IBM Cloud Advocate
Study Guide

This study guide will help prepare you for the IBM Cloud Advocate Certification Examination.

What's in the Study Guide

This study guide covers:

- ❑ ***Fundamentals of IBM Cloud***

How to Use this Study Guide

Read the content.

Take notes.

Answer practice questions.

Preparation

Thorough study is essential to a successful outcome on the exam.

- Clear your schedule.
- Find a quiet place to study.
- Focus on the content.

- Open the associated on-line course for reference.
- Locate the study guide.
- Download the study guide.

- Print a copy of the study guide.
- Take notes.

Courses and Objectives

Courses

1. The IBM Cloud Interface
2. The Structure of IBM Cloud
3. Security Measures and Security Options in IBM Cloud
4. Industry Compliance Standards for IBM Cloud

Objectives

- Identify the IBM Cloud console
- Identify the structure of IBM Cloud
- Recognize the function of the IBM Cloud console components
- Identify IBM Cloud regions
- Summarize benefits of a multi-zone architecture
- Identify security measures in IBM Cloud
- Identify security options in IBM Cloud
- Identify industry standards for IBM Cloud
- Explain how IBM Cloud meets compliance standards

Course 3.1: The IBM Cloud Interface

Introduction and Objectives:

In Course 3.1 of the study guide, the subject matter:

- Explores the IBM Cloud Platform, interface, and structure.
- Provides information on IBM Cloud docs, CLI, the Cost Estimator tool, and the Cloud Shell.
- Highlights the IBM Cloud console and IBM Support Center.

Lessons

- Introduction and Objectives
- The IBM Cloud Console and Its Components
- Course Summary
- Knowledge Check Questions

Objectives

- Identify the IBM Cloud console
- Identify the structure of IBM Cloud
- Recognize the function of the IBM Cloud console components

Course 3.1: The IBM Cloud Interface

The IBM Cloud console is a web interface for users to manage IBM Cloud resources, including the ability to create an account, log in, access documentation, access the catalog, and get support. It provides access to the IBM Cloud catalog, cloud documents, IBM support center, the cost estimator tool, IBM Cloud shell, and account management tools.

The IBM Cloud Console includes:

Dashboard

- Where users can see the status of cloud resources that are provisioned in their account.

Catalog

- Where users can find new services to provision. They can explore over 200 products and services for compute, networking, security management, developer solutions, and more listed in the catalog.

Docs

- Features video tutorials and articles. Find documentation about processes and applications, learning instructions, and tutorials.

Support

- Users can access the support center if they experience problems using the cloud.

Manage

- Users can access information about their account, billing, usage, identity, and access management options.

Cloud Shell

- A personal workspace where a user can run commands using the CLI (Command Line Interface). Holds user and session data. The IBM CLI can either be accessed using the IBM Cloud Shell or install the CLI plug-ins on a local machine.

Cost Estimator

- Helps users understand their likely cloud costs based on their estimation of how much of each service they will be using.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 1

Define the IBM Cloud Console.

A. Web interface for users to manage IBM Cloud resources
B. Command line interface for users to manage IBM Cloud resources
C. Downloadable remote desktop application for accessing servers on IBM Cloud
D. Centralized feature management and configuration service for use with web and mobile apps

Answer A. The IBM Cloud console is a web interface for users to manage IBM Cloud resources.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 2

How can users access the IBM Cloud Command Line Interface (CLI)?

A. CLI extension
B. API library
C. IBM Cloud Shell
D. Programmer SDKs

Answer C. Users can access the IBM Cloud CLI through the IBM Cloud Shell. They can also install the CLI plug-ins on a local machine.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 3

In the IBM Cloud Console, what menu option would you need to inspect past invoices?

A. Docs
B. Manage
C. Support
D. Catalog

Answer B. You would need to access the Manage option to inspect past invoices.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 4

Which option in the IBM Cloud Console lists over 200 products and services that users can choose to implement in web or mobile applications?

A. Catalog
B. Docs
C. Manage
D. Cost Estimator

Answer A. The IBM Cloud Console Catalog lists over 200 products and services that users can choose to implement in web or mobile applications.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 5

Which IBM Cloud Console option helps architects to determine their monthly expenses for a new service?

A. Docs
B. Support
C. Manage
D. Cost Estimator

Answer D. The Cost Estimator option in the IBM Cloud Console helps architects determine their monthly expenses for a new service.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 6

Which option in the IBM Cloud Console provides tutorials and helps with development and deployment?

