



2 Nov 2023

<https://github.com/EESSI/meetings/wiki>

Agenda



1. Quick introduction by new people
2. EESSI-related meetings and events in last month
3. Progress update per EESSI layer (incl. build-and-deploy bot + test suite)
4. EESSI pilot repository (2023.06) and outlook to new repository (`software.eessi.io`)
5. Documentation
6. Infrastructure and monitoring
7. EESSI support portal
8. AWS/Azure sponsorship update
9. Update on MultiXscale EuroHPC project
10. Upcoming/recent events
11. Q&A

Quick introduction by new people



New people on the call: feel free to introduce yourself!

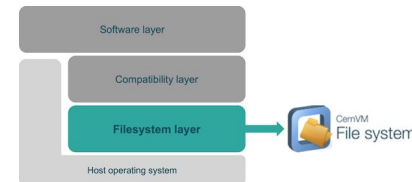
- Who are you, where do you work, on what?
- Why are you interested in the EESSI project?
- Are you planning to actively contribute,
and if so, to which aspect(s) of the project?

EESSI-related meetings



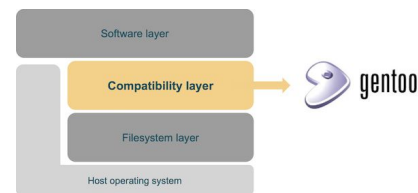
- (10 Oct'23) MultiXscale sync meeting (WP1+WP5) ([notes](#))
- (10 Oct'23) Sync meeting on EESSI support ([notes](#))
- (11 Oct'23) Sync meeting on Magic Castle clusters for EESSI ([notes](#))
- (11 Oct'23) Meeting with SURF visualization team w.r.t. software/test dashboard ([notes](#))
- (12 Oct'23) EESSI/AWS sync meeting ([notes](#))
- (13 Oct'23) Meeting on CVMFS setup for new `software.eessi.io` repository
(notes are in a private GitHub repository)
- (19 Oct'23) Sync meeting on EESSI test suite ([notes](#))
- (23 Oct'23) Sync with CernVM-FS developers on Best Practices in HPC tutorial ([notes](#))

Progress update: filesystem layer



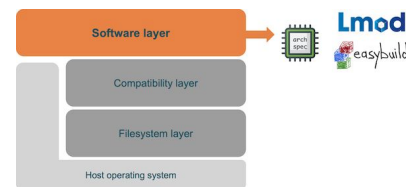
- New Stratum-0 server and Stratum-1 servers for new `software.eessi.io` repo
 - Ansible playbook + roles are in a private CVMFS repository (under the EESSI organization)
 - Added MFA for CVMFS admin accounts
 - Current plan is to start with two Stratum 1 servers:
one in AWS (`eu-central`), one in Azure (`us-east`)
 - Need proper DNS names for the servers, and then we should be ready to start using the new repository
- PR for updating meta information of CVMFS servers and repositories
<https://github.com/EESSI/filesystem-layer/pull/161>
- We should improve/rethink the ingestion workflow
 - Approving separate PRs for each CPU target is a bit of a hassle
- CVMFS 2.11.2 was released today
 - <https://cvmfs.readthedocs.io/en/2.11/cpt-releasenotes.html>

Progress update: compatibility layer



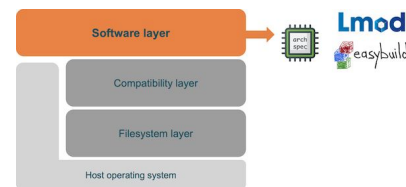
- 2023.06 version is available in EESSI pilot repository (`pilot.eessi-hpc.org`)
 - Was built with bot (see [PR #188](#))
 - Deployment was still done manually, needs more work to automate (see [issue #189](#))
 - No recent changes here
- Compat layers for `software.eessi.io` repo have been built (version 2023.06) ([PR #191](#))
 - Basically same setup as in EESSI pilot 2023.06, but with repo under `eessi.io`
 - May be a nice opportunity to also let bot take care of deployment (not just building it)
- Quite a lot of Gentoo security (GLSA) notifications recently
 - We still need to set up a good mechanism to deal with this

Progress update: software layer (1/2)



