Architects Forum Meeting

Date / Time:	2 September 2021, 14:00
Agenda:	https://indico.cern.ch/event/1071468/
Present:	
Remote:	P. Buncic, G. Eulisse, Graeme Stewart, Jakob Blomer, Andre Sailer, Pere Mato, Johannes Elmsheuser, Michal Simon, Ed Moyse, Gabriele Cosmo, Marco Clemencic, Axel Naumann, Gerri Ganis, Danilo Piparo
Excused:	M. Girone, Andrea Valassi
Next meeting:	07 October 2021

Announcements and upcoming events
Draft minutes of the last meeting can be found here. Minutes of the previous meetings can be found here.

Nov 29 - Dec 3 2021	ACAT "Korea". Virtual, abstract submission open: https://cern.ch/acat2021

SFT Line Management

- Personnel movements:
  - 1 fellow, 1 technical student and several summer students have left the group end of August
  - EBERHARDT Jakob, new Technical Student working on the CernVM project
  - HANSEN Harald, new Technical Student working on the SPI project
- Ongoing reports from students on the Monday group meetings (https://indico.cern.ch/category/266/)

Report from the SFT Projects	
ROOT	• 6.24/04 out, 6.24/06 in preparation (ETA today) • Many, many training sessions involving the whole team • Week of Sept 13: exclusive focus on ROOT documentation • Several ACAT submissions in preparation • First HighLO finance collab paper published • LHCC input doc (49 pages) sent to experiments for comments

Simulation	• A new monthly development release of Geant4 (10.7.ref07), including the developments of the last two months was deployed this week and is installed on CVMFS at CERN. • The Geant4 Collaboration meeting is taking place on September 20-24th through Zoom: https://indico.cern.ch/event/1052654/ Parallel sessions will take place during the preceding week (September 13-17th). • Registrations for externals for the advanced course on Geant4 (October 4-8th) were opened last week and now the course is fully booked (included the waiting list)... https://indico.cern.ch/e/geant4_advanced_course_2021
CernVM	• New technical student started on CernVM 5, which will transition the CernVM technology to a container-first platform (see workshop presentation) • Planning of a CernVM in-person started, likely to take place in Amsterdam in early September 2022 • GSoC project on adding support for file bundles finished. Several useful PRs, some merged, but due to the reduced GSoC programme (half of the coding time compared to last year) the project is not yet finished. • Support for S3/HTTPS added to CVMFS 2.9. The “secure” part is not required by cvmfs but by some S3 services, e.g. the one rolled out at RAL. • Finalising a CVMFS 2.8.2 patch release that helps diagnosing the issue where containerized workflows can “detach” a mountpoint and keep it in a “zombie state”. That is particularly painful on batch farms. A full fix has been developed in collaboration with the Linux fuse kernel developer. The patch has good chances to get merged in EL8 and will require CVMFS 2.9. • In the process of submitting an ACAT contribution on the setup of publishers on kubernetes

SPI	• Technical student started, will be working on spack related matters
	• Dev[34] now with python 3.9.6
	• Created LCG_100_ATLAS_6 and LCG_100_ATLAS_7, LCG_88c
	• Preparing for LCG_101
	  ○ ROOT 6.24/06, gcc11 (and others), Python 3.9.6
	  ○ Parallel build with spack
	  ○ Purging obsolete python backport packages and updating packages

Related Projects & IT	
Xrootd	• 5.3.0 released at the beginning of July, introduces xrdcp ZIP append and transfer retries, re-architectured server-side async I/O, support for FTS performance markers with EOS and important TLS patches for XCache. • 5.3.1 released at the end of July, two important bug fixes: fix sego in pgwrite/pgread logic; make sure PostMaster is not used after libXrdCl has been unloaded (fixes a segv on exit in root) • finalised summer student project on RDMA support in xrootd: 2 prototypes for exchanging messages between client and server, one based on librdmacm and one based on libfabric • We have a new person (Cedric) working on XrdHttpTpc.
HSF	• PyHEP 2021 workshop took place in July, 1300 registered, good attendance • Successful GSoC programme this year, 27 projects, 25 successful (93%) ○ In general changes to programme (reduced coding time) was a challenge for our projects, but we did adapt

	• Documents for submission to LHCC HL-LHC review have been prepared by projects and have been in a commenting phase from experiments and community
	  ○ No showstoppers for submission to LHCC by 1 October
	  ○ LHCC referees expressed their thanks for all the hard work there

CERN openlab	• Nothing to report to the AF for this meeting.
IT-SC-RD	•
EP R&D	• EP R&D days have been organised for 11-12 November • Ongoing wider seminar series, software contribution on tracking foreseen in October (probably 4 Oct)
CERN QTI	•

Stakeholders feedback	
ALICE	• We have now switched to ROOT 6.24/02 and we are happily using the now bug fixed Bulk I/O API (thank you Philippe). Early tests on a local machine show 2x / 6x overall improvement, depending on the tasks. • We are eagerly waiting for 6.24/06 and a critical fix for TDirectory in a multithreaded environment.
ATLAS	• Launch of Run2 reprocessing imminent - using LCG_100_ATLAS_7 and gcc8

	● Looking forward to LCG101 with ROOT 6.24/06 - will do a physics validation with gcc11 ● ATLAS software & computing week 4-8 October with a focus on Run3 preparations
CMS	● 5 weeks cosmic run with magnet off in July-August ○ Release CMSSW 11_3 tested in production ○ Very useful fixes to experiment specific sw, nothing for externals was needed ○ Plan magnet-on run before the beam test in october, tentatively with a CMSSW 12 release (tbc) ● CMSSW 12, release cycle for the 22 data taking, is Python 2 free ○ Big migration which lasted for long, involving many components ○ Key factor for the success: a dual Py3/Py2 stack (including ROOT, one single build) in production for long ● Final checks of DD4Hep being performed ● On track to include ROOT 6.24 and G4 10.7p1 in the data taking release ● Stage 2 Computing Model Review: ○ Feedback given to all CSAs, considerable effort ○ CMS specific documentation in good shape, on track for submission on time
LHCB	● Preparing for picking up LCG 101 ● Working for the readiness test in October
CLIC	● Many fixes for EDM4hep based reconstruction workflow
FCC	● Consolidating workflows based on Key4hep and EDM4hep for physics performance studies. ● A review of the “Software and Computing” work package mandate is being organized

for the early autumn. The purpose is to review the goals, the deliverables, the structure and dynamics of the work package, in view of the next European Strategy Update for Particle Physics.

Action items
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