NEXT General Membership Meeting
Date: Tuesday, April 12th, 2022
Time: 9:00AM PT
https://lbnl.zoom.us/j/95486913733
Meeting ID: 954 8691 3733
Find your local number: https://lbnl.zoom.us/u/abU1w9QyHN
iCalendar (.ics) files

ANNOUNCEMENTS:
Gregg Barrett made several announcements regarding the OECD AI Compute Task Force, MLPerf HPC Benchmark and the AI Africa Consortium. More information below.

Energy Efficient High Performance Computing Working Group
2/08/2022 Meeting Report

INTRODUCTION: The Energy Efficient High Performance Computing Working Group (EE HPC WG) held a meeting on 2/08/22. This Working Group is composed of members representing major governmental departments and independent agencies, private sector representatives, and members of the academic community. More information can be found at the working group's website, https://eehpcwg.llnl.gov/ .

FEB'22 MINUTES

Liquid Cooling Specification Team, presented by Dale Sartor
The final specification has been issued. It's a living document. It will be subject to change over time. At this point, we're moving attention to working with ASHRAE and the Open Compute Project to get the specification integrated into their resources, such as specifications and standards. We are also striving for harmonization among all the groups to the degree that we can. I think that's possible given who we are working with. The original plan was to develop a comprehensive open specification with other sections besides the transfer fluid section we just completed. With my retirement, I'm not going to be able to lead this Team in the future. We're meeting as a Team later this week and we need volunteers. If you're Interested and you haven't been invited, send Natalie an email and she'll add you to the list.

Operational Data Analytics Team, presented by Michael Ott
Not much has been going on the last couple of weeks, over Christmas and New Year's. We re-started our Brownbag presentations last week. We had Jim Brandt and Ben Schwaller from Sandia National Labs present what they are doing with LDMS; what they are doing with the data and how they are analyzing it. We are planning to have them come back for our next meeting to continue with more time for Q&A. Apart from our Brownbag presentations, there is a virtual workshop tomorrow at NERSC for AI, ML and Operations. I will be giving a presentation on the framework that we already presented at the EE HPC SOP Workshop 2021 and SC'21 BoF.

Procurement Considerations Team, presented by Gert Svensson

We published the latest draft of the Energy Efficient HPC Procurement Considerations document that was our main deliverable from last year. We are continuously upgrading this document and now we are in the innovative phase where we try to find ideas for new releases of the document. We have been discussing a lot of different things. So it would be sort of interesting to hear other people's comments about this. One thing we definitely should do is to go through a number of procurements again to see what has changed in recent procurements. We also have been discussing how we should reach out to users of this document and also to vendors. Maybe the document is too much centered on the HPC system itself rather than the procurement of the infrastructure and facilities. We have been talking about broadening the scope to include more than just energy, but also sustainability issues like CO2 emissions and other environmental considerations like water use. We discussed whether we should include something about Quantum Computing for the future. So we would welcome comments and what you like to get from us.

Comment from Natalie Bates: A few of us have been having a discussion on the energy requirements for cryptocurrency and bit mining data centers. They actually have a pretty good PUE. They run pretty efficient data centers that are consuming a lot of megawatts of power. A question arises, how effective and efficient are the applications? Then there's a broader question of what is the social contribution of the applications? This brings up the question of a metric which measures both the use value of computing as well as the efficiency of the infrastructure and the computer system. We may want to include discussion of a metric like this in the next revision of the document.

Response from Randy Rannow: There have been several recent examples of data centers that use old coal fire plants and retrofitted them with natural gas to power their plants. The amount of power and efficiency is maybe unknown because of the closed nature with which they're operating. Developing some sort of metrics could be truly helpful to society.

Web Migration Team, presented by Gregg Barrett

I don't think we're too far away from having a website, at least the front end, which will be available to the General Public. We did go through alpha testing with members from LLNL because the site is being hosted at Livermore and we had to keep it internal during this initial development. We have a few more changes that are underway right now, but we think we'll be ready to go to beta testing this week. In fact, some of the people on the line are going to help with beta testing of the new site. We hope to go live with the site by the end of March.

Mechanical Cooling Controls, presented by Natalie Bates

The mechanical cooling controls team has completed their document that is the owner project requirements guideline. There is a process that is used in the industry for construction projects that starts with a document that is the owner's project requirements (OPR) document. And in this case, we focused on what something like that might look like for mechanical cooling controls, We have finished the first draft of that document and sent it up to the team for review. We received positive feedback and haven't really gotten any negative feedback from the Team.

So, that document is really ready for prime time. We have shared the document with ASHRAE and our hope is that they help to promote it.

Power Measurement Methodology Team, presented by Natalie Bates
I put out an email a couple of weeks ago stating that we're re-convening this team and asking for participants. I've gotten quite a few responses. There's a lot of interest in the HPC system-level power measurement methodology for use when running benchmarks. We specifically focus on High Performance Linpack (HPL) that is used for both the Top500 and Green500. It could be used for other benchmarks as well. There are some things that we've identified as to update in the document. It's been several years now since we've updated it.

Electrical Commissioning Team, presented by Brandon Hong
We had originally been focused on guidelines for commissioning of electrical distribution systems, but we made a transition and decided that we wanted to do more like what the mechanical cooling controls team and focus further up in the design process for construction projects. We wanted to look at making a guideline for the owner project requirements (OPR). And, and that is where we stand today. Ethan Thomason, who is a commissioning agent, has drafted a position paper that would help with this OPR effort. The initial intention of the group was about the concerns about dynamic power fluctuations and how we handle this, especially with larger computer systems coming online.

