

National Aeronautics and Space Administration

Storage and Filesystems

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May 22, 2024



NASA High-End Computing

Different storage types available at NAS

- Home Filesystem
- Software Build/Repo
- Scratch Filesystem
- Mass Storage (Tape Backup)



Home filesystems and software build

- Home Filesystem
  - /u/*uname*
  - Used for a limited number of files
  - Small quota allocations
  - Backed up
- Software Build
  - /swbuild/*uname*
  - You need to request space
  - Larger quota than your home directory
  - Use for software build and repository
  - SSD backend for speed
  - Backed up



Scratch filesystems

- Named /nobackupp*XX*
- Primary used for job output
- Lustre
- Automatic SSD Cache
  - Files <5GB (nbp17,18,27,28)
  - Files <1 GB (nbp19)
- Upcoming Retirements: nbp10,12,13,15
- /nobackupnfs1 is all SSD-based filesystem
  - Ideal for small files
  - AI or ML workloads

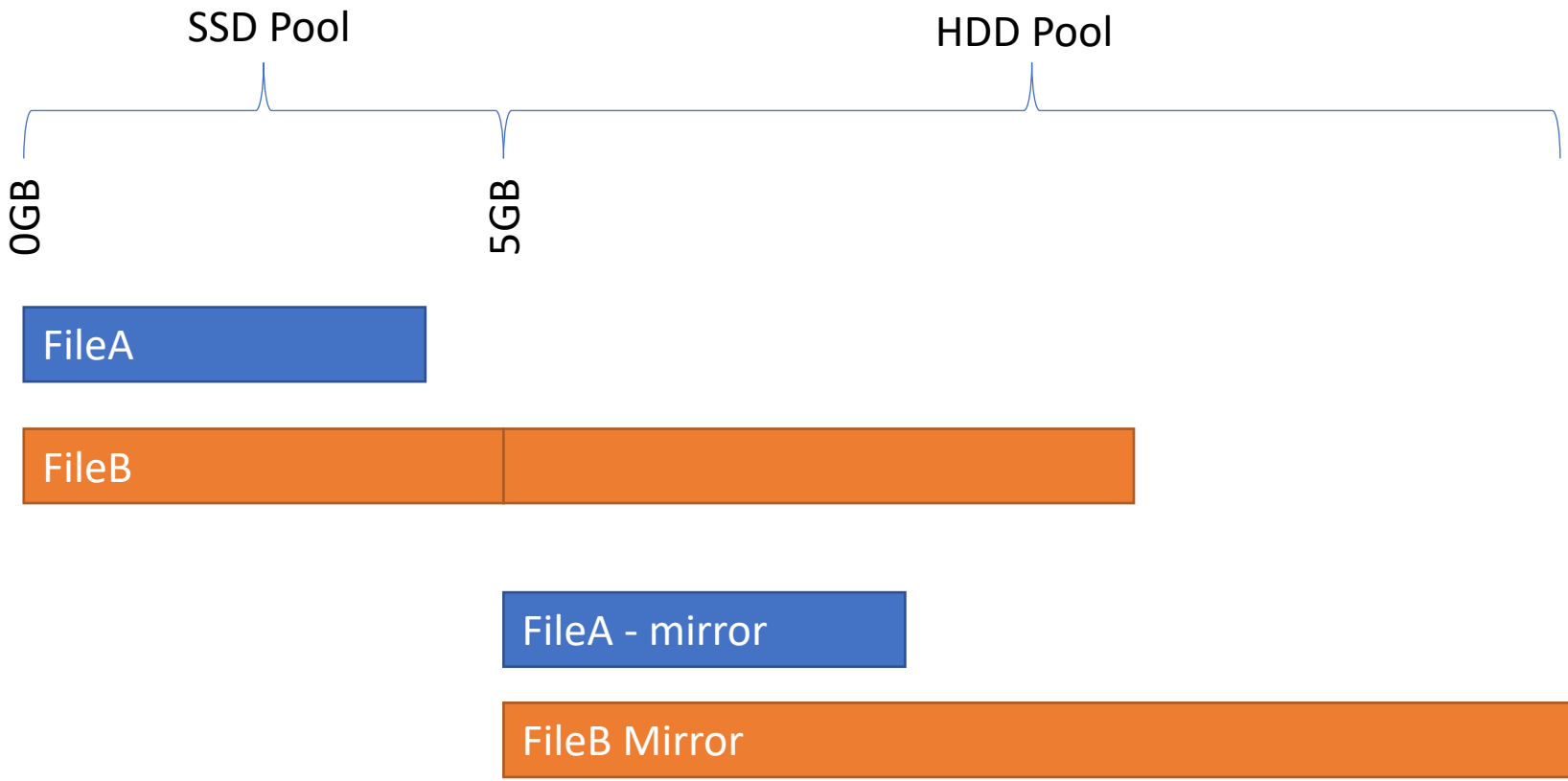
Name	HDD Size	SSD Size
Nobackupp17	18 PB	1 PB
Nobackupp18	18 PB	1 PB
Nobackupp27	18 PB	1 PB
Nobackupp28	18 PB	1 PB
Nobackupp19	9 PB	½ PB
Nobackupp29*	9 PB	½ PB
Nobackupnfs1	-	3 PB

* Dedicated to Viz Team



How do the filesystems SSD cache?

By making use of Lustre Progress File Layout and Lustre Pools:





HPE DMF HSM archive system (Lou)

- 238 petabytes (PB) of unique data stored
- Maximum capability of 1.5 exabytes
- 7.5 PB disk cache (not scratch storage)
- Files have two copies (housed in separate buildings)
- No space quota
- Tar up directories (use **shiftc** tool)
- LFEs: Lou front-ends for interactive work using Lou
- LDANs: Lou ata analysis nodes used for post-processing (access via PBS)



Looking forward

- HECC has been looking into Object Store Solutions
- Additional Lustre storage

Provide your input!

Email: support@nas.nasa.gov



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Ideas?
Questions?
Suggestions?

We want to hear from you!
support@nas.nasa.gov
1 (800)-331-8737

