HPC: Bright Cluster Management with Silicon Mechanics

HPC

Challenge

HPC (High Performance Cluster) management is complex. Companies run the risk of compromising on cluster performance and capability if they don't closely monitor the installation, management and use of their clusters. This can result in decreased productivity, more downtime, security risks and increased operating costs.

Solution

Bright Cluster Manager was developed from the ground up as a totally integrated and unified cluster management solution. When deployed with Silicon Mechanics hardware, this fundamental approach provides comprehensive cluster management that is easy to use and functionality-rich, yet has minimal impact on system performance. It has a single, light weight daemon, a central database for all monitoring and configuration data, and a single CLI and GUI for all cluster management functionality. Bright Cluster Manager is extremely easy to use, scalable, secure and reliable. You can monitor and manage all aspects of your clusters, on-premise or in the cloud, with virtually no learning curve.

Bright's approach is in sharp contrast with other cluster management offerings, all of which take a 'toolkit' approach. These toolkits combine a Linux distribution with many third party tools for provisioning, monitoring, alerting, etc. This method has critical limitations: these separate tools were not designed to work together; were often not designed for HPC, nor designed to scale. Furthermore, each of the tools has its own interface (mostly command-line based), and each has its own daemon(s) and database(s).

Countless hours of scripting and testing by highly skilled people are required to get the tools to work for a specific cluster, and much of it goes undocumented. Time is wasted, and the cluster is at risk if staff changes occur, losing the 'in-head' knowledge of the custom scripts.

Bright Computing

Highlights

Bright Cluster Manager delivers:
- Improved productivity
- Increased uptime
- Proven scalability and security

Key Features

- Robust monitoring and automation lead to more informed reporting
- Single daemon delivers all functionality, reducing overhead and maximizing performance
- On-premise and remote user portals offer maximum cluster accessibility
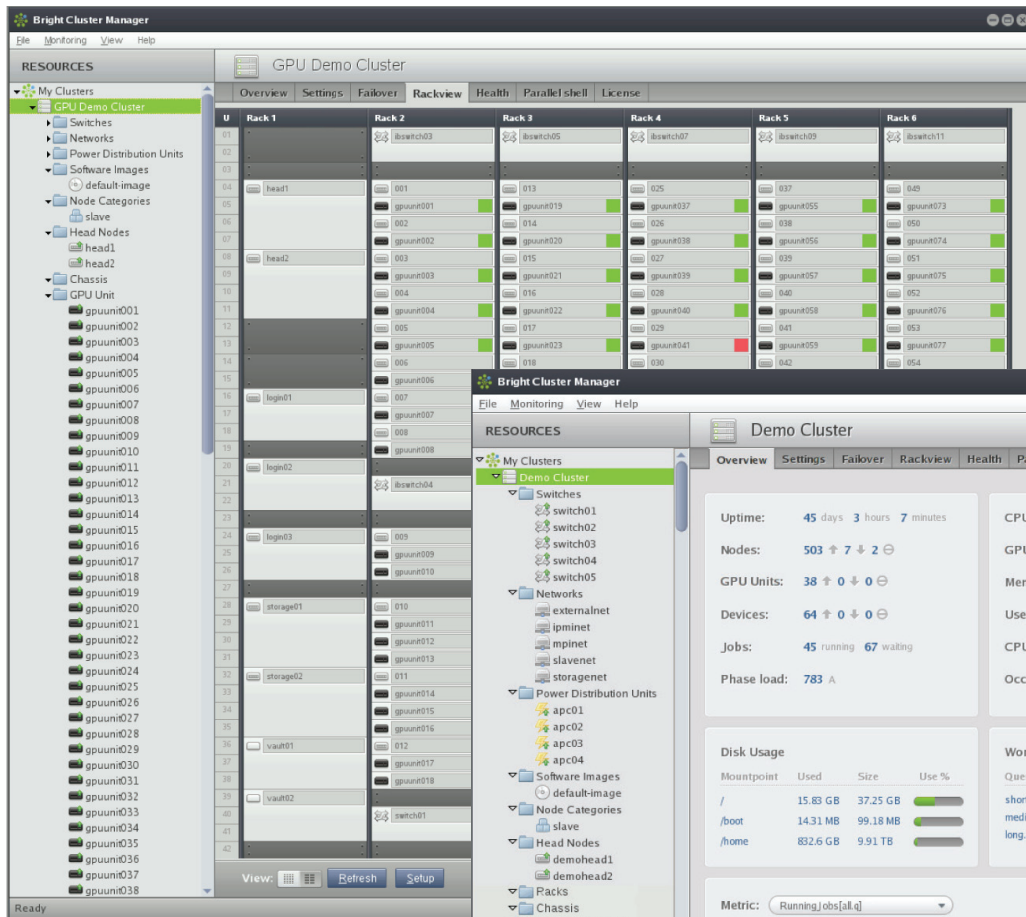
Use Cases

