

Few interesting findings on HANA with MDC

I was working on HANA with MDC and had few very interesting learnings.

If you have been using non- MDC HANA databases, you may come across those scenarios. This article summarizes the issues and their resolutions.

Setup Configuration

I had following setup for SAP HANA during my testing.

- HANA Version Installed: HANA 2 SPS1
- Operating System: SUSE 12 SPS2
- Hardware: HANA Large Instances in Azure

Along with the above setup, I had following SAP application layer installed:

- SAP Application: SAP Net Weaver 7.4
- Database Name: H11
- Instance Number:00

Note	SAP Application Instance was configured on Azure VM and HANA was installed on dedicated HANA Large Instance Server.
-------------	---

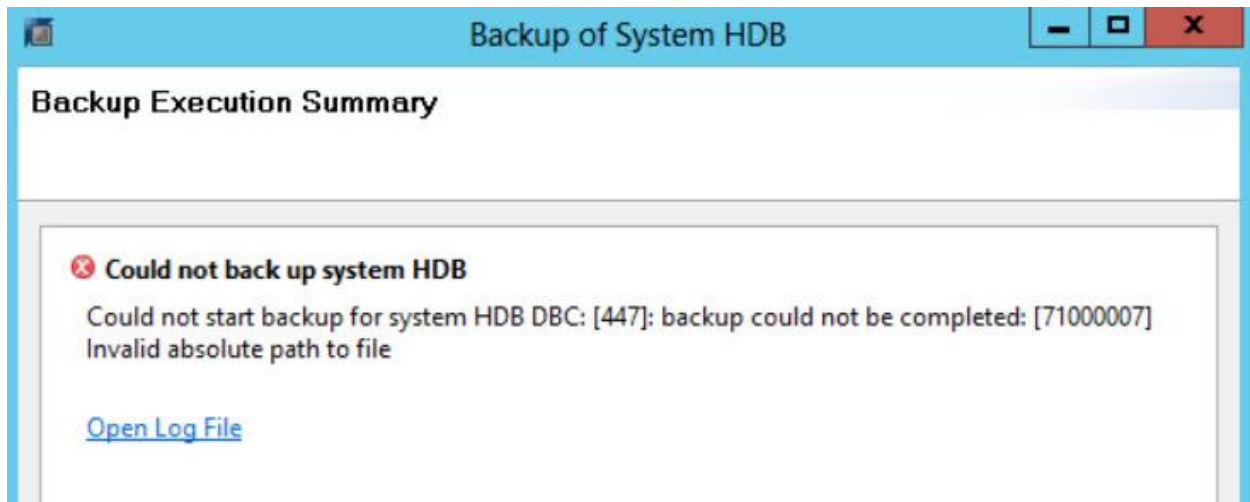
The following scenarios common scenarios were tested and here is describes the fix for those issues.

- Scenario 1: Unable to take backup from HANA Studio
- Scenario 2: Unable to confirm snapshot from HANA Studio
- Scenario 3: Unable to view Index server process

Please note, the intent of this blog is to show you a way to get the above features in HANA studio. But by doing so, it may prevent you from doing some other operations in HANA studio. Always read the latest SAP OSS notes and details at <https://help.sap.com> for more information about SAP HANA.

