



Performance Optimisation and Productivity

A Centre of Excellence in HPC



POP Newsletter 23 – Issue March 2024

Welcome to the 23rd newsletter from the EU [POP](#) Centre of Excellence.

In this edition, we introduce the third phase of the POP CoE (POP3) and report on the changes compared to the last phase, including our new project partner INESC-ID from Portugal. We also invite you to register for our next webinar on “Asynchronous GPU Programming in OpenMP”. Finally, we report on the first events organized 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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We are back for a Third Round!

All good things come in threes! Finally, with a delay of more than one year, the third phase of the POP CoE started January 1st, 2024 for another three years!

The **Centre of Excellence on Performance Optimization and Productivity** (POP CoE) was launched in October 2015 with the fundamental goal of supporting a broad community of HPC application developers and users in both academia and industry. The POP CoE helps them to

understand the performance-related problems of their applications and thus improve their efficiency and productivity. This is achieved by providing an external and objective review of code performance for all interested users, providing not only a qualitative but also a quantitative analysis using POP tools and methods. The POP CoE was funded for a second phase (POP2) for further three years in 2018.

The current project, Performance Optimization and Productivity 3 (POP3), continues the extremely successful work of the first two phases. Read more about the third phase of POP [here](#).

POP Webinars

Upcoming Event: 26th POP Webinar - Asynchronous GPU Programming in OpenMP

Join us on April 30, 2024 – register [here](#).

The OpenMP 4.0 standard introduced support for accelerator and GPU programming and there are many introductory tutorials available.

In this webinar, Christian Terboven (RWTH Aachen University) and Michael Klemm (AMD) will present OpenMP's support for asynchronous kernel offloading and explain how to use it. In addition, we will show how OpenMP supports the combination with GPU-native programming models.

Past Events

Browse the full list and catch up on all our previous webinars [here](#).

POP partner profile: The HPCAS group of INESC-ID R&D Institute

Our new POP project partner [INESC-ID](#) is a Lisbon-based R&D+I (Research, Development and Innovation) centre, mainly owned by Instituto Superior Técnico (IST), the school of engineering of University of Lisbon. Being one of the largest and highest valued in Portugal, it is organized into 4 thematic lines and 11 areas covering various topics in Computer Science and Engineering and in Electrical and Computer. In particular, the [High-Performance Computing Architectures and Systems \(HPCAS\)](#) research area, which is that of the INESC-ID members in POP3, is specialized on several topics related to high-performance and energy-efficient computing.

Find out more in this [blog post](#).

Recent POP Events

POP3 Kickoff Meeting

On January 22 and 23, 2024, partners of the original POP CoE -- Barcelona Supercomputing Centre (BSC), High Performance Computing Center Stuttgart (HLRS), IT4Innovations National Supercomputing Center (IT4I), Jülich Supercomputing Centre (JSC), Rheinisch-Westfälische

Technische Hochschule Aachen (RWTH), TERATEC, and Université de Versailles Saint-Quentin-en-Yvelines (UVSQ), as well as our new member for the third phase of the project -- INESC ID -- met in sunny Barcelona for the kick-off meeting for the third round of funding for the POP CoE. The third phase will run from January 2024 to December 2026. Unfortunately, long term partner Numerical Algorithms Group Ltd (NAG) is no longer part of the team.

POP @ 43rd VI-HPS Tuning Workshop

Instructors from the POP partners JSC and UVSQ supported the [43rd VI-HPS Tuning Workshop](#), which took place at the [CALMIP Mesocentre](#) in Toulouse, France, from January 29 to February 1, 2024.

Read everything about this successful training [here](#).

POP @ 44th VI-HPS Tuning Workshop

Instructors from the POP partners JSC and UVSQ supported the [44th VI-HPS Tuning Workshop](#), which took place both at [RWTH Aachen](#) and at [TU Dresden](#), Germany, from February 26 to March 1, 2024. Remote participation was also possible.

POP @ EuroHPC Summit 2024

Various POP partners participated in the [EuroHPC Summit 2024](#) in Antwerpen, Belgium from March 18 to 21, 2024. Ondřej Vysocký (IT4I) spoke in the session "How Does One Define an "Energy Efficient" HPC System? From Data to Action". Bernd Mohr (JSC) presented the POP3 in the Poster session Tuesday afternoon. Finally, Brian Wylie (JSC) represented POP3 in the European HPC NCCs and CoEs Workshop.

For a more detailed report see [here](#).

Upcoming Events

POP @ Performance Analysis Workshop Series 2024

From April 4 to May 9, 2024, POP experts from BSC, JSC and UVSQ are contributing to the [Performance Analysis Workshop Series 2024](#) at the DiRAC HPC facility of Rurham University. The workshop runs twice a week over the course of five weeks. The workshop series offers a comprehensive introduction to a selection of open source tools that enable researchers to assess the performance behaviour of their code.

POP @ ISC High Performance 2024

From May 12 to 16, 2024, POP will be at the [ISC High Performance 2024](#) conference. Visit our experts at the research exhibition booths of BSC (#L30), IT4I (#J22) or JSC/HLRS (#K02). On May 12, POP experts also contribute to the ISC tutorials "[Determining Parallel Application Execution Efficiency and Scaling using the POP Methodology](#)" (BSC, JSC) and "[Continuous Correctness Checking for HPC Applications](#)" (RWTH). Finally, on May 16, POP organizes the workshop "[First International Workshop on Readiness of HPC Extreme-scale Applications](#)".

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>



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