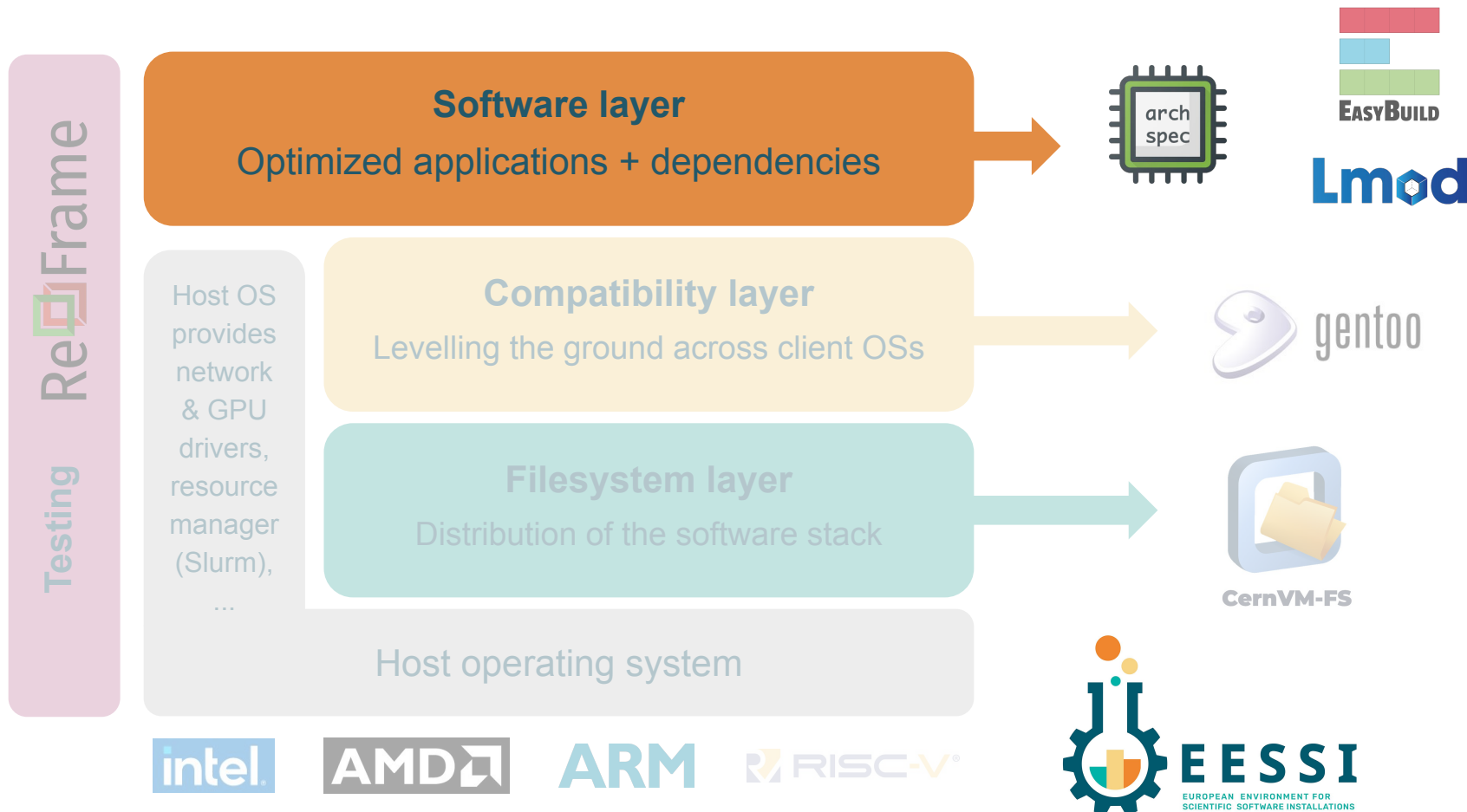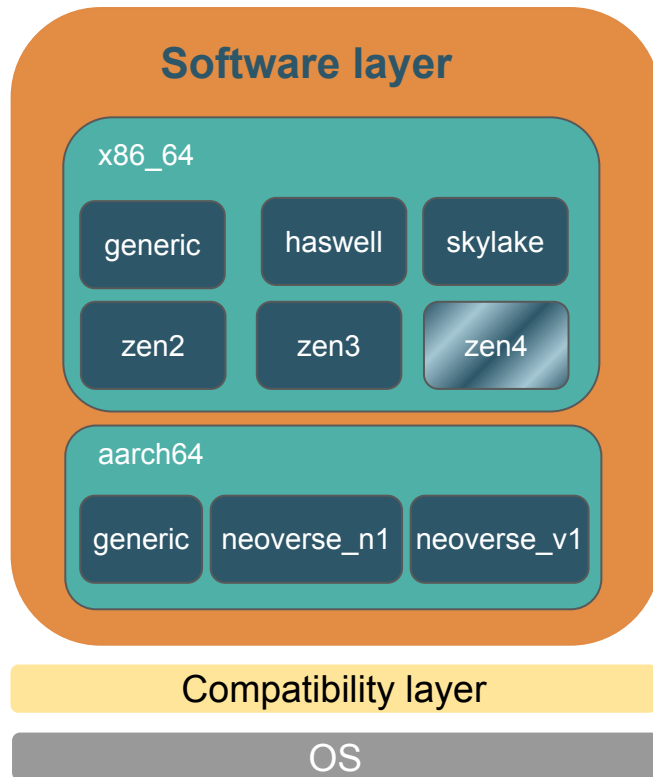# dev.eessi.io discussion
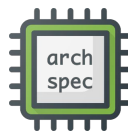
24/05/2024