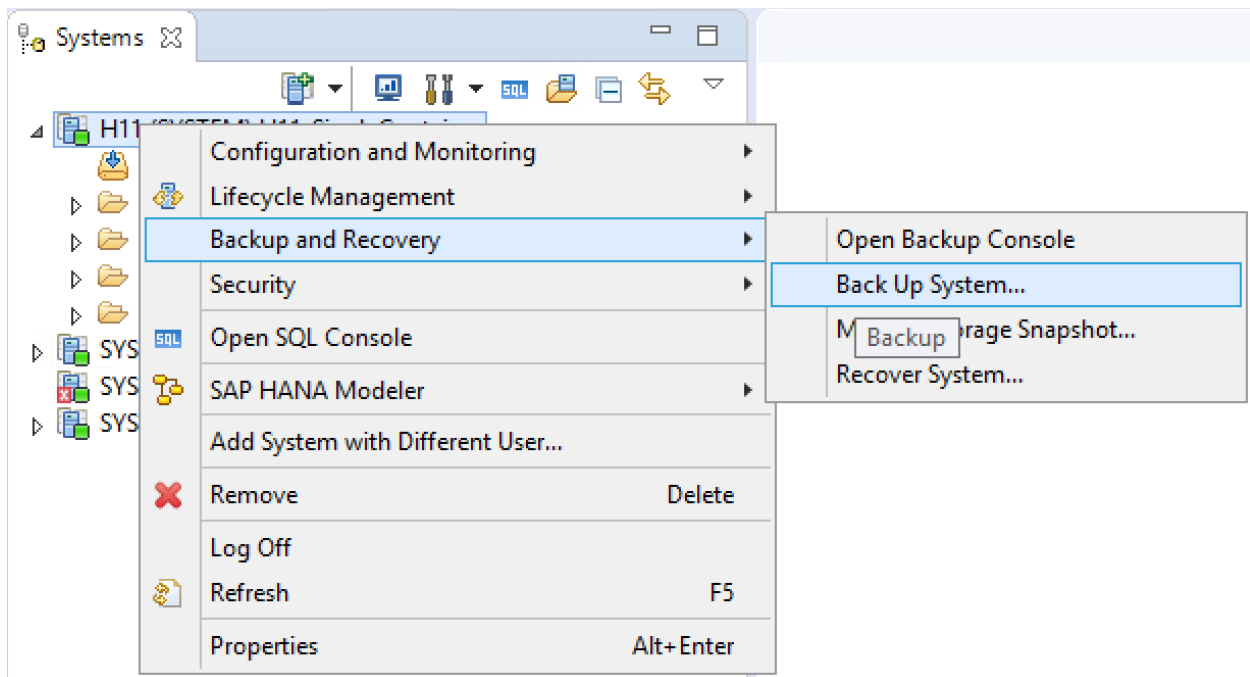
Scenario 1: Unable to take backup from HANA Studio

While I take a backup from HANA studio, it throw following error.



To re-pro the case:

Right click the system on HANA Studio>Backup and Recovery>Backup System



Specify the backup settings

The screenshot shows the 'Backup of System H11' dialog box with the 'Specify Backup Settings' tab selected. The dialog has a title bar with standard window controls. Below the title, the text 'Specify the information required for the data backup' and 'Estimated backup size: 9.08 GB.' are displayed. The 'Backup Type' is set to 'Complete Data Backup' and 'Destination Type' is set to 'File'. The 'Backup Destination' field contains '/usr/sap/H11/HDB00/backup/data' and the 'Backup Prefix' field contains 'COMPLETE_DATA_BACKUP'. A note at the bottom states: 'Note that customer-specific changes to the SAP HANA database configuration are not saved as part of the data backup. More Information: SAP HANA Administration Guide'. At the bottom of the dialog are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

Backup of System H11

Specify Backup Settings

Specify the information required for the data backup
Estimated backup size: 9.08 GB.

Backup Type: Complete Data Backup

Destination Type: File

Backup Destination: /usr/sap/H11/HDB00/backup/data

Backup Prefix: COMPLETE_DATA_BACKUP

i Note that customer-specific changes to the SAP HANA database configuration are not saved as part of the data backup.
More Information: SAP HANA Administration Guide

< Back Next > Finish Cancel

Review the backup setting

The screenshot shows the 'Backup of System H11' dialog box with the 'Review Backup Settings' tab selected. The dialog has a title bar with standard window controls. Below the title, the text 'Review the backup settings and choose 'Finish' to start the backup. To change the recovery settings, choose 'Back'.' is displayed. The 'System Information' section shows: System: H11, Host: sa 75, Version: 2.00.010.00.1491294693. The 'Backup Definition' section shows: Backup Type: COMPLETE DATA BACKUP, Destination Type: FILE, Backup Destination: /usr/sap/H11/HDB00/backup/data, Backup Prefix: COMPLETE_DATA_BACKUP. At the bottom of the dialog are buttons for '< Back', 'Next >', 'Finish', and 'Cancel'.

Backup of System H11

Review Backup Settings

Review the backup settings and choose 'Finish' to start the backup. To change the recovery settings, choose 'Back'.

