Spectrum Scale (GPFS)
Queen Mary University Of London
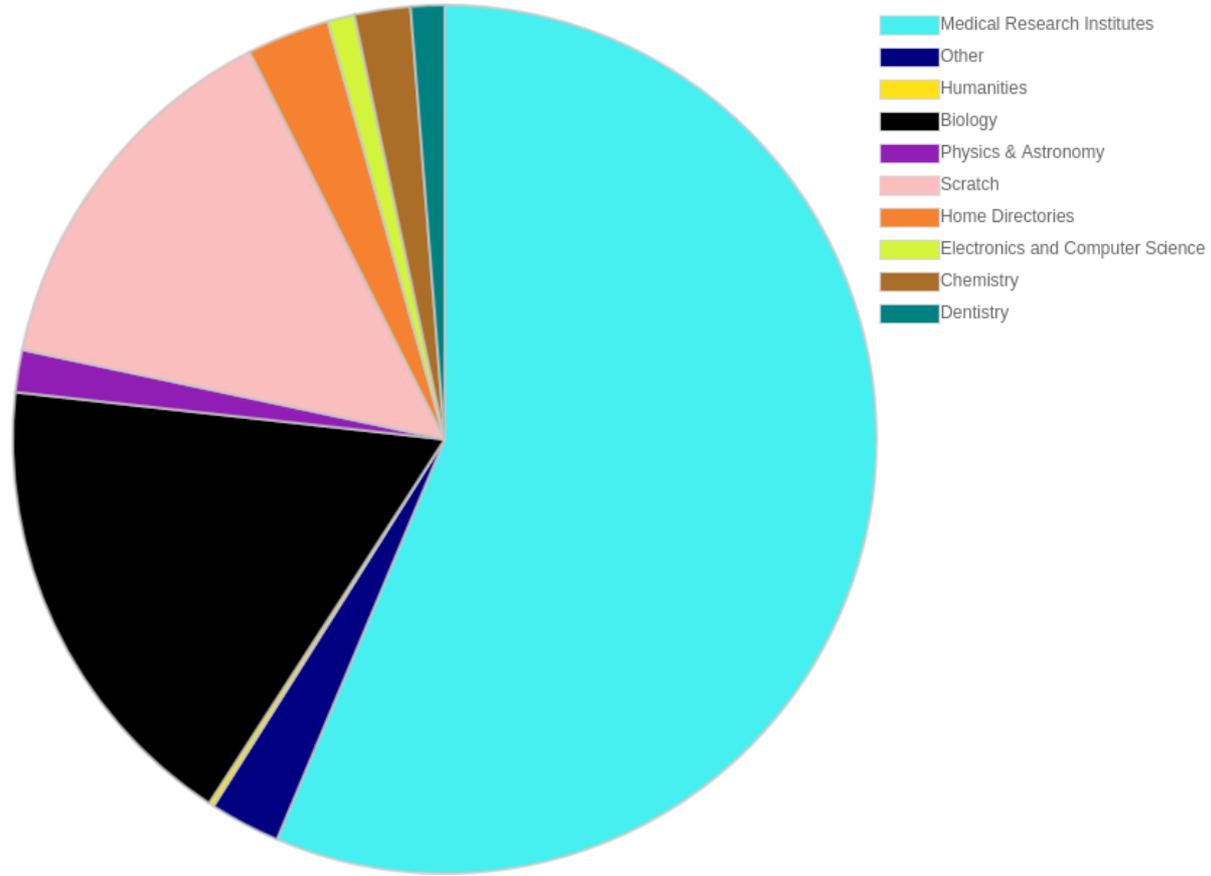# (QMUL)

