Reflections on SNACK Deployment Experience

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Overview

• SiNgular Application Configuration Kit (SNACK) Background
• Results
• Lessons Learned
SNACK Project Background

• Deploying applications consistently is a challenging effort
  • Information about how a deployed instance is created should be retained (e.g. source code location, in-place modifications)
  • Deployments must be reproducible (e.g. if a system fails)

• The solution was to create a central application “recipe” repository
  • A recipe is a complete description of how to create an application instance
  • SNACK processes recipes to deterministically build and deploy applications

• Developers would provide recipes for their applications and use SNACK to perform deployment
Results

• SNACK is available for production deployment with a rich feature set (remote builders, recipe templates, parallel deployment etc.)
• The tool was partially adopted for accelerator applications, with more than 200 deployed instances
• On the beamline side, the tool is not as widely used
• Overall, the tool is not recognized as much as it was envisioned
Lessons Learned

• Investment in training is of paramount importance
  • A lot of effort was put into making SNACK approachable, e.g. no Ansible knowledge is necessary and only basic git skills are required to use the tool
  • Still, a solid understanding of git, Ansible, and EPICS is essential to satisfy advanced deployment needs (e.g. versioning, complex dependencies, sophisticated build processes)

• “Advised approaches” don’t work well
  • If tool usage is only advised, then adopting it is up to a developer’s discretion
  • Works well for stable / legacy apps because creating a recipe is only required once
  • Some deployment cases may require a considerable time investment to create a complete recipe, deterring developers from using the tool

• Uniformity is key
  • For consistency, deployment processes should be uniform for similar applications (e.g. IOC's)
  • Discretionary approaches to deployment will result in a multitude of solutions which do not conform to each other, impacting system maintainability
Path Forward

• Improve documentation – provide better guidelines and examples
• Identify and act on cases which can benefit from SNACK
• Enroll more developers to use SNACK as their deployment solution
Thank you