github.com/EESSI/software-layer

software.eessi.io

github.com/EESSI/software-layer

software.eessi.io

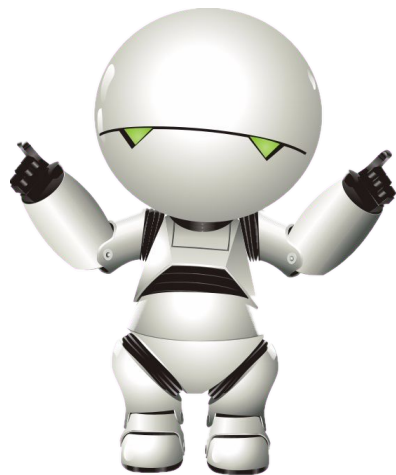How to add software to EESSI
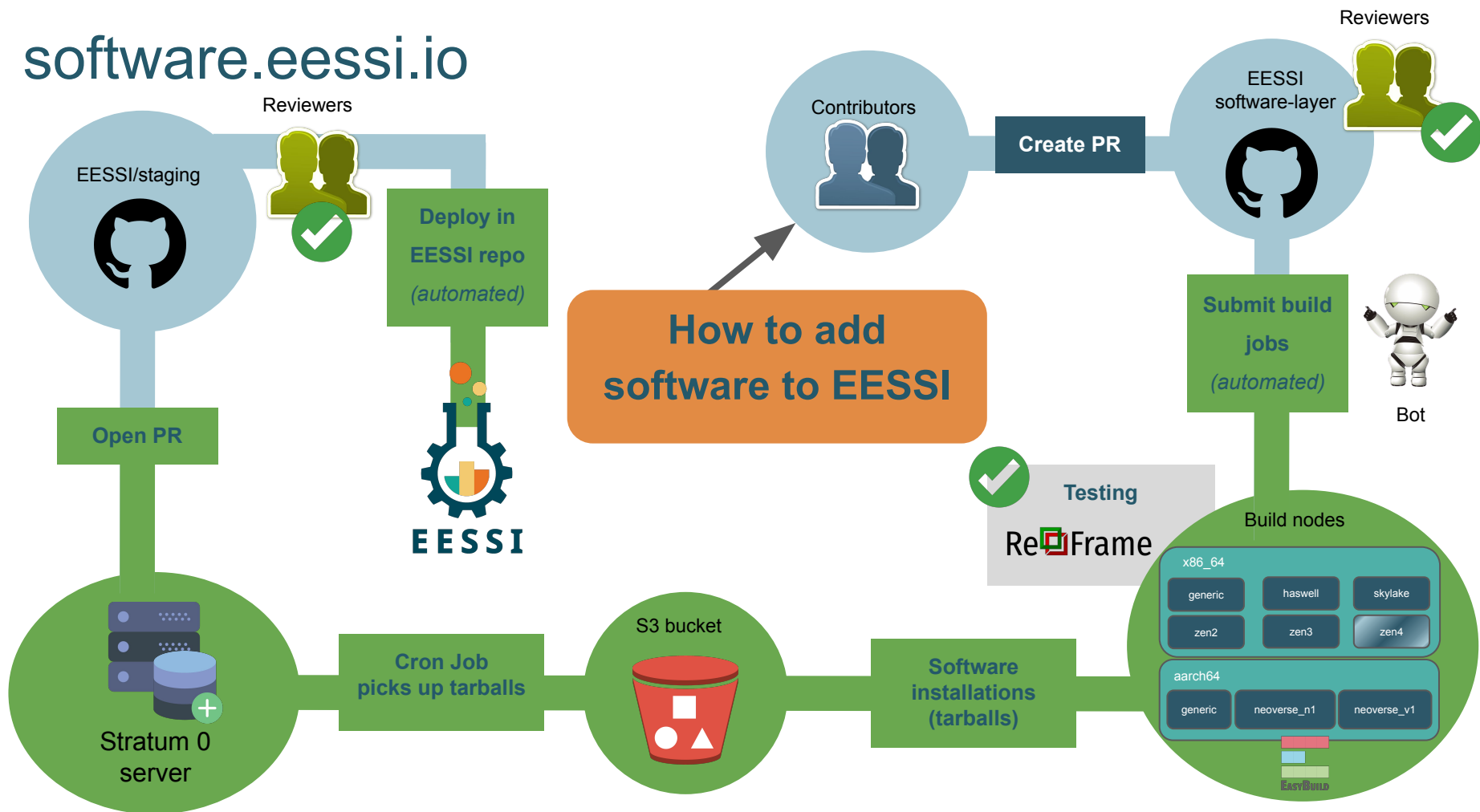
Bot   1/2

