



Executing database backups

Snap Creator Framework

NetApp

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Executing database backups

You can back up your SAP HANA database by using the Snap Creator GUI or the command line. To schedule backups, you can use the scheduler within the GUI, or you can use the command line in combination with an external scheduler like cron.

Overview of database backups

When Snap Creator is backing up the database, the following steps are executed.

1. Create a global synchronized backup save point (SAP HANA Snapshot copy) to obtain a consistent image on the persistence layer.
2. Create storage Snapshot copies for all data volumes.

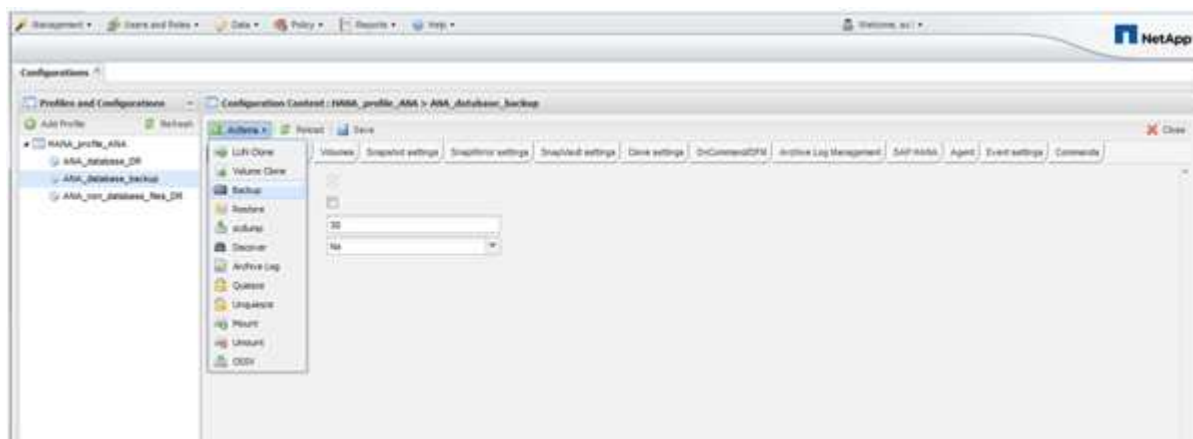
In the example, there are three data volumes, which are distributed to both storage controllers, hana1a and hana1b.

3. Register the storage Snapshot backup within the SAP HANA backup catalog.
4. Delete the SAP HANA Snapshot copy.
5. Start SnapVault update for all data volumes.
6. Check SnapVault status and wait until finished or configurable timeout.
7. Delete storage Snapshot copies and delete backups in the SAP HANA backup catalog based on the defined retention policy for backups at the primary and secondary storage.
8. Delete all log backups, which are older than the oldest data backup on the file system and within the SAP HANA backup catalog.

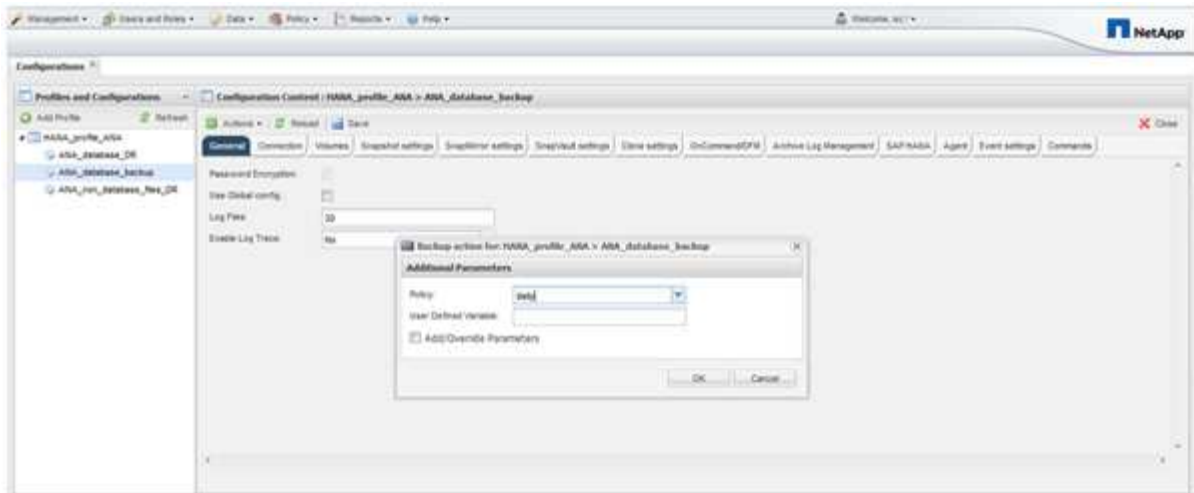
Backing up the database with the Snap Creator GUI