System Information

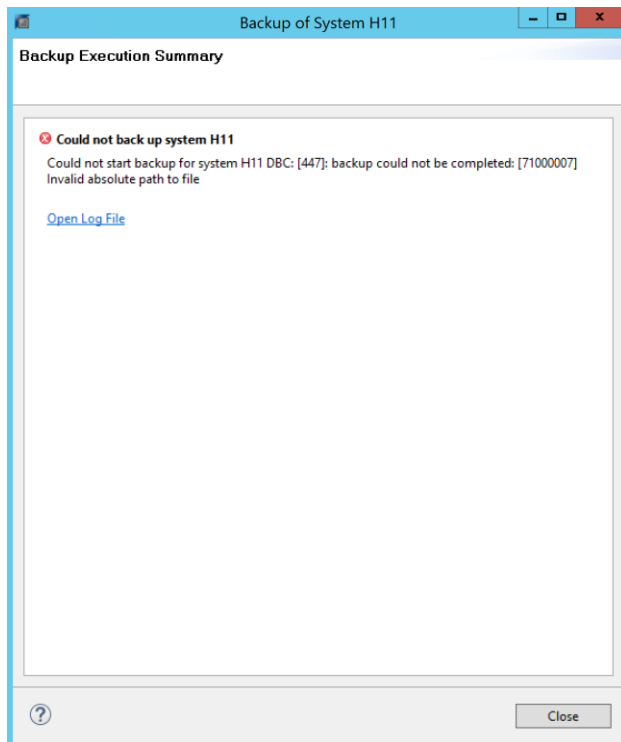
System: H11
Host: sa 75
Version: 2.00.010.00.1491294693

Backup Definition

Backup Type: COMPLETE DATA BACKUP
Destination Type: FILE
Backup Destination: /usr/sap/H11/HDB00/backup/data
Backup Prefix: COMPLETE_DATA_BACKUP

< Back Next > Finish Cancel

Backup error



However, backup from the command line was successful.

```
sag - fb75:/hana/shared/H11/HDB00/exe # ./hdbsql -u SYSTEM -i 00 "BACKUP DATA U
SING FILE ('backup')"
Password:
0 rows affected (overall time 27.486999 sec; server time 27.485155 sec)

sag      b75:/hana/shared/H11/HDB00/exe #
```

To fix the issue, you need to add the system as “Multiple Containers” and “System database” in HANA Studio.

System

Specify System
Specify the host name and instance number of the system.

Host Name: sap db75

Instance Number: 00

Mode:
☒ Multiple containers
☐ Tenant database
Name:
☒ System database

Description: HANA Instance

Locale: English (United States)

Folder: /

After you add the system, you can take backup from HANA studio successfully!

