PFS Computing Infrastructure at Subaru

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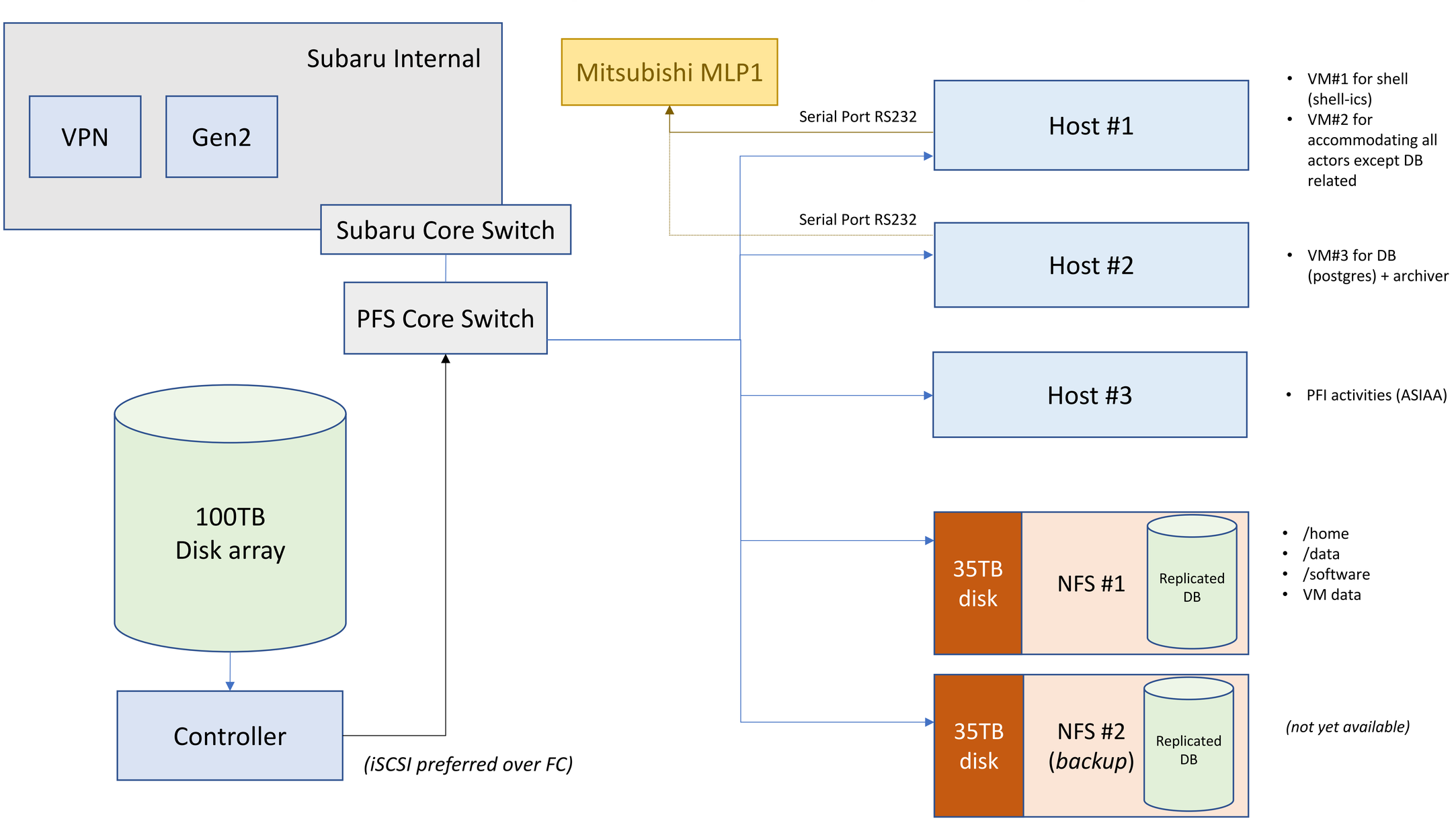
Introduction

The PFS software installed at Subaru needs to process and store critical science and calibration data during the course of operations. The infrastructure on which the software runs must therefore be robust and reliable. This poster outlines the current and planned infrastructure and lists the main open issues.

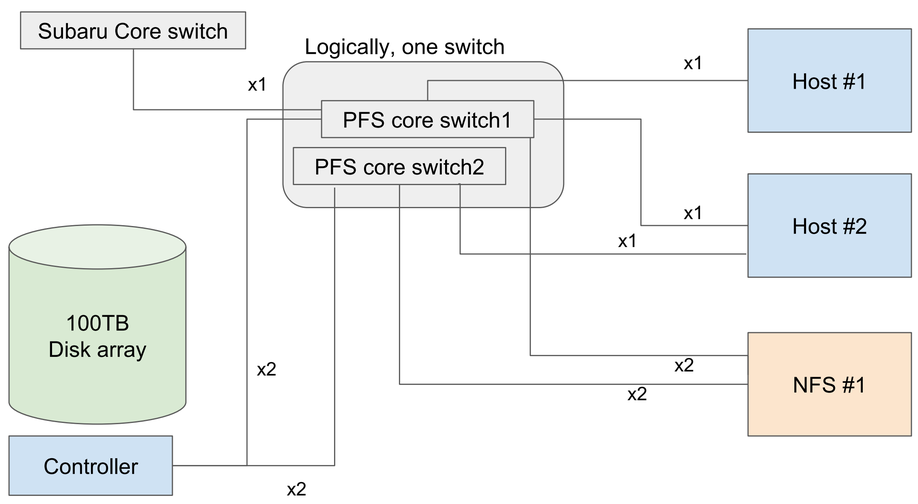
Target Infrastructure

Currently there are 2 hosts and 1 NFS machine processing data during the MCS engineering runs in April and Oct 2018. The target infrastructure, shown below, will consist of 3 hosts and two NFS boxes to provide as much redundancy and flexibility as possible.



Core Switch Layout

The detailed core switch configuration and ethernet connections to the host and NFS machines for the current configuration are shown below. This will be updated in due course to cover 3 hosts and 2 NFS machines.



User Access

- The PFS software infrastructure is accessible remotely through SSL VPN upon approval from a PFS project member at Subaru(Takato-san).
- For security, maintenance and traceability, all development and installation of software will be done using dedicated user accounts, with a per-user primary group id. In addition, all users will also share a common secondary group (`pfs`).
- Content written to the `pfs` group directories (`/software/`, etc) are *writable* by all in the project, but content written to non-pfs group directories (`/home/`, etc) are by default readable, *but not writable* by all in the project.

Open Points and Risks

1. The 35TB (physical size=60TB; effective capacity=35TB) disk arrays on NFS-1 and -2 are still to be confirmed, pending on the number of slots available and the cost.
2. The NFS-2 machine still needs to be purchased. How is the responsible (Subaru or PFS) is to be discussed.
3. iSCSI over ethernet is preferred to using fiber cable. It is felt that the former is more reliable and is more easily recoverable. This may introduce a performance penalty however.
4. Risks include: possible failure of Host2 that can affect the DB related operations; the loss of the 100TB disk array and related data.

References

See document PFS-ICS-PRU030000-01, available from the PBworks website.

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