DOMA LHCC Review
DOMA General

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LHCC Software and Computing review

November 2021 review of "Common Software Projects"

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

Draft to be ready by **end of June**

Four major "Common Software Activities" were identified in the charge

(1) **Rucio**

(2) **FTS**

(3) **Storage interfaces** and **caching layers**

(4) **Network** incl. monitoring and SDN

We have quite a lot of flexibility within the above categories

Adding cross-cutting themes

Subsidiary projects

Honourable mentions

Roles and actions

Roles

Mario and Oliver will act as chief editors

Editors for each of the Common Software Activities will be needed

Status

Draft skeleton of document available on Overleaf

Proposed scope and approach for "storage interfaces and caching layers"

Proposed scope and approach for "networking"

Proposed list of projects to be considered and in what detail

Contacted the computing coordinators of the 4 experiments to identify critical points

Discussed in more depth at CMS O&C Week

Concrete next steps

Agree the document structure and approach

Identify potential editors who will be in charge for each section, contact them, assemble editing team

Before end of June

Main text from subsections

Intro text and conclusions

Subsequently

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

Document organisation

Outline of the document

      Available on overleaf:

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

          NB - sub-editors have not yet been contacted or confirmed

Points to address per common software activity (from the charge, ~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

Storage - concept-oriented 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

     (6) HPC support

Specific projects to be reviewed

     (1) XrootD and Xcache

     (2) EOS

     (3) dCache

     (4) CTA

     (5) ECHO

     (6) StoRM

Network and related projects

4. Network incl. monitoring and SDN

We are not dealing with the same kinds of projects as in the previous sections.

Suggested approach:

Overview of anticipated network environment

Overview of NREN plans, incl. possibly disruptive technologies

Multi-community context where we share network resources with other large-scale users

Impact of content delivery model on network provisioning of large sites

Review "exploitation plan"

WLCG plans to deal with this new environment

Experiments' expectations for the network

Specific R&D and projects:

NOTED, perfsonar, packet marking - what else?

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

To discuss

1. Is the thematic approach to the storage section appropriate?

    Are the right themes represented?

2. Is the activity oriented approach to the network section appropriate?

    What considerations or projects are missing there?

3. Are any projects missing that deserve a mention?

    NB - we've been advised that inclusion/exclusion from this review is not in itself a judgement

    Let Mario and Oliver know if you'd like to contribute

    We will soon be contacting our potential topic editors.