

EP-SFT input

1st RCS-IT Technical Committee Meeting

9 December 2022

EP-SFT

Mandate: develop and maintain common scientific software for the physics experiments in close collaboration with the EP experimental groups, the IT department and collaborating HEP institutes

Deliverables

- Main projects (development, support): ROOT, Geant4, CernVM-FS
- LCG releases/nightlies
 - Large software stacks used by ATLAS, LHCb, SWAN, BE, SME, several Ixplus users
 - > 500 packages for O(20) {compilers, versions, architectures}
- R&D activities
- Common infrastructure and expertise to CERN experiments
 - Select/maintain tools used in the development process
- Training
 - CSC, GridKA, CERN Technical training, HSF Training, ...

All the above requires access to ICT services

EP-SFT and IT

- The role of IT as ICT service provider is significant for SFT
- Main source of build/deploy infrastructure through OpenStack
- General rule is to try to use IT managed resources as much as possible
 - Often starting and running for a while local instance of a service before moving to IT
 - Still managing some hardware and services by ourselves
- Good collaboration with IT in providing community services
 - CernVM-FS, SWAN
 - Development/support in SFT, operations in IT

EP-SFT usage of IT provided ICT ‘services’

Computing resources

- OpenStack
 - Standard VM projects (SPI/Geant4, ROOT, CernVM)
 - > 2350 CPU, >5 TB RAM, > 80 TB storage, >3TB S3 object store
 - Used for build nodes, Jenkins, CDash, ...
 - Physical machines, ‘ironic’, projects (SPI/G4, ROOT, CernVM)
 - 11 instances (64 core, 256 RAM, 1.7 TB SSD)
 - Special architectures projects: ARM, GPU VMs projects
 - 4 instances
- HT Condor
 - Project for Geant4 validation
- Hosting owned servers in IT premises
 - Mostly for R&D activities
- Container services
 - Harbour, Openshift

EP-SFT usage of IT provided ICT 'services' (2)

Storage services

- EOS project (60 TB)
 - Used also as web server backend (lcgpackages.web.cern.ch)
- S3 Object Stores
 - CernVM, ROOT website & future CI
- Few instances on DBOD
 - Mostly for services
- TSM
 - Backup of 5 physical machines

Centrally hosted Web services

- Web sites (Drupal, static/Jekyll)
- Discourse forum

EP-SFT usage of IT provided ICT 'services' (3)

Software development related services we use/profit from

- Davix, XRootd, EOS
 - We benefit direct interactions with the dev team
- RedHat low-level contract
- Code signing, Apple Developer Support

Application and other services

- Puppet: manage linux OpenStack machines
 - Dedicated project on GitLab it-puppet-hostgroup-lcgapp
- Gitlab
 - Projects for sft, ep-sft, geant4, cernvm
- JIRA centrally hosted instance
- CernBox
- Indico
- SWAN for training, tutorials
- Grafana

EP-SFT needs of ICT 'services' locally managed

Hardware

- Mac build nodes
 - 10 servers (7 Intel, 3 M1)
 - Supported MacOSX versions; preview of beta versions
- A few benchmarking machines

Applications

- Coverity, CDash
 - Managed locally on physical and VM resources provided by Openstack

EP-SFT projections / wishes

SFT plans to continue to use as much as possible the IT provided ICT services on which it currently counts on. In addition, we would appreciate new or improved services for

Hardware

- Easy access to heterogeneous / cutting edge resources on continue / regular base (not necessarily 7/7, 24/24)
 - Could also be an external cloud service
- Simplified procedure to get own hardware (e.g. GPU server) on IT facilities
- Mac hardware service

EP-SFT projections / wishes (2)

Applications

- Reverse proxy support for web services
- Improved interface for Service Now ticketing system
- Improved flexibility in accessing/customising Grafana services
- Improved outside accessibility of GitLab
 - I.e. w/o CERN full account
- Improved remote access for development during teleworking

AoB

- Site-reliability engineering service
 - To help improving reliability and validation of software on required hardware/resources
- Well maintained RHEL clone