History

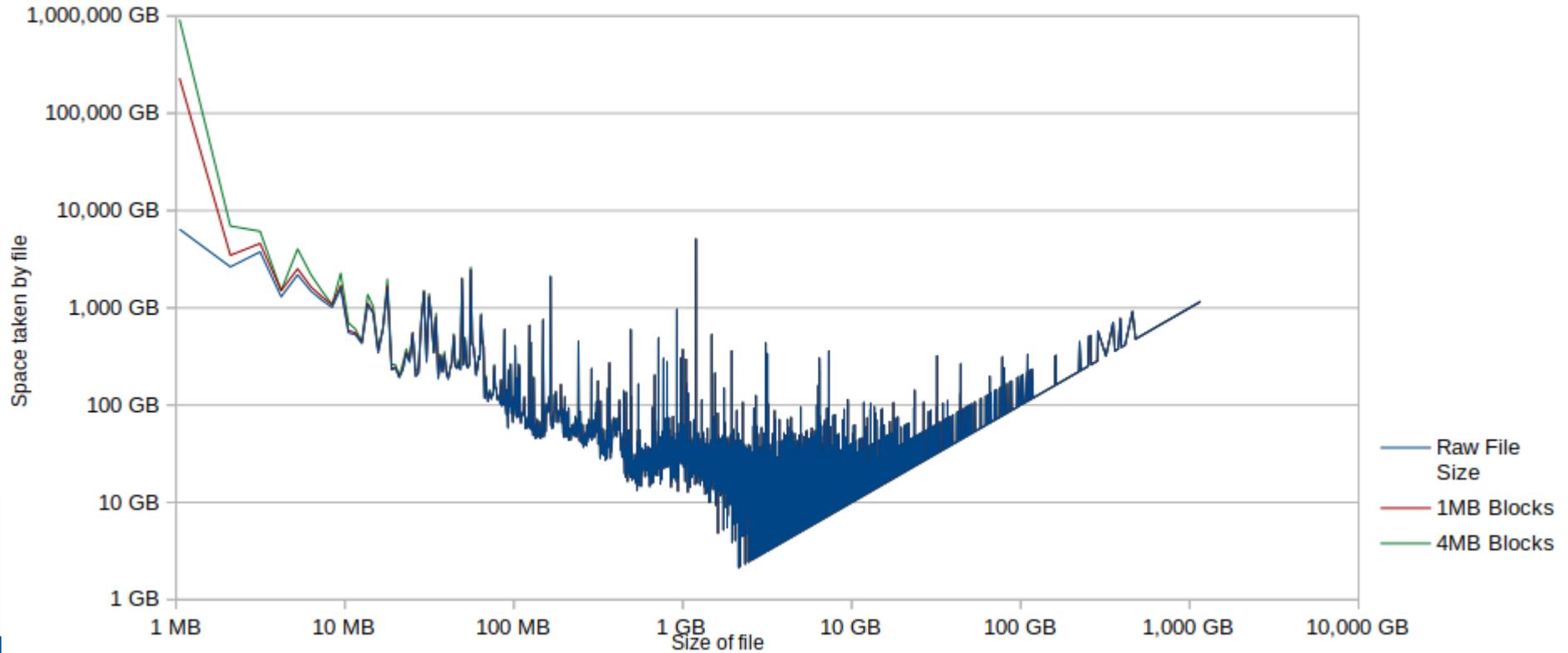| Date	Version	Size	
2012	3.5.0.10	110TB Data, 5.5Tb Meta	Meta Data on Hard disks RAID1 on an IBM DS3500, (data on RAID6 IBM DCS3700)
2013	3.5.0.10	220TB	Expansion Purchased,
June 2015	3.5.0.10	240TB	Emergency Expansion on to "hot" spare disks (we had 20 so used 10)
July 2015	3.5.0.10	386TB	2nd Expansion larger disks (8Tb not 6Tb)
Dec 2015	3.5.0.28	386TB	1st Big Upgrade
Aug 2016	3.5.0.31	386TB	
Oct 2016	4.1.1.8	386TB	
Oct 2016	4.2.1.1	386TB	Move Cluster to Slough
Dec 2016	4.2.1.1	930Tb Data, 1.4Tb Meta	New DDN GridScaler Deployed AFM LU Migration Started
Aug 2017	4.2.3.4	930TB	
Aug 2017	4.2.3.7	750TB	2nd GridScaler for a Disk based backup using AFM SW Backup (Rest of being upgraded to match),
Future	5.0.0	1.5PB+	Fill up current storage tray, Extra Storage Tray already needed Scratch Storage, Get AFM SW Working, Decommission original storage.