System database backup taken from HANA studio

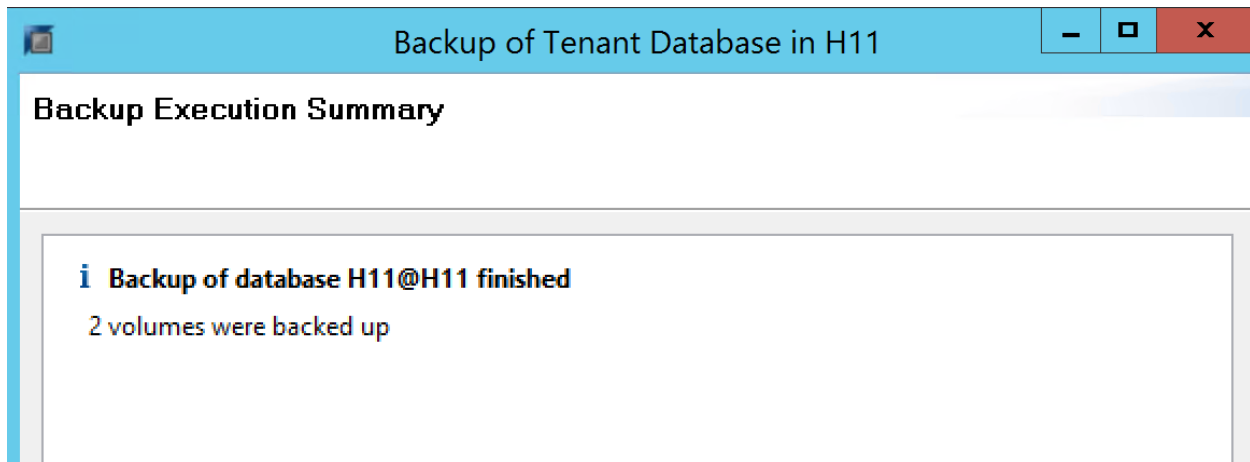
Backup of SYSTEMDB@H11

Backup Execution Summary

i Backup of database SYSTEMDB@H11 finished
1 volumes were backed up

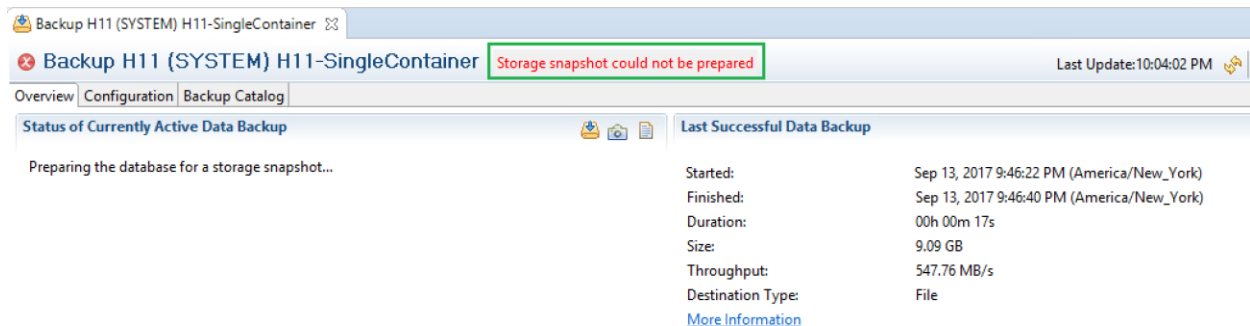
[Open Log File](#)

Tenant database backup taken from HANA studio



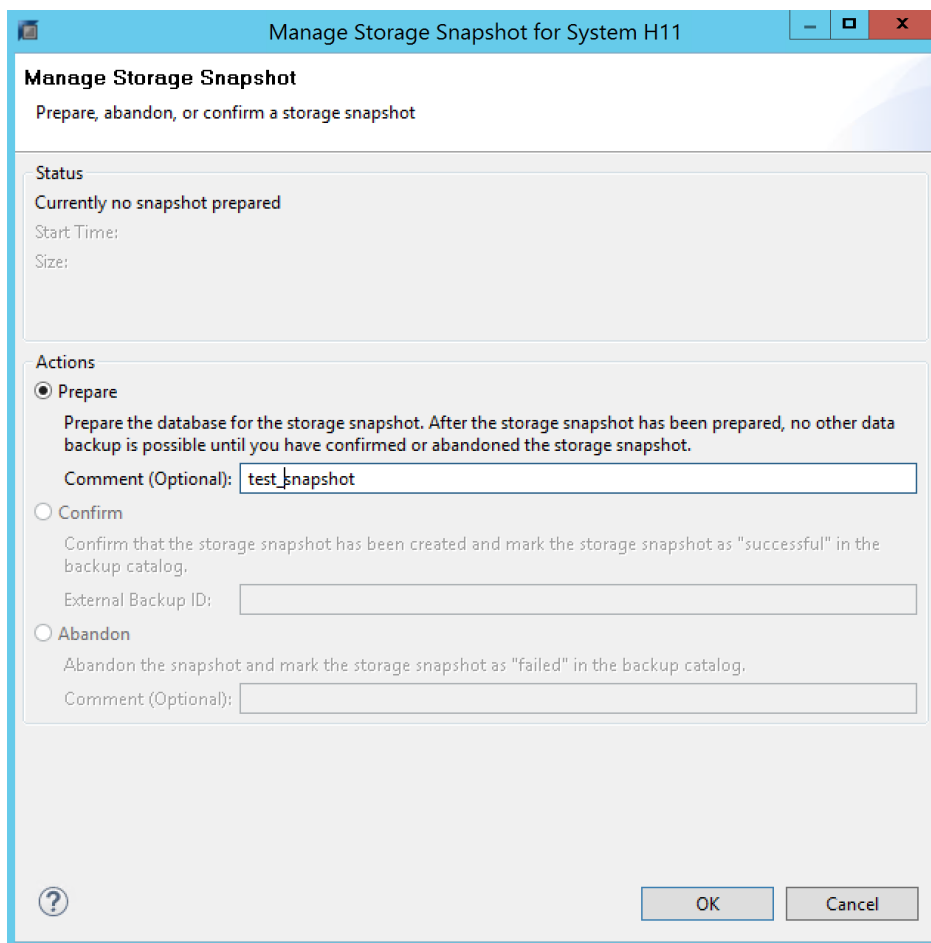
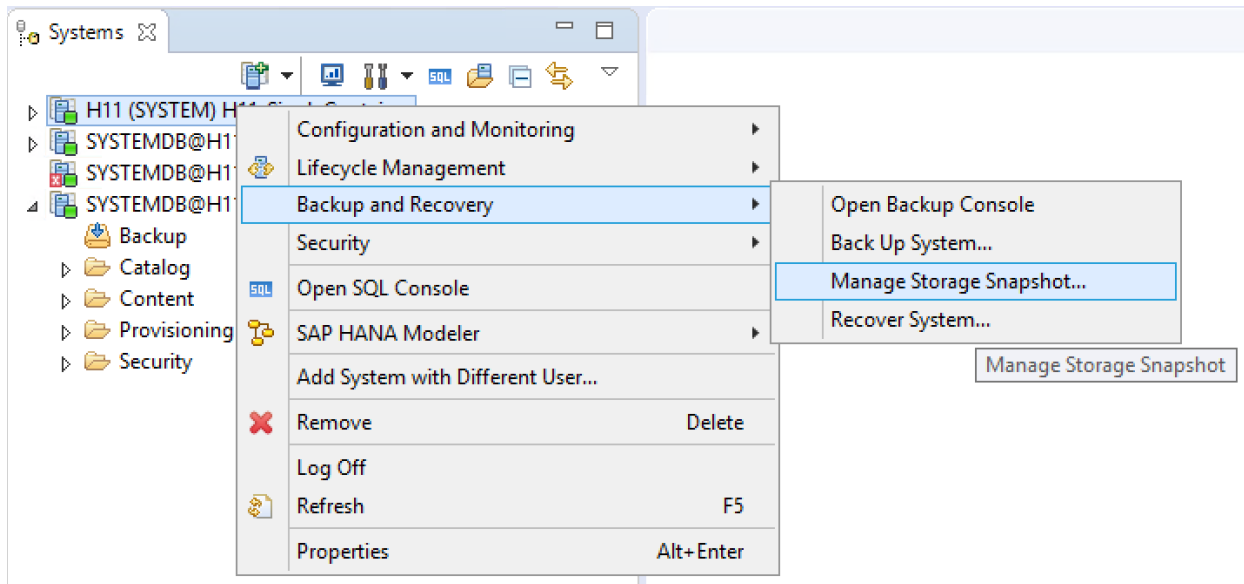
Scenario 2: Unable to confirm snapshot from HANA Studio

