CernVM-FS tutorial

at 6th EasyBuild User Meeting (EUM'21)

Jan 26-29 2021

https://cvmfs-contrib.github.io/cvmfs-tutorial-2021

https://easybuild.io/eum/#cvmfs-tutorial

Scope & goals

- Introductory CernVM-FS tutorial (the basics)

- Significant focus on hands-on: starting from scratch

- Also touch on some more "advanced" topics

- **Live stream + record all sessions**

- Motivated by EESSI project: kickstart project members with CernVM-FS

- Secondary: also gain experience with CernVM-FS ourselves…

- Ensure that it can be leveraged by CernVM-FS community going forward

Organisers

- **Bob Dröge (Univ. of Groningen)**

- **Kenneth Hoste (HPC-UGent)**

- **Microsoft Azure (Karl Podesta, Laura Redfern): sponsored cloud resources**

- Jakob Blomer (CERN): introductory talk + feedback + contributions

- Ryan Taylor (Compute Canada): feedback + contributions

- Dave Dykstra (Fermilab): feedback + suggestions

- Axel Rosén (Univ. of Oslo): testing + feedback

- + several tutorial attendees: fixes, suggestions, improvements

- With help from:
  - Simon Branford (Univ. of Birmingham) with Zoom
  - Alan O'Cais (Jülich Supercomputing Centre) with YouTube
  - Åke Sandgren (Umeå University) with Q&A moderation

Agenda

tutorial

CernVM-FS

- [Mon Jan 25 2021, 17:00-17:30 UTC] **Introductory presentation** by Jakob Blomer (CERN)
- [Tue Jan 26 2021, 09:00-10:00 UTC] **CernVM-FS tutorial (part 1/4)**
    - 0. Azure resources
    - 1. Quick CernVM-FS introduction (concepts and terminology)
    - 2. Stratum-0 and client access
    - *hands-on exercise*
- [Wed Jan 27 2021, 09:00-10:00 UTC] **CernVM-FS tutorial (part 2/4)**
    - 3. Stratum-1 + proxies
    - *hands-on exercise*
- [Thu Jan 28 2021, 09:00-10:00 UTC] **CernVM-FS tutorial (part 3/4)**
    - 4. Publishing
    - *hands-on exercise*
- [Fri Jan 29 2021, 09:00-10:00 UTC] **CernVM-FS tutorial (part 4/4)**
    - 5. Advanced topics: automatic deployment, debugging, garbage collection, gateway + publisher, unprivileged access, using a CernVM-FS config repository

Practical setup

- Tutorial website @ GitHub

  - https://github.com/cvmfs-contrib/cvmfs-tutorial-2021 ("sources")

  - https://cvmfs-contrib.github.io/cvmfs-tutorial-2021 (rendered website)

  - Written in Markdown format, using MkDocs to render (locally + on GitHub)

- Zoom: only accessible to registered attendees, for demo + live Q&A (~1h per session)

- YouTube: live streaming + recordings (instantly available after live sessions)
  - https://www.youtube.com/playlist?list=PLhnGtSmEGEQg8fY5t6nfjxGOYTfueDHwM

- (EasyBuild) Slack: questions, support (in between live sessions)

- CycleCloud on Microsoft Azure: (sponsored) cloud resources for tutorial attendees

  - 4 VMs per attendee: Stratum-0, Stratum-1, Squid proxy, client
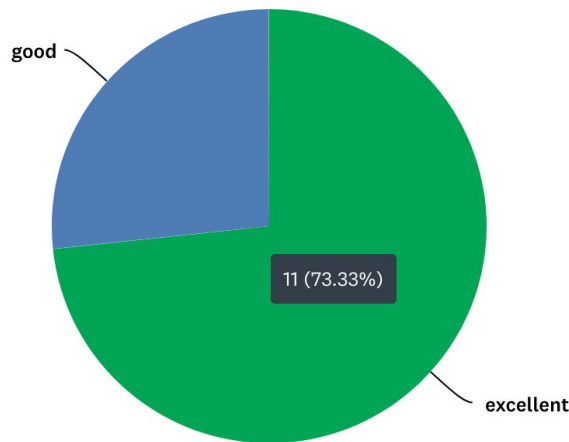
Attendance

tutorial

CernVM-FS

- 30 registered participants

- Belgium (7), Netherlands (3), France (3), Norway (3),

  US (3), UK(2), 3 diff. companies,

  + 1 person from Brazil, Canada, Germany, Switzerland, Sweden, Austria

- About 20 attendees during live Zoom sessions,

  some people caught up with recordings + help via Slack channel

Evaluation

- Very positive feedback!
- See EUM'21 survey results:

- Some minor hick-ups with CycleCloud (nothing major, easy to resolve)
- Minor improvements/extensions/fixes made to tutorial along the way, based on questions and feedback by attendees

Going forward...

- Existing tutorial materials can be leveraged by others!
  https://github.com/cvmfs-contrib/cvmfs-tutorial-2021

- Any missing topics?

- Consider submitting proposal for (half or full day)
  CernVM-FS tutorial at an HPC conference (ISC, SC)?