You can back up a database with the Snap Creator GUI.

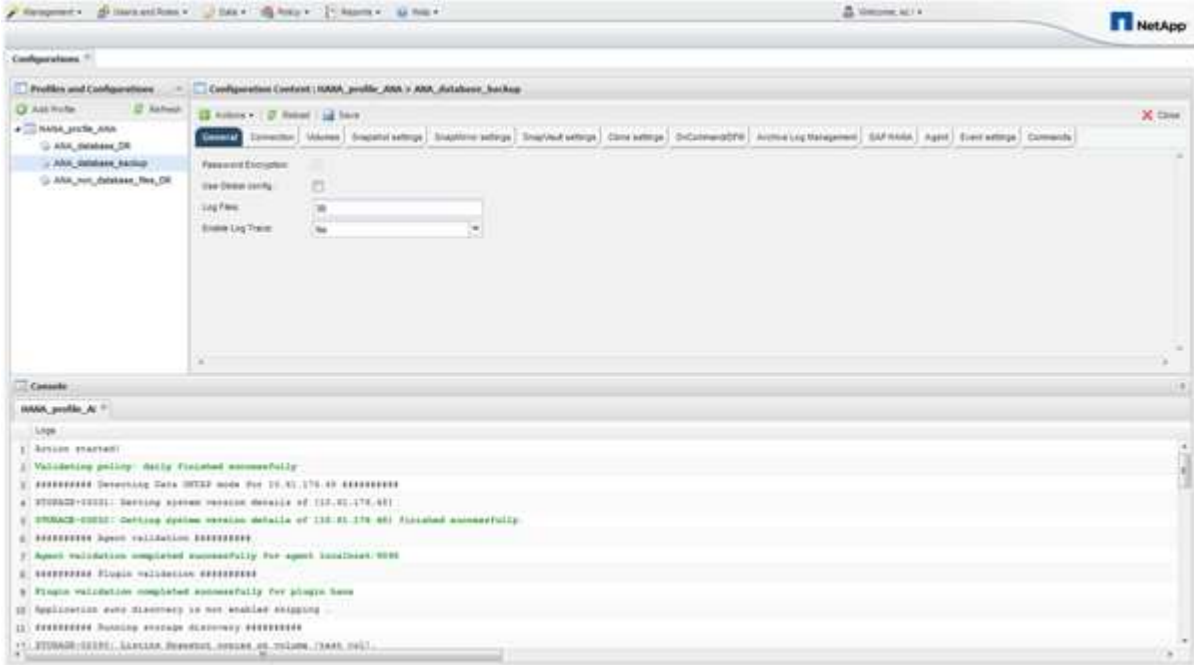
1. Select the **HANA_database_backup** configuration and then select **Actions > Backup**.



2. Select the backup policy and click **OK**.



The backup starts. Snap Creator triggers the “SnapVault update,” and Snap Creator waits until the data is replicated to the secondary storage. The wait time has been configured during the configuration and can be adapted in the SnapVault settings tab. Snap Creator triggers the SnapVault updates in parallel for each volume on the same storage controller, but in sequence for each storage controller.



Backing up the database with Snap Creator command line

You can also back up the database by using the Snap Creator command line.