- Incorrect CPU detection by archspec for zen3 ([issue #322](#)) and neoverse_v1 ([issue #320](#))
- Fix for `archdetect`, so we can use it by default in EESSI init script (open [PR #264](#))
- CI for testing if EESSI stack is available is only checking single architecture ([issue #349](#))
- Use module file to configure EasyBuild to extend EESSI (open [PR #371](#))
- Supporting NVIDIA GPUs (overview [issue #375](#), PRs in progress)
- First radio astronomy software supported ([PR 370](#))
- Remove Lua from filtered dependencies since version is ancient ([issue #377](#))
- EasyStack files not resolving dependencies from linked PR when easyconfig exists in release ([issue #378](#))

Progress update: software layer (2/2)

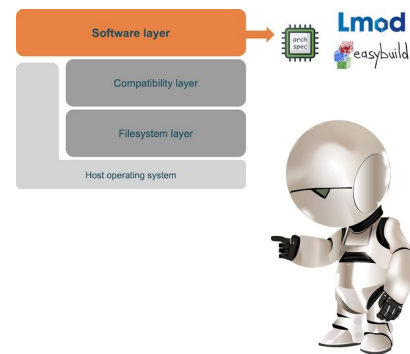


- Every now and then, we run into problems that only pop up when building for EESSI
 - Failing tests on `aarch64/neoverse_v1` CPU target (which supports SVE vector instructions)
 - Problems specific to use compatibility layer or RPATH linking
 - Very recent Python in compat layer (CMake issue)
- Recently merged EasyBuild PRs relevant to EESSI:
 - Add support for `%(sysroot)s` template value ([framework PR #4359](#))
 - Use `sysroot` template in `wget easyconfigs` to define `PKG_CONFIG_PATH` ([easyconfigs PR #19080](#))
 - Enhance TensorFlow easyblock to avoid `-mcpu=native` for XNNPACK on `aarch64` ([easyblock PR #3011](#))
 - Only set flag `--enable-asmjit` for PLUMED when installing on `x86_64` ([easyconfigs PR #19110](#))
 - Only add `tbb` as dependency in LAMMPS easyconfigs when installing on `x86_64` ([easyconfigs PR #19000](#))
 - Make sure Python dependency included for ESPReso is actually used by specifying `-DPYTHON_EXECUTABLE` ([easyconfigs PR #18963](#))

Bot for building + deploying software layer

Progress on implementation of build-and-deploy bot

<https://github.com/EESSI/eessi-bot-software-layer>



- Next bugfix release v0.1.1 soon:
 - [PR#217](#) tool to clean up disk space (removing tarballs of closed/merged PRs)
 - [PR#220](#) omit header lines in `squeue` output
 - [PR#221](#) add instructions on setting Permissions for GitHub App
 - [PR#224](#) Upgrade bot to be compatible with PyGithub v2.1.1
- Next minor releases:
 - v0.2.0: Support running EESSI test suite after a build, before deploy ([PR#222](#) + [PR#366](#))
 - v0.3.0: Remove code in the deployment function that is specific to [EESSI/software-layer](#)

EESSI pilot repository (1/2)

<https://www.eessi.io/docs/pilot>

**NOT FOR
PRODUCTION USE!**



- 2021.12 version is “frozen”, no more changes planned there, but it's still the default ("latest") version
- 2023.06 is being populated via [PRs to software-layer repo](#) + build-and-deploy bot
 - Supported CPU targets: see http://www.eessi.io/docs/software_layer/cpu_targets
 - Recently added software installations (for all supported CPU targets):
 - WRF 4.4.1 ([PR #336](#))
 - ESPResSo 4.2.1 ([PR #331](#))
 - EasyBuild 4.8.2 ([PR #376](#))
 - DP3 6.0 and WSClean 3.4 ([PR #370](#))
 - X11 20230603 ([PR #364](#))
 - SciPy-bundle 2022.05 ([PR #352](#))
 - Only increase limit for numerical test failures for OpenBLAS for aarch64/neoverse_v1 ([PR #345](#))
 - **We currently have ~450 software installations per CPU target => 3,600 installations in total !**

EESSI pilot repository (2/2)

