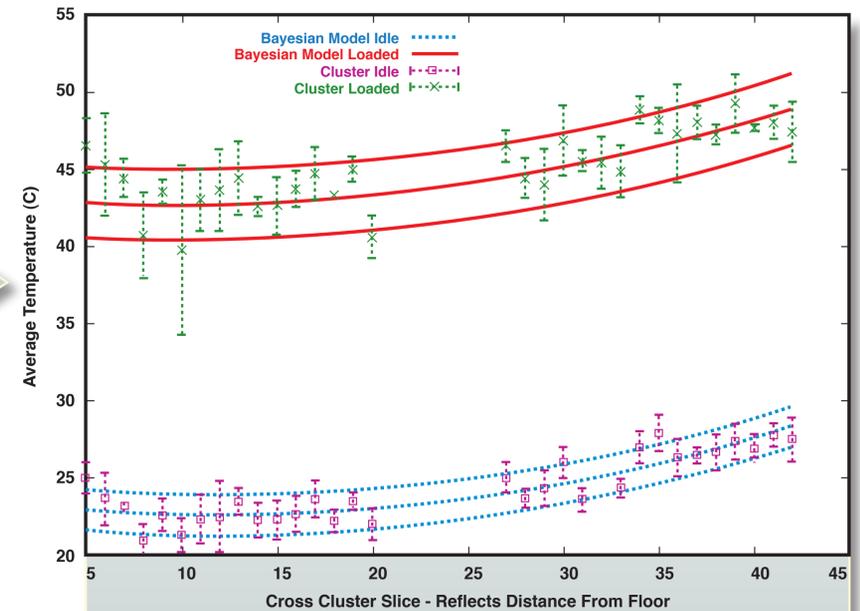
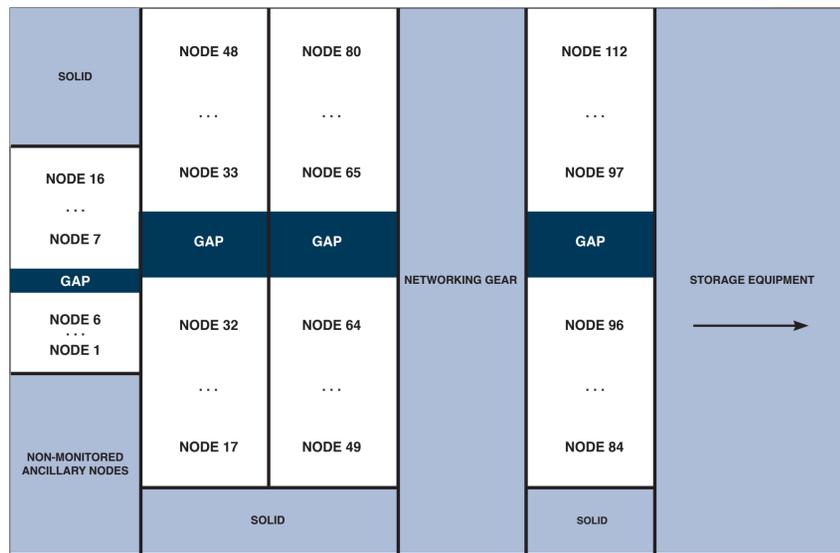




Bayesian Inference for Intelligent Real-Time Monitoring of Computational Clusters

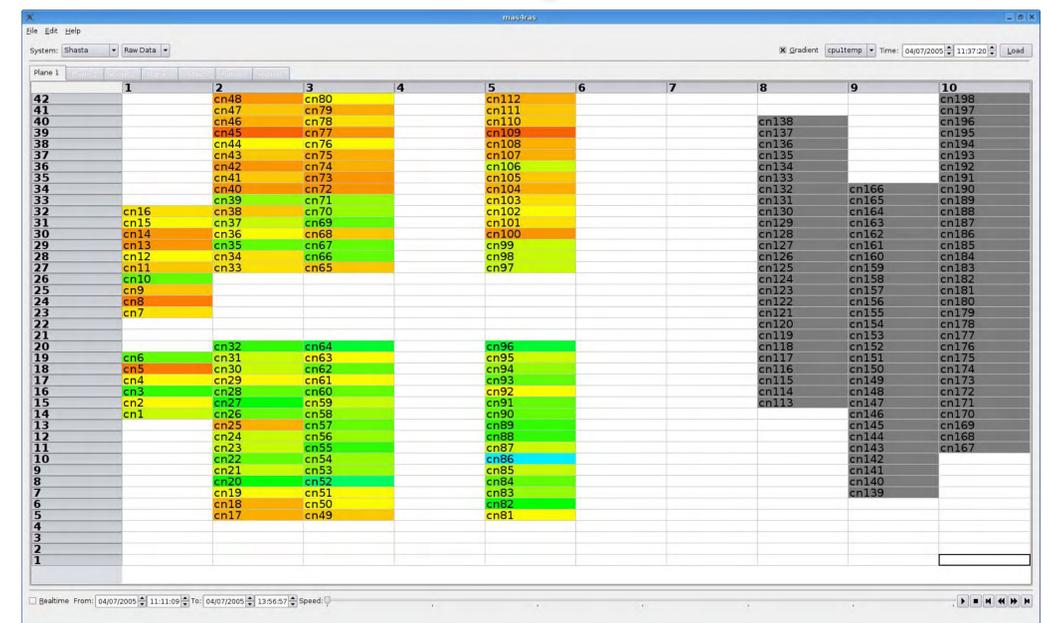
Traditional monitoring approaches consider nodes in singleton using manufacturer specified extreme limits as thresholds for failure “prediction.” We use a statistical approach to infer a global characterization of single device behaviors from those of a large number of statistically similar devices. The statistical characterizations are used to automatically identify outliers and abnormalities of individual entities as well as of ensemble patterns.



Use Bayesian inference to dynamically fit the cluster’s observed temperature data to a model.

In this case, $T \sim N(Q(h), \sigma)$ with $Q(h) = 2nd$ order polynomial. Inclusion of determination of σ allows us to determine the likelihood for any T at a given h .

Outliers automatically detected by likelihood. Color-coded graphical display aids in awareness of outliers and patterns.



Visualize the Difference