

ABSTRACT

The unprecedented facilities of cloud computing helps in utilization of resources with on demand pay per use approach. Cloud computing platform enables cloud consumers and providers to a large scale use of transferring SaaS services among them with internet as medium. Software as a Service is a cloud service which has minimum limitations and maximum advantages. Many IT enterprises adopt cloud facilities to maximize the throughput for supporting infrastructures. Auditing is a strategic approach which impacts cloud computing services in terms of quality and quantity. The objective of audit trails enables performance audit, privacy audit and security audit as per NIST reference model depending upon disruptive computing situations. The eloquence of performance audit considers the economy, effectiveness and efficiency about the entities involved in the cloud computing platform. In achieving genuine data, provenance plays a main role which provides complete lineage of data. The audit trail is complemented with the provenance data to edify the importance of performance audit. We propose our research contributions to circumscribe and curtail to the performance audit in developing of audit trail framework with three algorithms which projects effectiveness, economy and efficiency with aware of provenance data. As discussed above economic provenance aware audit trail (EPAT) algorithm was introduced to access the performance based on economy of proposed QoS attributes. Policy based provenance aware audit trail (PPAT) algorithm was introduced to access the performance based on effective policy (SLA) monitoring. Efficient services provenance aware audit trail (EFPAT) algorithm was introduced to assess the performance based on identifying efficient SaaS service provider depending on SaaS Services offered to its consumer. These algorithms are integrated as a framework which provides a complete performance audit trail based on provenance.