<https://eessi.github.io/docs/pilot>

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PRODUCTION USE!**



- 2023.06 is being populated via [PRs to software-layer repo](#) + build-and-deploy bot
 - TensorFlow (v2.7.1 in [PR #321](#), v2.8.4 in [PR #343](#), v2.11.0 in [PR #346](#), v2.13.0 in [PR #347](#))
 - Failing tests on `aarch64/*` with v2.7.1 probably too to properly support running on Arm?
 - Build problems with newer versions on aarch64 due to passing `-mcpu=native` to XNNPACK (fixed w/ patch)
 - More build problems on aarch64 due use of outdated Eigen library (fix is WIP...)
 - WRF 4.3 (PR [#290](#)):
 - Failing/hanging tests on `aarch64/neoverse-v1`
 - ESPResSo 4.3.2 with foss/2021a (PR [#332](#)): some tests time out
 - matplotlib v3.4.3 with foss/2021b ([PR #339](#)): trouble with hardcoded `/usr/*` paths used by Pillow dependency
 - LAMMPS 23Jun2022 ([PR #360](#)): issues with PLUMED (solved) and ScaFaCoS dependencies
 - TODO:
 - Bioconductor, waLBerla, ...
 - Ensure that Lmod cache update is done correctly, includes **all** available modules
 - Come up with a better approach to replace existing software installations

[Benjamin, Bob, Caspar, Lara, Richard, ...]

Contribution policy (proposal)



- **Proposal** for contribution policy for adding software to EESSI ([docs PR #108](#))
 - Has been reworked based on feedback (mostly rephrasing, added a version and changelog)
 - Initial policy - can be revised later as needed (policy will be versioned, changelog will be kept)
 - Meeting Nov 7th to discuss last minute updates, then will be published on [EESSI docs](#)
- Summary:
 - Only open source software (we should verify this by requiring [SPDX license IDs](#))
 - Software must be built by the bot (no manual builds) and support by latest EasyBuild release
 - `eb --from-pr` and `--include-easyblocks-from-pr` should only be used for *merged* PRs
 - A compiler toolchain still supported by latest EasyBuild release must be used
 - Ideally all software is installed for all supported CPU targets (exceptions allowed)
 - Recent software versions and toolchains should be preferred
 - There should be a way of testing the installations - ideally via the [EESSI test suite](#)

EESSI test suite

Merged pull requests:

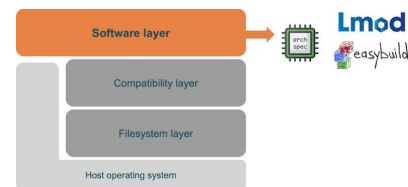
- Add content type of long description + license to setup.cfg ([PR #92](#))
 - Required to publish version 0.1.0 to PyPI

Open pull requests:

- Updated CI driving scripts ([PR #93](#))
- Add additional scales `1_cpn_2_nodes` and `1_cpn_4_nodes` ([PR #94](#))

Next steps

- Add more tests (ESPResSo, OpenFOAM, `eb --sanity-check-only`, ...)



ReFrame

EESSI documentation



<https://www.eessi.io/docs/> - GitHub repo <https://github.com/EESSI/docs>

- **Documentation has seen several updates throughout 2023**
 - Getting access, Using EESSI, Getting support, Test suite, Build-and-deploy bot
- **More updates are coming soon**
 - [PR#108](#) contribution policy for adding software to EESSI
 - [PR#117](#) Interactive building for debugging
 - [PR#118](#) How to build on top of EESSI
 - [PR#119](#) add new scales (related to test suite)
 - [PR#120](#) Update landing page
- **Some parts are a bit outdated and the structure could be improved**
 - We are thinking about a doc sprint (dates not set yet)

Infrastructure + monitoring

<http://status.eessi-infra.org>



- No updates

Support portal for EESSI (MultiXscale task 5.1)

