



EESSI meeting

7 Apr 2022

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

Agenda



1. Quick introduction by new people
2. EESSI-related meetings in last month
3. Progress update per EESSI layer
4. Infrastructure and monitoring
5. 2021.12 version of pilot repository
6. AWS/Azure sponsorship update
7. MultiXscale CoE proposal for EuroHPC call
8. Past/upcoming events
9. 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 (1/3)



Mar 8th: CernVM-FS coordination meeting

- CernVM-FS v2.9.1 release should go into staging later that week
 - Includes a fix for the GEO API + Python 3 issue
- CentOS 9 stream support: no `fuse2-devel` package in base repositories anymore
 - Packages for manual installation are available
- May start evaluating RISC-V support, expectations are that it could work
- CVMFS monitoring package developed by Terje
 - Would be useful to add it to <https://github.com/cvmfs-contrib>
- No plans to implement proper ACL support

EESSI-related meetings (2/3)



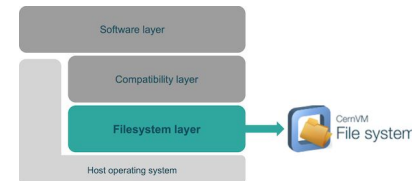
- Mar 18th: EESSI/Azure sync
 - Overview of spent credits
 - Debrief of EESSI hackathon and EasyBuild User Meeting
 - Data repository for WRF input data
 - These are quite small, so we will use a normal CVMFS repository for now
 - Hugo integrated EESSI (opt-in) in the Azure HPC On-Demand Platform (`azhop`)
 - <https://github.com/Azure/az-hop/pull/722>
 - https://azure.github.io/az-hop/deploy/define_environment.html
 - Hugo has created two PRs for Azure support in CitC
 - Main developer has access to EESSI credits on Azure for testing purposes

EESSI-related meetings (3/3)



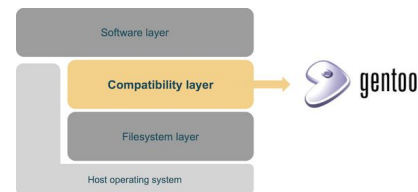
- Presentation on EESSI for Simula Research Lab (simula.no) by Thomas
- Simula has a test bed with different architectures (CPUs & GPUs)
 - <http://wiki.ex3.simula.no/doku.php?id=wiki:hardware>
- One software they are particularly interested in is FEniCS.
- Got an account on their cluster ... no time yet to play with it.
- It has a recent Singularity, so using EESSI should be possible one way or another.
- Might be interesting for building software too.

Progress update: filesystem layer



- Installed CernVM-FS 2.9.2 on the Stratum 1 servers running (RH)EL 8
 - This has fixed the issue with GeoAPI that was found during the hackathon
- Set up a repository `data.eessi-hpc.org` on the Stratum 0 (PR [#119](#))
 - Requested by Hugo for, initially, WRF; these files can be very large
 - Still has to be deployed to the Stratum 1 servers
- Various issues with the GitHub Actions
 - Installing CernVM-FS on macOS CLI seems broken: <https://github.com/cvmfs/cvmfs/issues/2882>

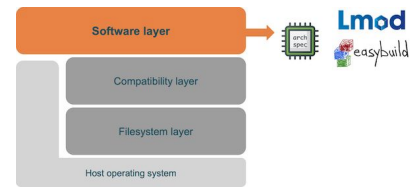
Progress update: compatibility layer



- No security updates required for 2021.06 and 2021.12 compat layers (as reported by Gentoo's `glsa-check` tool)
- Project idea submitted for Google Summer of Code in Gentoo project
 - *“RISC-V support for Gentoo Prefix”*
 - Main goal: make it possible to bootstrap and use a Gentoo prefix system on RISC-V
 - https://wiki.gentoo.org/wiki/Google_Summer_of_Code/2022/Ideas/RISC-V_support_for_Gentoo_Prefix

Progress update: software layer

- No updates



EESSI pilot repository

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

**NOT FOR
PRODUCTION USE!**



- 2021.06: considered “final” (no further changes, except security updates in compat layer if needed)
- Current status for 2021.12 (mostly unchanged since EESSI monthly meeting of Feb’22)
 - Compatibility layer: in place for `aarch64` / `ppc64le` / `x86_64`
 - List of installed packages is pretty much identical \o/
 - Software layer:
 - Software installations included in 2021.06 also in place for 2021.12, incl. GROMACS, OpenFOAM, TensorFlow + Horovod, R + Bioconductor, QuantumESPRESSO
 - Additional software (vs 2021.06): SciPy-bundle with foss/2021a (excl. `ppc64le`), WRF
 - **Problem with incorrect Lmod cache files fixed (see [issue #165](#))**
 - TODO:
 - Move “latest” symlink from 2021.06 to 2021.12: [PR #115](#) in `filesystem-layer`
 - Update documentation at <https://eessi.github.io/docs/pilot>: [PR #86](#) in `docs`

Progress update: infrastructure (1/2)



- Lots more Terraform work, 99% of it targeting AWS
 - Azure integration still outstanding, lack of time
 - Modularization galore (internal and external)
 - Testing of different environments shows that things work
- Ansible roles still not in production
 - @bedroge has been testing the client setup, thanks!
 - We are also working on (completely untested) [examples](#) that also target CI usage
- Goal? Infrastructure deployed by Terraform and managed by Ansible. **Only.**
 - Today there are multiple nodes (login, monitoring, ...) with on-node changes
 - This goal also includes EESSI-managed stratum servers!

