

Agenda

- Adhoc
- Daily
- Weekly
- Monthly



SAP HANA Check using SAP HANA Studio

Adhoc Performance -> **Blocked** Transactions / Job Process / Sessions(RUNNING)

Daily Performance -> Sessions <-> Thread에서의 부하세션확인

-> Block Transactions : Blocking 세션의 식별

Landscape -> Services -> Active 확인

Week OOM Tracking & Monitoring & Analysis !

cdtrace -> cd DB_<SID> -> index*alert*.trc의 최근 에러코드 확인

일별 로그백업 사이즈 Trend를 확인

Monthly SPS/MR패치검색

Year SPS/MR패치검색 적용검토, SR시스템일 경우 Takeover를 실행

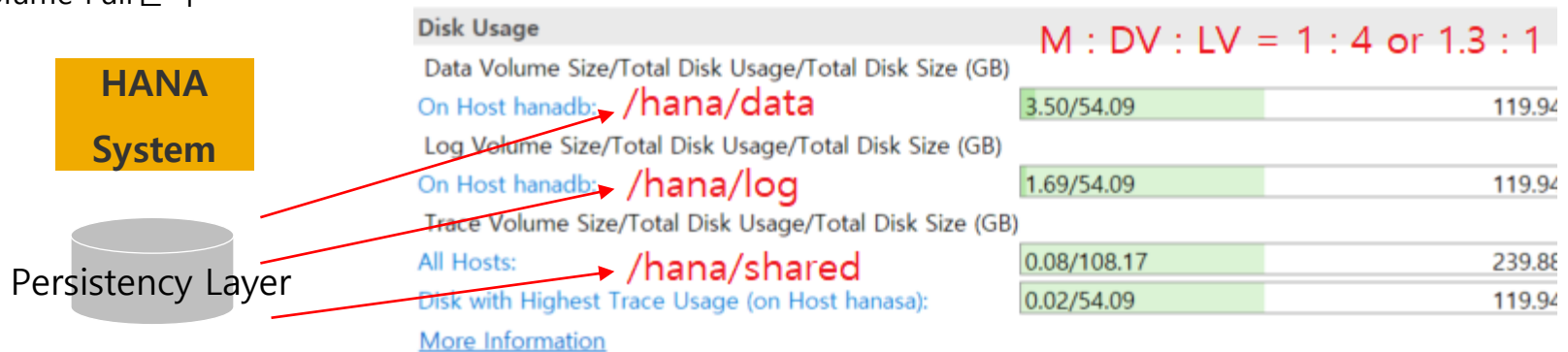
부하세션이란? CPU or Memory을 많이 사용하는 HDB Session

Tip!> 1969700 – SQLStatement Collection for SAP HANA의 활용

Daily - Check

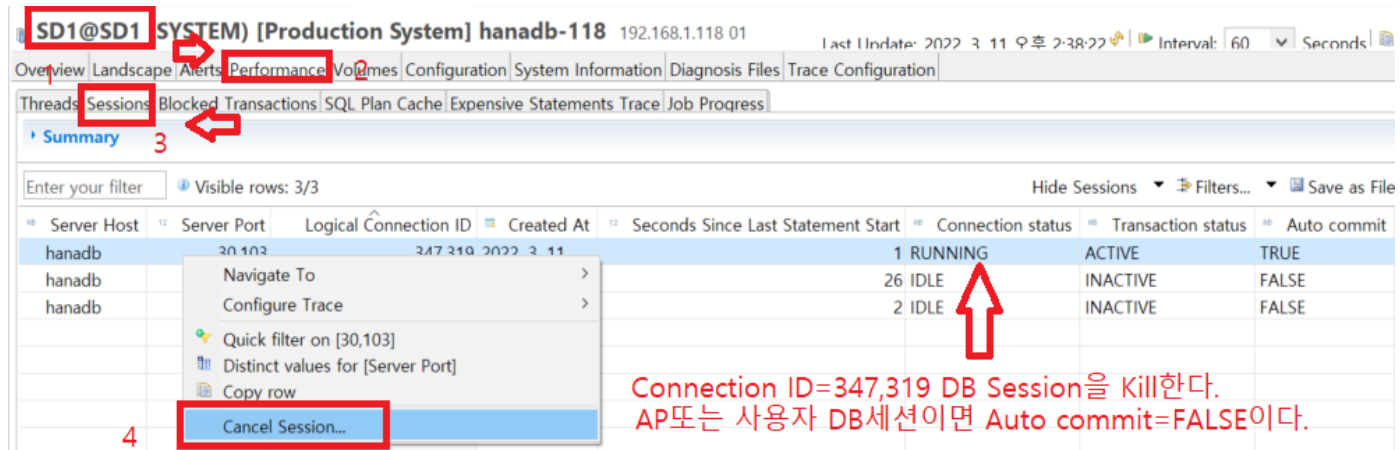
- **SAP HANA File System Size Check : 보통 Log Full인경우가 가장 많음**

