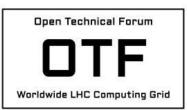# WLCG Open Technical Forum #2 Introduction

A. Di Girolamo (CERN) and J. Letts (UCSD)
WLCG OTF #2 - December 10, 2024

Welcome!

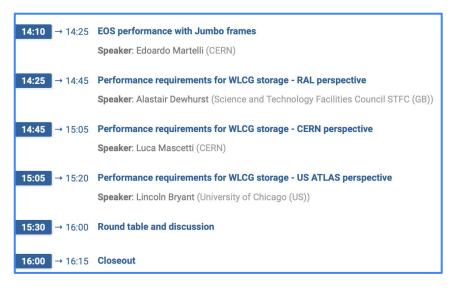Welcome to the second WLCG Open Technical Forum (OTF) meeting!

The focus of this meeting is the performance of storage solutions, with perspectives from EOS, CERN, RAL, and U.S. ATLAS, with a roundtable discussion to follow.

There are live notes attached to the Indico page - please help write them!

Topics covered at OTF#1 (see next slide):

- Token transition
- CVMFS evolution

This is a hybrid event: please raise your hand in the room and on Zoom if you wish to make a point, and please announce your name and affiliation when beginning to speak.

14:10 → 14:25	**EOS performance with Jumbo frames**
	Speaker: Edoardo Martelli (CERN)
14:25 → 14:45	**Performance requirements for WLCG storage - RAL perspective**
	Speaker: Alastair Dewhurst (Science and Technology Facilities Council STFC (GB))
14:45 → 15:05	**Performance requirements for WLCG storage - CERN perspective**
	Speaker: Luca Mascetti (CERN)
15:05 → 15:20	**Performance requirements for WLCG storage - US ATLAS perspective**
	Speaker: Lincoln Bryant (University of Chicago (US))
15:30 → 16:00	**Round table and discussion**
16:00 → 16:15	**Closeout**

Summary of Main Points ~~Today~~ at OTF#1

Token Session:

- There is a lack of consensus about token lifetime and scope as well as the service model and impacts on data taking in HL-LHC.
- The tape REST API is a crucial functionality that needs more discussion, perhaps in February.
- There is a scalability concern for access token handling in IAM and concerns about the IAM effort support level going forward.

CernVM:

- Need an evaluation of Varnish as a possible replacement for Squid including a plan for deployment.
- Open questions about the scalability of CVMFS, Shapshooter as a possible new functionality, and the usefulness of hot patching.

Live notes (for comments) can be found here.

The Open Technical Forum - role and focus

The OTF is an essential component of this process: a "bottom-up approach … which welcomes the participation of all contributors to the technical evolution of the WLCG community." - *Draft of WLCG MoU Annex 3.1, shown at the July WLCG MB#319 [Indico]*.

Today we will hear presentations on the **performance of storage solutions**.

In the discussions, we are particularly interested in focusing on identifying:

- any gaps in functionality or scalability foreseen for HL-LHC?
- any lack of consensus on timelines or milestones on the roadmap?
- how can we help facilitate coordination between experiments, sites, developers and other stakeholders?

In the **OTF#3 (tentatively on Tuesday & Wednesday, February 11 and 12th)** we plan to talk about **Analysis Infrastructure**, considering that the LHCC will consider this topic in March.
  - N.B. During CMS Week. ATLAS and CMS software and computing weeks are the week before.

The TCB - Goals and Membership

- The primary goal of the TCB is of producing and socializing within the community a Technical Roadmap for the evolution of WLCG services and infrastructures, and follow up on its implementation.
- Some of the membership of the Board is *ex officio*. The rest of the membership will be recruited soon. We need to have a small enough board to be functional, productive, and able to build consensus, but also be open, inclusive, and regionally diverse.
- Discussion from WLCG MB #323 [Indico]:
  - We would like to know from the WLCG community if they have suggestions for TCB members. (We have received some).

The TCB is at the service of the WLCG community

Reminder of TCB members profile

- In the TCB we foresee to have:
  - "Core" members, profile here on the right,
  - "Area experts", focused on specific areas: we will have all in the same egroup, same permissions, but not all the area experts should feel obliged to follow all the TCB meetings.
- We foresee to have ~monthly meetings and will adapt as needed.