Manage multiple clusters simultaneously including:
- HPC
- Hadoop
- Storage
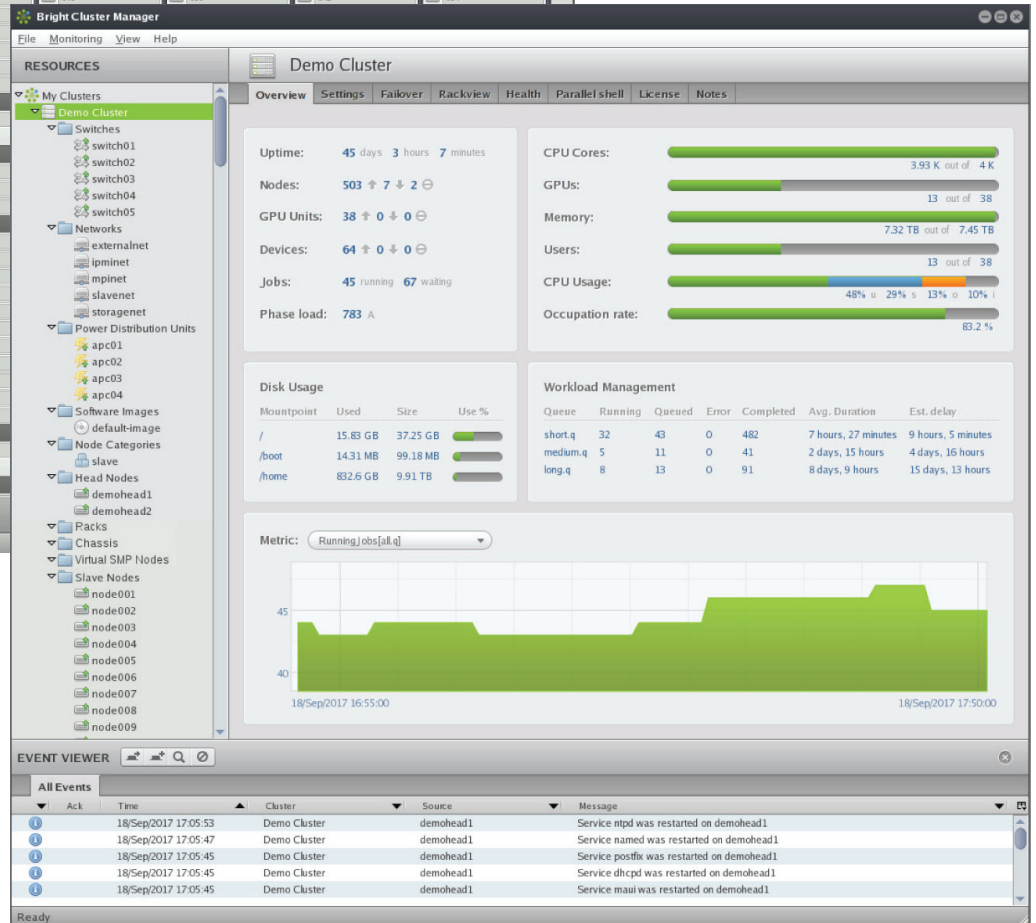- Database
- Private cloud
- Workstation

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Conduct at-a-glance cluster health checks in the Rackview tab that displays:

- GPU health checks
- Status of cluster nodes
- Status of switches

The Bright Cluster Manager Overview tab offers insight into the status of the cluster for a quick health check on :

- Cluster uptime
- CPU core performance
- Disk usage
- Workload management

About Silicon Mechanics

Silicon Mechanics, Inc., is a leading provider of servers, storage and high performance computing technologies to the world's most innovative organizations. Since 2001 Silicon Mechanics has supported customers with its "Expert included." approach, reflecting the company's passion for providing complete customer satisfaction and customer confidence in the return on their technology investments. Recognized as one of the fastest growing companies in the greater Seattle technology corridor, Silicon Mechanics is changing the way systems providers engage with customers.

About Bright Computing

Bright Computing is transforming the way clusters are managed in the modern data center. Founded in 2009, Bright's award winning cluster management software lets users monitor and build clusters of any size that are easy to provision, operate, monitor, manage, and scale. Bright partners include Amazon, Cisco, Cray and Dell. Customers include Boeing, NASA, Roche, Stanford University and the Tokyo Institute of Technology. Bright's technology is running in over 500 data centers all over the globe. Bright has been recognized as a Red Herring Top 100 company and a Deloitte Rising Star winner, and was named Bio-IT World's "Best of Show."

Bright *Computing*

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