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Nota di contenuto	Intro -- Cover Page -- Title Page -- Copyright Page -- Foreword -- Dedication Page -- About the Author -- Technical Reviewers -- Acknowledgements -- Preface -- Errata -- Table of Contents -- SECTION I: Overview and Need to Transform to Cloud Landscape -- 1. Evolution of Cloud Computing and its Impact on Security -- Introduction -- Structure -- Evolution of cloud -- Cloud computing journey -- Cloud computing overview -- Characteristics of cloud computing -- Cloud types -- Cloud computing service model -- Cloud computing trends -- Recognizing the development of cloud -- Justifications for using the cloud -- Analyzing the risk of cloud services -- Inherent risk -- Techniques to reduce the inherent risk -- Cloud computing privacy concerns -- Assessing your organization's cloud maturity -- Analyzing the development of cloud risk -- Shadow IT and its rise -- Understanding the shared responsibility paradigm -- Key considerations for the upliftment of cloud security -- Risk analysis -- Controls on user access -- Automation -- Continual monitoring -- Conclusion -- Reference -- 2. Understanding the Core Principles of Cloud Security and its Importance -- Introduction -- Structure -- Principles and concept understanding -- Most restrictive -- Defense in Depth -- Threat actors as well as trust limits -- Segregation of duties -- Fail-safe -- Economy of mechanism -- Complete mediation -- Open design -- Least common mechanism -- Weakest chain -- Making use of the current landscape -- Architectural considerations -- Basic concerns -- Compliance -- Security control -- Controls -- Additional

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-- Responsibilities of cloud security architecture -- Public cloud versus private cloud -- CSP versus customer.

Adoption of cloud security architecture on various service models --

Software as a Service (SaaS) -- Infrastructure as a Service (IaaS) --

Platform as a Service (PaaS) -- Cloud security framework -- System

design -- Operational excellence -- Security, compliance, and privacy

-- Reputation -- Cost management -- Performance management --

Adopting cloud security -- Five phases of adoption -- The foundational

layer -- The perimeter layer -- Data protection -- Visibility -- Cloud

solution -- Cloud security principles -- Autonomic security --

Autonomic system -- Autonomic protection -- Autonomic healing --

Evaluating the cloud security maturity model -- Cloud migration --

Software development for the cloud -- Need to shift software to cloud

-- Strategy for cloud migration -- Real-time challenges while

migrating to cloud -- Benefits of cloud migration -- Approaches to

cloud migration -- Scenarios for cloud migration -- Common cloud

services centralization -- Need to centralize common services --

Consumer PaaS -- Resources and services for development -- Public

facing services -- Security services -- Human impact -- Spending

money on people -- Support staff -- Microservices and container

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and protection -- Classification and identification of data --

Classification level for data -- Relevant regulatory or industry requirements.

Cloud-based data asset management -- Cloud resource tags -- Data

protection in the cloud -- Tokenization -- Encryption -- Key

management -- Encryption on both the client and server sides --

Cryptographic erasure -- Enabling encryption to protect against

different attacks -- Tagging cloud assets -- IAM on cloud --

Enterprise-to-Employee (B2B) and Enterprise-to-Consumer (B2C) --

Multi-Factor Authentication (MFA) -- API keys and passwords -- Shared

credentials -- Single Sign-On (SSO) -- SAML and OIDC -- SSO with

legacy applications -- Vulnerability management -- Differences in

traditional IT -- Components that are at risk -- Data access layer --

Application layer -- Middleware -- Operating system -- Virtual

infrastructure -- Physical infrastructure -- Vulnerability scanners for

networks -- Cloud Service Provider (CSP) security management tools --

Container scanner -- Dynamic Application Security Testing (DAST) --

Static Application Security Testing (SAST) -- Software Composition

Analysis Scanner (SCA) -- Interactive Application Scanning Test (IAST)

-- Runtime Application Self-Protection (RASP) -- Code reviews -- A few

tools for vulnerability management -- Network security -- Concepts

and definitions -- Whitelists and blacklists -- DMZ -- Proxies -- SDN

-- Feature of the network virtualization -- Encapsulation and overlay

networks -- Virtual Private Cloud (VPC) -- Network Address Translation

(NAT) -- Adoption path of network security components -- Encryption

in motion -- Segmenting the network with firewalls -- Perimeter

controls -- Internal segmentation -- Security groups -- Network

segmentation and firewall policies for container -- Administrative

access -- Jump servers (or bastion hosts) -- Virtual Private Network

(VPN) -- Site-to-site communications -- Client-to-site

communications -- Web Application Firewall (WAF) -- DDoS protection. Intrusion Detection System (IDS) and Intrusion Prevention System (IPS).

Sommario/riassunto

Cloud platforms face unique security issues and opportunities because of their evolving designs and API-driven automation. We will learn cloud-specific strategies for securing platforms such as AWS, Microsoft Azure, Google Cloud Platform, Oracle Cloud Infrastructure, and others. The book will help you implement data asset management, identity and access management, network security, vulnerability management, incident response, and compliance in your cloud environment. This book helps cybersecurity teams strengthen their security posture by mitigating cyber risk when "targets" shift to the cloud. The book will assist you in identifying security issues and show you how to achieve best-in-class cloud security. It also includes new cybersecurity best practices for daily, weekly, and monthly processes that you can combine with your other daily IT and security operations to meet NIST criteria. This book teaches how to leverage cloud computing by addressing the shared responsibility paradigm required to meet PCI-DSS, ISO 27001/2, and other standards. It will help you choose the right cloud security stack for your ecosystem. Moving forward, we will discuss the architecture and framework, building blocks of native cloud security controls, adoption of required security compliance, and the right culture to adopt this new paradigm shift in the ecosystem. Towards the end, we will talk about the maturity path of cloud security, along with recommendations and best practices relating to some real-life experiences.
