

Symptom

Statisticsserver alerts are triggered on HANA side:

HANA alert 39: Long-running statements

HANA alert 42: Long-running cursors

HANA alert 48: Long-running uncommitted write transactions

HANA alert 42: Long-running blocking situations

Environment

HANA

Resolution

These alerts are also reported into the alert trace of the indexserver (indexserver_alert_<host>.trc):

long running uncommitted write transaction detected: CONNECTION ID = 200647, HOST = hanadb:30003, CLIENT HOST = hanaci, CLIENT PID TRANSACTION_ID = "902", TRANSACTION TOTAL EXECUTED TIME = 6321 sec

The long running uncommitted write transaction possibly incurs performance degradation of HANA database. Please commit/rollback a transaction application or kill the connection by "ALTER SYSTEM DISCONNECT SESSION '202982' "

As a common quality, these alerts always contain information on the responsible client process. Before any action can be done (commit/rollback/kill), investigation has to be conducted on what the client process is doing.

Investigating client activity and application

In the first step, it has to be determined to which application the CLIENT PID on CLIENT host belongs to. Typically, this would be done using OS tools, like the 'ps' command in linux/unix or the taskmanager on windows systems. If the process is an SAP workprocess (disp+work.exe or dw), then further investigation can be conducted using transaction SM50 on the relevant SAP application server. In case of an 'uncommitted write transaction', it might actually be the client blocking the commits. The SAP workprocess might be in state 'sleep' or waiting for locks/semaphore, thus preventing the execution of the commit.

Tools for analyzing SAP workprocess activity:

- Transactions SE30 or ST12
- In case of processes that appear to be hanging, call stacks can be generated into the developer traces (accessible using transaction ST11). The commands to do so are 'kill -USR2 <pid>' (UNIX/LINUX) and 'sapntkill -USR2 <pid>' (Windows).

Analyzing database activity

Connections

If it can be ruled out that the problem is located on client side, the activity on HANA side has to be analyzed next. As an entry point, the CONNECTION ID is used.

[dbacockpit:](#)

SAP HANA database: Database Administration									
<ul style="list-style-type: none"> Current Status <ul style="list-style-type: none"> Overview Landscape Alerts Services Threads Disks Volumes Trace Configuration Performance Configuration Jobs Diagnostics System Information <ul style="list-style-type: none"> Connections Transactions Connection Statistics Caches Query Cache Large Tables Memory Configuration and Usage by Index SQL Workload Documentation 									
Host	Port Number	Connection ID	Transaction ID	Start Time	Idle Time	Connection Status	Client Host	Client IP	Client PID
hanadb	30.003	200.749	266	21.04.2013 14:32:31	0		hanaci	192.168.123.133	10.657
hanadb	30.003	200.750	266	21.04.2013 14:32:31	2.679.204	IDLE	hanaci	192.168.123.133	10.657
hanadb	30.003	200.632	242	21.04.2013 14:30:01	0		hanaci	192.168.123.133	10.657
hanadb	30.003	200.649	243	21.04.2013 14:30:01	3.260.310	IDLE	hanaci	192.168.123.133	10.657
hanadb	30.003	200.633	245	21.04.2013 14:30:01	0		hanaci	192.168.123.133	10.657
hanadb	30.003	200.643	225	21.04.2013 14:30:01	341.617	IDLE	hanaci	192.168.123.133	10.657
hanadb	30.003	200.636	254	21.04.2013 14:30:01	0		hanaci	192.168.123.133	10.657
hanadb	30.003	200.647	237	21.04.2013 14:30:01	5.478	IDLE	hanaci	192.168.123.133	10.657

Details	
Group description	Cell Content...
Host	hanadb
Port Number	30.003
Connection ID	200.647
Transaction ID	237
Start Time	21.04.2013 14:30:01
Idle Time	5.478
Connection Status	IDLE
Client Host	hanaci
Client IP	192.168.123.133
Client PID	10.657
User Name	SAPHDB
Connection Type	Remote
Own	FALSE

