

Issue Avamar snapshots stored on Data Domain are not being expired after upgrade to DDOS 6.1, without any other changes to have been made.

Cause The ddbboost user for a particular storage unit is created in previous versions of DDOS with an operating system group of "users", rather than "admin". This occurs when Avamar is first connected to a Data Domain and creates the storage unit. This sets permissions for the files on the mtree similar to those below:

```
drwxr-xr-x 7 <ddbboostuser> users 430 Apr 26 2016 avamar-1501099628
```

From DDOS 6.1.x some operations on the storage units, such as deleting a storage unit, expiring snapshots etc. require that the owner of the storage unit to be part of the "admin" group (instead of the "users" group). When this is not the case, these operations will fail, and every day two new Data Domain snapshots (corresponding to Avamar checkpoints) will be left around without being expired, as shown in the example below:

snapshot list mtree /data/col1/avamar-1501099628

Snapshot Information for MTree: /data/col1/avamar-1501099628

Name	Pre-Comp (GiB)	Create Date	Retain
cp.20170802130330	501241.1	Aug 2 2017 09:04	
cp.20170802131127	501355.0	Aug 2 2017 09:11	
cp.20170803120133	503440.7	Aug 3 2017 08:02	
cp.20170803120726	503554.7	Aug 3 2017 08:07	
cp.20170804120142	496207.0	Aug 4 2017 08:02	
cp.20170804120836	496321.0	Aug 4 2017 08:09	
cp.20170805130259	523295.5	Aug 5 2017 09:03	
cp.20170805130955	523409.5	Aug 5 2017 09:10	
cp.20170806130127	541524.5	Aug 6 2017 09:01	
cp.20170806130719	541638.5	Aug 6 2017 09:07	
cp.20170807130120	438037.9	Aug 7 2017 09:01	
cp.20170807130712	438151.9	Aug 7 2017 09:07	

Snapshot Summary

```
Total: 12
Not expired: 12
Expired: 0
```

The system will not be affected if the ddbboost user associated to the storage unit was changed to an "admin" role afterwards. However, in DDOS 6.1 the code now checks the registry and folder settings, which causes the snapshot expire operation to fail.

Following messages can be seen in the ddrmaint logs on the Avamar Server:

grep -i err /usr/local/avamar/var/ddrmaintlogs/ddrmaint.log

```
Aug 7 09:07:45 avamar ddrmaint.bin[122469]: Error: cp-
delete::expire_checkpoint_snapshot - Failed to expire checkpoint:
cp.20170806130719, ddr: dd.emc.com, ddr-index: 1, DDR result code:
```

```

5075, desc: the user has insufficient access rights
Aug  7 09:07:45 avamar ddrmaint.bin[122469]: Error: <4740>Datadomain
checkpoint delete operation failed.
...
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Info: Data Domain
configured in Stand-Alone mode.
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Info: cp-
delete::execute_delete_cp - Deleting DDR Checkpoint for
dpnid:1234567890 on ddr:dd.emc.com cp: cp.20170805130259
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Info: Setting default
storage unit to 'avamar-1501099628' for handle 1
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Warning: Calling
DDR_EXPIRE_SNAPSHOT returned result code:5075 message:the user has
insufficient access rights
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Error: cp-
delete::expire_checkpoint_snapshot - Failed to expire checkpoint:
cp.20170805130259, ddr: dd.emc.com, ddr-index: 1, DDR result code:
5075, desc: the user has insufficient access rights
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Error: <4740>Datadomain
checkpoint delete operation failed.
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Info:
===== cp-delete finished in 1 seconds
Aug  6 09:07:18 avamar ddrmaint.bin[176316]: Info:
===== cp-delete cmd finished
=====

```

Corresponding messages from the ddfs.info (/ddr/var/log/debug/ddfs.info) logs on the Data Domain:

```

08/07 08:01:06.322 (tid 0x7fe7037cd930): ddboost-<avamar.emc.com-
37933>: ddboost_api ERROR: ddp_snapshot_expire() failed for SUName
avamar-1501099628, snapshot: cp.20170802130330, retention: -1,
flags: 0 Err: 5075-Update retention of snapshot [cp.20170802130330]
on Storage Unit [avamar-1501099628(nfs: Operation not permitted)
10/11 11:19:55.468 (tid 0x7f27454a63f0): ddboost-<10.1.42.55-60566>:
test-avamar.dell.emc.com Local Time: Wed Oct 11 11:19:55 2017
10/11 11:19:55.471 (tid 0x7f2cd150e830): OST_FH_PERM FAIL on
storage-unit=avamar-1501099628 op=NFSPROC3_DDP_LOOKUP[27]
client=test-avamar.dell.emc.com uid=500:uid or gid does not match

