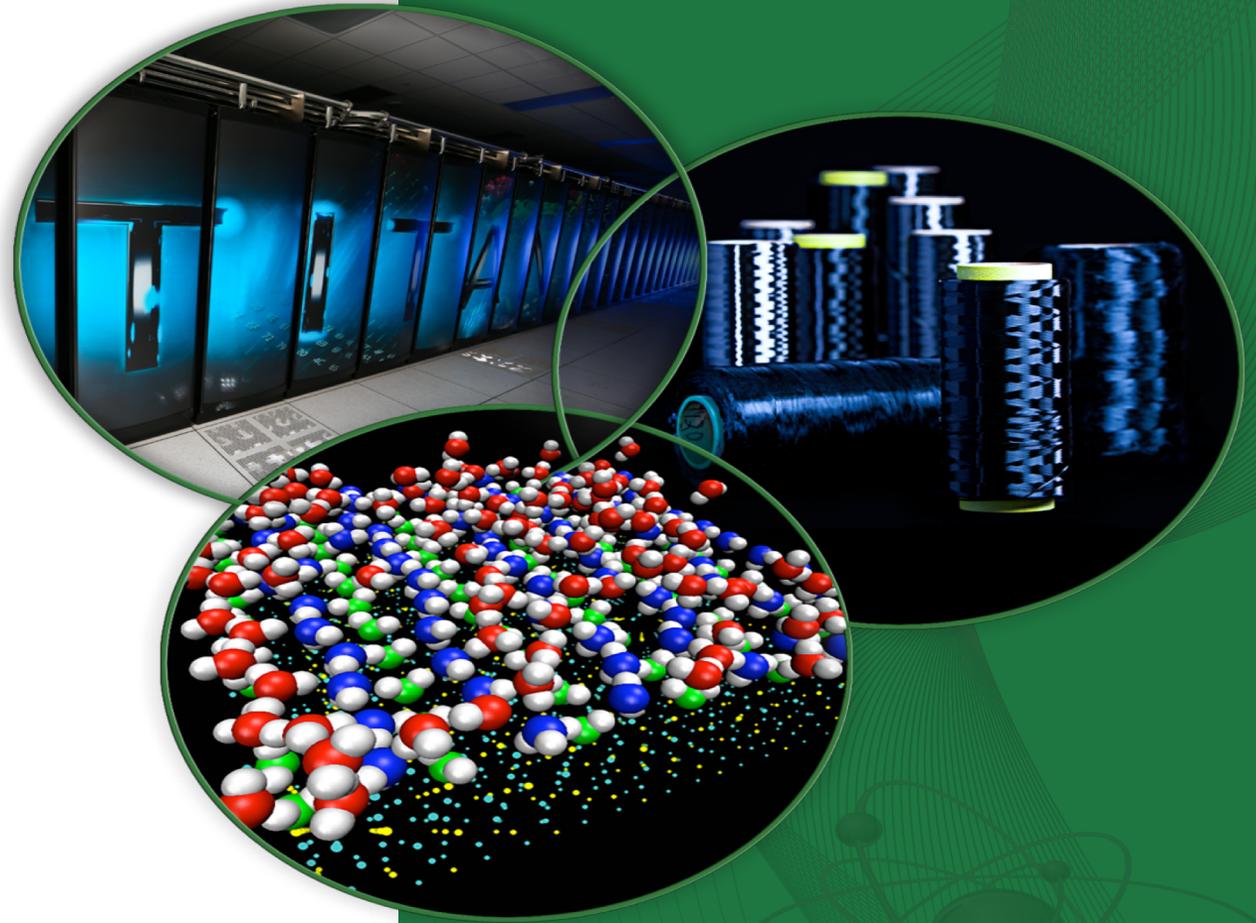# Lustre support for ARM

status of this effort

Supported client platforms

- SuSE 12 (4.4 kernel)
  - Tested with ethernet

- Red Hat 7 alt (4.15 kernel + MOFED 4.4)
  - Tested with IB
  - Kernel breaks Multi-Rail (LU-11278). Only one IB port usable

- Ubuntu18 (4.16 kernel)
  - Not tested but should work ☺

- Native Linux Lustre client
  - https://github.com/neilbrown/linux (branch lustre)
  - ARM support landed for 4.20-rc1

Which Lustre versions for ARM clients ?

- Can you use the lustre 2.10 x86 servers?
  - Don't need to patch !!!
  - With IB must set map_on_demand=16

- Lustre 2.11 x86 servers tested with LU-10157 patch

- Lustre 2.12 x86 servers just work

- Lustre 2.11 ARM clients
  - Need LU-10157 patch for RHEL7 alt

- Lustre 2.12 ARM works out of the box

How well does Lustre ARM clients work?

- Whamcloud division working on auto testing ARM
  - Not ready yet.

- Testing against x86 servers with ZFS
  - Largest set of failures are with lfs find
    - Sanity test 56 group
  - Several userland to kernel side interface test fail
    - Sanity test 184f : IOC_MDC_GETFILEINFO returned garbage
    - Might be a ARM ABI issue.

Lustre 2.12+ ARM server support

- ZFS has been tested and it works
  - No patches needed!!!
  - Tested on RHEL7 alt kernel (4.15)

- ldiskfs is a work in progress
  - Default RHEL7.4 alt kernel has bug that breaks ldiskfs
    - EXT4_FEATURE_INCOMPAT_SUPP missing EXT4_FEATURE_INCOMPAT_EA_INODE
    - Single line patch to ext4.h to make it work
  - Test on RHEL7 alt. LU-11200
    - VFS locking has change which locks up osd-ldiskfs

Bugs found with ARM client to ARM server testing

- Problems same as ARM client to x86 servers

- Largest set of failures are with lfs find
  - Sanity test 56 group

- Several userland to kernel side interface test fail
  - Sanity test 184f : IOC_MDC_GETFILEINFO returned garbage
  - Might be a ARM ABI issue.

- Application appear to work
  - More work is needed. Other pieces are missing

Lustre ARM roadmap

- Make ARM client standard testing

- Lustre 2.13 should complete ARM support
  - Fix remaining client UAPI issues
  - Resolve ldiskfs locking issues

- If 2.12 is made LTS backport fixes from 2.13

- Make native linux lustre client an option