

Compaq :: Technical Programming for Cluster Availability

During its short life Compaq led the personal and business computing industry. In May of 2002 Hewlett-Packard and Compaq merged to serve more than one billion customers across 162 countries, as a leading global provider of products, technologies, and solutions. The company's offerings span IT infrastructure, personal computing and access devices, global services and imaging and printing.

challenges

Prior to the merge, Compaq had a lead in the Unix world with clustering technology. This technology simultaneously used the computing power of multiple servers but presented to the user as a single unit. An application running on a cluster could use the processors of all machines in the cluster, choose a machine that had the lowest processor load, or if needed, move processing from one machine to another during processing.

Compaq was able to monitor machines individually but was unable to judge the performance of the cluster as a whole. This was an issue in the marketplace where customers demanded high availability for their mission critical applications (99.999% available). Compaq needed to create a tool that would report on the availability of the cluster, the systems in the cluster, and applications running on the cluster. Specifically they needed to:

- Gather data from all the machines in a cluster
- Analyze the data for cluster availability, the systems in the cluster, and applications running on the cluster.
- Dynamically generate a new log with information on the overall cluster availability, system availability, and application availability
- Dynamically generate easy to understand reports and graphs for display on the web
- Generate a report to be used within their current Systems Management utility as well as an interface for a Systems Admin to add a comment when a system went down (i.e. taken down for maintenance, power loss, etc.)

solution

Preliminary work focused on understanding the Compaq architecture, how information was captured on each machine, and how that information related to performance of the cluster as a whole.

The strategy was to take all the information that was necessary to determining the availability of the cluster, systems, and applications and write them to a log file.

When the data was needed, an analysis tool ran on the newly created log file and generated either a web report or a report that integrated with Compaq's System Management Utility that was standard on all their high end machines.

results

The prototype of the tool was developed and provided to current customers who were evaluating Compaq's high end cluster product. The tool allowed these customers to evaluate the availability of the cluster, the systems

in the cluster, and their applications. They would see specifically if a system went down and automatically came back up or if an application switched from one machine in the cluster to another and how it performed.

deliverables

- A Data Collection Tool
- An Analysis Tool
- A Report Generation Tool
- An Administrative Reporting Tool

applications/ software used:

- Compaq Tru64 Unix
- Perl
- Compaq's System Management Development Utility
- Photoshop
- DreamWeaver

Web Page ::
An example of a dynamically generated report.