- GitHub App (bot) listening to pull request (PR) events

- **Builds software with EasyBuild**

  - Requires (merged) easyconfig file(s)

- Pulls easyconfig files from PR

- Triggers builds for all (currently 8) supported CPU microarchitectures

- Checks installations for errors (build problems, test suite failures, …)

- Runs EESSI test suite (using ReFrame)

eessi.io/docs/bot   github.com/EESSI/eessi-bot-software-layer

Bot   2/2
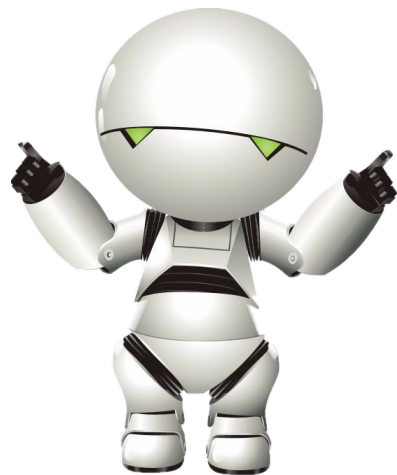
- Two instances running for EESSI in two cloud clusters:
  - AWS
  - Azure (zen4 WIP)
- Bot commands (permissions needed):

  - `bot: build repo:... arch:...`

  - `bot: deploy` *(currently via setting label* `bot:deploy`*)*
  - `bot: show_config`
- **Bot listens to maintainers** (GitHub account specific)
- Ingestion step to get software installations into EESSI repository

eessi.io/docs/bot   github.com/EESSI/eessi-bot-software-layer

software.eessi.io - building 1/2

software.eessi.io - building 2/2

Ingestion step

Ingest eessi-2023.06-software-linux-x86_64-intel-skylake_avx512-1713253265.tar.gz #1172

[Edit] [<> Code ▾]

🔀 **Merged** bedroge merged 2 commits into `main` from `eessi-2023.06-software-linux-x86_64-intel-skylake_avx512-1713253265.tar.gz_approved` 📋 last week

💬 Conversation 0 | -○- Commits 2 | ✓ Checks 0 | ± Files changed 1   +0 −0 ▪▪▪▪▪

EESSIbot commented last week   ⋯

A new tarball has been staged for EESSI/software-layer#542.
Please review the contents of this tarball carefully.
Merging this PR will lead to automatic ingestion of the tarball.

