LHCC Review Preparation for DOMA

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https://indico.cern.ch/event/1022571/

LHCC Software and Computing review

LHC Experiments Committee (LHCC) needs to ensure preparations for HL-LHC are credible

May 2020 Initial review of ATLAS and CMS plans for common software and DOMA

Overall recommendations to address

1. specific tasks and their associated milestones for **quantifying the potential reductions**
2. **sites** expected to be at the core … are **engaged and play an active role**
3. **tasks and targets** … placed onto a **timeline** … how they **relate to each other** and **relate to** milestones of broader **WLCG and HL-LHC projects**
4. **keep the effort** needed for the **software development** at the right level

November 2021 Next review phase with focus on "Common Software Activities"

Beyond CDRs, TDRs, …

November 2021 review

Our deliverable is a concise document (20-30 pages) by **October 1**

Draft ready by **end of June**

Four major "Common Software Activities"

(1) **Rucio**, (2) **FTS**, (3) **storage interfaces** and **caching layers**, (4) **network** incl. monitoring and SDN

Two potential additions were under discussion, but as of now will be honourable mentions

(5) **CVMFS**, and (6) **Tokens**

Roles and actions

Roles

Mario and Oliver will act as chief editors
Editors for each of the Common Software Activities will be needed

Before Easter

Draft general structure of the document on Overleaf
Resolve the scope of “storage interfaces and caching layers”
Contact the computing coordinators of the 4 experiments to identify critical points

Concrete next step

Identify potential editors who will be in charge for each section, contact them, and confirm their availability

Before end of June

Main text from CSAs
Intro text and conclusions

Subsequently

Iteration and harmonisation with other (non-DOMA) review input

Document organisation

Outline of the document

Introductory sections on "Overall DOMA organisation, requirements, and current status"

Specific common software activity sections

Cross-cutting issues

Summary section on "Plans and milestones"

https://www.overleaf.com/read/gkbppxdvcvvf

Points to address per common software activity (~5 pages each)

Description of the project

Plans and timelines to deliver the agreed functionality and performance

Project management, incl. priorities, progress, communication

State of development teams, incl. gaps in skills or effort

Risk assessment, incl. gaps in functionality and dependencies

"Projects" to review

1. Rucio

Data organisation and management framework

Common to ATLAS and CMS

2. File Transfer Service (FTS)

Data transfer framework

Common to ATLAS, CMS, LHCb

LHCb expressed that this area will be the most important one for them to contribute

2.1. Dependency: Grid File Access Library (GFAL)

Common to FTS, Rucio, DIRAC, and many others

2.2 Dependency: WebDAV Access Library (DAVIX)

De-facto library for HTTP-based data access and management

Strong tie-in with ROOT I/O

"Concepts" to review

3. Storage interfaces and caching layers

Thematic review: The projects must address each of these topics separately and explicitly

(1) Data access and support for caches, (2) Third-party-copy,
(3) Exploitation of tape, (4) Quality of Service, (5) Token support

Specific projects to be reviewed

(1) XrootD and Xcache, (2) EOS, (3) dCache, (4) CTA, (5) ECHO, (6) StoRM

4. Network incl. monitoring and SDN

No existing common software activities right now which could be reviewed

Instead start with an overview of anticipated network environment for HL-LHC and ask for review of the plan instead

(1) Overview of NREN plans, incl. possibly disruptive technologies
(2) WLCG plans to deal with this new environment
(3) Experiments' expectations for the network
(4) Multi-community context where we share network resources with other large-scale users
(5) Impact of content delivery model on network provisioning of large sites

ALICE expressed that this area will be the most important one for them to contribute

5. Associated projects

Projects to be mentioned but not explicitly reviewed: CVMFS, IAM, CRIC