Breaking into Cloud Engineering: Module 1

Formative

1. What is cloud computing?

[Correct Answer] A**.** The delivery of various computing services over the internet

B. The use of physical servers and hardware for computing

C. A type of software development methodology and processes for cloud engineers

D. A form of local area networking that uses the internet

[Rationales]

Cloud computing is the delivery of various computing services such as databases, servers, apps, networking, analytics, and AI services over the internet or “the cloud.” See “A Brief History of the Cloud.”

2. How did cloud computing evolve from distributed computing?

A. By focusing solely on mainframe computing

[Correct Answer] B. Through different types of computing stages such as mainframe, cluster, and grid computing

C. By eliminating the need for any form of distributed systems

D. By using only personal computers

[Rationales]

Cloud computing did not focus solely on mainframe computing. See “A Brief History of the Cloud.”

3. What are the common deployment models of cloud computing services?

A. HTTP, FTP, SMTP

B. LAN, WAN, WLAN

C. BIOS, OS, applications, software

[Correct Answer] D. IaaS, PaaS, SaaS

[Rationales]

HTTP, FTP, and SMTP are internet protocols, not cloud deployment service models. See “How Cloud Computing Differs from On-Premises IT.”

5. What is a major security concern in cloud computing?

A. Data encryption

[Correct Answer] B. Data breaches

C. High availability

D. Scalability

[Rationales]

Data encryption is a security measure, not a concern. See “Cloud Challenges and Filling Cloud Skills Gaps.”

Breaking into Cloud Engineering: Module 2

Formative

1. What is a familiar challenge cloud engineers face when migrating applications to the cloud?

A. Increased physical storage requirements

[Correct Answer] B. Compatibility issues with existing applications and lack of cloud computing knowledge

C. Reduced network latency

D. Simplified security protocols

[Rationales]

Cloud migration typically reduces the need for physical storage. See “Cloud Engineering.”

2. Why is hands-on experience with cloud platforms important for aspiring cloud engineers?

A. It helps in understanding theoretical concepts.

[Correct Answer] B. It provides practical knowledge and problem-solving skills.

C. It reduces the need for certifications.

D. It simplifies the learning process.

[Rationales]

Hands-on experience goes beyond understanding theoretical concepts. See “Career Opportunities for Cloud Engineers.”

Breaking into Cloud Engineering: Module 3

Formative

1. How do cloud engineers ensure compliance with regulatory requirements?

A. By ignoring regulations

[Correct Answer] B. By implementing security controls and conducting regular audits

C. By reducing the use of cloud services

D. By focusing solely on performance optimization

[Rationales]

Ignoring regulations can lead to legal issues. See “Technical Skills for Cloud Engineers.”

2. What is the role of a cloud engineer in disaster recovery planning?

A. Designing the architecture of the applications hosted on the cloud

[Correct Answer] B. Ensuring data backup and recovery processes for cloud-hosted production applications are in place and are resilient

C. Managing all the users who need to get notified when a cloud application is down

D. Conducting financial audits of how much the organization had lost during a disaster or outage problem

[Rationales]

Designing the cloud architecture of applications is essential but different from disaster recovery's cloud engineering tasks. See “DevOps and SRE (Site Reliability Engineering).”

3. What group of programming languages are commonly used by cloud engineers?

[Correct Answer] A. Python, C#, Java, JavaScript, Ruby

B. HTML, CSS

C. COBOL, Fortran, and Pascal

D. Swift, Kotlin, and Objective-C

[Rationales]

C#, Python, Java, JavaScript, and Ruby, among many other major languages, are widely used in cloud computing for their versatility and support for various cloud services. See “Programming for Cloud Engineering.”

4. Why is networking knowledge essential for cloud engineers?

[Correct Answer] A. To design and manage cloud infrastructure that is secured on public internet

B. To develop and build applications so that they are open to the public or to everybody who wants to access and use the systems

C. To write content for websites that is easily accessible globally

D. To manage which IP addresses and countries access the applications on the cloud

[Rationales]

Understanding networking is crucial for designing and managing cloud infrastructure, including virtual networks, load balancing, and security. See “Networking Basics for the Cloud.”

5. What is a crucial security skill for cloud engineers?

[Correct Answer] A. Data encryption

B. Building a web application that is unprotected and not secured

C. Writing security scripts to combat attackers trying to hack the applications on the cloud

D. Logging every event and monitoring logs of an application hosted on the cloud

[Rationales]

Data encryption is essential for protecting sensitive information in the cloud. See “Cloud Security.”

6. Why is knowledge of operating systems important for cloud engineers?

[Correct Answer] A. To manage cloud-based applications and infrastructure services

B. To be able to deploy virtual machines

C. To perform operational audits on operating systems hosted on the cloud

D. To conduct technical research on the operating systems that are fastest to use for the cloud

[Rationales]

Cloud engineers must understand operating systems like Linux and Windows to manage and optimize cloud-based applications and services. See “Operating Systems for the Cloud.”

7. Who are the known leading cloud computing providers globally in terms of comprehensive cloud services they support and provide?