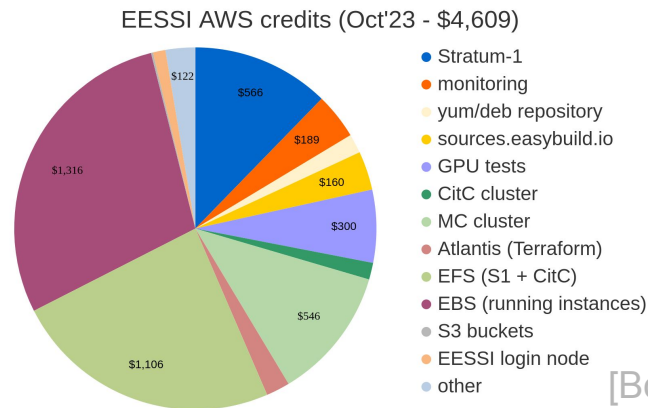
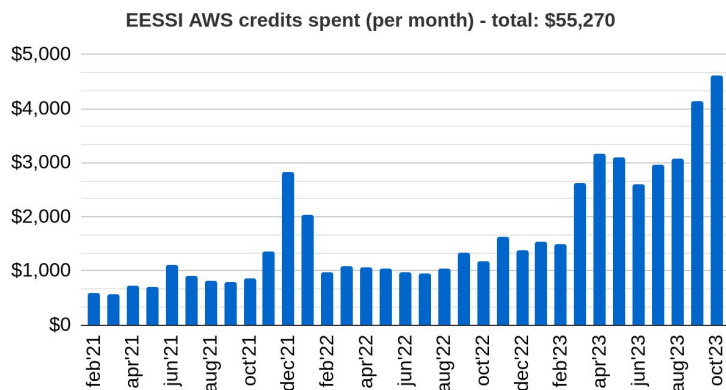


- EESSI support portal set up at <https://gitlab.com/eessi/support>
 - Tickets can be created by opening an issue in GitLab, or sending an email to `support@eessi.io`
 - Information on support portal and initial support policy now in EESSI docs: <https://eessi.io/docs/support>
 - Support is “reasonable effort” + only for problems with how software was installed in EESSI
 - Proposal for the support rotation in the wiki (<https://gitlab.com/eessi/support/-/wikis/Proposal-for-rotation>)
- 1 Oct - 22 Dec’23 (experimental) support rotation between the MultiXscale partners
 - A MultiXscale partner is “first-line” for incoming support requests for 2 weeks
 - Weekly regular support sync or hand-over meetings
 - Tickets are starting to be opened and are followed up, thanks to the support rotation and the weekly support syncs

Sponsored AWS credits



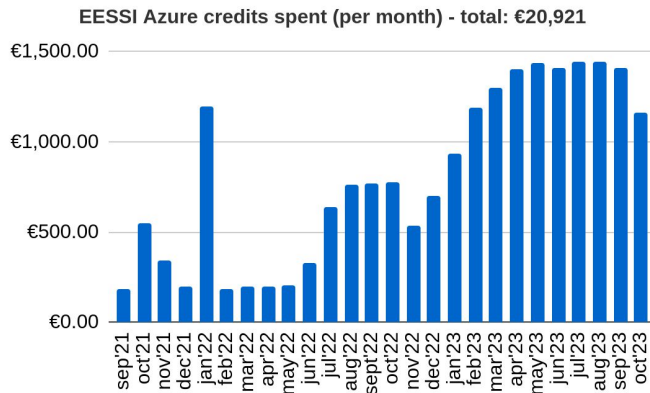
- Ask in #aws-resources Slack channel to get access!
- Currently ~\$24k worth of sponsored credits left (valid until 29 Feb'24)
- ~\$4,609 “spent” in Oct'23 on Stratum-1 servers, monitoring, sources.easybuild.io, **Slurm clusters (build bot)**
 - Includes new Stratum 1 servers for eessi.io, new Magic Castle Slurm cluster, GPU support test machine
- ~\$55k worth of credits spent in total so far (since Feb'21), all covered by sponsored credits
- **Increase in consumed credits due to extensive activity with build-and-deploy bot**
- Large cost for shared fs (TBs) due to huge tarballs created by the bot (was ~\$90/day, now back to ~\$35/day)
- Monthly sync meetings with Brendan/Angel/Matt/Francesco (AWS) every 2nd Thursday of the month



