

Abstract: Cloud computing is emerging as a new paradigm that aims at delivering computing as a utility. For the cloud computing paradigm to be fully adopted and effectively used, it is critical that the security mechanisms are robust and resilient to faults and attacks. Securing cloud systems is extremely complex due to the many interdependent tasks such as application layer firewalls, alert monitoring and analysis, source code analysis, and user identity management. In this presentation, I will introduce two emerging technologies: Autonomic Computing and Big Data Analytics and demonstrate the feasibility of using these techniques to build highly secure and resilient cloud services. We present an approach to utilize Smart Big Data Analytics and self-management to provide the required autonomic management and analytics to secure and protect cloud resources and services.



Bio: Salim Hariri is a Professor in the Department of Electrical and Computer Engineering at The University of Arizona. He received his Ph.D. in computer engineering from University of Southern California in 1986, and an MSc from The Ohio State University in 1982. He is the UA site director of NSF Center for Cloud and Autonomic Computing and he is the Editor-In-Chief for the CLUSTER COMPUTING JOURNAL (Springer, <http://clus.edmgr.com>) that presents research techniques and results in the area of high speed networks, parallel and distributed computing, software tools, and network-centric applications. He is the Founder of the IEEE/ACM International Symposium on High Performance Distributed Computing (HPDC) and the co-founder of the IEEE/ACM International Conference on Cloud and Autonomic Computing. He is co-author/editor of four books on Autonomic computing, parallel and distributed computing: Autonomic Computing: Concepts, Infrastructure, and Applications (CRC Press, 2007), Tools and Environments for Parallel and Distributed Computing (Wiley, 2004), Virtual Computing: Concept, Design and Evaluation (Kluwer, 2001), and Active Middleware Services (Kluwer, 2000). His research interests include autonomic cyber security, big data analytics, resilient cloud services, critical infrastructure protections, and autonomic programming, and resilient Dynamic Data Driven Application Systems (rDDDDAS).