

# Filesystems Micro-Talk: ext4 v xfs v btrfs v zfs

Wah

# Installation

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**DELL R510; SL6; 12 2TB disks RAID 6; parted into 4**

**1. Ext4 familiar from SL5**

- SL6 now e2fsprogs (instead of e4fs)
- mkfs.ext4 [with some sensible options that I forget]

**2. xfs**

- mkfs.xfs [xfs equivalents of the above]

**3. btrfs – preview in SL6**

- btrfs-progs-0.19-12.el6.x86\_64
- mkfs.btrfs [I didn't use any options]

**4. ZFS – not at all official but easy instructions at**

- <http://zfsonlinux.org/zfs-building-rpm.html>
- /sbin/modprobe zfs
- zpool create tank sdb4 -m /mnt/gridstorage04

**All worked straight off out of the boxes**

# Experiences

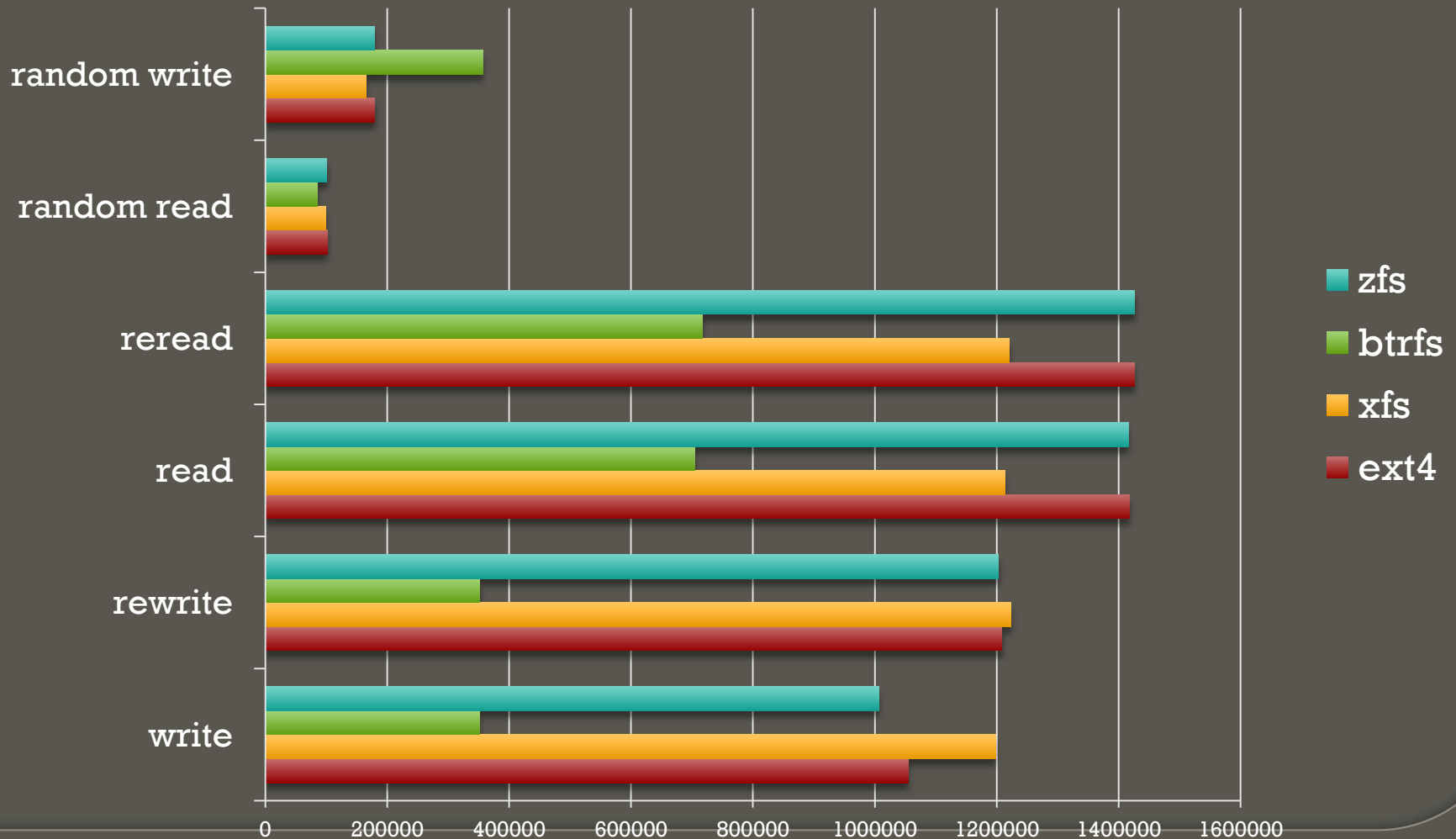
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/dev/sdb1 on /mnt/gridstorage01 type ext4 (rw)  
/dev/sdb2 on /mnt/gridstorage02 type xfs (rw)  
/dev/sdb3 on /mnt/gridstorage03 type btrfs (rw)  
tank on /mnt/gridstorage04 type zfs (rw,xattr)

