The ClusterGrid monitoring system

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Abstract

Service monitoring is an important part of every grid system. The system administrators, users, resource owners all want to know about the state of the services and error conditions. Information on necessary interventions is needed, too.

The subject of this presentation is the new, integrated monitoring system of the Hungarian ClusterGrid Infrastructure. This new software replaces the old, MON-based monitoring system.

The old system used a mixture of shell and python scripts, cron jobs for data collection and monitoring. HTTP protocol was used to transfer data over the network: the central web-interface was built this way, by pulling the RRD files and graphs from the cluster servers. Due to inefficiencies in data transfer, the web interface was updated only every two hours. Over time, this system became laborious to deal with: it's very CPU-intense, and hard to expand.

In contrast, the new system was consciously designed from the ground up to accommodate the needs of the grid. So far this integrated software lived up to its name.

The Python programming language was used to develop the new monitoring software. It's modular, expandable, with integrated data collection and monitoring. Thanks to it's hierarchical design, all the monitoring data can be accessed from a single host.

The system also has integrated RRD-file handling and weathermap drawing components: the state of the monitored resources and the measured values can be viewed real-time (!) on the web interface.

The biggest advantages of the new system: it's fast, modular, small, and expandable.

References:

[1] www.clustergrid.niif.hu