Exam Session - Knowledge Check: Cloud Fundamentals

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#1

Public cloud vendors have a common definition of what aspects of security are the vendor's responsibility and what aspects of security are the end user's responsibility. This is referred to as the Shared Responsibility Model. Under the Shared Responsibility Model, which of the following would be the end user's responsibility?

✗
Access to the physical datacenter

✗
Operation and administration of the hardware hosting virtual resources

✗
Availability of a cloud storage service

✓
Creating authentication and authorization mechanisms for a cloud storage service

Explanation

The vendor will operate to an exceptionally high standard of security for the underlying infrastructure of the cloud, but it's up to you as the end-user to then architect security in the cloud by using the tools, services, and applications available.

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#2

What is the most accurate definition of cloud computing?

✗

Cloud computing is a pool of servers offering compute resources that are designed to be issued exclusively to individual tenants (users and organizations).

Cloud computing is a remote virtual pool of on-demand shared resources offering compute, storage, and network services that can be rapidly deployed at scale.

Cloud computing is a term used to describe virtualized technology.

Cloud computing is a physical pool of compute, storage, and network resources that cannot be accessed over the internet.

Explanation

Cloud Computing is based on Virtualization technology and therefore provides virtual pools of compute, storage and network resources that can be accessed over the internet to shared tenants which can be quickly deployed into new and existing environments. The incorrect answers here either refer to physical pools or resources, or individual tenants, which isn't accurate when describing Cloud Computing.

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#3

Which service model allows you to configure and customize your environment from the base up?

Software as a Service (SaaS)

Infrastructure as a Service (IaaS)

Platform as a Service (PaaS)

'Anything' as a Service (XaaS)

Explanation

IaaS provides the greatest level of customization as you can configure the environment from the ground up, starting from which operating system to install and up. Other service models have fixed components which you are unable to change or manage.

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#4

Which resources provide the 'brains' to process your workloads, including what is required to process and run requests from applications?

✓ Compute

✗ Storage

✗ Network

✗ Internet

Explanation

Compute objects provide the brains to process your workload. Including what's required to process a run request from applications and services. As a comparison, if you think of hardware devices with CPUs and RAM, typically servers and how they work in a classic, on-premises environment, compute resources in a cloud, are comparable to these.

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#5

What is a hypervisor?

A hypervisor is a piece of software used to create the virtualized environment allowing for multiple VMs to be installed on the same host.

A hypervisor is an operating system that allows you to then install your business applications onto your server.

A hypervisor sits between your cloud storage and compute resources acting as a gateway for network traffic.

A hypervisor is a piece of software that prevents you from having multiple VMs being installed on the same host.

Explanation

The hypervisor is the key aspect of cloud technology. Without it, cloud computing would not be possible. It allows for multiple VMs to be installed on the same physical host by sitting between the underlying physical hardware and any other operating system installed (VMs), enabling the infrastructure to be shared between multiple tenants VMs.

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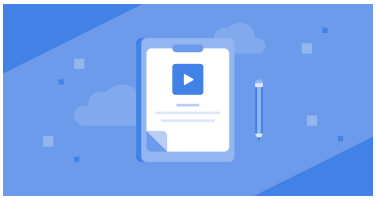

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#6

One can argue that security on the public cloud is superior to on-premise security. Why is this? (Choose 2 answers)

Public cloud vendor services must meet international security requirements.

✓
Public cloud vendor services must meet multiple business industries' security and governance requirements.

✗
Public cloud vendor datacenters use superior security technology.

✗
Public cloud vendor services are entirely separate from the public internet.

Explanation

Security is one of the most discussed topics within cloud computing, and many enterprises still have concerns over how secure it is. However, public cloud vendors such as AWS and Microsoft Azure are considered to be more secure than your own data center. This is down to the fact that they have to adhere to global compliance programs across multiple industries and by applying the shared responsibility model.

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#7

When you need to provision a resource within the cloud, _____ makes it almost immediately available to you to allocate where and when you need it.

