Summary Report

Summary of the topic - Saadman

Research problem –

The authors in the article discuss security as well as dependability challenges while developing secured and dependable cloud applications with respect to Software Development (SDLC) and Data Security (DSLC) Life Cycles. DevOps requires implementing a continuous deployment pipeline (CDP) which wants more security as well as error- checking, so that errors or any malicious code doesn’t spread. In testing and deployment, complete automation increases challenges on security, dependability and requires quick recovery, rollback, and resilience.

SaaS Security Life Cycle (SSLC) combines SDLC and DSLC, with each phase having security and dependability issues.

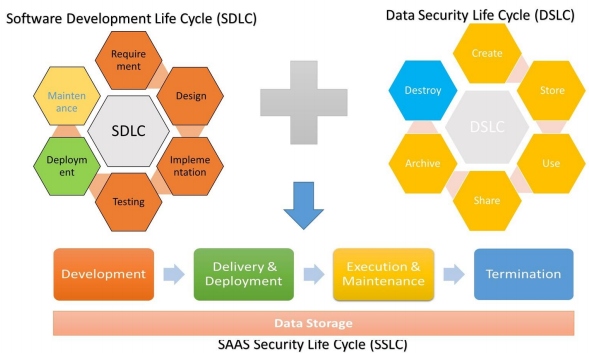


Fig 1. SaaS Security Life Cycle. Source [1]

In **Development phase**, the first two steps- requirement gathering and design includes security and dependability and last step- testing has CDP activities. Fully in-cloud solutions have benefits like agility and distributed collaborative coding but, it also adds several threats and inability to port developed applications from one cloud provider to another. [1]

In **Delivery & Deployment phase,** dependability and security can be enhanced by using continuous delivery (ensures everything is tested) or continuous deployment (automatic deployment of changes).

In **Execution & Operation phase,** use of Hypervisor enhances security and detect vulnerabilities of Virtual Machines (VM), but it is a single point of failure.

In **Termination,** the owner doesn’t have full control over data or storage media as the issue of secured deletion of data arises.

**Data Storage-** the security of data is very important. To achieve Confidentiality there are three criteria, architecture (uses Hybrid Cloud to separate sensitive- private and non-sensitive data- public cloud), privacy (K-anonymization and differential privacy), and security (homomorphic encryption). To achieve Integrity there are two categories, public auditing and verification but these approaches relies on storage service and efficiency problem. Availability is achieved by replicating data among several cloud service providers. So, in case of outage backups needs to be ready to minimize data loss and unavailability.

Solution Proposed - Bhanu

Critique – Sogra

REFERENCES:

[1] Ingo Weber. Surya Nepal. Liming Zhu. “Developing Dependable and Secure Cloud Applications”. [Online]. [Available]. <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7465693&tag=1>. [Accessed On: 19th April 2018]