Conferences Update, presented by Torsten Wilde
We are in the process of defining our focus for this year in terms of conferences and activities. We have already identified some of the core things that we want to do. We definitely want to continue our two workshops. One is our regular working group workshop and one is the state of the practice (SOP) workshop. The EE HPC SOP workshop will be part of Cluster 2020 from 6 to the 9th of September in Heidelberg Germany. So watch for a call for papers coming soon. For our regular EE HPC WG Workshop, we are currently discussing moving that earlier in the year. We also decided that the Showcase that we had last year from Rikan was very successful and that we want to continue that and for this year. We are discussing with Oakridge to talk about Frontier though the time is not fixed yet. It kind of depends on when the system is up and running. We will also participate with BoFs at both ISC and SC. The SC panel deadline is the 22nd of April. That's probably the first thing we will work on. We have been considering doing a tutorial at supercomputing that would be on software energy efficiency. Finally, we want to reinvigorate our webinar schedule. If there's anybody who has any ideas for webinars or any desires for webinars and would like to help me out there, please let us know.

Question from Dale: Did we get any further feedback in terms of why our workshop proposal at SC, after many years of success was rejected?

Response from Natalie and Torsten: We decided that a supercomputing is likely to be a hybrid event and, as such, we didn't see any benefit of even making this submission to supercomputing for our Workshop this year. We would rather have it an entirely virtual event than a hybrid event. If it becomes an in-person event again, we will revisit that. Currently, we

decided it makes more sense to focus our efforts with a virtual workshop and see how things develop.

Dale: I know that our laboratory is starting to ease travel restrictions. Obviously, nobody can predict the future, but I think there's hope and anticipation that by the end of this year, things will be a lot better.

Torsten: It is unlikely that the whole of the globe is going to be free of this. It's also about international attendance.

ANNOUNCEMENT DETAIL:

- OECD AI Compute Task Force Survey
- MLPerf HPC Benchmark Submissions
- AI Africa Consortium

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OECD AI Compute Task Force Survey

The task force has launched a survey to gather first-hand information on existing indicators and frameworks to measure AI computing resources ("AI compute") as well as related environmental impacts. Your input through the survey would be invaluable.

The survey is intended for both users and suppliers of AI compute or those with in-depth technical knowledge on the subject. The survey includes an optional section specifically on the environmental impacts of AI compute, for those with relevant expertise. Please feel free to share it with other relevant colleagues in your network through LinkedIn and Twitter.

The deadline to complete the survey is 6 April 2022. The survey should take between 10 and 15 minutes to complete and can be accessed here: https://survey.oecd.org/index.php?r=survey/index&sid=679658&newtest=Y&lang=en

For further questions, please do not hesitate to contact AI@oecd.org.

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MLPerf HPC Benchmark Submissions

This is a call for participation in the MLPerf HPC v2.0 benchmark submission round in 2022.

MLPerf HPC is a machine learning (ML) training performance benchmark suite from MLCommons for the scientific high performance computing communities. It features scientific applications characteristic of the emerging ML workloads at HPC centers, holistic measures of performance such as time-to-train and system throughput, and a robust methodology and set of rules for a fair measurement and reporting process.

After two successful submission rounds in 2020 and 2021, with a variety of quality results on several leading HPC systems across the world, we are ramping up for our v2.0 submission round targeting a results release at Supercomputing conference (SC22). Now is a great time to get involved, to help shape and grow the benchmark suite, and to use this tool to evaluate and optimize the ML capabilities of your HPC systems.

The tentative schedule for MLPerf HPC v2.0 is:

- May 23, 2022, benchmarks and rules freeze
- Sep 16, 2022, submission deadline
- Nov, 2022, publication of results

If you are interested in learning more, please visit the following links:

- MLPerf HPC benchmark page: https://mlcommons.org/en/training-hpc-10/
- MLCommons HPC working group page: https://mlcommons.org/en/groups/training-hpc/
- The MLPerf HPC paper (presented at MLHPC 2022): https://arxiv.org/abs/2110.11466
- Get involved: https://mlcommons.org/en/get-involved/

You may also reach out to the current group chairs with questions:
Murali Emani (memani@anl.gov), Steve Farrell (sfarrell@lbl.gov)

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AI Africa Consortium

Website:
AI Africa Consortium

Documents:
Executive Summary
Brochure
Explanation of Benefits

Summary:
- There is no cost to join the Consortium.
- There are no ongoing costs as part of Consortium Membership.
- There are no other obligations except to provide the Members' marks so that they can be listed as a Consortium Member, and where an institution joins as a Tier 1 Member, to appoint an Ambassador.

- Only academic and research institutions can join.

Consortium Contact Details:

AI Africa Consortium Lead

Professor Emeritus Barry Dwolatzky

Barry.Dwolatzky@wits.ac.za

+27 82 881 7856

AI Africa Consortium Coordinator

Dr Roy Forbes

Roy.Forbes@wits.ac.za

+27 84 445 4732

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MEETING PARTICIPANTS:

Torsten Wilde (HPE)
Anna Maria Bailey (LLNL)
Dale Sartor (LBNL, Retired)
Natalie Bates (EE HPC WG)
Herbert Huber (LRZ)
Dan Ellsworth (Colorado College)
Michael Ott (LRZ)
Fabrizio Magugliani (E4 Company)
Yuetsu Kodama (RIKEN)
Gert Svensson (KTH)
Charlotte Mendes (DOE HQ)
Daniel Wilson (Boston University/Intel)
Ashwin Siddarth (Motivair)
Gregg Barrett (CirrusAI)
David Mohr (Nvidia)
David Sickinger (NREL)
Mike Lang (NNSA)
Randy k Rannow (Silverdraft Supercomputing)
Otto Van Geet, NREL
Axel Auweter (Megware)
Vladimir Getov (University of Westminister)
Brandon Hong (LLNL)