1. To back up the database, run the following command.

```

mgmtsrv01:~ #
/opt/NetApp/Snap_Creator_Framework_411/scServer4.1.1/snapcreator
--server
localhost --port 8443 --user scadmin --passwd scadmin --profile
HANA_profile_ANA --config
ANA_database_backup --action backup --policy daily --verbose
[Wed Mar 5 14:17:08 2014] INFO: Validating policy: daily finished
successfully

##### Detecting Data ONTAP mode for hanala #####

##### Detecting Data ONTAP mode for hanalb #####
[Wed Mar 5 14:17:13 2014] INFO: STORAGE-03031: Getting system version
details of [hana2b]
[Wed Mar 5 14:17:13 2014] INFO: STORAGE-03032: Getting system version
details of [hana2b] finished successfully.
[Wed Mar 5 14:17:13 2014] INFO: STORAGE-03031: Getting system version
details of [hanala]
[Wed Mar 5 14:17:13 2014] INFO: STORAGE-03032: Getting system version
details of [hanala] finished successfully.
[Wed Mar 5 14:17:13 2014] INFO: STORAGE-03031: Getting system version
details of [hanalb]
[Wed Mar 5 14:17:13 2014] INFO: STORAGE-03032: Getting system version
details of [hanalb] finished successfully.

...
Truncated
...

```

Reviewing available backups in SAP HANA Studio

You can see the list of storage Snapshot backups in the SAP HANA Studio.

The highlighted backup in the following figure shows a Snapshot copy named “Backup-ANA_hourly_20140320103943.” This backup includes Snapshot copies for all three data volumes of the SAP HANA system. The backup is also available at the secondary storage.

Controller/Volume	Access Time	Snapshot Copy Name	Location	% Complete 1	% Complete 2	% Total Backs	% Used Backs
@hana08 backup_ana_00001	Thu Mar 20 10:42:19 GMT+	Backup-ANA-EV_hourly_20140320103943	Secondary(SnapVault)	0	0	0	0
@hana08 backup_ana_00001	Thu Mar 20 10:42:18 GMT+	Backup-ANA-EV_hourly_20140320103943	Secondary(SnapVault)	0	0	0	0
@hana08 backup_ana_00001	Thu Mar 20 10:42:17 GMT+	Backup-ANA-EV_hourly_20140320103943	Secondary(SnapVault)	0	0	0	0
@hana08 ana_00001	Thu Mar 20 10:39:58 GMT+	Backup-ANA-hourly_20140320103943	Primary	0	0	0	0
@hana08 ana_00001	Thu Mar 20 10:39:58 GMT+	Backup-ANA-hourly_20140320103943	Primary	0	0	0	0
@hana08 backup_ana_00001	Thu Mar 20 08:42:33 GMT+	Backup-ANA-EV_hourly_20140320083943	Secondary(SnapVault)	0	0	0	0
@hana08 backup_ana_00001	Thu Mar 20 08:42:33 GMT+	Backup-ANA-EV_hourly_20140320083943	Secondary(SnapVault)	0	0	0	0
@hana08 backup_ana_00001	Thu Mar 20 08:42:33 GMT+	Backup-ANA-EV_hourly_20140320083943	Secondary(SnapVault)	0	0	0	0
@hana08 ana_00001	Thu Mar 20 08:39:58 GMT+	Backup-ANA-hourly_20140320083943	Primary	0	0	0	0
@hana08 ana_00001	Thu Mar 20 08:39:58 GMT+	Backup-ANA-hourly_20140320083943	Primary	0	0	0	0
@hana08 backup_ana_00001	Thu Mar 20 08:42:37 GMT+	Backup-ANA-EV_hourly_20140320083943	Secondary(SnapVault)	0	10	0	0
@hana08 backup_ana_00001	Thu Mar 20 08:42:37 GMT+	Backup-ANA-EV_hourly_20140320083943	Secondary(SnapVault)	0	0	0	0
@hana08 backup_ana_00001	Thu Mar 20 08:42:37 GMT+	Backup-ANA-EV_hourly_20140320083943	Secondary(SnapVault)	0	0	0	0
@hana08 ana_00001	Thu Mar 20 08:39:58 GMT+	Backup-ANA-hourly_20140320083943	Primary	0	0	0	0
@hana08 ana_00001	Thu Mar 20 08:39:58 GMT+	Backup-ANA-hourly_20140320083943	Primary	0	0	0	0

The Snapshot copy name is used by Snap Creator as a backup ID when Snap Creator registers the storage Snapshot copy in the SAP HANA backup catalog. Within the SAP HANA Studio, the storage Snapshot backup is visible in the backup catalog. The external backup ID (EBID) has the same value as the Snapshot copy name as shown in the following figure.

