active/Active (Read Enabled), AARE, SQLStatistics

Reason and Prerequisites

Issue number 286925

Reason:

In HANA System Replication environment, HANA primary system collects statistics of the secondary system via Smart Data Access in a way that the primary system is considered as a local source and the secondary as a remote source. If the remote source is created with read only for Active/Active mode and a transaction references the remote source, a transaction mode for this transaction is changed to 'read-only' by internally executing '*SET TRANSACTION READ ONLY...*' statement.

However, due to a programming error in SAP HANA, above internal statistical transactions try to create a temporary table for join relocation, but it fails as it contradicts the restriction imposed by transaction mode '*READ ONLY*'.

Affected Releases:

- SAP HANA 2:
 - Revisions of SPS00 - SPS04
 - Revisions <= 059.04 (SPS05)
 - Revisions <= 063.00 (SPS06)

Prerequisites:

- HANA system replication is set up **AND**
- Active/Active (Read Enabled) mode is in use

!-- Important --!

Please note that when configuration parameter [smart_data_access] *enable_binary_transfer* is set to 'false' with above prerequisites met, this issue **always** occurs, but not vice versa.

Solution

Apply one of the following SAP HANA Revisions:

- SAP HANA 2:
 - Revisions >= 059.05 (SPS05)
 - Revisions >= 064.00 (SPS06)
 - or higher
- or higher

Workaround:

Consider applying one of the following options:

- Unset [smart_data_access] *enable_binary_transfer* in case it was previously set to 'false' and there is no specific reason to keep it as is

```
ALTER SYSTEM ALTER CONFIGURATION ('indexserver.ini', 'SYSTEM') UNSET ('smart_data_access', 'enable_binary_transfer') WITH RECONFIGURE COMMENT 'SAP Note 3221290';
```

- Disable capacity CRT_TEMP_TABLES for the secondary system

1. Find the remote source name for the secondary system

```
SELECT REMOTE_SOURCE_NAME FROM M_REMOTE_STATEMENTS;
```

=> _SYS_SR_SITE_<DB_NAME> -- it is most likely _SYS_SR_SITE_ **HANAD**

2. Allow temporary modification of system-managed objects

```
ALTER SYSTEM ALTER CONFIGURATION ('indexserver.ini', 'SYSTEM') SET ('sql', 'reserve_object_name_prefix') = 'false' WITH RECONFIGURE COMMENT 'SAP Note 3221290';
```

3. Block capability to create temporary tables for the remote source _SYS_SR_SITE_ **HANAD**

```
ALTER REMOTE SOURCE _SYS_SR_SITE_ HANAD SET PROPERTY 'CAP_CRT_TEMP_TABLES' = 'FALSE';
```

4. Block modification of system-managed objects again

```
ALTER SYSTEM ALTER CONFIGURATION ('indexserver.ini', 'SYSTEM') UNSET ('sql', 'reserve_object_name_prefix') WITH RECONFIGURE COMMENT 'SAP Note 3221290';
```

Once the system is upgraded to one of the solution revisions, please repeat this process, but at Step 3 run a command below instead:

```
ALTER REMOTE SOURCE _SYS_SR_SITE_ HANAD UNSET PROPERTY 'CAP_CRT_TEMP_TABLES';
```

- Disable join relocation

```
ALTER SYSTEM ALTER CONFIGURATION ('indexserver.ini', 'SYSTEM') SET ('smart_data_access', 'join_relocation') = 'false' WITH RECONFIGURE COMMENT 'SAP Note 3221290';
```

Once the system is upgraded to one of the solution revisions, unset this parameter as it might degrade performance of all transactions involving join relocation.

```
ALTER SYSTEM ALTER CONFIGURATION ('indexserver.ini', 'SYSTEM') UNSET ('smart_data_access', 'join_relocation') WITH RECONFIGURE COMMENT 'SAP Note 3221290';
```

Disclaimer

The SAP HANA configuration parameter [sql] *reserve_object_name_prefix* is an internal parameter and may only be used in the context of this SAP Note. Using such a parameter requires that the SAP HANA system has the revision specified in the SAP Note. Using internal parameters outside of this given scope is not supported. Please unset this parameter once you have upgraded to a revision containing the permanent solution.

Validity

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

Support Packages & Patches**Support Package Patches**

Software Component	Support Package	Patch Level
SAP HANA DATABASE 2.0	SP059	000005
	SP064	000000

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](#)

This document is referenced by:**Customer Incident (3)**

Number	Year	Title	Status	Processor	Customer Number	Customer Name
0000012440	2023	alert_id_0.entries.every_hour	Restricted	Bandish Patil	0002022801	Atos Nederland B.V.
0000552203	2022	Issues observed related to Statistics Server after DB upgrad	Restricted	Ruohua Tao	0000030857	Unilever Foods Europe ERP-CC Unilev
0000627833	2023	SQL code 129 occurred while accessing table NRIV	Restricted		0000738253	L G Balakrishnan & Bros Ltd

SAP Knowledge Base Articles (2)

2147247 HAN-DB-MON [FAQ: SAP HANA Statistics Server](#)
 2380176 HAN-DB [FAQ: SAP HANA Database Trace](#)

SAP Notes (1)

3218836 HAN-DB [SAP HANA 2 SPS06 Revision 064.00](#)

ServiceNow Case (4)

Number	Year	Text	Status	Processor	Customer Number	Customer
0000552203	2022	Issues observed related to Statistics Server after DB upgrad	Closed	Ruohua Tao (I844760)		
0000012440	2023	alert_id_0.entries.every_hour	Closed	Bandish Patil (C5309224)		
0000627833		SQL code 129 occurred while accessing table NRIV	Closed	Caroline Maitz (I517389)		
0003223193	2022	Getting odd alerts after update to HANA 2.0 SP06	Closed	Daniel Lemen (I822351)	0000146416	Milliken & Company (0000146416)