SGI Management Center Power Option

Eco-logical™ Power Monitoring and Management at your Fingertips

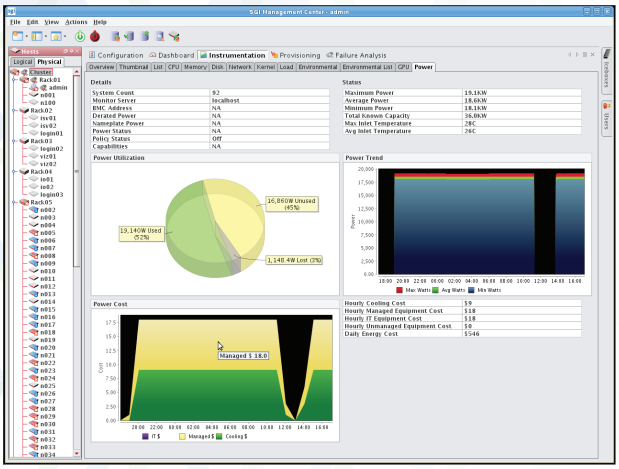
Many datacenters are increasingly concerned about the amount and cost of power to keep their equipment running at peak performance. Other datacenters have run out of their power or monetary budget and are looking for ways to more efficiently use what they have. According to IDC®, power continues to be one of the top issues in HPC datacenters.

SGI Management Center provides a single, consistent, and powerful management interface for all SGI systems from individual servers, to clusters, to SGI® UV™ systems. It provides a comprehensive but customizable interface to monitor essential system metrics and initiate management actions from a single point of control. SGI Management Center reduces the time and resources spent administering the system by streamlining software maintenance procedures and automating repetitive tasks. The comprehensive features of SGI Management Center lower total cost of system ownership, increase productivity, and provide a better return on your SGI investment.

SGI Management Center consists of a Standard Edition which is included with SGI Rackable™ or CloudRack™ servers. The Standard Edition offers an integrated system management console, full system health monitoring, events and alerts, bare-metal provisioning, image management, version control and user management. SGI Management Center can be upgraded to the Premium Edition that adds memory fault analysis, BIOS management for SGI ICE™ systems, GPU monitoring, high-availability (HA), and power monitoring. SGI Management Center Power Option adds power management on top of the Premium Edition power monitoring to finely tune power usage across the data center, or for those customers starting with Standard Edition, Power Option adds both power monitoring and power management to their SGI Management Center environment.

Power Monitoring

SGI Management Center power monitoring capability allows real-time monitoring of actual power and inlet temperature data aggregated to rack, system, and user-defined logical groups. It provides delta inlet temperature in the rack for thermal monitoring. The data can be logged and saved to understand trends and perform capacity planning and key metrics can be queried such as minimum, maximum or average rack power, and energy cost.



The Power Tab of SGI Management Center allows a system administrator to monitor per node, per rack and per system power usage, in both kW and in cost, depending upon the cost/kW factor entered into the tool. Active policies that are in place can also be viewed quickly from this display.

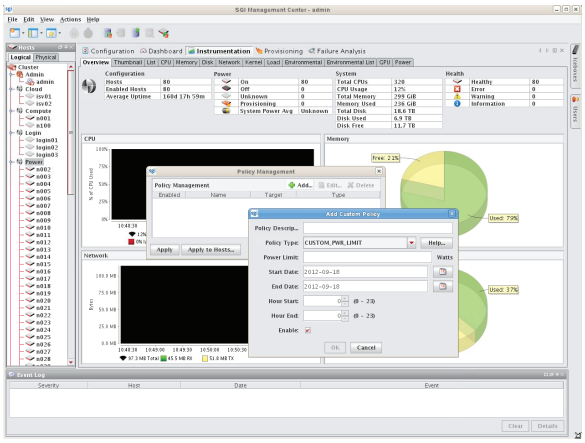
Power Management

SGI Management Center Power Option relies upon the capability of underlying hardware to control the power usage via the Intel® Data Center Manager (DCM) capability. Two Intel® Xeon® 5600 (“Westmere”) motherboards support this capability (“TY6” and “TY15”) while all Intel Xeon E5-2600 (“SandyBridge”) motherboards, including SGI ICE™ X, support the capability.

Nodes in a cluster can be configured via the DCM capability either as they are added into the cluster, or at a later time. For example, DCM can be enabled (not enabled by default) and a specific de-rated power setting for the node specified. Power Option allows multiple power policy types, allowing scheduling to be done based upon time of day. For example, in areas where power cost is highest during the day, a thrifty administrator can dial down power usage during the day, while dialing it up at night, thus encouraging users who want fastest performance to run their jobs in batch at night when power cost is lowest.

Power policies are set via the GUI, by selecting a particular ‘target’ (which can be a single node, a rack, up to an entire system), and then calling up a Power sub-menu. Power policies can have Start Date, End Date, Start Hour and End Hour and a variety of different power policies are possible:

- Maximum power threshold for a particular target
- Minimum operational power for the target
- Mininum power based upon a specific temperature threshold
- Immutable power budgets for specific targets



The Power Policy Management screen allows you to set particular policies depending upon selected nodes.

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