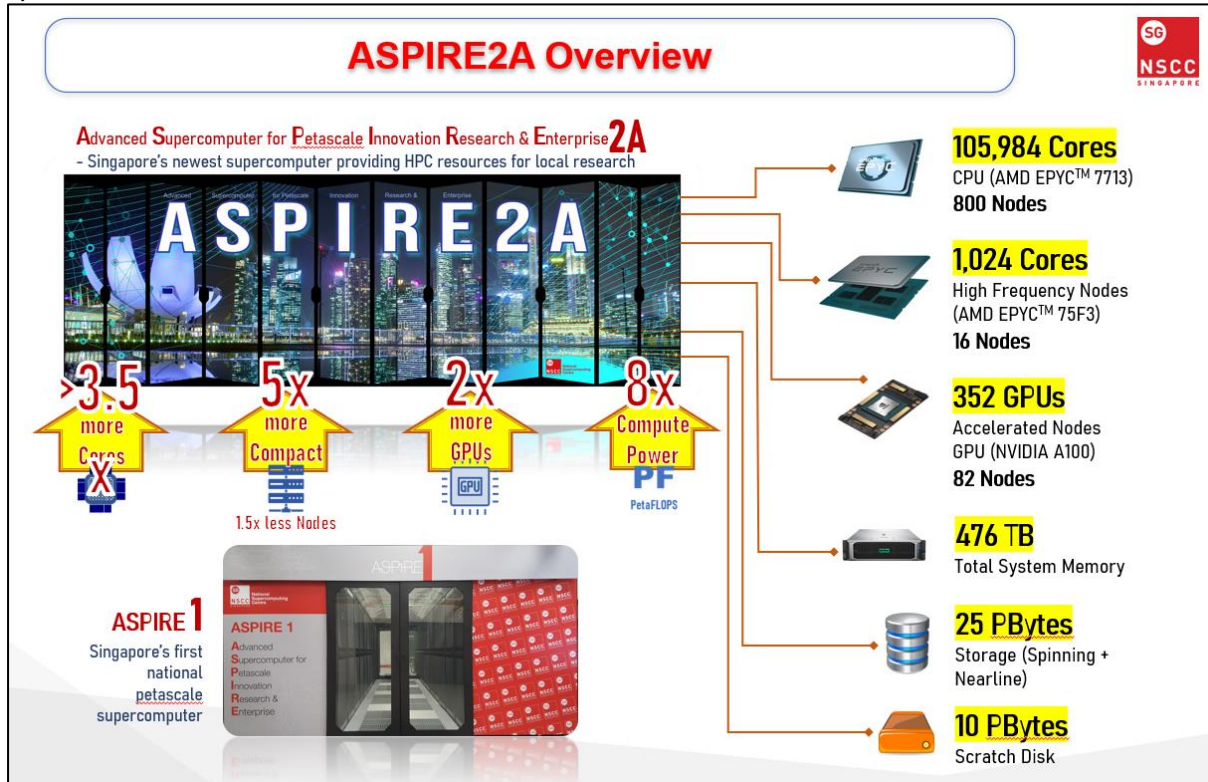


ASPIRE 2A Architecture and Specifications

ASPIRE2A is an AMD-Based Cray EX supercomputer with 8 PB of GPFS FS and 10 PB of Lustre FS storage and Slingshot interconnect. The following diagram shows the high-level specification of ASPIRE2A.



Detailed specifications:

768 Cray EX CPU Nodes [ASPIRE 2A]

- Dual-CPU AMD 7713 (64 cores/CPU + 64 cores/CPU = 128 cores in a node)
- 512 GB DDR4 ECC RAM (User accessible RAM = 500 GB)
- 100G High Speed Network
- RHEL 8

64 Cray EX 4-GPU Nodes [ASPIRE 2A]

- Single-CPU AMD 7713 (64 cores/CPU = 64 physical cores in a node)
- 4x Nvidia A100 40GB
- 512 GB DDR4 ECC RAM (User accessible RAM = 500 GB)
- 2x 100G High Speed Network
- RHEL 8

12 Cray EX Large Memory Nodes (2 TB)

- Dual-CPU AMD 7713 (64 cores/CPU + 64 cores/CPU = 128 cores in a node)
- 2048 GB DDR4 ECC RAM (User accessible RAM = 2000 GB)
- 100G High Speed Network
- RHEL 8

12 Apollo 4-GPU Nodes [ASPIRE 2A AI System]

- Single-CPU AMD 7713 (64 cores/CPU = 64 physical cores in a node)
- 4x Nvidia A100 40GB

- 512 GB DDR4 ECC RAM (User accessible RAM ≈ 500 GB)
- 11 TB NVME Storage
- 2x 100 Gbps High Speed Network
- RHEL 8

6 Apollo 8-GPU Nodes [ASPIRE 2A AI System]

- Dual-CPU AMD 7713 (64 cores/CPU + 64 cores/CPU = 128 physical cores in a node)
- 8x Nvidia A100 40GB
- 1024 GB DDR4 ECC RAM (User accessible RAM ≈ 1000 GB)
- 14 TB NVME Storage
- 2x 100 Gbps High Speed Network
- RHEL 8

4 DL385 Large Memory Nodes (4TB)

- Dual-CPU AMD 7713 (64 cores/CPU + 64 cores/CPU = 128 cores in a node)
- 4096 GB DDR4 ECC RAM (User accessible RAM = 4000 GB)
- 100G High Speed Network
- RHEL 8

16 DL385 High Frequency Nodes

- Dual-CPU AMD 75F3 (32 cores/CPU + 32 cores/CPU = 64 cores in a node)
- 512 GB DDR4 ECC RAM (User accessible RAM = 500 GB)
- 100G High Speed Network
- RHEL 8

Storage

GPFS (8 PB) & Lustre (10 TB) File Systems

Slingshot Interconnect

All nodes are connected with HPE Slingshot Interconnect (Dragonfly Topology)