



PROFESSIONAL SERVICES TECH NOTE #056

64-bit Aggregates

The Concept

Data ONTAP 8.0 supports the larger 64-bit aggregates to move beyond the 16TB aggregate size limit of older aggregates. Depending on storage controller model, 64-bit aggregates can be 40 – 100TB large. The primary use for 64-bit aggregates will be to support SATA 2TB, and larger, drives which would have very low spindle counts in 32-bit aggregates.

Examples

Use the new `-B` flag in **aggr create** to set the aggregate bit size:

```
fas1> aggr create aggr_64 -B 64 24@868
```

RAID group sizes remain the same as for 32-bit aggregates so the loss of disks to parity will remain the same.

What It Means To You

There are some caveats to implementing 64-bit aggregates:

- 1) The FAS200, FAS2000 series and FAS3020/3050 controllers will NOT support 64-bit aggregates.
- 2) The root aggregate must be a 32-bit aggregate. (You may want to consider keeping smaller drives around for a dedicated 3-disk root aggregate – RAID4 parity, data, spare drive.)
- 3) The default for ONTAP 8.0 is 32-bit aggregates so 64-bit must be manually created.
- 4) There is no conversion process to turn 32-bit aggregates to 64-bit and vice versa. Converting an existing system will require a data migration similar to the transition from traditional volumes to aggregates.
- 5) Accessing data on 64-bit aggregates requires more memory to store the block metadata. On busy systems, this could affect performance. Expect to see recommendations for PAM cards to reduce this performance bottleneck, especially when using larger drives where latency is higher.
- 6) Volume SnapMirror, volcopy and aggrcopy must be between like aggregates – i.e., flexvols in 32-bit aggregates cannot replicate to 64-bit aggregates or vice versa. Qtree SnapMirror, SnapVault, and NDMP are unaffected.
- 7) Deduplication is limited to FlexVols of 16TB or smaller (4TB maximum on FAS3040 and FAS3140).
- 8) Even with 64-bit aggregates, ONTAP 8.0 still has the same size limits as 7.3 for individual files and LUNs.

More Information

TR-3786 A Thorough Introduction to 64-Bit Aggregates:

<http://www.netapp.com/us/library/technical-reports/tr-3786.html>

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Send comments, corrections & suggestion to Michael Cope at mcope@netapp.com

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