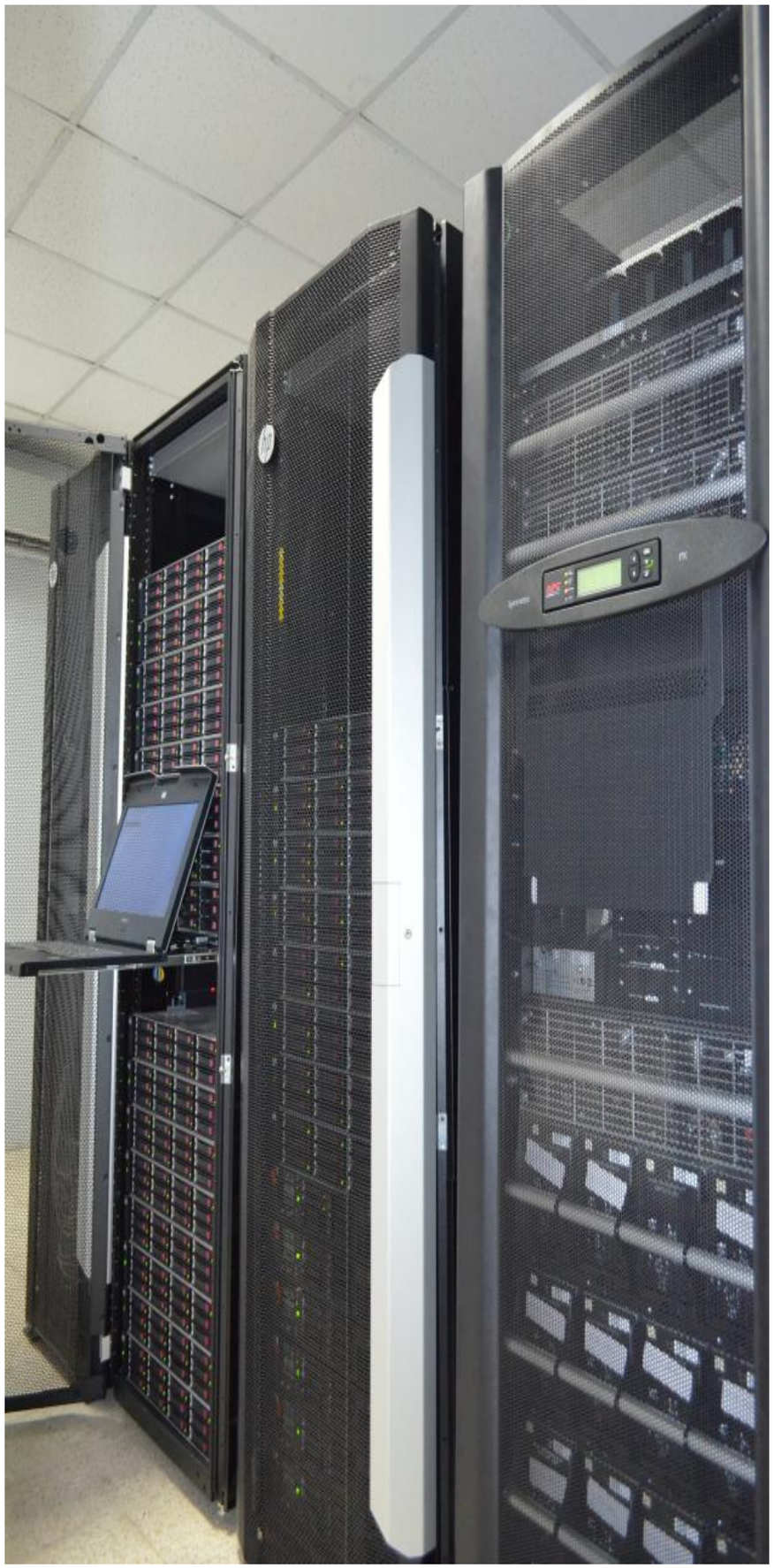
ASHAA: Advanced Supercomputing Hub For Aquatic Animals



ASHAA, the Advanced Supercomputing Hub for Aquatic Animals was established at ICAR-National Bureau of Fish Genetic Resources, Lucknow on February 18, 2014. The aim of its establishment is to develop a hub for computational biology and bioinformatics to support frontier biotechnological research in fisheries domain with integration of high performance system. The supercomputing hub is poised to bridge the gap between genomic information and knowledge by utilizing statistical and computational sciences. ASHAA consists of a hybrid hardware architecture of Linux and Windows based clusters i.e. Centos operating environment for HPC Systems and Window 10 for the workstations. This robust mini super-computing facility consists of 16 Linux based cluster nodes, each having 96 GB RAM, 1 Head node, 1 login node, 1 CMS server, more than 76.7 TB storage capacity supporting the PFS, SAN and NAS storage structures, active and passive networking components. It also adorned with several important application software packages for analysis of fish genome and proteome data. It is hoped that ASHAA will open up new vistas for molecular research in fisheries including genomics, transcriptomics, proteomics and metabolomics for enhancing the aquaculture production and development of improved varieties/strains.

Hardware Configuration

- 16 HPC Compute Nodes (for Linux based Cluster):
  - Processor : 2x Intel Xeon Processor X5675, 3.07Ghz and minimum 6 Core/Processor
  - Memory: 96 GB DDR3 ECC 1333 MHz upgradable to 128 GB
  - Hard Disk : Single 146GB 15K RPM SAS HDD
  - O.S: 64 bit Centos operating system
- Head Node & Login Node:
  - Processor : 2x Intel Xeon Processor X5675 3.07Ghz, with 12MB L3 Cache and 6 Core/Processor
  - Memory: 96 GB DDR3 ECC 1333 MHz upgradeable to 128 GB.
  - Hard Disk : 6 x 600GB 10k RPM, 6Gbps hot swappable SFF SAS HDDs.
- Store Management Utility:
  - Six storage management with a total capacity of 126.56 TB
- Switches:
  - SAN, Ethernet, ILO and InfiniBand switches