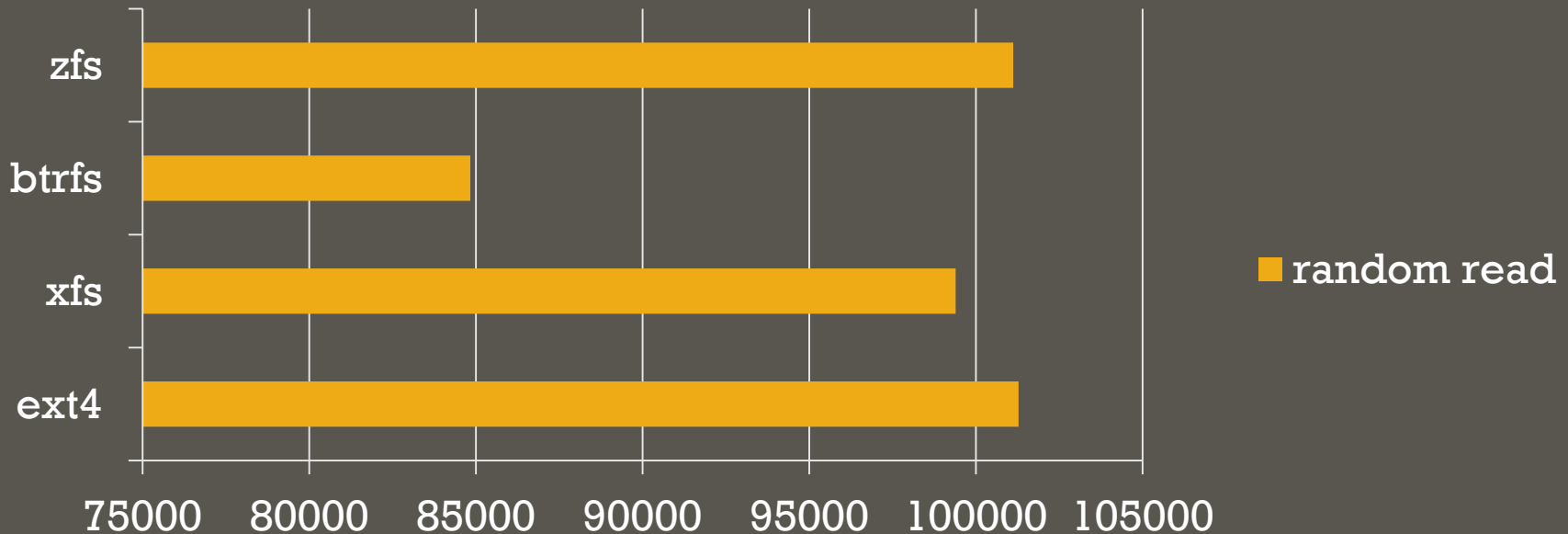
- Been set up for about a week – regular single jobs running against them plus izone test(s)
- Nothing broke yet
- I'm no expert

# Testing

`iozone -ac -i 0 -i 1 -i 2 -r 1024k -s 64G`



## random read



- No tuning: btrfs no mkfs opts
  - Some options may be enabled or disabled
- ATLAS test didn't work out of (SL6) box
- Using as bkend to regular rfio / webdav test
- Will report further soon (suggestions welcome)

# WebDav Experience so far

Wah

# Installing

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- DPM 1.8.3
- I used SL6 EMI2 Release Candidate; Sam has EMI 1
- Just put in site-info.def:  
DPM\_DAV="yes"  
Opened up port 443 in the firewall  
And it worked

```
curl -v -E $X509_USER_PROXY --capath  
$X509_CERT_DIR -L  
https://svr025.gla.scotgrid.ac.uk/dpm/gla.scotgrid.ac.uk/home/atlas/atlasppsdisk/user.ilijav.HCtest.4/group.test.hc.NTUP\_SMWZ.root -o  
./group.test.hc.NTUP\_SMWZ.root
```

# ROOT reading

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● After some iteration (thanks Alejandro!):

```
TSSLSocket::SetUpSSL("$X509_USER_PROXY", "./$X509_CERT_DIR", "$X509_USER_PROXY", "$X509_USER_PROXY")  
TWebFile *g = new TWebFile(https://blah)
```

works

But Tfile::Open() doesn't

Bit of a problem as TRfioFile behaves exactly opposite but doesn't prevent testing



# Testing

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- Running regular test through Hammercloud
- Initially– 403 forbidden
  - job running with pilot DN whereas file written with mine – easy enough to fix .
- Now have scary ROOT error:
  - R\_\_unzip: error -5 in inflate (zlib)
- Sure we'll sort it out – but no test results