

# HSF Packaging Group, #12

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# Reminder

- The group was started back at the beginning of 2015
- The main goal was stated as *foster communication and exchange among the experiments' librarians*, with these topics
  - Common build recipes and tools
  - How to take most advantage of technologies like dockers
  - Exchange of experience with the CMake eco-system
- Most (all?) work has been done in the first of these areas
  - Containers are likely going to be an important part of our *deployment* model in the future
  - Should pursue this - after all we package in order to deploy software
- This been one of the HSF's more active groups
  - Evidenced by the fact that this is meeting #12
  - Thanks to Liz and Benedikt for getting us this far
- And it already produced a first report for the community

# Summary of Packaging Tools

- The group looked at many different packaging tools

aliBuild	cmsBuild	Contractor	Homebrew	LCGCmake
Nix	Portage*	SciSoft	Spack	Worch

- The report set out concrete criteria for a comparison between the different tools
  - The platforms they support (including cross-compilation)
  - Their ability to produce different build and install variants
  - Their ease of installation and use
  - A grab bag of other desirable features (performance, native system reuse, community, ...)

\*Portage came too late to be in the report

# High Level Conclusions

- Spack was the tool that was felt to be most generally promising\*:
  - Excellent support for multi-stack, multi-configuration setups (one of the principal failings of non-HEP tools)
  - However, the inability to install pre-compiled binaries and the lack of relocatability of the build were issues that needed addressed
    - There is progress on that, which we will hear about today
- aliBuild and LCGCMake looked to be the most promising HEP specific candidates for generalisation
  - However, work here was deferred, pending further investigation of Spack
- Some work on specifying build recipes was suggested

\* *“Spack currently seems to be the most suitable candidate for a common packaging tool.”*

# Electron-Ion Collider Contact

By happy coincidence with the re-start of packaging group meetings I was contacted by one of the developers in the Electron-Ion Collider:

*I am involved in the EIC software development right now, and I wonder if you guys (hep software foundation) have solved the problem of software packaging already? I've found a number of documents related to the packaging working group activities, but I failed to find a short summary on that like "project X seems to be the best for now" or "we gonna develop our own package manager" - something EIC Software Consortium may take into consideration.*

I think that enquiry summarises very nicely what we should be aiming for - future experiments can really benefit from this work

# Where now?

- **We want to continue with work on common packaging and build solutions**
  - This grows naturally out of the Community White Paper on [Software Development and Deployment](#)
- Envision to work on the following items
  - Continue on Spack proof of principle
    - What's our testbench stack? ⇒ small-experiments as target
  - Add evaluation of Portage
  - Are there any other solutions on the market?
    - aliBuild or LCGCMake on hold for now
- Expand our consideration of deployment scenarios
  - CVMFS is a baseline
  - Stand alone local installations (HPCs, laptops)
  - Containerisation (computing centres, laptops)
    - Decoupling from actual infrastructure environment
- Update our report with new findings
- N.B. All of this is work, so I hope we also have volunteers!
  - I am very happy to be one of the group's new convenors, but we need two

## Practical matters:

- Meet how often?
- And when?