Enhancing the security of Cloud Computing and its work environment using TPM

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Loubna DALI is a Doctor of Science candidate in computer sciences. Prior arriving to Bowie State University, Loubna received her master's degree in computer sciences from National School of Applied Science, Agadir Morocco. Having a great passion of research, Loubna published more than ten papers and two book chapters on her area of research. She also won the first prize on research expo day. On summer of 2015, Loubna was granted a SURI (summer undergraduate research institute) grant from the provost office and the NSF to teach and mentor undergraduate student on Cloud Computing. She was the primary PI along with her thesis advisor Dr. Hoda El sayed. Besides being a graduate assistant/ Teacher assistant, she is also working on her dissertation focusing on enhancing cloud computing. On her dissertation, she will be focusing on cloud security issues and how to prevent and reduce cloud security flaws.

Abstract:

Cloud computing has recently emerged as a core technology for managing and delivering services in informational technology (IT) research. It is rapidly changing the scenery of information technology, and ultimately turning the long-held promise of utility computing into a reality. With such speedy progressing and emerging, it becomes crucial to understand all security aspects about this technology. In fact, the complexity of the cloud security poses new computing challenges. Computing methods and software developments for cloud security are likely to continue as a major area of research in the coming years.

In this seminar, we will explain the novel method we proposed to ensure the security levels of all computing environments and components associated with cloud computing. Our proposal was   to use a combination of new machine authentication mechanism using Trusted Platform Module (TPM), which can be used to provide a secure access to virtual environments in the cloud, along with cloud broker to secure the client end as well, prior to this work, we had done a global analysis on Cloud Computing to check what of its features which are CIA (Confidentiality. Integrity. Availability), are more vulnerable to attacks, employing FMECA (Failure Mode Effects and Critical Analysis).

Contact Dr. Soo-Yeon Ji (sji@bowiestate.edu) if you have any question.