```

For any DD affected by this issue the registry will contain the BOOST user(s) permission and group information, the group being "100" (users) rather than the necessary "50" (admin):

reg show protocol.ost

```

protocol.ost.stu_user.<avamar-1234567890>= 500:100
protocol.ost.uid500:100 = <ddboostusername>
protocol.ost.user.<ddboostusername> = 500:100
protocol.ost.user_count = 1

```

Note for each different BOOST user in a DD , the same set of entries will be reported. For example, there may be storage units in the DD for networker, Avamar and NetBackup, however, the issue is so far only known to affect Avamar, because the other backup applications make no use of the operations being checked against the user's group and permissions.

CAUTION: If the same user being assigned to the other storage units used by other backup softwares like NetWorker, NetBackup, Backup Exec, DDBOOST Enterprise Applications or DDBEA, those storage units will also lose the ddboost user assigned to them. If the same DDBOOST user is assigned to other DDBOOST storage units (in addition to the Avamar storage unit), same steps from the resolution section should be performed on the other ddboost storage units.

In case of doubt, DO NOT PROCEED FURTHER AND PLEASE CONTACT DATA DOMAIN TECHNICAL SUPPORT FOR FURTHER ASSISTANCE.

Resolution

For any ddbboost user associated to an Avamar mtree, which is having Avamar maintenance failing after the upgrade to DDOS 6.1, with the daily checkpoints leaving old snapshots around in the system, the same steps described below will be necessary. No changes are required to the ddbboost user accounts associated to storage units from other backup applications. Following commands are example from test system, make sure to edit the values before running them on the production systems.

Note: While these steps incur no downtime, there is a brief period of time during which file permissions on disk and user credentials are updated. During that time there is small chance that some ddbboost operations operations from Avamar can fail. It is recommended to run these steps when the Avamar system is idle (no backups/replication/maintenance)

Retrieve the ddbboost username from the Avamar grid using the following command:

ddrmaint read-ddr-info --format=full

```
System max streams : 50

System attached      : 2017-07-26 21:24:01 (1501104241)
DDOS version        : 6.1.0.5-567091
Serialno            : APMABC1237638
Model number        : DD6300
CP Backup           : True
Replication         : True
System index        : 1
DDBoost user       : ddbboost-avamar
System ID           : C238BEB0A16520E6F453C22C8C2EFBD0B52372E0
System name         : test-dd.dell.emc.com
```

In the above output, the ddbboost username is "**ddbboost-avamar**". Same information can be gathered from the Data Domain CLI by running "**ddbboost storage-unit show**".

Extract the dpid/hfscreate time from the Avamar Server. This number is used as the suffix for the Avamar mtree on the Data Domain, so either run the command below or take the timestamp from the DD command output above.

avmaint hfscreate

1501099628

Retrieve the UID for the ddbboost user:

Check the list of users in the Data Domain CLI:

user show list

```
User list from node "localhost".
Name           Uid  Role  Last Login From  Last Login
Time           Status  Disable Date
-----
sysadmin       100  admin  10.1.40.59  Tue Oct 10
14:44:52 2017  enabled  never
ddbboost-avamar 500  admin  10.1.42.55  Wed Oct 11
11:07:49 2017  enabled  never
-----
```

```
-----
2 users found.
```

Note and save the value of the UID for the ddbboost user. In this case the UID is 500. This can vary.

At this point, ensure that the operations performed from the DD CLI are from the **"SE" mode**.

