Call for Papers for
The First Workshop on Hot Topics in Cloud Computing Performance

HotCloudPerf-2018

"Performance in the cloud datacenter"

https://hotcloudperf.spec.org

VENUE: workshop held on April 9, in conjunction with ICPE 2018, Berlin, Germany [https://icpe2018.spec.org/].

IMPORTANT DATES (Anywhere on Earth)

Jan 10, 2018	Abstracts due
Jan 15, 2018	Papers due
Feb 07, 2018	Author notification
Feb 18, 2018	Camera-ready deadline for proceedings:
Apr 09, 2018	Workshop

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 2018, the theme is “Performance in the cloud datacenter.” Articles focusing on this topic are particularly encouraged for HotCloudPerf-2018.

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 in conjunction with ICPE, 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, TOPICS:

Topics of the focus-theme for 2018, “Performance in the cloud datacenter”:

1. Serverless computing platforms and micro-services in cloud datacenters.
2. Understanding and engineering dependability and non-traditional performance requirements for cloud datacenters.
3. Running specialized services with performance guarantees, such as, Business Process as a Service, Data as a Service, business-critical workloads, etc.
4. Extending the cloud datacenter to support the non-functional requirements of converged workloads, including IoT, HPC, and big data services.
5. 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 (ICPE 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, ACM format)
- **Short paper** limited to 2 pages (double column, ACM 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-2018. Articles must use the ACM conference format. Each valid submission will receive at least three (3) peer reviews. Presented papers will be published by ACM and included in the ACM Digital Library. Adhering to ACM guidelines for conferences, ICPE requires that at least one author of each accepted paper attends the workshop and presents the paper.

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