

EESSI webinar series May-June 2025

<https://eessi.io/docs/training/2025/webinar-series-2025Q2>



Q&A via EESSI Slack

**Please join the #webinar-series-2025q2 channel
in the EESSI Slack for questions and discussion**

Step 1) **Join the EESSI Slack**, see “Slack channel” link at <https://eessi.io>

Step 2) **Join #webinar-series-2025q2 channel** in EESSI Slack

(direct link: <https://eessi-hpc.slack.com/archives/C08QPMLHZ2M>)

Today's session will start at 13:33 CEST !

Webinar series: Different aspects of EESSI

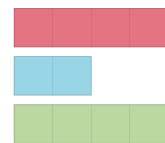
5 Mondays in a row May-June 2025

<https://eessi.io/docs/training/2025/webinar-series-2025Q2>

- Introduction to EESSI - **slides+recording available**
- Introduction to CernVM-FS - **slides+recording available**
- Introduction to EasyBuild - **slides+recording available**
- **EESSI for CI/CD (*today*)**
- Using EESSI as the base for a system stack (*2 June*)



CernVM-FS



EASYBUILD



More info and registration →

EESSI for CI/CD

EESSI webinar, 26 May 2025

<https://eessi.io/docs/training/2025/webinar-series-2025Q2>

Alan O'Cais (UB/CECAM)

Technical Manager of MultiXscale

Helpful knowledge

- You have watched the previous episodes in the webinar series:
 - [“Introduction to EESSI”](#)
 - [“Introduction to EasyBuild”](#)
- You have built a software package in some way (e.g., compiled)
 - Nice to have:
 - You have heard of (and maybe used) CMake/Autotools
- You are familiar with Git
 - Nice to have:
 - Familiar with GitHub/GitLab





Overview

- Introducing CI
- Navigating EESSI to build my project
- Building my project with the EESSI GitHub Action
- Navigating EasyBuild to build with **EESSI-extend**
- Building with **EESSI-extend** and the EESSI GitHub Action
- Building my project with the EESSI GitLab Component
- CD and what EESSI can offer there
- Q&A






What is Continuous Integration (CI)?

- Development practice of frequently merging code into a shared repository
- Automated build and test run on each code change
- Helps detect bugs early and improve code quality
- Provides immediate feedback to developers
- Ensures the application is always in a deployable state

Key Components of CI

-  Version Control System (e.g., Git)
-  Automated Build System
-  Automated Testing Suite
-  Notification/Feedback Mechanism

Benefits of Continuous Integration

-  Early detection of integration issues
-  Faster and safer release cycles
-  Encourages small, incremental changes
-  Improved code quality and team collaboration
-  Easier refactoring and code maintenance

Specific Challenges of CI in HPC context

- Need HPC-suitable toolchains and dependencies
- Need a way to deal with MPI
- Typically want to test defined architectures
- Want to have accelerator support
- Performance and scalability (also) matter

Leveraging EESSI in CI environments

- EESSI can be used in CI environments like:
 - GitHub: github.com/marketplace/actions/eessi
 - GitLab: gitlab.com/explore/catalog/eessi/gitlab-eessi
- EESSI can provide:
 - Different compilers to test your software with
 - Required dependencies for your software
 - Additional tools like ReFrame, performance analysis tools, ...
- Other than CernVM-FS to get access to EESSI, no installations required!
 - Everything is pulled in on-demand by CernVM-FS
- Significantly facilitates also running CI tests in other contexts

Big long demo: An example software package

- github.com/EESSI/cicd-demo
- Dependencies: HDF5 and MPI
- Builds with CMake
- Tests via **ctest**

(Cheat sheet: <https://hackmd.io/myPkGyj-Rz6pQNMOZWi1IA?view>)

Continuous Delivery (CD)

- Consider case of “release candidates” and production releases
- Developers commit code → triggers CI
- If tests pass, code can be included in a Release Candidate (RC)
- RC is deployed to a staging environment
- Manual/automated approval takes place
- RC is promoted to production manually or with a controlled deployment

What can EESSI do for CD?

- Production quality software deployed to **software.eessi.io**
- In preparation is **dev.eessi.io**, mostly for release candidates
 - More control for developers
 - Access/deployment to specific architectures
- EESSI is working on getting EuroHPC site support for EESSI test suite, could be leveraged for **dev.eessi.io** to remove need for direct access to resources for development

Questions?



- Website: <https://easybuild.io>
- Documentation: <https://docs.easybuild.io>
- Tutorials: <https://tutorial.easybuild.io>
- **10th EasyBuild User Meeting: <https://easybuild.io/eum25>** (slides+recording of talks available!)
- Getting help:
 - Mailing list: <https://lists.ugent.be/www/subscribe/easybuild>
 - **Slack: <https://easybuild.slack.com> - <https://easybuild.io/join-slack>**
 - Bi-weekly conference calls: <https://github.com/easybuilders/easybuild/wiki/Conference-calls>



Website: <https://eessi.io>

Join our Slack channel (see join link on website)

Documentation: <https://eessi.io/docs>

Blog: <https://eessi.io/docs/blog>

GitHub: <https://github.com/eessi>

Paper (open access): <https://doi.org/10.1002/spe.3075>

[EESSI YouTube channel](#)

[Bi-monthly online meetings](#)
(first Thu odd months, 2pm CEST)

MultiXscale



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EuroHPC
Joint Undertaking

Web page: multixscale.eu

Facebook: [MultiXscale](https://www.facebook.com/MultiXscale)

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