

Simple Event Correlator (SEC) is a tool used for custom monitoring of high-performance computing (HPC) systems for specific events of interest. It also allows for automated hardware triage ticket creation which minimizes system downtime. To relieve stress on admin nodes, scalable unit leader nodes are used to balance the load of monitoring all the system's compute node event logs. One issue is that there is no monitoring tool to ensure that SEC is running on the leader nodes, so if SEC goes down on one of them the monitoring of its respective compute nodes is dropped. Therefore, the focus of this project is to create a monitoring tool for the SEC processes that run on the HPC systems. To start the research, I needed to figure out a way to establish a connection between the leader and admin nodes to ensure that a "heartbeat" is being recorded. As a result, a SEC calendar rule was created so that every hour each leader node will check in with the admin node to verify that SEC is operational. Once the admin node receives a "heartbeat" it calls a script that opens a Python dictionary to store a key/value pair of the leader node and the epoch time it last checked in. The script also contains a threshold check function that will determine if any leader node has not checked in with the admin in over an hour by comparing epoch values for each node contained in the dictionary. Nagios, an event monitoring and alerting service, sends automated requests to the admin node that runs the threshold check function and returns the output to the site Nagios dashboard that staff monitor. A Warning message is displayed on Nagios indicating which nodes are not running SEC, otherwise nodes report an "OK" status.