▸ Metadata of tarball

▾ Overview of tarball contents
Total number of items in the tarball: 21
URL to the tarball: https://software.eessi.io-2023.06.s3.amazonaws.com/2023.06/software/linux/x86_64/intel/skylake_avx512/1713253265/eessi-2023.06-software-linux-x86_64-intel-skylake_avx512-1713253265.tar.gz
Full listing of the contents of the tarball:

```
2023.06/software/linux/x86_64/intel/skylake_avx512/modules/all/ncdu/1.18-GCC-12.3.0.lua
2023.06/software/linux/x86_64/intel/skylake_avx512/modules/tools/ncdu/1.18-GCC-12.3.0.lua
2023.06/software/linux/x86_64/intel/skylake_avx512/software/ncdu/1.18-GCC-12.3.0
2023.06/software/linux/x86_64/intel/skylake_avx512/software/ncdu/1.18-GCC-12.3.0/bin
2023.06/software/linux/x86_64/intel/skylake_avx512/software/ncdu/1.18-GCC-12.3.0/bin/ncdu
2023.06/software/linux/x86_64/intel/skylake_avx512/software/ncdu/1.18-GCC-12.3.0/easybuild
2023.06/software/linux/x86_64/intel/skylake_avx512/software/ncdu/1.18-GCC-12.3.0/easybuild/easybuild-ncdu-1.18-
```

Reviewers   ⚙
🔵 bedroge   ✓

Assignees   ⚙
No one—assign yourself

Labels   ⚙
None yet

Projects   ⚙
None yet

Milestone   ⚙
No milestone

Development   ⚙

Documentation + getting help

- Comprehensive documentation for users, **contributors** and maintainers.
- Detailed instructions on:
  - Adding new software
  - Getting help
  - Debugging failing builds
- Support portal
- EESSI Slack

eessi.io/docs

eessi.io/docs/adding_software

| | Opening a pull request | 🔍 Search | EESSI @ GitHub ⬚ 20 |

European Environment for Scientific Software Installations (EESSI)

Home

Project overview

Filesystem layer ›

Compatibility layer

Software layer ›

Test suite ›

To add software to EESSI, you should go through the semi-automatic software installation procedure by:

- 1) Making a pull request to the software-layer repository to (add or) update an easystack file 📚 that is used by EasyBuild to install software;
- 2) Instructing the bot 🤖 to build the software on all supported CPU microarchitectures;
- 3) Instructing the bot 🤖 to deploy the built software for ingestion into the EESSI repository;
- 4) Merging the pull request once CI indicates that the software has been ingested. ✅

Table of contents

Preparation

Creating a pull request

dev.eessi.io

- Similar CernVM-FS repository:
  - `/cvmfs/dev.eessi.io`
  - Identical reach: mount the repository and gain access to deployed software
  - Similar infrastructure can be set up:
    - GitHub (GitLab?) repository
    - CI on PRs
    - Bot instance that builds, runs tests, ingests software (semi-)automatically

dev.eessi.io - policies

- Submission/build control

- Ingestion/staging PR:
    - Trade-off in oversight and review vs speed of deployment

- Easyconfig files:
    - Included in the repository? (could be github.com/EESSI/dev.eessi.io)
    - Maybe auto-generated based on a template?
    - In project specific repositories?
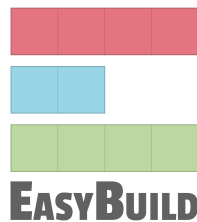
Policy differences

software.eessi.io

- Permanent installations

- Only install releases

- Builds for all CPU architectures

dev.eessi.io

- Temporary installations

- Can install from commits

- Can skip some CPU targets

- Subdirectories per project

- dev.eessi.io built on top of software.eessi.io

E E S S I

dev.eessi.io - Triggering builds

- Builds could be triggered in different ways:
  - Within a PR, through a commit ID added to a (YAML) file that genres an easyconfig file
  - As in software.eessi.io: via comments/labels by trusted accounts
  - For certain CPU targets or systems
 - How frequently would builds happen?

dev.eessi.io - GitHub/GitLab

- Current implementation runs through GitHub

- Bot can be ported to GitLab and CI to GitLab runners

- Public/private repositories

- GitHub Action that mounts EESSI
  - github.com/marketplace/actions/eessi
  - Support for GitLab under development
  - Can be integrated in the development workflow

dev.eessi.io - EESSI-extend module

- EESSI can be extended with EasyBuild for a site, group, or user

- Useful to quickly add to the EESSI stack for a particular application

- Permissions and EasyBuild configuration are handled automatically
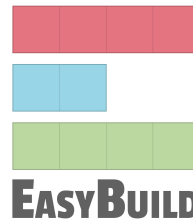
dev.eessi.io - input

- Preferred way to trigger builds and deployments?
  - Via PR comments, through (specific) commits, by adding labels, etc.?

- How frequent would you be adding installations?
  - Multiple times per day/week/month?

- How long should build be kept?
  - Days, weeks, months?

- How many builds should be kept (most recent, X builds in total)

- Easystack and easyconfig files
  - Project specific repos, separate subdirectories?