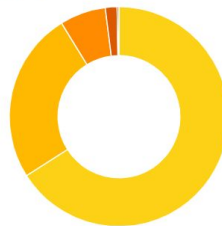
Sponsored Azure credits



- Sponsored credits (€40,000) are being put to good use!
- **Ask in #azure-resources Slack channel to get access!**
- In Oct'23: ~€1,163 worth of credits spent
- ~€20.9k worth of (sponsored) credits spent in total (since Sept'21)
- Used for: Stratum-1, GitHub Runners, heterogeneous Slurm cluster, Ampere Altra build node
- Current Slurm cluster using [Azure Cyclecloud](#) is not used
- Will start over with Magic Castle, same tool as used in AWS (WIP)



Service name ▾



Resource group name ▾

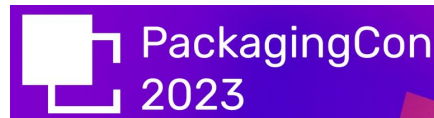


Oct'23

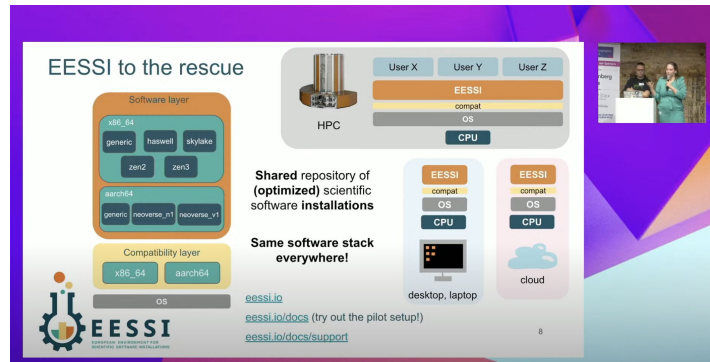
[Bob, Kenneth]

- Introduction to EESSI tutorial (05-12-2023 14:30 - 16:30)
 - Register at <https://event.ugent.be/registration/event/201863f3-cead-498b-9659-16d98c966eab>
- “Best Practices for CernVM-FS on HPC systems” training event
 - Being developed in <https://github.com/multixscale/cvmfs-tutorial-hpc-best-practices>
 - In collaboration with CernVM-FS developers & experts
 - Mon 4th Dec’23 - fully virtual event (registration will be open soon)
- CI/CD collaboration via CASTIEL2
 - Still not clear what demands will come from this
 - **Funding call expected from EuroHPC in this space**
- Relevant deliverables due end of 2023
 - D1.1: Report on shared software stack prototype
 - D1.2: Plan for design of a portable test suite
 - D5.1: Community contribution policy and GitHub App
 - D5.2: Support portal for EESSI

EESSI @ PackagingCon'23



- 26-28 Oct'23 in Berlin (Germany) - <https://packaging-con.org>
- Talk on EESSI by Lara & Kenneth (<https://cfp.packaging-con.org/2023/talk/9WAN3N>)
“Streaming optimized scientific software installations on any Linux distro with EESSI”
- Really well received, broad interest incl. by people from IBM Research & NVIDIA



Recorded live stream @ youtu.be/wcBXEoj0Y3I?t=30751, slides [here](#)

[Kenneth, Lara]

EESSI @ Supercomputing'23?



- 12-17 Nov'23 in Denver (US) - <https://sc23.supercomputing.org>
- Who is planning to attend? (confirmed: Alan, Henk-Jan, HPCNow!)
- Planned activities:
 - Magic Castle tutorial (Alan)
 - Booth talks @ Microsoft
 - Alan will ask this week
 - MultiXscale presence in EuroHPC boot?
 - Video only
 - No swag... but if we bring some stickers maybe they will not complain?

EESSI @ SURF Advanced Computing User Day



- 7 Dec'23 in Amsterdam - <https://www.surf.nl/en/agenda/advanced-computing-user-day>

- Explore trends and connect with other peers in HPC, AI, Machine Learning, Quantum and Data Science on December 7 at Royal Tropical Institute, Amsterdam.

Admission is free of charge.

- Proposal for talk submitted by Bob:

One scientific software stack for all systems, that's EESSI

- Accepted! 🎉
- Track 1: The power of High-Performance Computing



[Bob]