Following steps can be used to elevate to SE mode:

```
system show serial
```

```
priv set se
```

When prompted for the password, copy and paste the serial number

To fix this issue some registry settings needs to be changed, and ownership of the existing Avamar files in the mtree needs to be adjusted. Please follow these steps:

Step 1: Adjust the registry settings:

The group id (gid) of the admin group is 50 while the group id of users group is 100. Perform the following steps to update the registry settings to admin group

```
reg set protocol.ost.stu_user.avamar-<dpnid>= <uid_val>:50  
reg set protocol.ost.user.<ddbboostusername> = <uid_val>:50  
reg set protocol.ost.uid<uid_val>:50 = <ddbboostusername>  
reg removekey protocol.ost.uid<uid_val>:100
```

Following values should be substituted with the actual values in the above commands:

<dpnid> : Substitute this with the value obtained from the output of the command 'avmaint hfscreate' from Avamar Server(This is the same value that is used as the suffix for the Avamar mtree)
<uid_val> : Substitute this with the value obtained from the output of the command 'user show list' from Data Domain CLI (In this scenario it is 500, but this can be different)
<ddbboostusername> : Substitute this with the value obtained from the output of the command 'user show list' from Data Domain CLI (in this scenario it ddbboost-avamar, but this vary as well)

Sample commands with the values:

```
reg set protocol.ost.stu_user.avamar-1501099628 = 500:50  
reg set protocol.ost.user.ddboost-avamar = 500:50  
reg set protocol.ost.uid500:50 = ddbboost-avamar  
reg removekey protocol.ost.uid500:100
```

Step 2: Adjust the ownership of the existing files in the Avamar storage unit:

Elevate to bash mode. Refer KB [500320](#)

Mount the /data partition locally

```
mount localhost:/data /data
```

Navigate to the /data/col1 location

```
cd /data/col1/
```

Update the group value from users to admin for the Avamar storage unit

```
chgrp -R admin avamar-1501099628
```

Note: The above command may time out in some cases, in that scenario, re-run the

same command again.

Unmount the /data partition

cd /

umount /data

Verify that the ddbboost user still owns the avamar storage unit, if not assign the user to the storage unit:

ddbboost storage-unit show

Name	Pre-Comp (GiB)	Status	User	Report Physical
-----	-----	-----	-----	-----
			Size (MiB)	
-----	-----	-----	-----	-----
avamar-1501099628	2385257.2	RW	-	-
-----	-----	-----	-----	-----

ddbboost storage-unit modify avamar-1501099628 user ddbboost-avamar

ddbboost storage-unit show

Name	Pre-Comp	Status	User	Report Physical
(GiB)				
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
avamar-1501099628	2385257.2	RW	ddbboost-	
avamar	-			
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----

Note: Make sure there are no ddbboost storage units without a user assigned

Example:

ddbboost storage-unit show

Name	Pre-Comp (GiB)	Status	User	Report Physical
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----
avamar-1501099628	10808220.0	RW	ddbboost-	
avamar	-			
d025	457051.7	RW	-	
-				
rman_dd	240902.7	RW	ddbboost-	
rman	-			
mssql	142474.8	RW	-	
-				
-----	-----	-----	-----	-----
-----	-----	-----	-----	-----

In the above output the storage unit d025 and mssql had the same ddbboost user (ddbboost-avamar). But when the registry settings are updated the user assignment was removed. Assign the storage unit the correct ddbboost user. If not backups and restore operations will fail for these storage units.

Example:

ddboost storage-unit modify d025 user ddboost-avamar
ddboost storage-unit modify mssql user ddboost-avamar

Note: These steps are only required, if there are other storage units owned by the same ddboost user as that of the Avamar storage unit.

There is no need to immediately expire older checkpoints using steps from KB [500477](#), because next time Avamar maintenance runs it will do so automatically, of course, doing it manually depends on urgency and the particular need to dispose of the snapshots and reclaim disk space for deleted files in the DD quickly.

Re-run maintenance on the Avamar and verify that the snapshots are being expired. Compare them to the list on Avamar (cplist). If this does not resolve the issue please engage Data Domain Engineering.

Notes Alternatively, Support may also opt to disable checking the ddboost users for being part of the "admin" group by setting the setting the following registry key:
reg set protocol.ost.opt.disable_admin_check = TRUE

However, as the ddboost user being part of the admin group is an integration requirement long ago set in the Avamar / Data Domain documents, it will always be best to assign the user to the group, however, if there are storage units with millions of files or there is no good time to run the recommended workaround, this registry key may be used instead.

Primary Product Avamar