



CASE STUDY

SBA Info Supports a Leading Higher Education & Research Institute with the Implementation of High-Performing Supercomputers

The Client

Our customer, a premier engineering & technology institute, provides higher education in engineering and has established itself as a premier center for teaching, research, and industrial consultancy in India. It has academic departments with few advanced research centres in various disciplines of engineering and pure sciences, with 100+ lab facilities. They hold faculties with international reputations, innovative student community, and excellent technical & supporting staff.

Business Need

Our customer's existing high-performance cluster which was again provided by us earlier was not supporting their growing demands, and they wanted to deploy a supercomputer of 700TF – of which 500TF in computer-based workload and 200TF in GPU-based nodes. The proposed High Performance Computing Environment (HPCE) was to cater to the ever-increasing demand for supercomputing facilities of researchers at the institute.

Material science and engineering, atmospheric and ocean modelling, aerospace engineering, modelling social, ecological, and physical networks, design of large structures and VLSI, understanding flows and combustion, spectroscopy and molecular modelling are some of the active research areas in the institute, where such large-scale computing will be used. Primary application to be supported included Ansys/Fluent, Abaqus, Comsol, Mathematica, Matlab, Namd, Gromacs, OpenFoam, Scilab, LAMMPS Parallel etc

They wanted a solution that can be accommodated within the existing 160 kilowatts of IT power load and to consider the power requirements for both compute and cooling for 100% of the cluster size. Our client wished to have a full implementation of cluster and migration of the application from existing to new while also considering the solution getting accommodated in the existing data center space with around 10-12 racks.

The Solution

SBA proposed a comprehensive HPC cluster populated in a high-density smart rack solution with a combination of water- and air-cooled environments in a cost-efficient manner. The solution is built on HPE Apollo high density compute servers with a petabyte of parallel file system, storage and NAS incorporated on Vertiv – smartrack along with in-row cooling solutions to ensure optimal thermal dissipation within a small footprint.

Results

After the successful implementation & migration to the new HPC cluster, our customer was able to achieve better performance which is five times higher than with the previous cluster, especially within a similar footprint. Also, they are benefited with,

- A lower TCO solution considering power consumption & cooling per TFlop
- With the incorporation of GPU Based computing, the client was able to take advantage of the newer software libraries and was able to execute compute codes much faster taking advantage of the large number of CUDA cores supported by the GPU
- The water-based cooling solution provided by SBA increased the cooling efficiency of the Datacentre at much reduced power consumption and increasing heat dissipation efficiency

About SBA Info Solutions

SBA Info Solutions is an ISO 27001:2013, 9001:2015 & 20000-1:2011 certified firm serving as a trusted technology partner focused on innovative, next-generation services and solutions in the areas of Data Center, Cloud, and Information Security services. With our 30+ years of experience and time-tested consultative sales approach, we empower BFSI, Manufacturing, Infrastructure, IT & ITES, and Institutional organizations to improve IT security and maximize the efficiency of their Data Center or Cloud environment by enabling the adoption of the latest technologies, business agility and accelerate responding to immediate business needs and security threats. Our headquarters is located in Chennai, India and our key customers include BHEL Ltd, City Union Bank, Hyundai, IIT Madras, Kasturi & Sons, Karur Vysya Bank, The Hindu Group, L&T Ltd, Royal Sundaram, Sriram Group, Star Health, TNPL, Access Healthcare, Cholamandalam Investments, FIS Global. Visit www.sbainfo.in for more information.