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Forensic Readiness Capability for Cloud Computing

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Abstract

Cloud computing services represent the actual computation delivery to the most of customer communities. Such services are regulated by a contract called Service Level Agreement (SLA), cosigned between customers and providers. During its validity time several contractual constraints have to be respected by the involved parties. Due to their popularity, cloud services are enormously used and unfortunately also abused, especially by cyber-criminals. A manner for guaranteeing and enhancing cloud service security is the provisioning of a forensic readiness capability to them. Such a capability is responsible to perform some activities aimed to prepare the services for a possible forensic investigation. Sometimes, the crimes are related to some contractual constraint violations without the parties are aware of. Thus, a dedicated forensic readiness capability interacting with cloud services and detecting the SLA violations by analysing some cloud log files can guarantee more control on such contracts. In this dissertation, a formal model aimed to represent a forensic readiness capability for the cloud that detects contractual violations is presented, together with a prototype system running on a specific case study.