

Benchmarking in the Datacenter (BID): Expanding to the Cloud

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ABSTRACT

Welcome to the 2024 5th International Workshop on Benchmarking in the Data Centre: Expanding to the Cloud (BID '24), hosted at Imperial College London as a workshop track of the International Conference on Performance Engineering (ICPE'24).

The past few years have been remarkably exciting for the cloud computing domain. We are witnessing groundbreaking developments in AI architectures, new AI/ML methodologies, and the significant expansion of newer CPU architectures such as AArch64 and RISC-V. These innovations not only redefine the capabilities and efficiency of cloud-based services but also open new avenues of research on how we can attain the best possible performance in the cloud.

BID '24 is dedicated to advancing the field of high-performance computing (HPC) benchmarking, extending its application from traditional academic settings to industry and the cloud. This evolution prompts a reassessment of user education concerning HPC's advantages, optimal selection of computational resources for specific workloads, and the considerations surrounding cost and environmental impact. Our discussions will encompass several key areas: privacy issues in commercial HPC environments, emerging cloud architectures, comprehensive workflows for effective benchmarking, and theoretical approaches to performance analysis. Additionally, this year's workshop will delve into the unique challenges presented by AI/ML workloads in cloud settings.

The success of BID '24 is made possible by the contributions of numerous individuals and organizations. We extend our gratitude to all authors and presenters who have submitted their work for discussion. A special thank you goes to the members of the Technical Committee for their invaluable support and diligent reviews. We also appreciate the hospitality and support from our hosts in London, UK, who have provided an excellent venue for our workshop.

Ultimately, the essence of BID '24 is shaped by its participants. We thank all authors, speakers, and attendees for enriching this workshop with their insights and presence. We hope you find the discussions stimulating, the networking fruitful, and your time in London memorable.

CCS CONCEPTS

• **Computing methodologies** → **Parallel computing methodologies**; • **Computer systems organization** → **Cloud computing**; **Heterogeneous (hybrid) systems**.

KEYWORDS

HPC; benchmarking; cloud computing; confidential computing; AI/ML workflow

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