A. Manage
B. Docs
C. Cloud Shell
D. Cost Estimator

Answer B. The Docs option in the IBM Cloud Console provides tutorials and helps with development and deployment.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 7

Which option in IBM Cloud Console can an administrator invite a new team member to be part of an IBM Cloud access group?

A. Manage
B. Docs
C. Cloud Shell
D. Catalog

Answer A. The Manage option in the IBM Cloud Console can help an administrator invite a new team member to be part of an access group.

3.1: The IBM Cloud Interface Check Your Knowledge

Question 8

What is an IBM Cloud Shell workplace?

A. A shared environment that teams can use for managing cloud resources

B. An IBM Cloud graphical user interface that allows admins to control the access

C. A way to organize Terraform templates and control the access

D. A personal workspace where a user can run commands and holds user and session data

Answer D. An IBM Cloud Shell workplace is a personal workplace where users can run commands using the CLI.

Course 3.2: The Structure of IBM Cloud

Introduction and Objectives:

In Course 3.2 of the study guide, the subject matter:

- Explores the structure of IBM Cloud.
- Provides information on IBM Cloud's locations, regions, and zones.
- Highlights the benefits of a multi-zone architecture.

Lessons

- Introduction and Objectives
- Single Zone Regions
- Multi-zone Regions
- Data Centers
- Course Summary
- Knowledge Check Questions

