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Systems Delivery And What Lurks Below: Legacy, Support, Users

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The NSLS-II Control System has workstations and servers standardized to the usage of Debian OS. With exceptions like RTEMS and Windows systems where software is built and delivered by hand, all hosts have EPICS development software installed from an internally-hosted and externally-mirrored Debian package repository. The sysv-rc-softioc toolkit is used to manage deployments locally. Configured by Puppet, machines have a similar environment with EPICS base, modules, libraries, and binaries. The repository is populated from epicsdeb, a collaboration-maintained project collection on GitHub.

Currently, packages are available for Debian 8 and 9 with legacy support being provided for Debian 6 and 7. Since packaging creates overhead on how quickly software updates can be available, keeping production systems on track with development is a challenging task. Software is often customized and built manually to get recent features, e.g. for AreaDetector. Another challenge is services like GPFS which underperform or do not work on Debian, or older hardware, or both.

Different facilities utilize different approaches to enable longer-term system flexibility and accommodation of continuous update needs. When considering larger time frames, it becomes very important that standards, practices, and approaches remain consistent with existing system solutions, and vice versa. As the system grows and ages, tending to new requirements and introducing new solutions, e.g. for deployment, is even more challenging, especially when it involves bringing new technologies and tools. The talk is dedicated to major challenges identified in that process: Legacy, for ensuring consistency of approaches for existing and new cases; Support, for tools and infrastructure which enable the new solution; and Users, for developers' knowledge and compliance.

Track

EPICS Building, packaging and distributing

Primary author: DERBENEV, Anton (Brookhaven National Laboratory)

Presenter: DERBENEV, Anton (Brookhaven National Laboratory)

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