SPEC Research Group
An Overview
Kai Sachs, Samuel Kounev
Standard Performance Evaluation Corporation

OSG
Open Systems Group

HPG
High Performance Group

GWPG
Graphics and Workstation Performance Group

RG
Research Group

> 80 member organizations & associates

Founded 1988
Standard Performance Evaluation Corporation
Development of Industry Standard Benchmarks

> 80 member organizations & associates
Founded 1988
Standard Performance Evaluation Corporation
Research Platform

OSG
Open Systems Group

HPG
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GWPG
Graphics and Workstation Performance Group

RG
Research Group
Cloud, Intrusion Detection Systems, (Big) Data?

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Founded 1988
Mission Statement

- Provide a **platform for** collaborative research efforts in the area of
  - Quantitative system evaluation and analysis
- **Scope:** Computer benchmarking, performance evaluation and experimental system analysis in general
- Provide metrics, (research) benchmarks, methodologies and tools
Performance

Performance in a broad sense:

- **Classical performance metrics**
  *Example*: response time, throughput, scalability, efficiency, and elasticity

- **Non-functional system properties** *under the term dependability*
  *Example*: availability, reliability, and security
Activities of the SPEC Research Group

- Working Groups
  - RG Cloud
  - Intrusion Detection Systems (IDS) Benchmarking
  - *In discussion: Big Data Working Group*

- Portal for all kinds of performance-related resources
  - Repository of peer-reviewed tools, experimental data & traces

- Organization of ACM/SPEC ICPE conference series (& others)
Selected Peer – Reviewed Tools

**Faban** - A performance workload creation and execution framework

**FINCoS** - Framework for Performance Evaluation of Event Processing Systems

**Kieker** - Application Performance Monitoring & Dynamic Software Analysis
The IDS Benchmarking Working Group
Chair: Marco Vieira

Vision: “… to foster and facilitate innovative research in computer system and network intrusion detection, with special attention given to benchmarking intrusion detection systems in virtualized cloud environments…”

Topics of Interest:
- Security- and performance-related IDS benchmark metrics
- Workloads based on vulnerability and attack injection
- IDS benchmarking methodologies and methods
- Performance attack signatures
The Cloud Working Group
Chair: Alexandru Iosup

Vision: “Develop new methodological elements 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.”

Topics of interest
- Novel cloud properties (elasticity, performance isolation, dependability…)
- Non-functional system properties
- Classical performance-related metrics (response time, throughput, scalability…)

Hot right now
- Cloud Benchmarking survey: metrics, tools, use. In work
Big Data: Ongoing Activities
Towards a Standard Benchmark

Workshop on Big Data Benchmarking
- May 8-9, 2012 in San Jose, CA
- December 17-18, 2012 in Pune, India
- July 16-17, 2013 in Xian, China
- ‘Incubator’ for Big Data standard benchmark(s) for industry

SPEC Research Group
- New working group focusing on Big Data is discussion
- Focus on research questions

SPEC OSG
- Big Data as part of a cloud benchmark

WBDB 2012 Report: Setting the Direction for Big Data Benchmark Standards
C. Baru, M. Bhandarkar, R. Nambiar, M. Poess, T. Rabl, TPCTC: 2012, collocated with VLDB2012
Report on Cloud Computing to the OSG Steering Committee
Data categories
- Structured, unstructured and semi-structured; events & streams; graphs; geospatial, retail, astronomy & genomic; ...

Big Data (Benchmark) scenario & metrics
- Realistic use-cases & workload mixes
- Classification schema

Research Benchmarks

Data generation
- Real world traces & synthetic data
How can we collaborate?

Co-location of Workshop on Big Data Benchmarking & ACM/SPEC ICPE 2014 in Dublin next March

Establish a Big Data Working Group @ SPEC RG

Why?
Overlapping community, no need for two groups working on the same topics, SPEC organization, infrastructure & resources…
Thank you

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