Performance Optimisation and Productivity
A Centre of Excellence in HPC

POP Newsletter 24 – Issue June 2024

Welcome to the 24th newsletter from the EU POP Centre of Excellence.

In this edition, we invite you to register for our next webinar on "The CARM Tool: Cache-aware Roofline Model for HPC" and report on the recent events and workshops attended and held by POP3.

If you would like to contribute technical content for this newsletter on the topic of parallel performance profiling, please contact us at pop@bsc.es.

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For past editions of the newsletter, see the POP newsletter web page.

POP Webinars

Upcoming Event
28th POP Webinar - The CARM Tool: Cache-aware Roofline Model for HPC

Join us on the 5th of September

In this live webinar, José Morgado (INESC-ID) will present the Cache-aware Roofline Model (CARM) which offers effective guidance by providing insights into bottlenecks that limit the application's ability to reach the system's maximum performance. Additionally, this webinar will include a live demonstration of the capabilities of this tool including a short tutorial of its usage.

Past Events
Last webinar: Performance Analysis of OpenMP Target Offloading in Score-P

On Ap 30, 2024, Jan Andre Reuter (JSC) presented first results in adding support for OpenMP offloading to the JSC instrumentation and measurement infrastructure Score-P using the OpenMP Tools Interface. The recording and the slide presentation can be found here.

Browse the full list and catch up on all our previous webinars here.

Recent POP Events

POP @ Durham Performance Analysis Workshop Series 2024

POP successfully participated and contributed to the Performance Analysis Workshop Series 2024, which was organised by DiRAC High Performance Computing facility and Durham University and ran from the 4th of April until the 9th of May.

Read our blog article for more on the workshop and POP's contribution.

POP @ ISC 2024

POP was represented by several of our experts and partners at this year's ISC in Hamburg from the 12th of May to the 16th of May. Our contributions included an introductory presentation about POP3 at the EuroHPC JU booth, presentations for workshop as well as the organisation of workshops and tutorials. Our POP experts were also represented at booths for the various project partners.

Read about the workshops and POP at the ISC 2024 here.

POP @ HPCSE24

The High Performance Computing in Science and Engineering 2024 conference organised by IT4Innovations National Supercomputing Center in the Besydy mountains of the Czech Republic was attended by three of our POP experts.

Read everything about POP at the conference here.

POP @ 45th VI-HPS Tuning Workshop

Instructors from the POP partners BSC, JSC and UVSQ supported the 45th VI-HPS Tuning Workshop, which took place at the Leibniz Supercomputing Centre in Garching, Germany, from the 10th to 13th of June 2024.

Read everything about this successful training here.

POP Tool Descriptions

RWTH Performance and Correctness Tools

The IT Center of the RWTH Aachen University develops the correctness analysis tools MUST and Archer and the performance analysis tool OTF-CPT. Archer is a dynamic data race detector for OpenMP programs which identifies data races in large OpenMP applications with low runtime and memory overheads. MUST is a runtime error detection tool for MPI applications. It detects usage errors of the MPI at runtime and reports them to the user. And OTF-CPT is a lightweight performance analysis tool that reports a summary of POP metrics for MPI+OpenMP at the end of execution.

Find out more about the tool here.

Inesc-ID Tools and Methods

The Cache-aware Roofline Model (CARM), developed at the CHAMP Hub at INESC-ID, is an insightful computer architecture performance model. It offers a high-level picture on the fundamental memory and compute performance limitations, while also providing intuitive analysis of the application execution bottlenecks and effectively guiding optimization efforts. The CARM Tool [2] provides a one-stop shop for CARM related analysis across a variety of different architectures, supporting nearly all major CPU vendors and ISAs.

Read everything about this tool here.

Apply For Free Help with Code Optimisation

We offer a range of free services designed to help EU organisations improve the performance of parallel software. If you are not getting the performance you need from parallel software or would like to review the performance of a parallel code, please apply for help via the short Service Request Form, or email us to discuss the service further and how it can be beneficial.

These services are funded by the EuroHPC research and innovation programme so there is no direct cost to our users.

The POP Helpdesk

Past and present POP users are eligible to use our email helpdesk. Please contact our team of experts for help analysing code changes, to discuss your next steps and to ask questions about your parallel performance optimisation.

https://pop-coe.eu