Status	Started	Duration	Size	Backup Type	Destination Ty
Success	Mar 20, 2014 2:35:47 AM	00h 00m 12s	4.78 GB	Data Backup	Snapshot
Success	Mar 20, 2014 1:39:47 AM	00h 00m 12s	4.99 GB	Data Backup	Snapshot
Success	Mar 20, 2014 12:39:47 AM	00h 00m 14s	5.00 GB	Data Backup	Snapshot
Success	Mar 19, 2014 11:39:47 PM	00h 00m 12s	4.97 GB	Data Backup	Snapshot
Success	Mar 19, 2014 10:39:47 PM	00h 00m 12s	4.94 GB	Data Backup	Snapshot
Success	Mar 19, 2014 9:39:47 PM	00h 00m 12s	4.92 GB	Data Backup	Snapshot
Success	Mar 19, 2014 8:39:47 PM	00h 00m 12s	4.89 GB	Data Backup	Snapshot
Success	Mar 19, 2014 7:39:47 PM	00h 00m 12s	4.87 GB	Data Backup	Snapshot
Success	Mar 19, 2014 6:39:47 PM	00h 00m 12s	4.94 GB	Data Backup	Snapshot
Success	Mar 19, 2014 5:39:47 PM	00h 00m 12s	4.92 GB	Data Backup	Snapshot
Success	Mar 19, 2014 4:39:47 PM	00h 00m 12s	4.89 GB	Data Backup	Snapshot
Success	Mar 19, 2014 3:40:00 PM	00h 00m 08s	4.86 GB	Data Backup	Snapshot
Success	Mar 18, 2014 2:39:47 PM	00h 00m 39s	4.94 GB	Data Backup	Snapshot
Success	Mar 19, 2014 12:00:04 PM	00h 00m 12s	4.95 GB	Data Backup	Snapshot
Success	Mar 18, 2014 12:00:03 PM	00h 00m 12s	4.79 GB	Data Backup	Snapshot
Success	Mar 17, 2014 12:00:03 PM	00h 00m 12s	4.75 GB	Data Backup	Snapshot
Success	Feb 26, 2014 1:15:20 AM	00h 00m 54s	3.67 GB	Data Backup	Snapshot

ID	Status	Backup Type	Destination Type	Started	Finished	Duration	Size	Throughput	Comment
132530837410	Successful	Data Backup	Snapshot	Mar 20, 2014 2:35:47 AM (America/Los_Angeles)	Mar 20, 2014 2:39:59 AM (America/Los_Angeles)	00h 00m 12s	4.78 GB	n/a	Backup-ANA-hourly_20140320103943

Host	Size	Size	Size	Source	Type	EBID
o1hana08	index(228.04 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana08	vsimg(65.94 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana08	index(258.10 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana08	name(78.93 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana08	stats(1.30 GB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana08	index(746.15 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana10	index(257.60 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana10	index(257.72 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana10	index(257.85 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana11	index(257.47 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana11	index(257.47 MB)	idx	volume	Backup-ANA-hourly_20140320103943		
o1hana11	index(257.77 MB)	idx	volume	Backup-ANA-hourly_20140320103943		

With every backup run, Snap Creator deletes Snapshot backups at the primary and at the secondary storage based on the retention policies defined for the different schedules (hourly, daily, and so on).

Snap Creator also deletes the backups within the SAP HANA backup catalog if the backup does not exist at the primary or secondary storage. The SAP HANA backup catalog always shows the complete list of backups that are available at the primary and/or the secondary storage.

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