When tried to take snapshot from HANA studio, the following error was thrown at the studio.



To re-pro a case, right click on system in HANA Studio> Backup and Recovery > Manage Storage Snapshot.

Note To view "Manage Storage Snapshot" option, you must add system as "Single Container" to the HANA Studio.



Error showing snapshot can't be prepared

Backup H11 (SYSTEM) H11-SingleContainer

Storage snapshot could not be prepared

Last Update: 10:04:02 PM

Overview | Configuration | Backup Catalog

Status of Currently Active Data Backup

Preparing the database for a storage snapshot...

Last Successful Data Backup

Started: Sep 13, 2017 9:46:22 PM (America/New_York)

Finished: Sep 13, 2017 9:46:40 PM (America/New_York)

Duration: 00h 00m 17s

Size: 9.09 GB

Throughput: 547.76 MB/s

Destination Type: File

[More Information](#)

To fix this issue, you must run the snapshot from the SQL command

BACKUP DATA FOR FULL SYSTEM CREATE SNAPSHOT COMMENT 'HANA 2 SP1 SNAPSHOT'

SYSTEMDB@H11 (SYSTEM) sap b75 00

SQL

BACKUP DATA FOR FULL SYSTEM CREATE SNAPSHOT COMMENT 'HANA 2 SP1 SNAPSHOT'

Statement 'BACKUP DATA FOR FULL SYSTEM CREATE SNAPSHOT COMMENT 'HANA 2 SP1 SNAPSHOT'' successfully executed in 445 ms 117 µs (server processing time: 442 ms 820 µs) - Rows Affected: 0

Backup SYSTEMDB@H11 (SYSTEM) saj >75

Overview | Configuration | Backup Catalog

Backup Catalog

Database: SYSTEMDB

☐ Show Log Backups ☐ Show Delta Backups

Status	Started	Duration	Size	Backup Type	Destination
	Sep 14, 2017 2:39:25 ...		2.42 GB	Data Backup	Snapshot

Backup Details

ID: 1505414365953

Status: Prepared

Backup Type: Data Backup

Destination Type: Snapshot

Started: Sep 14, 2017 2:39:25 PM (America/New_York)

Finished:

And close the snapshot as below.