✗
high availability

✗
flexibility and elasticity

✓
on-demand resourcing

✗
economy of scale

Explanation

On-demand resourcing provides you with the ability to provision resources within seconds and minutes, instead of days or weeks that it may take within an on-premise environment, especially if you had to order the additional hardware first. For example, if you had a server in the Cloud and its CPU utilization was steadily increasing with demand, you would be able to deploy a second server, which would be ready within minutes to take some of the load off of the first.

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#8

The public cloud allows you to pay only for the time that you use cloud resources, not for the cost of ownership. This concept is known as _____.

✓ consumption-based metering

✗ shared infrastructure

✗ economy of scale

✗ scalability

Explanation

Consumption-based metering simply means you pay for what you use. Public cloud vendors offer different services at different units of time, some reserved for multiple years, and others charged based on milliseconds.

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#9

The _____ model requires no software installation and focuses on design simplicity and ease of use. It offers a minimal level of service customization.

✕
Infrastructure-as-a-Service

✕
Platform-as-a-Service

✓
Software-as-a-Service

✕
Traditional on-premise

Explanation

The SaaS cloud service model focuses on the delivery of an application to a large audience and requires the smallest amount of user administration. As a trade-off, it offers very few customization options.

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Cloud Service Models
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#10

In what way is a private cloud model similar to a public cloud model?

✕
Both private and public cloud models physical hardware are managed by the end users hosting their applications on the hardware.

✕
In both private and public cloud models, the cloud infrastructure is hosted on the premises of a business using it.

✕

Using both private and public cloud will increase a business' capital expenditures to acquire hardware hosting the cloud.

✓

Both private and public cloud models use virtualization to differentiate themselves from traditional on-premise servers.

Explanation

The only correct statement is that both private and public cloud models use virtualization to differentiate themselves from traditional on-premise servers.

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#11

What cloud resource type stores structured data used by cloud applications?

✗

Storage

✗

Compute

✗

Network

✓

Database

Explanation

Cloud database resources store structured data used by applications, and in the classic resource model, it is comparable to MySQL, Oracle and database servers.

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#12

A _____ cloud deployment model is where a vendor makes available the use of shared infrastructure, including compute, storage and network resources, that can be provisioned on demand and typically accessed over the internet.

✗ private

✓ public

✗ hybrid

✗ community

Explanation

Public clouds allow for users to access remote resources on-demand, which is accessed over the internet. Anyone can gain access to the vendors' resources as long as they sign up to the service. Private, hybrid and community clouds are restricted on access.

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#13

What benefit of cloud computing allows you to increase or decrease the power or quantity of resources at any time, without extensive installation or physical processes of provisioning?

✓
Scalability

✗
Economy of Scale

✗
High availability

✗
Utility-based metering

Explanation

Scalability means you can increase or decrease the power of provisioned resource, such as adding or removing more CPU or memory to a virtual machine. This is an example of scaling vertically. Scalability also means you can increase the sheer number of resources in your environment, such as adding more virtual machines or terminating some that you have deployed. This is an example of scaling horizontally.

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#14

What is a key benefit of Virtualization?

✗
Increased operational cost

✗
Quicker remote connectivity

✗
Reduced network latency

✓

Reduced capital expenditure

Explanation

As Virtualization allows for multiple VMs to be installed on the same physical host, it maximizes the optimization potential and reduces the requirement to purchase additional servers, resulting in a reduced capital expenditure

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#15

The _____ cloud service model offers a balance between customization and user control, allowing developers to focus on designing at the application layer while the service handles the administration of the virtual architecture, including the network and operating system.

✗
Infrastructure-as-a-Service

✓
Platform-as-a-Service

✗
Software-as-a-Service

✗
Traditional on-premise

Explanation

A PaaS cloud service model allows access to the framework above the operating system level, which is ideal for developers who want to focus on their application design while the service itself manages a large portion of the day-to-day service administration.

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