**Lesson Summary: Cloud Security and Monitoring**

In this lesson, you have learned:

* Cloud security refers to the policies, technological procedures, services, and solutions designed to secure enterprise applications and data on the cloud against insider threats, data breaches, compliance issues, and organized security threats.
* Cloud security is a shared responsibility between the cloud provider and the user organization.
* Security architecture and methods for achieving continuous security need to be embedded through the life cycle of an application to ensure that the application runs on a safe platform, the code is free from vulnerabilities, and the operational risks are understood.
* Identity and Access Management, also known as access control, helps authenticate and authorize users and provides user-specific access to cloud resources, services, and applications.
* As part of their Identity and Access Management services, most cloud providers offer users the ability to define access groups and create access policies that define permissions for users on account resources.
* Cloud encryption, often called the last line of defense, encrypts data and provides robust data access control, key management, and certificate management.
* Data needs encryption in three states:
  + Encryption at rest: Protecting data while it is stored
  + Encryption in transit: Protecting data while it is transmitted from one location to another
  + Encryption in use: Protecting data when it is in use in memory
* All connected systems and cloud-based services should be monitored to maintain visibility of all data exchanges between public, private, and hybrid cloud environments. This ensures that the cloud provides a trusted platform to integrate with your enterprise data centers securely.

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**Lesson Summary: Case Studies and Jobs**

In this lesson, you have learned:

* Businesses all over the world are realizing tangible benefits from the use of cloud technologies and services, including:
  + The Weather Company migrating to the cloud to reliably deliver critical weather data at high speed, especially during major weather events such as hurricanes and tornadoes
  + American Airlines using the cloud platform and technologies to deliver digital self-service tools and customer value more rapidly across its enterprise
  + Cementos Pacasmayo achieving operational excellence and insight to help drive strategic transformation and reach new markets using cloud services
  + Welch choosing cloud storage to drive business value from hybrid cloud
  + LiquidPower using cloud-based SAP applications to fuel business growth
* The market size of the cloud services industry is at nearly three times the growth of overall IT services, increasing the need for qualified cloud computing professionals. Some common job roles that are available in this domain include Cloud Software Engineers, Cloud Integration Specialists, Cloud Data Engineers, Cloud Security Engineers, Cloud DevOps Engineers, and Cloud Solution Architects.