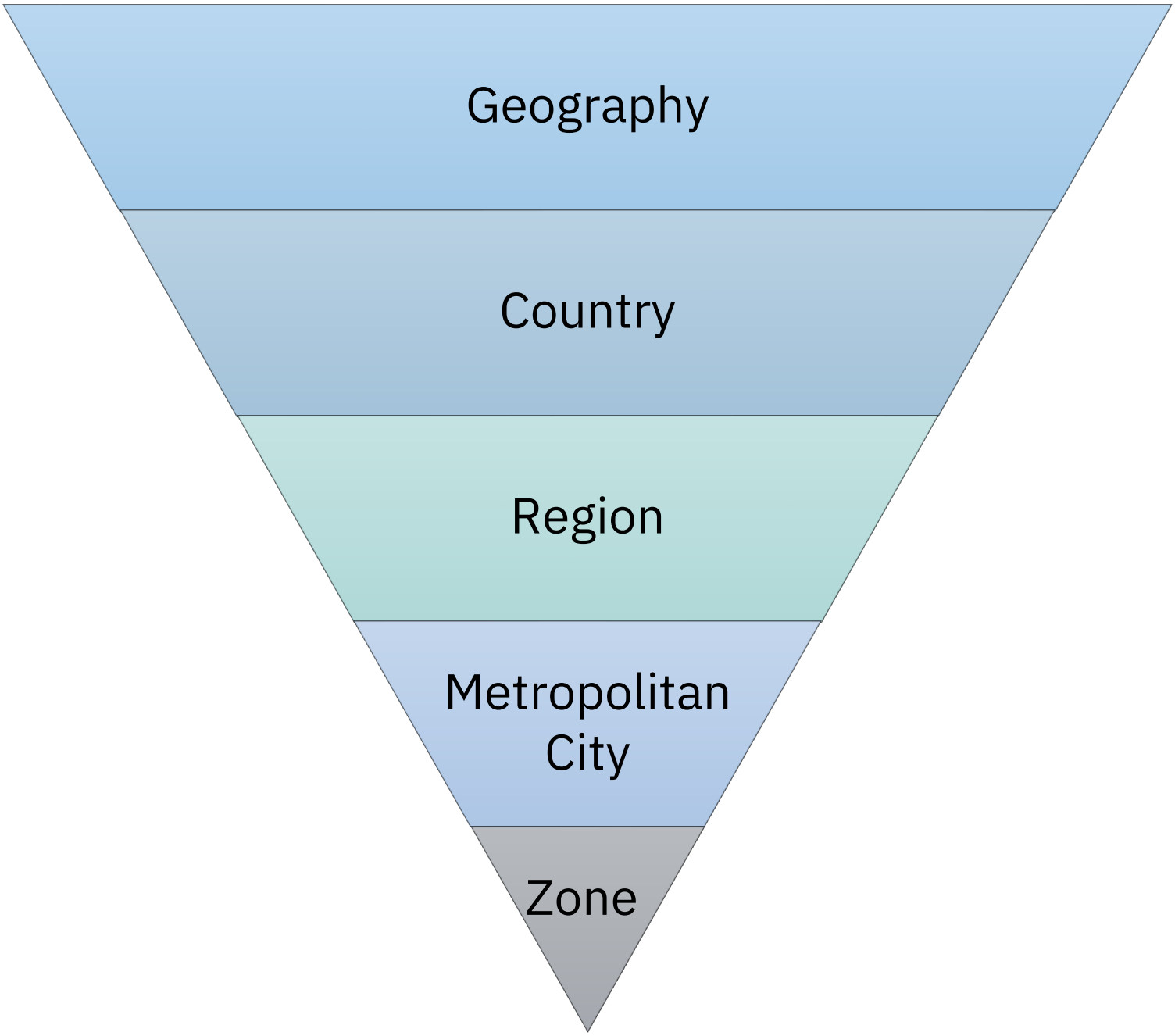
Objectives

- Identify IBM Cloud regions
- Summarize benefits of a multi-zone architecture

Course 3.2: The Structure of IBM Cloud

Cloud resources are organized according to a hierarchy of geographic locations.

Their availability is listed according to their:



Course 3.2: The Structure of IBM Cloud

SZR Single Zone Region	MZR Multi-zone Region	Data Centers
One availability zone	Three or more zones	Data centers are large warehouses or rooms.
Resources remain in the same zone where a cluster is deployed.	High availability (Spreading workloads across 3 zones increases availability to 99.99% compared to SZR.)	Each data center contains a pod of infrastructure equipment.
Does not provide fault tolerance during failure events when the entire zone is affected.	If a network failure occurs, data is automatically redirected to an alternative zone.	Data center locations are not isolated from multi-zone regions.
Resources in an SZR cannot be spread across zones.	Services in MZRs have better resiliency and connection speed.	Each data center contains infrastructure resources used for services and apps.
SZR locations: • India • South Korea	MZR locations: • Toronto • Washington DC • Dallas • Sao Paulo • London • Frankfurt • Osaka • Tokyo • Sydney	Located in Americas: • Dallas • Mexico • Montreal • San Jose • Sao Paolo • Toronto • Washington, DC Europe • Washington, DC • Frankfurt • London • Milan • Paris Asia • Chennai • Hong Kong • Osaka • Seoul • Singapore • Sydney • Tokyo

3.2: The Structure of IBM Cloud Check Your Knowledge

Question 1

A company has deployed a critical application across three zones in a multi-zone region. What level of availability can deploy across the three zones bring?

A. 99.5%
B. 99.9%
C. 99.99%
D. 99.99999%

Answer C. Deploying across three zones in an MZR can bring 99.99% availability.

3.2: The Structure of IBM Cloud Check Your Knowledge

Question 2

What happens if there is a networking failure in one zone of a multi-zone region, such as in the case of a natural disaster?

A. Traffic is automatically redirected to a failover zone.
B. Load balancers wait for the network connectivity to resume.
C. Traffic is automatically redirected to the nearest available cloud region.
D. Traffic is automatically redirected to a different service instance in the same zone.

Answer A. In a multi-zone region, traffic is automatically redirected to a failover/alternative zone to keep the service up and running.

3.2: The Structure of IBM Cloud Check Your Knowledge

Question 3

In IBM Cloud locations, what is the correct order of hierarchy?

A. Geography, Country, Zone, Metro
B. Geography, Metro, Country, Zone
C. Geography, Country, Metro, Zone
D. Country, Geography, Metro, Zone

Answer C. The correct order of hierarchy in IBM Cloud locations is Geography, Country, Metro, Zone.

3.2: The Structure of IBM Cloud Check Your Knowledge

Question 4

Resources deployed on _____ cannot be spread across zones.

A. Single Zone Regions
B. Multi-zone Regions
C. Data Centers

Answer A. Resources deployed on Single Zone Regions cannot be spread across zones.

3.2: The Structure of IBM Cloud Check Your Knowledge

Question 5

What are data centers?

A. Centers built in multi-zone regions
B. Large warehouses containing pods and racks or standardized containers of computing resources
C. Centers that provide isolation from multi-zone regions in a location
D. One or more buildings within a 5-mile radius in a metro region

Answer B. Data centers are large warehouses containing pods and racks or standardized containers of computing resources.

3.2: The Structure of IBM Cloud Check Your Knowledge

Question 6

Which of the following will provide fault tolerance for a single failure event that effects the zone?

A. SZR
B. MZR
C. Data Center

Answer B. MZRs provide fault tolerance for a failure event that effects the zone.

Course 3.3: Security Measures and Security Options in IBM Cloud

Introduction and Objectives:

In Course 3.3 of the study guide, the subject matter:

- Explores security measures and security options in IBM Cloud.
- Focuses on readiness, encryption, and shared responsibility.