- Log Segments Full 인지 /hana/log 운영기는 log_mode=normal 이므로 /hana/log가 많이 사용될 수 있음.
- Data Volume Full인지



- **Tenant DB Performance Check : DB Session에서 실행되며 CPU/Memory사용이 많음.**

- Ex: SD1@SD1 Tenant의
- Administration Console
- -> Performance
- -> Sessions/Blocked



Daily - Check

- SAP HANA Services가 Active로 운영되고 있는지
- Services에 문제가 없는데도 HDB 사용자 접속에 문제가 있다면
- AP에서 **hdbsql -U DEFAULT**을 실행하여 AP:ABAP Server에서 HDB로 접속이 되는지 확인한다.

SD1@SD1 (SYSTEM) [Production System] hanadb-118

Overview | Landscape | Alerts | Performance | Volumes | Configuration | System Information | Diagnosis Files | Trace Configuration

Services | Redistribution | Host: <All> | Service: <All>

Active	Host	Port	Service	Detail	Start Time	Process ID	CPU	Memory
■	hanadb	30110	compileserver		2022. 2. 14 오후 12:03:17	13666		
■	hanasa	30110	compileserver		2022. 2. 14 오후 12:35:44	10258		
■	hanadb	30100	daemon		2022. 2. 14 오후 12:02:27	13378		
■	hanasa	30100	daemon		2022. 2. 14 오후 12:35:35	10191		
■	hanadb	30103	indexserver	master	2022. 2. 14 오후 12:03:18	13716		
■	hanasa	30103	indexserver		2022. 2. 14 오후 12:35:45	10335		
■	hanadb	30101	nameserver	master	2022. 2. 14 오후 12:02:27	13396		
■	hanasa	30101	nameserver		2022. 2. 14 오후 12:35:35	10209		
■	hanadb	30102	preprocessor		2022. 2. 14 오후 12:03:17	13670		
■	hanasa	30102	preprocessor		2022. 2. 14 오후 12:35:44	10261		
■	hanadb	30106	webdispatcher		2022. 2. 14 오후 12:04:30	14237		
■	hanasa	30106	webdispatcher		2022. 2. 14 오후 12:36:08	10485		
■	hanadb	30107	xsengine		2022. 2. 14 오후 12:03:18	13719		

SAP NW AS ABAP Server

SAP NW AS ABAP System

Dispatcher

WP WP WP

hdbuserstore

KEY DEFAULT

ENV: <HOST>:<SQL-Port>

USER: SAP<Schema-ID>

hdbsql -U DEFAULT

SAP HANA Server

SAP HANA System

Schema: SAP<SCHEMA-ID>

1 Get password for SAP<SCHEMA-ID> from the hdbuserstore

2 Connect as user SAP<SCHEMA-ID>

Weekly - OOM HANA Check

> SCN_Doc_Automatically_Analyze_HANA_Issues_with_SAP_HANA_dump_analyzer.pdf

> <https://blogs.sap.com/2019/01/24/analyzing-sap-hana-runtime-dumps-with-sap-hana-dump-analyzer/>

• HANA Used Memory 분석

- OOM등으로 인한 GC메모리가
- Used Memory에 점유하고 있는지
- 참조> 1813020 - How to generate a runtime dump on SAP HANA
- 2400007 – FAQ: SAP HANA Runtime Dumps
- SAP HANA Studio 을 이용
- `call "SYS"."MANAGEMENT_CONSOLE_PROC" ('runtimedump_dump',`
- `'hanadb:30103',?)`

SAP HANA Used Memory

Used Memory/Peak Used Memory/Allocation Limit (GB)

All Hosts:

23.51/24.03 49.22

Host with Highest Used Memory (hanadb):

19.86/20.25 28.15

[More Information](#)

Resident Memory

Database Resident/Total Resident/Physical Memory (GB)

All Hosts:

29.18/28.55 54.97

Host with Highest Total Resident Memory (hanadb):

25.74/24.66 31.42

[More Information](#)

CPU Usage

Database CPU Usage/Total CPU Usage/Maximum CPU Usage

All Hosts:

12/13 100

Host with Highest CPU Usage (hanadb):

18/19 100

[More Information](#)

Used Memory < Resident 이지만 GAL가 가깝고
차이가 크다면 -> OOM 분석필요

• OOM 분석을 위한 설정과 SAP HANA dump analyzer의 사용

- OOM분석을 위한 tracking 설정 (ex: indexserver_wdfbmt7346.30003.rtedump.20201212-172619.0020533.oom.trc)

`alter system alter configuration ('global.ini','SYSTEM')`

`SET ('resource_tracking','enable_tracking')='on', ('resource_tracking','memory_tracking')='on'`

`with reconfigure;`

`cdtrace ->`

`DB_<SID> ->`

`*oom*.trc`

SD1@SD1 (SYSTEM) [Production System] hanadb-118 192.168.1.118 01

Last Update: 2022 3 11 오후 4:36:58

Overview Landscape Alerts Performance Volumes Configuration System Information Diagnosis Files Trace Configuration

Create and collect one or multiple sets of runtime environment (RTE) dump file(s)

Included Hosts: <All>

Sets: 5 Interval: 1 minute(s)

Filter: rte

Host Name

hanadb indexserver_hanadb.30103.rtedump.20220311-165128.013716.trc

SD1

Diagnosis Files... Delete Trace Files... Diagnosis Information

Collect...

