C-CHAKSHU

MULTI CLUSTER MONITORING PLATFORM

Monitor | Analyse | Improvise

- Centralized Dashboard for **Multi Cluster Monitoring**
- **Application Performance** Monitoring and Analysis
- Integrated **Ticketing System** for better user support
- History of HPC **Usage Statistics and Reporting**
- Live and Quick **Infrastructure Visibility** via Graphs
- **Real Time 3D** HPC System Rack View
- Job **Accounting** and **Analysis**
- HPC Infrastructure **Health Monitoring**

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High Performance Computing - Technologies Group at C-DAC is responsible for setting up HPC Systems of various sizes at different geographical location across India. Effective HPC system operation and utilization requires insight into system state, application requirement and system Infrastructure requirement. Monitoring can ease diagnosis and detection of these issues. However, its effectiveness depends on the ability to obtain, integrate, analyze, and curate the necessary data. To monitor and manage those systems from central or local facility itself is a big challenge considering complexity of setup. To address this challenge HPC-Tech Group, CDAC, Pune has developed '**C-Chakshu**'. **C-Chakshu** is a HPC multi cluster monitoring and management platform which addresses the effective usage of deployed HPC systems by comprehensive monitoring. It gives real time system infrastructure insights to code developers, system administrators, system architects and hpc users. Ultimately this can help ensure operational performance and guide future procurements and policy design.

C-CHAKSHU Components:

■ Monitoring

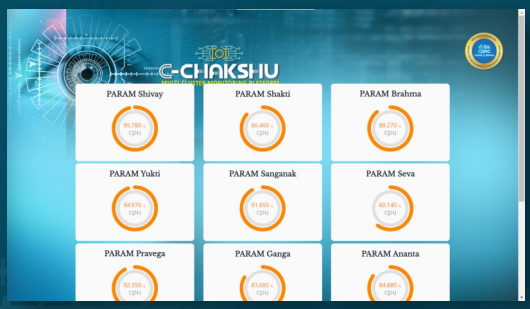
- Centralized multiple HPC Systems monitoring through interactive dashboard
- Quick Infrastructure Visibility via graphs of Live Cluster Wide Metric
  - Live CPU , Memory and Storage Usage
- Node Based Resource Registry and Management
  - Interconnect, Services, File System
  - CPU, Memory, Network Metric
- Application Performance Monitoring and Analysis
- 3D HPC System Rack View
- HPC Infrastructure Health Monitoring

■ Analysis

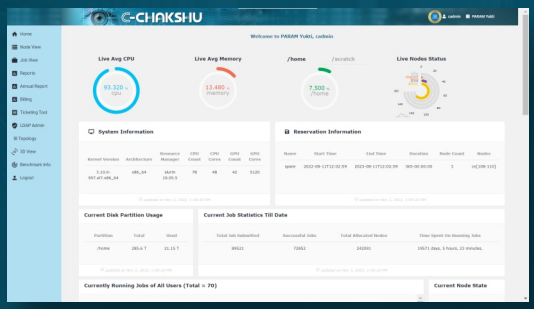
- Time-frame based HPC usage statistics and reporting
  - Graphical representation of total number of jobs, CPU hours consumed
  - CPU Usage grouped by: users, accounts, queue
- Job Accounting and Customized Reporting

■ Improvisation

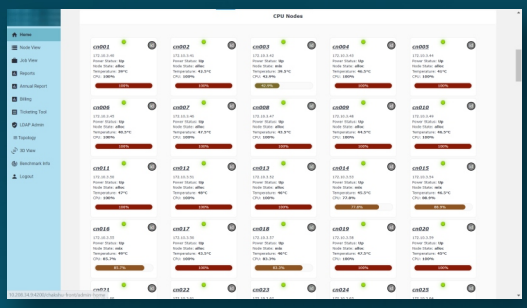
- Integration with Ticketing system to better insights to users support request and subsequent actions by administrator, decision maker.
- Efficient HPC System usage, operational performance and maintaining uptime
- Benefit for better policy design and future HPC procurements
- Application specific data can help users in logic improvisation of their jobs and monitor subsequent performance accordingly.



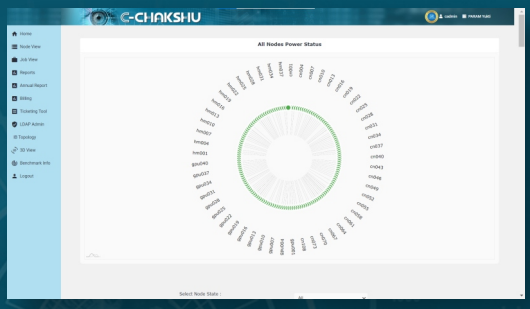
Centralized Dashboard



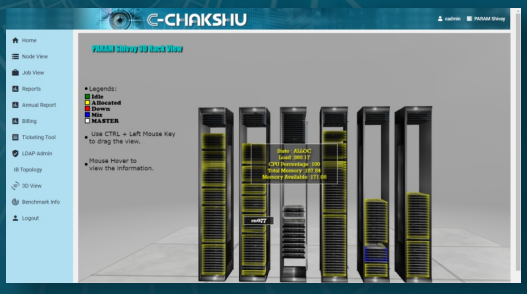
Welcome Page



Node Status View



Aerial Node View



3D Rack view

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