

## FreeNAS - Bug #28544

### Merge in compressed ARC patches

02/15/2018 03:38 PM - Bill Sorenson

<b>Status:</b> Done	
<b>Priority:</b> Important	
<b>Assignee:</b> Dru Lavigne	
<b>Category:</b> OS	
<b>Target version:</b> 11.2-BETA1	
<b>Seen in:</b> 11.1	<b>Needs Merging:</b> No
<b>Severity:</b> Medium	<b>Needs Automation:</b> No
<b>Reason for Closing:</b>	<b>Support Suite Ticket:</b> n/a
<b>Reason for Blocked:</b>	<b>Hardware Configuration:</b>
<b>Needs QA:</b> No	<b>ChangeLog Required:</b> No
<b>Needs Doc:</b> No	

#### Description

The latest release of ZFS on Linux includes a patch related to one of the changes in compressed ARC support. The issue results in a notable decline in ARC hit rate.

The details of the ZoL patch can be found here: <https://github.com/zfsonlinux/zfs/pull/6989>

It is my option from testing my own hack import of the patch into FreeBSD 11-STABLE and 11.1-R that this issue also affects FreeBSD 11.1+ and FreeNAS. On my own system running FreeBSD 11.1 (with this patch) my ARC hit rate went from ~35% to ~97% after a few days. The system serves as a file share, runs several jails and also ran a few buildworlds on the machine in that time. I'd like someone to validate my findings if possible.

I'm not sure how soon OpenZFS/FreeBSD are to port that over, FreeNAS is usually one of the first to pull in the cross-pollination of ZFS enhancements that I've seen.

-Bill S

#### Associated revisions

##### Revision a8c26e0e - 05/08/2018 01:48 PM - Dru Lavigne

Mention OS and ZFS improvements.

Ticket: #28544

Ticket: #23893

#### History

##### #1 - 02/16/2018 06:14 AM - Dru Lavigne

- Assignee changed from Release Council to Alexander Motin

Alexander: what are your thoughts on this one?

##### #2 - 02/16/2018 06:26 AM - Alexander Motin

- Category set to OS

- Priority changed from No priority to Expected

- Target version set to 11.2-BETA1

- Severity set to Medium

Description in the ZoL PR looks significant. I'll take a deeper look on it. Unfortunately I don't see it in Illumos/OpenZFS, that complicates things, but at least the patch is not very invasive.

**#3 - 02/26/2018 08:39 AM - Ben Gadd**

- Due date set to 03/09/2018

**#4 - 03/19/2018 11:11 AM - Dru Lavigne**

- Target version changed from 11.2-BETA1 to 11.2-RC2

**#5 - 03/19/2018 12:26 PM - Alexander Motin**

- Priority changed from Expected to Important

We tried that patch, and while it does improve some synthetic tests, we haven't found it to produce significant difference in more realistic tests. The reason is that very small amount of data are kept decompressed in DMU cache, and so affected by this issue. It should probably be fixed, but may be not a huge deal. It should be proposed to OpenZFS for inclusion.

**#6 - 04/02/2018 04:26 PM - Alexander Motin**

- Status changed from Not Started to In Progress

Since dbuf cache size increased recently (will be in FN 11.2), effect of this patch should grow more significant. I've pushed the pull request to OpenZFS.

**#7 - 04/20/2018 09:40 AM - Alexander Motin**

- Status changed from In Progress to Done

I've just merged that patch into freenas/11-stable branch (further 11.2) together with other changes.

**#8 - 04/23/2018 04:20 PM - Dru Lavigne**

- Subject changed from Compressed ARC performance regression to Merge in compressed ARC patches

- Target version changed from 11.2-RC2 to 11.2-BETA1

- Needs Doc changed from No to Yes

Master PR: <https://github.com/freenas/os/pull/117>

**#9 - 05/08/2018 01:51 PM - Dru Lavigne**

- Needs Doc changed from Yes to No

Doc commit: <https://github.com/freenas/freenas-docs/commit/a8c26e0e4171c92be2b7ebac7569075bfc7cf880>.

**#10 - 05/08/2018 05:14 PM - Eric Loewenthal**

- Assignee changed from Alexander Motin to Dru Lavigne

Dru: I think the OpenZFS blurb should read just "device removal" instead of "SLOG/L2ARC device removal", or something along those lines. SLOG and L2ARC have been removable for a very long time, the new feature is for vdev removal (only works with mirrors, according to the man page).

**#11 - 05/09/2018 05:03 AM - Dru Lavigne**

Followup doc commit: <https://github.com/freenas/freenas-docs/commit/f3661f4614960f4c23b0c911d0941db33fe782e>