History

Weekly - HANA Check (계속)

- 운영기일 경우 Log Volume의 Trend 분석
- → Size of recent Log Backups : 일자별 시간대별 Log Backup량을 분석

```
SELECT TOP 100 t1.BACKUP_ID,  
t1.ENTRY_TYPE_NAME, t2.service_type_name,  
t2.source_type_name,  
to_decimal(t2.BACKUP_SIZE/1024/1024/1024,10,4) as  
Backup_Size_GB,  
t1.UTC_START_TIME, t1.UTC_END_TIME  
FROM SYS.M_BACKUP_CATALOG t1,  
      SYS.M_BACKUP_CATALOG_FILES t2  
WHERE t2.BACKUP_ID = t1.BACKUP_ID  
      AND t1.state_name = 'successful'  
      AND (t1.ENTRY_TYPE_NAME = 'log backup')  
ORDER BY t1.UTC_START_TIME desc;
```

•

Month / Year - HANA Check

- 2.0 SPS050 / MR Patch 검색과 Patch 적용계획
- 컬럼테이블 대상중 파티션대상 식별 : Alert 27, Alert 20, Alert 17

- 1909763 - How to handle H

ANA Alert 17:

‘Record count of non-partitioned

column-store tables’ -> 제한: 컬럼테이블은 20억을 초과하여 저장 안됨.

Configure E-Mail Functions

Configure Check Thresholds

type filter text

ID	Check Name	Low	Medium	High
27	Record count of column-store table partitions	1500000000	1800000000	1900000000

- Data / Log Volume의 증가이력

ALTER SYSTEM RECLAIM DATAVOLUME 120 DEFRAGMENT; /* 105~120 */

2910857 - Increase Data Volume free space 2499913 - How to shrink SAP HANA Data volume size

2910794 - Datavolume size started to grow

- MiniCheck 2.00.030+ :

- 1969700

SQL Statements에서

SQLStatements_EarlierRevisions.zip

Filter pattern 455 rows retrieved - 53 sec, 91 ms							
CHID	DESCRIPTION	HOST	VALUE	EXPECTED_VALUE	C	SAP_NOTE	Configuration
****	SAP HANA MINI...					1999993	
M0006	Mini check version		2.00.030+ / 2....				
M0010	Analysis date		2022/03/14 1...				
M0011	System ID / data...		SD1 / SYSTEM...				
M0012	Revision level		42.00	>= 50.00	X	2378962	
M0013	Version		2.0			2378962	
M0110	Everything started		yes	yes		2177064	
M0111	Host startup tim...		1987	<= 600	X	2177064	
M0115	Service startup ti...	hanadb	50	<= 600		2177064	
		hanasa	9	<= 600		2177064	

Month / Year - HANA Check (계속)

- MiniCheck 2.00.043+ SQLStatements.zip

SYSTEMDB@SD1 (SYSTEM) [Production System] hanadb 192.168.1.118 01

Overview Landscape Alerts Performance Volumes Configuration System Information Diagnosis Files Trace Configuration

Filter: mini

Name	Description
My_HDB_Check_v6xx	
ABAP	
Configuration	
MiniChecks	
2.00.043+	- General SAP HANA checks (HANA_Configuration_MiniChecks_2.00.043+)
2.00.053+	- General SAP HANA checks (HANA_Configuration_MiniChecks_2.00.053+)
2.00.059.01+	- General SAP HANA checks (HANA_Configuration_MiniChecks_2.00.059.01+)
SHC	- General SAP HANA checks (HANA_Configuration_MiniChecks_SHC)

- MiniCheck Security

Raw Data Distinct values

Filter pattern 94 rows retrieved - 267 ms

CHID	DESCRIPTION	VALUE	EXPECTED_VALUE	STATUS	SAP_NOTE
****	SAP HANA SECURITY MINI CHECKS				2159014
S0010	Analysis date	2022/03/...			
S0011	Database name	SD1			
****	USERS				
S0110	CATALOG READ privilege granted to current user	yes	yes		1640741
S0120	SYSTEM user deactivated	no	yes	X	
S0130	Non-technical users without password lifetime	none	none		
****	PRIVILEGES				

- 해당 Notes를 참조
Expected_Value가
되도록 설정하고 변경