[Correct Answer] A. Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP)

B. IBM, Oracle Cloud, Salesforce

C. Dropbox, iCloud, OneDrive

D. Facebook, Twitter, Instagram

[Rationales]

AWS, Microsoft Azure, and GCP are a few of the top and well-known cloud computing providers at the time of publication. See “Cloud Computing Platforms.”

8. What is infrastructure as code (IaC)?

A. A method for creating physical infrastructure

[Correct Answer] B. A practice of creating, managing, and provisioning computing infrastructure through machine-readable scripts

C. A type of cloud storage

D. A programming language for cloud applications

[Rationales]

IaC does not involve creating physical infrastructure. See “Technical Skills for Cloud Engineers.”

Breaking into Cloud Engineering: Summative Quiz

Summative

1. How has the impact of cloud computing on businesses and IT operations led to the increased demand for cloud engineers today?

A. Increased deployment time raised capital expenditures, limited collaboration, and worsened disaster recovery.

B. Cloud computing does not have any significant impact on businesses and IT operations.

[Correct Answer] C. Cloud computing helped in creating opportunities for cloud engineering career jobs. It also creates rapid deployment, reduces capital expenditures for IT, enhances collaboration, and helps in improved disaster recovery.

D. Cloud computing is primarily AI-assisted agents and copilots, leading to no increased demand of cloud engineers to work with the cloud today.

[Rationales]

Cloud computing typically speeds up deployment, lowers capital expenditures, and enhances disaster recovery. See Module 1, “The Evolution of Cloud Computing.”

2. What is vendor lock-in in the context of cloud computing?

A. The ability to switch between cloud providers easily

[Correct Answer] B. The dependency on a single cloud provider’s service

C. The use of multiple cloud providers simultaneously

D. The implementation of open source cloud solutions

[Rationales]

Vendor lock-in refers to the difficulty of switching providers, not the ease. See Module 1, “The Evolution of Cloud Computing.”

3. How does cloud computing impact cost management?

A. It always reduces costs.

B. It eliminates the need for budgeting.

[Correct Answer] C. It can lead to unpredictable expenses.

D. It guarantees fixed monthly costs.

[Rationales]

While cloud computing can reduce costs, it does not always do so. See Module 1, “The Evolution of Cloud Computing.”

4. What is a common challenge related to data privacy in cloud computing?

A. Easy data access

[Correct Answer] B. Data sovereignty

C. High data redundancy

D. Simplified compliance

[Rationales]

Easy data access is generally a benefit, not a challenge. See Module 1, “The Evolution of Cloud Computing.”

5. What is the cloud computing skills gap?

A. The lack of interest in cloud computing jobs

[Correct Answer] B. The shortage of professionals with the necessary skills to manage and implement cloud technologies

C. The oversupply of cloud computing professionals

D. The lack of cloud computing job opportunities

[Rationales]

There is significant interest in cloud computing jobs. See Module 1, “The Evolution of Cloud Computing.”

6. What is one effective way to address the cloud computing skills gap within an organization?

A. Hiring only experienced professionals

[Correct Answer] B. Offering continuous training and certification programs

C. Reducing the use of cloud technologies

D. Outsourcing all cloud-related tasks

[Rationales]

Relying solely on hiring experienced professionals does not address the need to develop skills within the existing workforce. See Module 1, “The Evolution of Cloud Computing.”

7. Which of the following is a benefit of using serverless computing in cloud engineering?

A. It requires managing physical servers.

[Correct Answer] B. It allows developers to focus on writing code and building event-driven applications without managing infrastructure.

C. It increases the complexity of application deployment.

D. It limits the scalability of applications.

[Rationales]

Serverless computing eliminates the need to manage physical servers. See Module 3, “What Technical Skills Does a Cloud Engineer Need to Have?”

8. What role does containerization of applications play in cloud engineering?

A. It helps in creating physical servers.

B. It helps cloud engineers build virtual machines into containers.

[Correct Answer] C. It allows applications to run consistently across different environments.

D. It allows you to manage and monitor cloud resources.

[Rationales]

Containerization does not involve creating physical servers. See Module 3, “What Technical Skills Does a Cloud Engineer Need to Have?”

9. What is a key factor to consider when choosing a cloud engineering certification?

A. The popularity of the certification among your friends and colleagues

[Correct Answer] B. The relevance of the certification to your career goals or the career role you aspire to

C. The length of the certification exam

D. The ability to show it off to your friends and colleagues

[Rationales]

While popularity among your colleagues may help you decide between certification options, this should not be your deciding factor. See Module 5, “Cloud Certifications: What You Need to Know.”

10. Why is it important to understand the exam objectives for a cloud certification?

A. To memorize the answers to all possible questions

B. To avoid studying altogether

[Correct Answer] C. To focus your study efforts and study time management on the most relevant topics required to pass the cloud certification exam

D. To ensure you only study the easiest topics

[Rationales]

Understanding the exam objectives is about knowing what topics to study, not memorizing answers. See Module 5, “Cloud Certifications: What You Need to Know.”