Lessons

- Introduction and Objectives
- How IBM Cloud Ensures Security Readiness
- Encryption and IBM Cloud
- Shared Responsibility
- Course Summary
- Check Your Knowledge

Objectives

- Identify security measures in IBM Cloud
- Identify security options in IBM Cloud

Course 3.3: Security Measures and Security Options in IBM Cloud

Secure Engineering
Allows IBM Cloud to provide layered security controls across network and infrastructure.

IBM Cloud adheres to security policies within IBM driven by best practices for **systems**, **networking**, and **secure engineering**.

These security policies refer to practices, such as:
- Source code scanning
- Dynamic scanning
- Threat modeling
- Penetration testing

IBM encrypts all data within IBM Cloud **in transit.**

Data at rest = Encrypted with keys

- **BYOK (Bring Your Own Key)**
  - Customer managed option
  - Often used with IBM Key Protect
- **KYOK (Keep Your Own Key)**
  - Featured with IBM Cloud Hyper Protect Crypto Services
  - Dedicated key management and hardware security module (HSM)

IBM Cloud Activity Tracker

Once data is encrypted, events around the life cycle of encryption keys can be monitored using the IBM Cloud Activity Tracker. This tracker allows users to view, manage, and analyze cloud activities that change services in the cloud. It records events that help users comply with corporate policies and industry regulations.

Course 3.3: Security Measures and Security Options in IBM Cloud

Clients and IBM share responsibility for managing the process of operating and securing products in the cloud. Working together helps ensure that all workloads and applications hosted in the cloud remain secure and operate smoothly.

Shared Responsibility Tasks

- Incident and Operations Management
- Change Management
- Identify and Access Management
- Security and Regulation Compliance
- Disaster Recovery

Clients are responsible for all **data** and **applications** for all of the above tasks.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 1

Which practice allows IBM Cloud to provide layered security controls across network and infrastructure?

A. Secure engineering
B. Incident Management
C. Data governance
D. Operational insights

Answer A. Secure engineering allows IBM Cloud to provide layered security controls across network and infrastructure.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 2

IBM Cloud ensures security readiness by adhering to security policies that are driven by best practices for _____.

A. User engineering
B. System engineering
C. Data engineering
D. Application engineering

Answer B. System and network engineering ensure security readiness and adhere to security policies.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 3

By using _____ modeling, IBM Cloud ensures security readiness by adhering to security policies.

A. Access
B. Encryption
C. Usage
D. Threat

Answer D. IBM Cloud ensures security readiness by adhering to security policies by using threat modeling.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 4

By using _____ scanning, IBM Cloud ensures security readiness by adhering to security policies.

A. RBAC
B. Source code
C. Encryption enforcement
D. Application authentication

Answer B. IBM Cloud ensures security readiness by adhering to security policies by using source code scanning.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 5

Where does IBM encrypt all data within IBM Cloud?

A. In memory
B. In backup
C. In storage
D. In transit

Answer D. IBM encrypts all data within IBM in transit.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 6

How does IBM Cloud monitor the events around the lifecycle of keys as it pertains to encryption?

A. Activity Tracker
B. Compliance Center
C. Log Analysis
D. Cloud Monitor

Answer A. IBM Cloud monitors the events around the lifecycle of keys as it pertains to encryption through the IBM Cloud Activity Tracker.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 7

What is featured in IBM Cloud Hyper Protect Crypto Services and is a dedicated key management and hardware security module (HSM)?

A. BYOK (Bring Your Own Key)
B. RYOK (Rent Your Own Key)
C. KYOK (Keep Your Own Key)
D. CYOK (Create Your Own Key)

Answer C. KYOK is featured in IBM Cloud Hyper Protect Crypto Services. It is a dedicated key management and hardware security module.

3.3: Security Measures and Security Options in IBM Cloud Check Your Knowledge

Question 8

Which two types of resources are always the client's responsibility in the IBM Cloud shared responsibility model?

A. Data, Applications
B. Applications, Storage
C. Data, Storage
D. Storage, Encryption

Answer A. The data and applications are always the client's responsibility in the IBM Cl oud Shared responsibility model.

Course 3.4: Industry Compliance Standards for IBM Cloud

Introduction and Objectives:

In Course 3.4 of the study guide, the subject matter:

- Focuses on compliance standards for IBM Cloud.
- Provides information on compliance reports, GDPR, and environmental information.
- Highlights the IBM Cloud Security and Compliance Center.

