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3rd Workshop on Hot Topics in Cloud Computing Performance (HotCloudPerf'20) “Performance Variability” by SPEC Research Cloud

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SUMMARY

The organizers of the Third Workshop on Hot Topics in Cloud Computing Performance (HotCloudPerf 2020) are delighted to welcome you to the workshop proceedings as part of the ICPE conference companion.

The HotCloudPerf 2020 workshop is a full-day workshop on Tuesday, April 21, taking place jointly with WOSP-C as part of the ICPE conference week in Edmonton, Canada.

Each year, the workshop chooses a focus theme to explore; for 2020, the theme is “Performance variability of cloud datacenters and the implications of such phenomena on application performance”

Cloud computing is emerging as one of the most profound changes in the way we build and use IT. The use of global services in public clouds is increasing, and the lucrative and rapidly

growing global cloud market already supports over 1 million IT-related jobs. However, it is currently challenging to make the IT services offered by public and private clouds performant (in an extended sense) and efficient. Emerging architectures, techniques, and real-world systems include hybrid deployment, serverless operation, everything as a service, complex workflows, auto-scaling and -tiering, etc. It is unclear to which extent traditional performance engineering, software engineering, and system design and analysis tools can help with understanding and engineering these emerging technologies. The community also needs practical tools and powerful methods to address hot topics in cloud computing performance.

Responding to this need, the HotCloudPerf workshop proposes a meeting venue for academics and practitioners, from experts to trainees, in the field of cloud computing performance. The workshop aims to engage this community, and to lead to the development of new methodological aspects for gaining deeper understanding not only of cloud performance, but also of cloud operation and behavior, through diverse quantitative evaluation tools, including benchmarks, metrics, and workload generators. The workshop focuses on novel cloud properties such as elasticity, performance isolation, dependability, and other non-functional system properties, in addition to classical performance-related metrics such as response time, throughput, scalability, and efficiency.

The HotCloudPerf workshop is technically sponsored by the Standard Performance Evaluation Corporation (SPEC) Research Group (RG), and is organized annually by the RG Cloud Group.

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HotCloudPerf has emerged from the series of yearly meetings organized by the RG Cloud Group, since 2013. The RG Cloud Group group is taking a broad approach, relevant for both academia and industry, to cloud benchmarking, quantitative evaluation, and experimental analysis.

This year, after a thorough review process, HotCloudPerf 2020 features three full papers. Furthermore, we are proud to open the workshop with two keynote talks given by Robert Ricci, research associate professor at the University of Utah, and Tim Brecht, associate professor at the University of Waterloo.

The workshop will conclude with a discussion session and lightning talks on the recent achievements of the SPEC RG Cloud group.

The organizing committee would like to thank all members of the HotCloudPerf program committee for their intense and constructive reviews and discussion. Furthermore, thanks go to the ICPE workshop track chairs Cati Llado and Cor-Paul Bezemer, the ICPE proceedings chair Holger Eichelberger, and the complete local organisation team.

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- Cristina Abad (ESPOL, Ecuador)
- Nikolas Herbst (U. Würzburg, Germany)
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