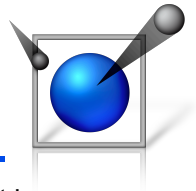


Integrating the EPICS IOC Log into the CSS Message Log

K.U.Kasemir, E.Danilova, SNS, ORNL, Oak Ridge, USA

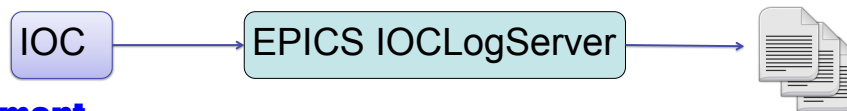
NEUTRON SCIENCES



The Experimental Physics and Industrial Control System (EPICS) includes the “IOLogServer”, a tool that logs error messages from front-end computers (Input/Output Controllers, IOCs) into a set of text files. Control System Studio (CSS) includes a distributed message logging system with relational database persistence and various log analysis tools. We implemented a log server that forwards IOC messages to the CSS log database, allowing several ways of monitoring and analyzing the IOC error messages.

Original EPICS IOC Log

Simple TCP-based logging system: IOCs connect to an “IOLogServer” on TCP port 6500, and send basic text messages. Each text message is terminated by a new line character. The IOLogServer annotates each line of text with the current time/date and the IP address of the IOC, then writes them to a rotating set of text files.



IOC Log replacement

Java IOLogServer listens on default TCP port for text messages, writes them to CSS message tables in RDB.

Also available as web service via URL like:

<http://server/LogMessages/write.jsp?TEXT=...&SEVERITY=...>

Filters: a) Regular expression for message text.

b) Repeated messages from same host.

Information in RDB:

CREATETIME: Time of entry

TYPE: “ioclog”

SEVERITY: Indicator of severity (“ERROR”, “INFO”)

HOST: Sender’s IP address

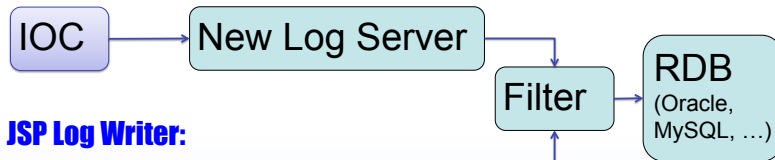
TEXT: Message text as sent by IOC or web client

USER: (optional)

APPLICATION-ID: Indicates IOCMessageLog or web service

REPEATED: Number of repeats (if repeated)

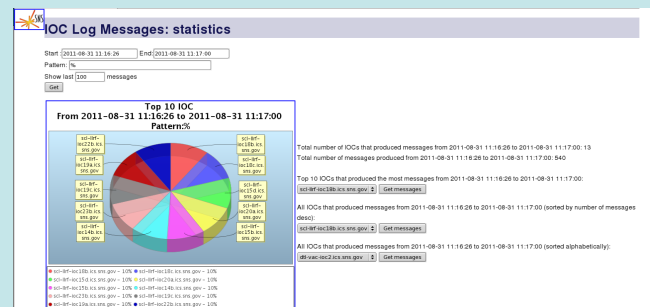
CSS Log:



JSP Log Writer:



JSP reports



JSP Reports:

JSP reports allow filtering on time range, IOC name, number of messages.

Tables are sortable by every column.

Detailed message list for each IOC.

Conclusion

By routing the IOC log messages into the CSS Message log and adding web reports that show for example which IOC produced the most messages in the last few days, we are now able to make more use of the IOC log which was previously mostly ignored and only consulted “after the fact” when an IOC had run into severe problems.