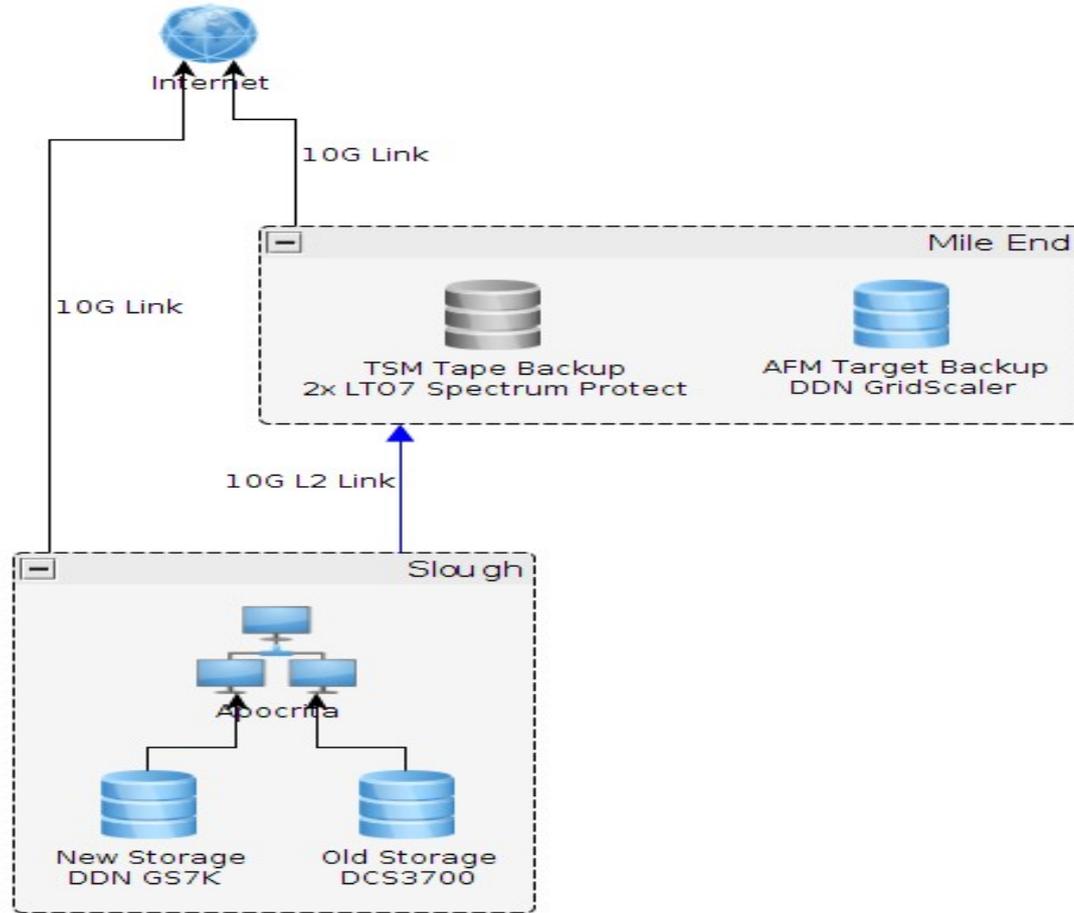# Long Term space usage

Apocrita Space Usage

Space Usage

Legend:
- Medical Research Institutes
- Other
- Humanities
- Biology
- Physics & Astronomy
- Scratch
- Home Directories
- Electronics and Computer Science
- Chemistry
- Dentistry
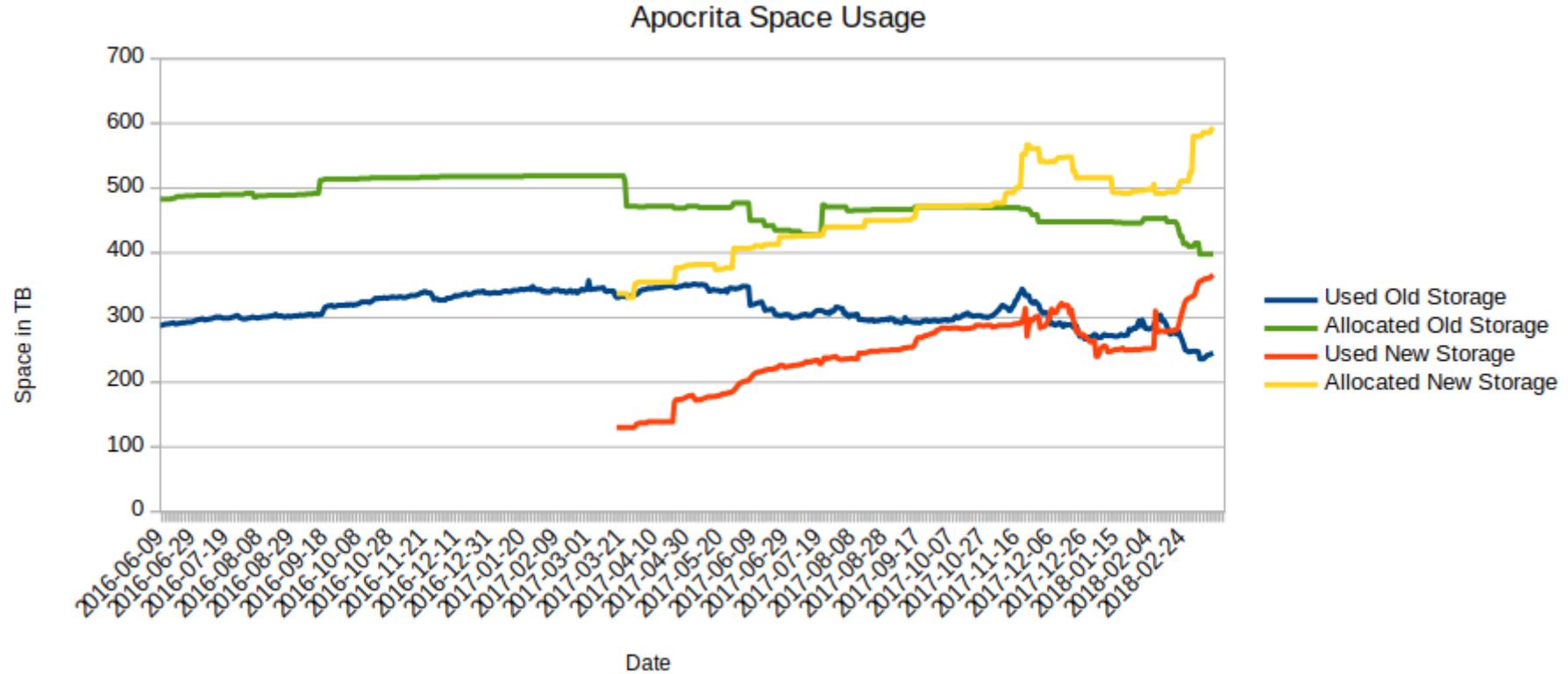
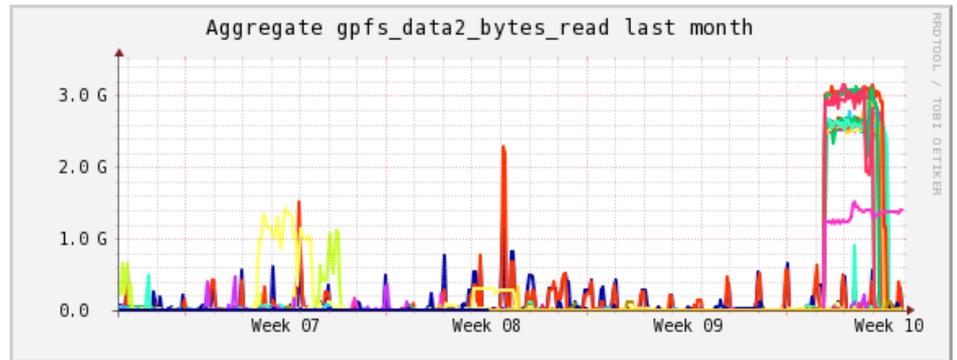# File Space Usage By Block Size