Is History Saved	FALSE
Used Memory Size (Byte)	308.080
Auto Commit	FALSE
Last Action	CommitTrans
Current Operator Name	
Fetches Record Count	22.751
Sent Message Size(Byte)	12.423.309

HANA Studio:

Overview	Landscape	Alerts	Performance	Volumes	Configuration	System Information	Diagnosis Files	Trace Configuration
Name	Description							
Used memory by tables	Shows total memory consumption of all column and row tables							
Transactions	Shows a list of transactions							
Table locks	Shows table locks							
Size of tables on disk	Shows the size of tables on disk in bytes							
Sessions	Shows details about sessions and their resource consumption							
Session context	Shows session context information							
Schema size of loaded tables	Shows memory consumption of schemas (loaded tables) in MB							
Record locks	Shows record locks							
Overall workload	Shows current workload							
Open transactions	Shows a list of open transactions							
Merge statistics	Shows merge statistics							
MVCC blocker transaction	Shows transaction which is blocking the garbage collection							
MVCC blocker connection	Shows connection which is blocking the garbage collection							
Lock waiting history	Shows summary of occurred lock waits							
HANA usage	Show usage information of the HANA system							
Database information	Basic configuration of the database							
Connections	Shows a list of connections							
Connection statistics	Shows connection statistics including network I/O							
Connection attempts and status	Shows connection attempts and status							
Component memory usage	Shows memory consumption of components							
Caches	Shows caches							
Blocked transactions	Shows a list of transactions waiting for a record lock							
Backup catalog	Backup catalog - Shows most recent backups and recoveries							

SQL Statement:

```
select * from m_connections where connection_id = <id>
```

Threads

Since HANA is using multiple threads to process incoming request, an overview of all threads associated with a particular connection has to be created.

```
select * from m_service_threads where hierarchy like '<connection id>/%'
```

Tools to analyze HANA thread activity

Call stacks

The HANA Studio provides the functionality to display the call stacks of the HANA threads:

Overview	Landscape	Alerts	Performance	Volumes	Configuration	System Information	Diagnosis Files	Trace Configuration
Threads	Sessions	SQL Plan Cache	Expensive Statements Trace	Job Progress	Load	Host: <All>	Service: <All>	Thread Type: <active>
Host	Port	Service	Connection ID	Thread ID	Thread Type	Thread Method	Thread Detail	
vm13012	30003	indexserver	213201	27585	SqlExecutor	ExecuteStatement	SELECT "THREADS"."HOST","THREADS"."PORT","THREADS"."SERVICE_NAME","THREADS"."HIERARCHY","TH	
vm13012	30003	indexserver	213201	26981	Generic			
vm13012	30007	xsengine	213201	9389	Request	stat		

Call Stack for Thread ID: 27585

```

1 : syscall+0x15 (libc.so.6)
2 : Synchronization::BinarySemaphore::timedWait(unsigned long, Execution::Context&)+0x265 at LinuxFutexOps.hpp:53 (libhdbbasis.so)
3 : TrepSync::Event::waitFor(int)+0x35 at TrepSync.cpp:367 (libhdbbasement.so)
4 : TrepThreads::Thread::join(int)+0x28 at Thread.cpp:204 (libhdbbasement.so)

```

While this information is mainly for SAP internal purposes, the following function names being visible in the call stack could indicate known issues:

- TRepAPI::LateMatColumn: When observed during a seemingly hanging DSO migration, this function is an indication for the problem outlined in [1821785](#).

Header Data

Released On 14.05.2013 14:29:11

Release Status Released to Customer

Component BC-DB-HDB SAP HANA database

Priority Normal

Category Problem

Product

This document is not restricted to a product or product version

References

This document refers to:

CSS SAP Notes

1821785 [DSO conversion is hanging due low number of latematcol pages](#)