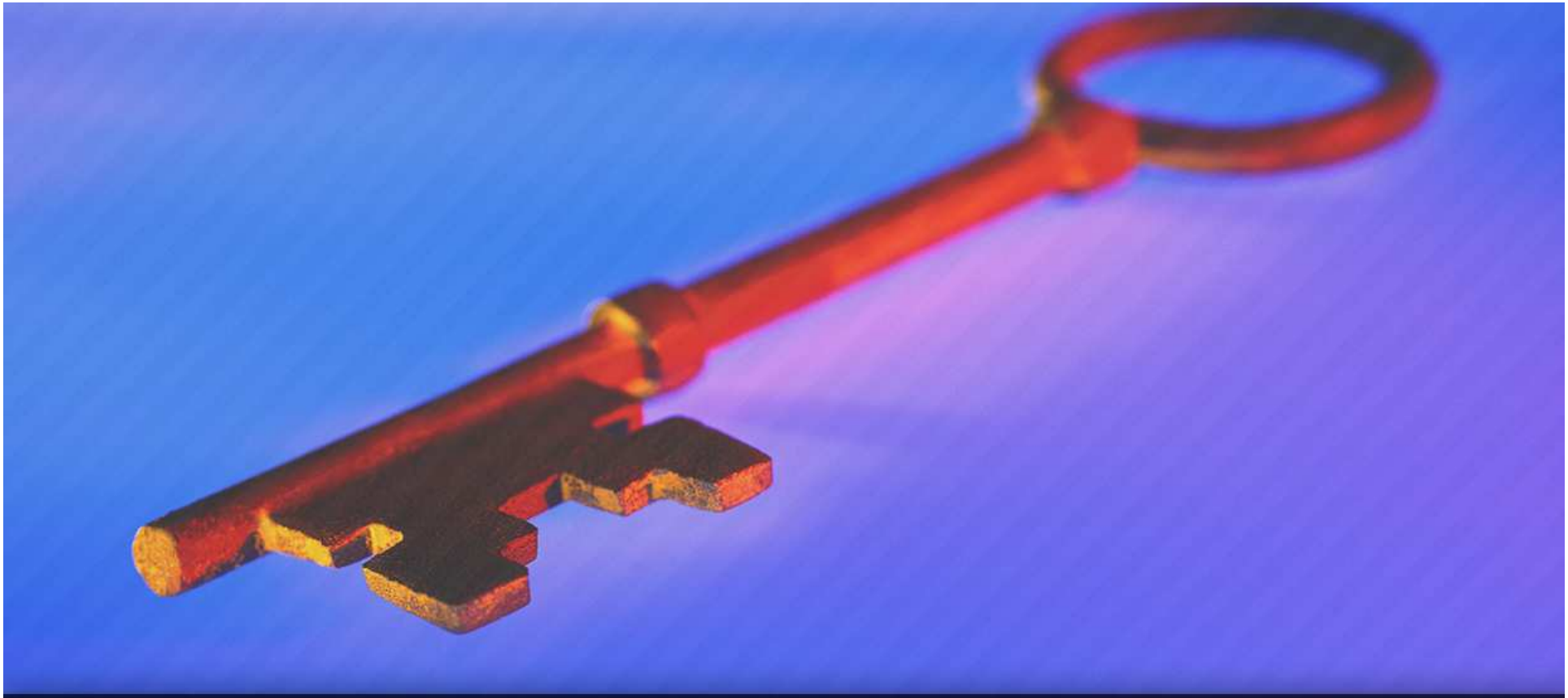

Security at IaaS, PaaS and SaaS

Security at Layers of Cloud

Threats	Effects	Affected Cloud services	Solution directives
Changes to business model	Loss of control over Cloud infrastructure.	SaaS, PaaS and IaaS	Provide control and monitoring system on offered services.
Abusive use of Cloud computing	Allows intruder to launch stronger attacks due to anonymous signup, lack of validation, service fraud, and ad-hoc services.	PaaS and IaaS	Stronger registration and authentication. Comprehensive monitoring of network traffic.
Insecure interfaces and API	Poses threats like clear-text authentication, transmission of the content; improper authorizations etc.	SaaS, PaaS and IaaS	Ensure strong authentication and access control mechanism with encrypted transmission.
Malicious insiders	Insider malicious activity bypassing firewall and other security model.	SaaS, PaaS and IaaS	Provide transparency for security and management process. Use compliance reporting and breach notification.

Security at Layers of Cloud

Threats	Effects	Affected Cloud services	Solution directives
Shared technology issues	Allows one user to interfere other users' services by compromising hypervisor.	IaaS	Use strong authentication and access control mechanism for administrative task. Inspect vulnerability and configuration.
Data loss and leakage	Confidential data can be compromised, deleted or modified.	SaaS, PaaS and IaaS	Use secure APIs, encryption algorithms and secure keys. Apply data retention and backup policies.
Service hijacking	User accounts and service instances could in turn make a new base for attackers.	SaaS, PaaS and IaaS	Use security policies, strong authentication mechanism and activity monitoring.
Risk profiling	Internal security procedures, security compliance, configuration hardening, patching, auditing and logging may be overlooked.	SaaS, PaaS and IaaS	Disclose partial logs, data and infrastructure detail. Use monitoring and alerting system for data breaches.
Identity theft	An attacker can get valid user's identity to access that user's resources; and obtain credit or other benefits in that user's name.	SaaS, PaaS and IaaS	Use strong passwords and authentication mechanism.

References

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