TCB Member Profiles

TCB

Call for TCB members - Influencers in Technology Evolution for Facilities, Storage, Compute, Workflow & Data Management

As a member of the WLCG Technical Coordination Board (TCB), your role is to **provide strategic guidance** and expert input based on your experience participating and/or leading R&D efforts and engaging with funding agencies. Your expertise in the technological evolution of facilities, compute and storage technologies, and data/workflow management will be key in aligning the WLCG technical roadmap with both current and future needs.

You will contribute by offering a broad perspective on the technical and resource challenges WLCG faces, **participating in the development and editing of the roadmap**, and ensuring that it reflects the most relevant and impactful R&D projects. Your ability to **influence and shape discussions** at the funding level is critical to evaluate and understand the support and resources needed and possibly available to realize the technical evolution of the WLCG, while balancing the diverse priorities of funding agencies.

Your role will help shape the long-term sustainability and success of the WLCG's technical objectives.

We are seeking colleagues with strategic vision, results-driven, and able to build consensus.

A. Di Girolamo & J. Letts - WLCG MB - October 15, 2024   6

Technical Roadmap - timeline

A report on WLCG Evolution was made last month to the WLCG LHCC Referees, describing the status quo of the Data Challenges, Tokens, and in general the WLCG Evolution with the TCB and OTF.

Main comment expressed at the WLCG MB #323 [Indico]:

"Positive statement of the LHCC about the Open Technical Forum as a mechanism to build consensus on the technical roadmap. The LHCC expects some progress from the TCB in defining the structure of such roadmap by mid 2025."

Concrete milestone

Open Technical Forum - next dates

- OTF#3 Feb 11-12 (Tues & Wed afternoons)
  - Tentative main topic: Analysis Infrastructure
- ISGC - March 17-22
  - TBD with organizers about a remote presentation
- OTF#4 @HEPiX March 31 - April 4
  - TBD with organizers, tentatively 3h session on HEPiX-related topics - Facilities
- OTF#5 WLCG Workshop in Saclay, May 5-9
- OTF#6 @CERN Tue & Wed afternoons, June 24-25
- OTF#7 @CERN Tue & Wed afternoons, September 9-10
- OTF#8 Co-located with FTS workshop, October 13-17
  - TBD with organiers, tentatively 3h session
- OTF#9 TBD, tentatively end of Nov - beg of December

Comments or Questions?

Backup Slides (for information)

Administrative Matters

There are 3 relevant CERN e-groups:

- **`wlcg-technical-coordinators`** (to contact Ale & James)
- **`wlcg-technical-coordination-board`** (currently with ex-officio members included only, to be populated with the membership of the TCB)
- **`wlcg-open-technical-forum`** (**open to self-subscription, please join!**)

and two new Indico categories:

- WLCG Technical Coordination Board: https://indico.cern.ch/category/18888/
- WLCG Open Technical Forum: https://indico.cern.ch/category/18889/

The GDB e-groups will eventually be archived but for now we are also using project-lcg-gdb to publicize OTF meetings.

Future Possible Topics for the TCB & OTF

A non-exhaustive list!

- Data challenge strategic goals
- Token transition
- New storage architectures
- Analysis ecosystems (including how infrastructure will be shared with production activities)
- Networking
- Heterogeneous architectures
- HPC/Cloud/external resources integration
- Distributed computing infrastructures
- Environmental sustainability
- Data and Workflow management
- Services provided by sites, e.g. dCache (DESY), FTS (CERN)
- Onboarding new WLCG sites

Please contact us (wlcg-technical-coordinators AT cern.ch) to propose more topics and/or to propose your contributions on some of the topics.

Technical Coordination of WLCG Services and Infrastructures

Ultimately we have to deliver, agree on, and execute the Technical Roadmap.

- Format of the "chapters" of the Technical Roadmap - short, about 5 pages per service, functionality, or infrastructure.
- Each chapter driven by one or two people (e.g. TCB members, DOMA coordinators, WLCG Operations Coordinators, etc.) depending on interest or expertise.
- Common format for every chapter: We want a coherent document at the end so we need to agree on this format early in the process as well.
- Major timelines with milestones along the roadmap
- Maps can have more than one path to a destination - where are the decision points?