Lessons

- Introduction and Objectives
- Compliance in IBM Cloud
- Course Summary
- Check Your Knowledge

Objectives

- Identify industry standards for IBM Cloud
- Explain how IBM Cloud meets compliance standards

Course 3.4: Industry Compliance Standards for IBM Cloud

Compliance in IBM Cloud

The IBM Cloud platform and services are built to be secure, trustworthy, and meet the needs of industry standards. The cloud platform and services are built to meet the needs of industry standards, such as General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Compliance Reports

The cloud provides compliance reports for compliance regulations, such as System and Organization Controls (SOC) and Payment Card Industry (PCI).

Includes audit details and help users assess risks identified.

GDPR

The GDPR provides a standardized data protection law framework across the European Union (EU). It has strict rules on how personal data is hosted and processed around the world.

IBM provides cloud solutions to help organizations meet GDPR standards.

Environmental Information

IBM Cloud addresses environmentally conscious standards by providing efficient power and recycling in data centers. Cloud servers comply with regulations to set up ecosystem requirements for servers and data storage products.

Course 3.4: Industry Compliance Standards for IBM Cloud

IBM Cloud Security and Compliance Center

Automatic security checks can be integrated into everyday workflows and is comprised of the following components:

Posture management
Helps organizations ensure best practices, external regulations, or laws are being followed at all times by scanning available resources in the cloud at set times and creating an audit inventory.

Configuration governance
Prevents resource misconfiguration. Templates define preferred property values for supported resources. Rules and templates are created that standardize and set guardrails around how resources are provisioned and configured across cloud accounts.

Security insights
Help users continuously monitor and analyze cloud resources for potential threats. Users are notified as risks to the organization are evaluated as threats are detected.

3.4: Industry Compliance Standards for IBM Cloud
Check Your Knowledge

Question 1

For industry standard regulations, such as Payment Card Industry (PCI) or Service Organization Control (SOC), how does IBM Cloud it meets the regulations?

A. Compliance reports
B. Security risk manager
C. Environmental assets
D. Cloud Pak

Answer A. The cloud provides compliance reports for compliance regulations, such as System and Organization Controls (SOC) and Payment Card Industry (PCI).

3.4: Industry Compliance Standards for IBM Cloud
Check Your Knowledge

Question 2

Which regulation in EU law protects data and privacy?

A. HIPPA
B. GDPR
C. PCI
D. SSN

Answer B. GDPR is a regulation in EU law that protects data and privacy.

3.4: Industry Compliance Standards for IBM Cloud
Check Your Knowledge

Question 3

How is IBM Cloud being environmentally conscious regarding its servers that are in service?

A. IBM Cloud is leveraging the industry's highest levels of energy efficiency encryption certification.
B. IBM Cloud provides power efficiency and recycling in data centers.
C. IBM Cloud incorporates security features that protect cluster infrastructure.
D. IBM Cloud enables continuous security, compliance, and resiliency to reduce compliance costs.

Answer B. IBM Cloud is being environmentally conscious regarding its servers by providing power efficiency and recycling in data centers.

3.4: Industry Compliance Standards for IBM Cloud
Check Your Knowledge

Question 4

Which IBM Cloud service, made up of posture management, configuration governance, and security insights, enables its users to achieve security and compliance?

A. IBM Hyper Protect Crypto Service
B. IBM Cloud Framework for Security and Compliance
C. IBM Cloud Security and Compliance Center
D. IBM Activity Tracker

Answer C. IBM Cloud Security and Compliance Center is made up of posture management, configuration governance, and security insights.

3.4: Industry Compliance Standards for IBM Cloud
Check Your Knowledge

Question 5

What is the purpose of Configuration Governance in the Security and Compliance Center?

A. Helps organizations ensure that laws are being followed
B. Creates an audit inventory
C. Helps users continuously monitor and analyze cloud resources for potential threats
D. Guards against resource misconfiguration

Answer D. The purpose of Configuration Governance is it guards against resource misconfiguration.

3.4: Industry Compliance Standards for IBM Cloud
Check Your Knowledge

Question 6

Why do users create templates in the Security and Compliance Center?

A. To define property values for supported resources
B. To ensure the notification is properly formatted
C. To verify that profiles match necessary criteria
D. To configure notification channels for alerts

Answer A. Users create templates in the Security and Compliance Center to define property values for supported resources.

Acronyms

Acronym	Acronym Expansion
API	Application Programming Interface
BYOK	Bring Your Own Key
CLI	Command-Line Interface
EU	European Union
GDPR	General Data Protection Regulation
HIPAA	Health Insurance Portability and Accountability Act
HSM	Hardware Security Module
KYOK	Keep Your Own Key
MZR	Multi-Zone Region
PCI	Payment Card Industry
SDK	Software Development Kit
SOC	System and Organization Controls
SZR	Single Zone Region