DAQ Restart Scripts

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DAQ Restart

• After power cycle (or fatal crash) of a given DAQ machine, we need to reliably bring it into a usable state for DAQ operations
  - Start core software: nsm2, Zabbix, …
  - Run slowcontrol apps: runcontrold, hvmasterd, …
  - Extra tools: run elog daemon etc.
  - Different machines need to start different software
• Old solution: restart_*.sh, bootnsm, bootcpr in daq_slc repository
  - Not well maintained, no common structure
  - Advantage: reads nsm ports from daq_slc configs
• New solution: daq_restart repository
  - 100% bash
daq_restart

- Agnostic to bash/csh due to some shell magic
- Nakao-san wrote very nice nsm2 starting tool
  - Acts as “single source of truth” for nsm2 ports on all relevant machines
- OH wrote tool to start/stop slowcontrol apps
  - relatively nice implementation for readout PCs + coppers
  - Stable and fast
  - Used by some people, but never officially introduced to DAQ and subdetector experts
  - Terrible logging, terrible user output
daq_restart – reloaded

- Learned so much about bash that I rewrote things from scratch
- Now much nicer logging, useful user output summary
  - Logging very close to default logging of daq_slc tools
  - User screen output only gives overview of success/fail in tree hierarchy
- Either works on current machine/subdetector only, or try to connect to all known machines in daqnet
- Modes:
  - start: start all missing/bad status processes
  - stop: stop all processes
  - restart: stop, then start
  - status: give slc status overview for machine(s)
- Integrated “daemonizer” to start nsm2cad (etc.) in background and log all outputs, no more screen/tmux needed
  - Full support of “env” command, can easily run with specific env variables
Status check

- nsm2 status: check process exists, parse nsminfo2 output
- slc apps status: check process exists, request version number nsm variable
  - Can check for correct version and process alive
- EPICs apps: check process exists, ... ?
- Other scripts (e.g. run elog): check process exists?
- Finally want to include status monitoring in Zabbix as well
Final Words...

- When is it available? Very soon. (just like the last times…)
  - Propose a training session for DAQ shifters and detector experts before beam runs resume
- Nils plans to use the same “framework” for HLT restart scripts

- We are totally reinventing a wheel here. Industry needs reliable job management/machine setup on far larger scales.
- Excellent FOSS software exists to deal with this issue, e.g. Apache Mesos/Aurora
  - A lot more features, very reliable! See Nils’ talk later today
  - Should consider this for the DAQ upgrade