Progress update: infrastructure (2/2)



- User management via GitHub Teams and `AuthorizedKeysCommand`?
 - EESSI nodes grant access to the GitHub EESSI infrastructure team
 - Temporary nodes will pull keys during creation / deployment to avoid leaking access tokens as requesters of these nodes have root access (and team access requires tokens)
- User management + Terraform modules for external users
 - We have external projects that tie into EESSI and who many want persistent nodes
 - Tooling will offer deployment, management, and access control in a consistent way
- Web interfaces to create temporary nodes from Terraform modules?
 - [Stack-Lifecycle-Deployment](#) was easy to get going, but some issues with the scheduler
 - [Gaia](#) is showing a lot of promise, early testing suggests thumbs up

Progress update: monitoring

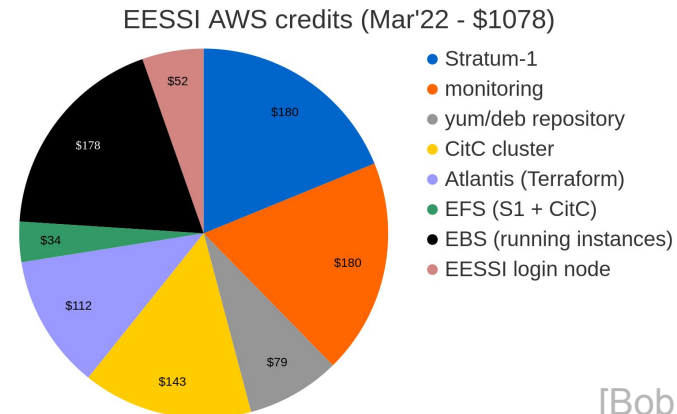
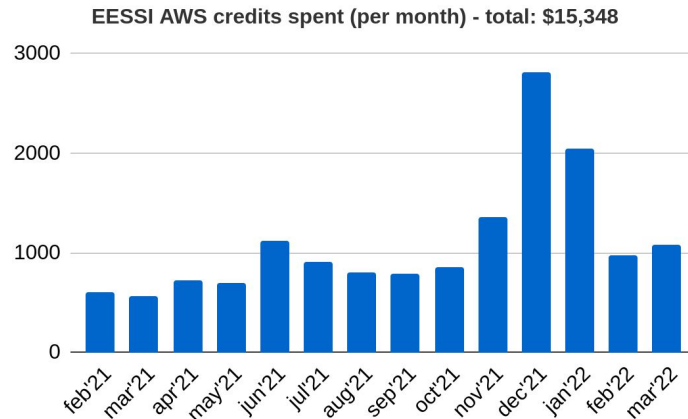


- Many small fixes to the [status page](#)
 - Handled a lot of things well, except servers being down-down.
 - Multithreading doesn't help when timeouts are minutes long...
 - Still running on the monitoring node, not a long term solution (lambda or dedicated EC2)
- A [patch](#) has been submitted to the CVMFS GitHub repository
 - Expands meta.json on stratum servers with OS version and CVMFS server version
 - [cvmfs_server_scraper](#) will be updated once fields are available and our Grafana instance will then display the data. For older servers without the updated files, the lack of data will be handled gracefully
 - Patch was approved last week but internal testing is failing. It very much looks like the tests and not the patch itself. ETA a bit in the blue.

Usage of sponsored AWS credits



- **Ask in #aws-resources Slack channel to get access!**
- Original batch of \$25,000 worth of sponsored credits expired on Jan 31, 2022!
- Request for new credits is WIP, extra \$10k worth of credits already received to bridge the gap
- In March '22: ~\$1078 worth of credits spent on Stratum-1 server, monitoring node, ...
- ~\$15,348 worth of credits spent in total so far (since Feb'21), all covered by sponsored credits
- Olly Perks (ex-Arm, now AWS) is our new contact



Azure sponsorship



- Sponsored credits (€40,000) are being put to good use!
- **Ask in #azure-resources Slack channel to get access!**
- In Mar'22: ~€ 199 worth of credits spent, pretty much all on Stratum-1
- ~€2,855 worth of credits spent in total (since Sept'21)

Service name ▾



Virtual Machines	€102.67
Storage	€62.45
Virtual Machines Lic...	€31.97
Virtual Network	€1.93
Bandwidth	€0.12

Resource group name ▾



stratum1-us-east	€195.50
gh-runner-eu-west	€3.43
cloud-shell-storage-...	€0.22

MultiXscale proposal for EuroHPC call



- Call: [CENTRES OF EXCELLENCE FOR HPC APPLICATIONS](#)
- Collaboration with CECAM, scientific domain is multiscale simulations
 - Kind of a successor to E-CAM (a previous CoE), so reasonable chance of success
- 6M euro budget, EESSI related activities make up ~50%
- Objective is to make EESSI suitable for production and start providing all the additional services we would like to offer
 - Lots of interesting activities and collaborations, mostly in line with what was in our paper
- Will get evaluation results in ~5 months 🍊 🍊 🍊 🍊

Past/upcoming events



- Call for project proposals for BioHackathon Europe 2022
 - <https://biohackathon-europe.org> - <https://biohackathon-europe.org/projects.html>
 - 7-11 November 2022 in Paris
 - Maybe an interesting venue to promote EESSI? See #biohackathon channel in Slack.
 - Submissions are lightweight (max. 300 words) - deadline: 8 April 2022 (**tomorrow!**)
- ISC 2022
 - <https://www.isc-hpc.com>
 - 29 May - 2 June 2022 in Hamburg
 - [Half-day EasyBuild tutorial](#) where EESSI will be shortly featured
 - EESSI presentation for Dell HPC/AI customers by Bob