

Cloud Benchmark Performance and Security Infrastructure for Mobile Clouds

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Abstract: In this talk, Dr. Hwang addresses cloud performance, security and privacy issues. New ideas and benchmark results of two papers accepted by IEEE-TPDS and by Mobile Computing Conference are presented. We report real-life benchmark results using BenchClouds, TPC-W, HiBench, BenchSuite, and Yahoo! YCSB on Amazon AWS EC2/S3 clouds. We have developed three groups of cloud performance metrics, covering high-volume throughput, efficiency, scalability, elasticity, productivity, availability, QoS, network latency, software portability, etc. His talk also covers the protection of cloud resources, mobile devices, cloudlets, big-data privacy preservation, and security infrastructure for cloud networking in either wired or wireless environments. The ultimate goal is to achieve enhanced ubiquity, mobility, security, scalability and *quality of service* (QoS) of clouds in the entire cyberspace. To remove the security and trust barriers in bare-metal or virtual clouds, some new approaches are discussed. Finally, he introduces the new BYOC (*Bring Your Own Cloud*) model for inter-cloud (mashup) applications.

Biographical Sketch: Kai Hwang is a Professor of EE/CS at the University of Southern California (USC). He is also an EMC-endowed visiting Chair Professor at Tsinghua University. He received the Ph.D. from University of California, Berkeley in 1972. He has published 8 books and over 240 scientific papers in computer architecture, parallel processing, distributed systems, cloud computing and network security. His books have been adopted worldwide and translated into Chinese, Korean, Spanish, and German languages. His works have been cited more than 14,000 times with an h-index of 50. His latest book: *Distributed and Cloud Computing* was published by Kaufmann in 2012.



Dr. Hwang was recognized with an IEEE Fellow in 1986. He received the very-first Outstanding Achievement Award from China Computer Federation in 2004, the IPDPS-2011 Founder's Award, and the Lifetime Achievement Award from the IEEE Cloud2012 for his pioneering work in parallel computing and distributed systems. He has served as the founding Editor-in-Chief of the *Journal of Parallel and Distributed Computing* for 28 years. He has produced numerous Ph.D students at Purdue University and at USC. Four of them were elected IEEE Fellows and one an IBM Fellow. He has delivered three dozens of keynote addresses on advanced computing systems and cutting-edge information technologies in major IEEE/ACM Conferences. Hwang has performed advisory, consulting and collaborative work for IBM, Intel, MIT Lincoln Lab, JPL at Caltech, ETL in Japan, Academia Sinica in China, GMD in Germany, and INRIA in France. He can be reached via Email: kaihwang@usc.edu.