SuParikshan
Supercomputer Monitoring & Management

SuParikshan

High Performance Computers (HPC) are is being used to solve complex problems in science; as they are capable of doing thousands of computations per second. Ensuring high availability and reliability of all the components in the HPC system is essential. Malfunctioning and performance degradation of any of the components turns out costly for the long-running mission-critical user jobs executing on them.

C-DAC has developed SuParikshan software to assist the system administrators in maintaining the HPC cluster health. SuParikshan aids in easy identification and resolution of errors / problems in the components (compute elements, storage, network interconnects, etc) through its intuitive visual interface.

Features

SuParikshan is light weight, web based software which monitors the health and helps to visualize / analyse various important parameters of the HPC cluster supercomputers.

- The Dashboard summarizes the cluster health in both graphical and textual format
- Critical hardware and software parameters are periodically monitored
    - CPU (multi/many core)
    - Accelerator (GPU / FPGA)
    - Network
    - Storage
    - User jobs
    - Services
    - Power

- Alerts - Identify system errors, notify, track and resolve in fixed timespan
- Generate reports on health and performance of the HPC facility
- Inspection of cluster performance and problems using time series data
- GUI based installation to monitor a cluster : Rocks, OpenHPC (warewulf & XCAT)
- GUI based cluster management for CRUD with support for monitoring admin preferential scripts
- Automatic ticketing system with privileges to admin head to delegate problem solving and escalation
- Customizable & adaptive views with search facilities assisting in pinpointing error components
- Supports multiple graph and report formats as cards for ease of understanding
- Low footprint with responsive design able to scale monitoring of nodes to 100s in a cluster.
- Loosely-coupled with ability to extend monitoring of new hardware

Usage

- System administrators, facility managers and stake holders of HPC cluster Data Centres
- Computer Centres of academic institutes, HPC data centre of R&D organizations
- HPC facilities of the National Supercomputing Mission (NSM) of India