BACKUP DATA FOR FULL SYSTEM CLOSE SNAPSHOT BACKUP_ID 1505414365953 SUCCESSFUL 'External_ID_1505414365953';

SYSTEMDB@H11 (SYSTEM) si 75 00

SQL

BACKUP DATA FOR FULL SYSTEM CLOSE SNAPSHOT BACKUP_ID 1505414365953 SUCCESSFUL 'External_ID_1505414365953';

You can get the actual backup ID from M_BACKUP_CATALOG as below:

SELECT * FROM M_BACKUP_CATALOG WHERE ENTRY_TYPE_NAME LIKE '%snapshot%' and STATE_NAME = 'prepared'

SYSTEMDB@H11 (SYSTEM) sap1 75 00

SQL Result

SELECT * FROM M_BACKUP_CATALOG WHERE ENTRY_TYPE_NAME LIKE '%snapshot%' and STATE_NAME = 'prepared'

	ENTRY_ID	ENTRY_TYPE_NAME	BACKUP_ID	SYS_START_TIME	UTC_START_TIME	SYS_END_TIME	UTC_END_TIME	STATE_NAME	COMMENT
1	1,505,414,365,953	data snapshot	1,505,414,365,953	Sep 14, 2017 2:39:25.953 PM	Sep 14, 2017 6:39:25.953 PM	?	?	prepared	HANA 2 SP1 SNAPSHOT

Scenario 3: Unable to view Index server process

To repro the case, you open the Services view in Landscape and don't see the index server process.

SYSTEMDB@H11 (SYSTEM) sapprdhdb75 sa1 b75 00 Last Update: Sep 12, 2017 8:12:10 PM

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

Services Hosts Redistribution System Replication Host: <All> Service: <All>

Active	Host	Port	Service	Detail	Start Time	Process ID	CPU	Memory	Used Memory (MB)
Active	sap	30010	compileserver		Sep 5, 2017 9:11:53 PM	125976			1,084
Active	sap	30000	daemon		Sep 5, 2017 9:11:46 PM	125615			0
Active	sap	30001	nameserver	master	Sep 5, 2017 9:11:46 PM	125631			5,926
Active	sap	30002	preprocessor		Sep 5, 2017 9:11:53 PM	125979			1,811
Active	sap	30006	webdispatcher		Sep 5, 2017 9:12:59 PM	127617			1,308

However, from Operating System level, you can check the process is running

```


sap b75:/usr/sap/hostctrl/exe $ ./sapcontrol -nr 00 -function GetProcessList

14.09.2017 15:08:45
GetProcessList
OK
name, description, dispstatus, textstatus, starttime, elapsedtime, pid
hdbdaemon, HDB Daemon, GREEN, Running, 2017 09 05 21:11:46, 209:56:59, 125615
hdbcompileserv, HDB Compileserv, GREEN, Running, 2017 09 05 21:11:53, 209:56:52, 125976
hdbindexserver, HDB Indexserver-H11, GREEN, Running, 2017 09 05 21:11:55, 209:56:50, 126014
hdbnameserver, HDB Nameserver, GREEN, Running, 2017 09 05 21:11:46, 209:56:59, 125631
hdbpreprocessor, HDB Preprocessor, GREEN, Running, 2017 09 05 21:11:53, 209:56:52, 125979
hdbwebdispatcher, HDB Web Dispatcher, GREEN, Running, 2017 09 05 21:12:59, 209:55:46, 127617
hdbxsengine, HDB XSEngine-H11, GREEN, Running, 2017 09 05 21:11:55, 209:56:50, 126016
sap b75:/usr/sap/hostctrl/exe $

```









The **reason** is, in MDC environment, each tenant database has its own index server. So, if you add a system in HANA Studio as a "Multi Container System", it does not show process in landscape-services. You need to add the system as "Single Container" and then the index service will be visible in the HANA studio under Landscape-Services.

Result after adding system as a "Single Container System"

 **H11 (SYSTEM) H11-SingleContainer** sap, jlb75 00

Overview Landscape Alerts Performance Volumes Configuration System Information D

Services Hosts Redistribution System Replication Host: <All> ▾ Serv

Active	Host	Port	Service	Detail	Start Time	Process ID
	sap	30010	compileserver		Sep 5, 2017 9:11:53 PM	125976
	sap	30000	daemon		Sep 5, 2017 9:11:46 PM	125615
	sap	30003	indexserver	master	Sep 5, 2017 9:11:55 PM	126014
	sap	30001	nameserver	master	Sep 5, 2017 9:11:46 PM	125631
	sap	30002	preprocessor		Sep 5, 2017 9:11:53 PM	125979
	sap		sapstartsrv			
	sap	30006	webdispatcher		Sep 5, 2017 9:12:59 PM	127617
	sap	30007	xsengine		Sep 5, 2017 9:11:55 PM	126016