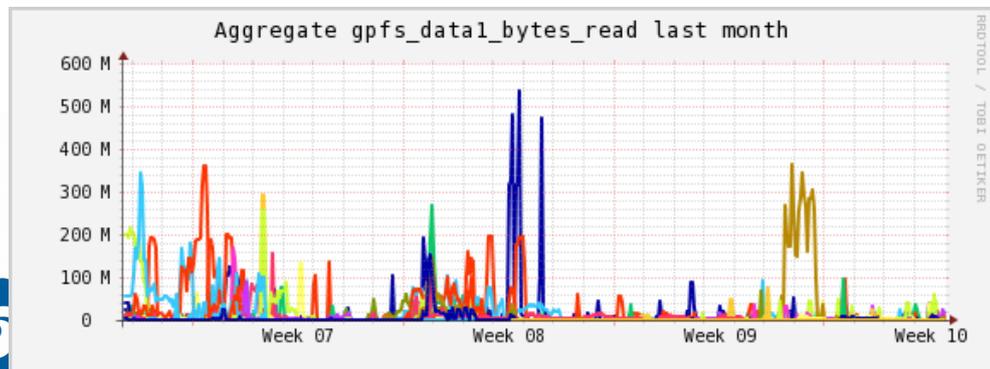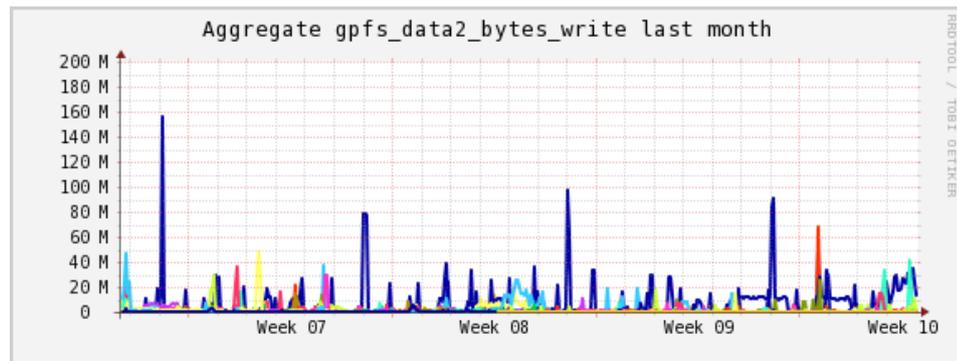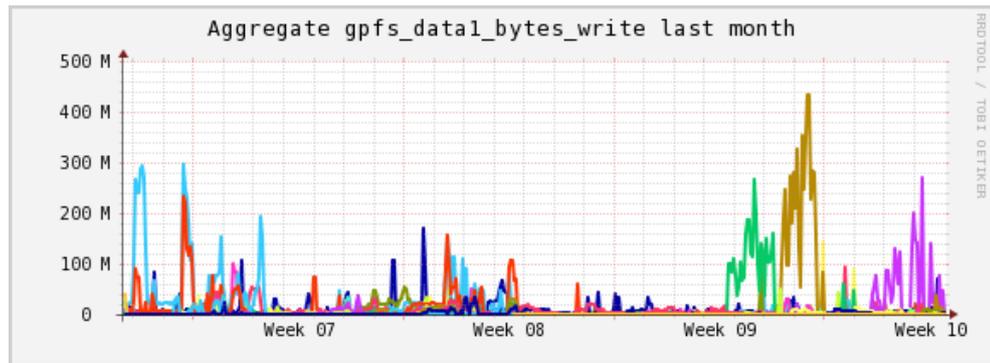
GridScaler – GS7K

Backups - Archive

- Acchive Backup (Spectrum Protect)
  - Replacing a older shared TSM on Single LTO5 tape.
  - New 8.1 Backup solution just deployed
  - 2 x LTO7. With a TS4500 Tape Library
- Online Backup (AFM)
  - Using AFM Single Writer
  - 2nd GS7K Based at our office at Mile End.

Internet

10G Link

10G Link

Mile End

TSM Tape Backup
2x LTO7 Spectrum Protect

AFM Target Backup
DDN GridScaler

10G L2 Link

Slough

Apocrita

New Storage
DDN GS7K

Old Storage
DCS3700

Monitoring
using Ganglia and Nagios

Spectrum Scale on IBM Power 9

Future Plans

- Scratch storage on flash

- Further expansion as the disk are once again full

- File access services, such as Cifs and wider file access to our users outside pure compute.

Questions