HotCloudPerf-2019

The Second Workshop on Hot Topics in Cloud Computing Performance

"Performance from the cloud datacenter to the edge"

co-located with FAS*(ICAC/SASO) conferences, June 16 or 17, Umea, Sweden

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IMPORTANT DATES (Anywhere on Earth)

February 22, 2019	Abstracts due
March 1, 2019	Papers due
April 10, 2019	Author notification
April 18, 2019	Camera-ready deadline, author registration
June 16 or 17, 2019	Workshop Day

WORKSHOP THEME AND BACKGROUND

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.
Each year, the workshop chooses a focus theme to explore; for 2019, the theme is "Performance from the cloud datacenter to the edge." Articles focusing on this topic are particularly encouraged for HotCloudPerf-2019.
The HotCloudPerf workshop is technically sponsored by the Standard Performance Evaluation Corporation (SPEC)'s Research Group (RG), and is organized annually by the RG Cloud Group. 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.

WORKSHOP SCOPE AND TOPICS

Topics of the focus-theme for 2019, "Performance from the cloud datacenter to the edge":

1. Serverless/Function-as-a-Service(FaaS) computing platforms and micro-services in cloud datacenters.
2. Understanding and engineering dependability and non-traditional performance requirements for cloud datacenters.
3. Studying performance variability in cloud datacenters and/or
4. solutions for taming performance variability in clouds.
5. Running specialized services with performance guarantees, such as, Business Process as a Service, Data as a Service, business-critical workloads, etc.
6. Extending the cloud datacenter to support the non-functional requirements of converged workloads, including IoT, HPC, and big data services.
7. Experience reports and use-cases with understanding and engineering performance in the cloud datacenter.

Long-running topics of the HotCloudPerf workshop include, but are not limited to:

1. Empirical performance studies in cloud computing environments, applications, and systems, including observation, measurement, and surveys.
2. Comparative performance studies and benchmarking of cloud environments, applications, and systems.
3. Performance analysis using modeling and queueing theory for cloud environments, applications, and systems.
4. Simulation-based studies for all aspects of cloud computing performance.
5. Tuning and auto-tuning of systems operating in cloud environments, e.g., auto-scaling of resources and auto-tiering of data, optimized resource deployment.
6. Software patterns and architectures for engineering cloud performance, e.g., serverless.

7. Experience with and analysis of performance of cloud deployment models, including IaaS/PaaS/SaaS/FaaS.
8. End-to-end performance engineering for pipelines and workflows in cloud environments, or of applications with non-trivial SLAs.
9. Tools for monitoring and studying cloud computing performance.
10. General and specific methods and methodologies for understanding and engineering cloud performance.

ARTICLE SUBMISSION GUIDELINES

There are two ways to participate: i) present a talk without a respective paper published in the workshop proceedings, ii) submit a paper to be presented at the workshop and published in the workshop (FAS*(ICAC/SASO) companion) proceedings.

We solicit the following types of contributions:

- **Talk only:** Extended abstract limited to 1 page (without formatting restrictions)
- **Full paper** limited to 6 pages (double column, IEEE conference format)
- **Short paper** limited to 2 pages (double column, IEEE conference format)

Contributions in the 1st category (as Talk only) may have already been (partially) presented at other events or in publications. Contributions in the 2nd and 3rd category (technical papers) must represent original and unpublished work that is not currently under review. Full papers may report on original research, lessons learned from realizing an approach, or experiences on transferring a research prototype into practice. Short papers may report on work-in-progress, a tool/demo, or present a vision or position motivating the community to address new challenges.

Articles and talk only contributions are required to be submitted via the EasyChair system of HotCloudPerf-2019.

Articles must use the IEEE conference format. Each valid submission will receive at least three (3) peer reviews. Presented papers will be published by IEEE and included in IEEE Xplore. Adhering to IEEE guidelines for conferences, FAS*(ICAC/SASO) requires that at least one author of each accepted paper attends the workshop and presents the paper.

ORGANIZING COMMITTEE

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