Using Docker Containers for EPICS IOC deployment and diskless servers with remote boot strategy bring consistency and repeatability to the control system.

Sirius Diagnostics IOC Deployment Strategy

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Introduction

In order to ease maintenance and increase robustness, repeatability and dependency isolation a deployment workflow was developed for standardizing the diagnostics IOC at Sirius. It is based on two main components: containerization, which isolates the IOC in a well-known environment, and a remote boot strategy for our diagnostics servers, which ensures all hosts boot in the same base operating system image.

Methods

By following the microservice architecture principles, we choose to use Docker containers to package EPICS IOCs, using reusable base Docker images, diskless servers with Debian 9 base image and NFS mounts for rootfs, host customization and autosave features.

Results

Containers + diskless servers brought to the control system:
- Scalability.
- Isolation.
- Repeatability.

Container orchestration is being evaluated to substitute the node-based approach (pull updates) to a manager-node dispatcher (push updates).

Sirius Deployment Workflow.