



<https://github.com/Tizcom/Microsoft-Certification-Day-2022>

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Microsoft Certification Day

อัปสกิลกับการติวสอบแบบเข้มข้น

วันที่ 21 – 22 กรกฎาคม 2565

เวลา 9:00 – 16:30 น.

วิทยากร:
ธีชนก ชนาคลัง

21 กรกฎาคม 2565

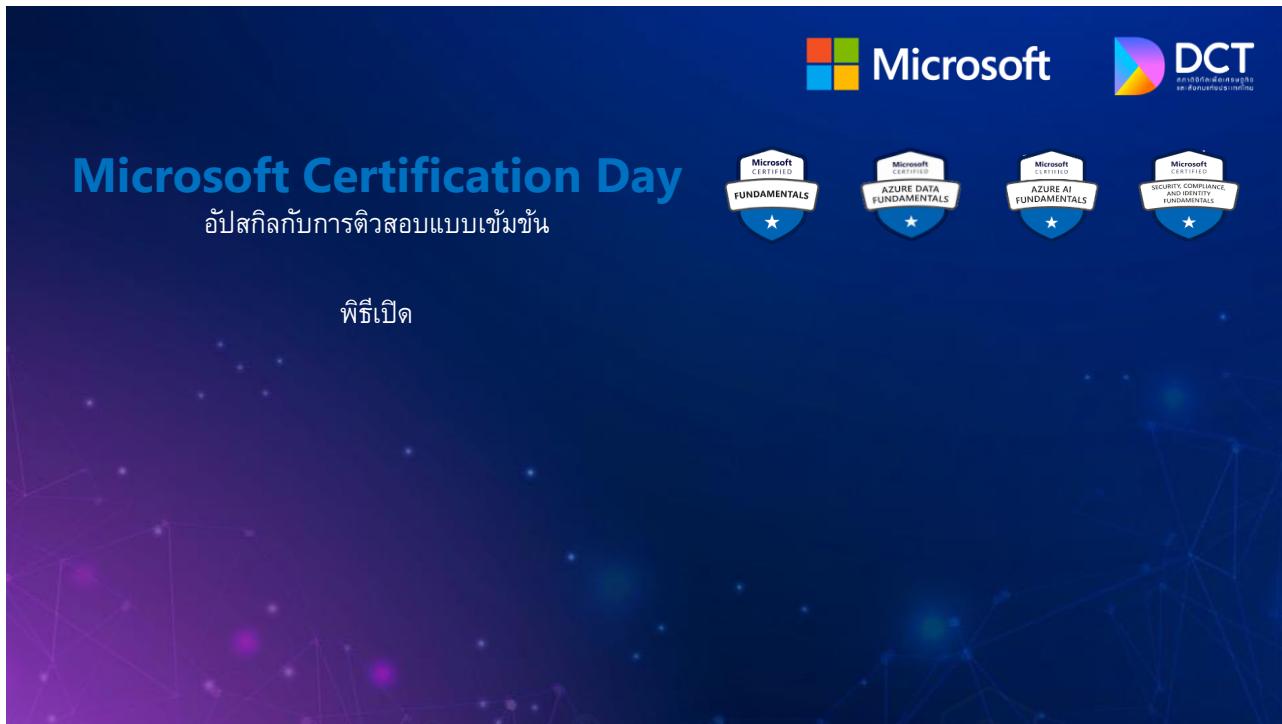
AZ-900
9:00-12:00 น.

DP-900
13:30-16:30 น.

AI-900
9:00-12:00 น.

SC-900
13:30-16:30 น.

2



Microsoft Certification Day
อัปสกิลกับการติวสอบแบบเข้มข้น

พิธีเปิด

Microsoft DCT

Microsoft Certified Fundamentals
Microsoft Certified Azure Data Fundamentals
Microsoft Certified Azure AI Fundamentals
Microsoft Certified Security, Compliance, and Identity Fundamentals

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Microsoft Certification Day
อัปสกิลกับการติวสอบแบบเข้มข้น

Microsoft DCT

Microsoft Certified Fundamentals
Microsoft Certified Azure Data Fundamentals
Microsoft Certified Azure AI Fundamentals
Microsoft Certified Security, Compliance, and Identity Fundamentals

เนื่องจากการเรียนนี้เป็นการเรียนผ่านระบบ Teams Meeting ดังนั้นจึงขออนุญาตในการที่แต่ละท่านจะเห็นข้อมูลส่วนบุคคลในระบบ
และต้องขออภัยที่ทางทีมงานจะไม่มีการบันทึกการสอนได้ฯ ผ่านระบบ

4



วันที่ 21 กรกฎาคม 2565
เวลา 09:00 – 12:00

Azure Fundamentals

เพื่อสอบ AZ-900



5

วันที่ 21 กรกฎาคม 2565
เวลา 13:30 – 16:30

Data Fundamentals

เพื่อสอบ DP-900



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วันที่ 22 กรกฎาคม 2565
เวลา 09:00 – 12:00

AI Fundamentals

เพื่อสอบ AI-900



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วันที่ 22 กรกฎาคม 2565
เวลา 13:30 – 16:30

Security Fundamentals

เพื่อสอบ SC-900



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แนะนำศูนย์สอบ ที่สามารถรับของที่ระลึก
เมื่อสอบผ่าน AZ-900 AI-900, DP-900, PL-900,
SC-900, MS-700, MB910, MB920
หมดเขต 30 กันยายน 2565



ศูนย์สอบ	ติดต่อ	เบอร์โทร	ที่ตั้ง	ช่วง Covid เปิดหรือไม่
ERT	Patthama	02-718-1599 ต่อ 1903	เลขที่ 2922/135-136 ชั้น 3 (ไข่แพค沙) ห้อง 331-332 อาคารชาญอิสสระหวานช'	เปิดปกติ
Iverson	Siriwat	095-894-9191	อาคารวัน แปซิฟิค เพลส ชั้น 12 ห้อง 1208-1209 เลขที่ 140 ถนนสุขุมวิท แขวงคลองเตย กรุงเทพมหานคร 10110 (ติด BTS สถานีนานา)	เปิดจันทร์ พุธ, ศุกร์
Trainocate	Siriporn Nipa	080-669-1428 081-008-7991	999/9 The Offices at CentralWorld , 16F, Unit ML1606-1607, Pathumwan, Bangkok 10330 Thailand	เปิดปกติ

สำหรับผู้สอบ online
ตั้งแต่ 1 July 21

สามารถเลือกติดต่อไปที่
phanwadee@iverson.co.th หรือ

siriporn@trainocate.com

โดย-แนบ Transcript อัปเดท
LinkedIn และ -แจ้งเบอร์ติดต่อกลับ

*ทุกศูนย์สอบปิดเสาร์-อาทิตย์

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ดูข้อมูลหลักสูตรต่างๆ ได้ที่นี่

<https://www.microsoft.com/apac/events/th-th>

เรียนรู้ภายใน 30 วันได้ที่นี่

<https://aka.ms/30dayslearnit>

เรียนรู้หลักสูตรต่างๆ

<https://aka.ms/mslearning>

10

Microsoft Support

Microsoft CERTIFIED FUNDAMENTALS AZURE DATA FUNDAMENTALS AZURE AI FUNDAMENTALS SECURITY COMPLIANCE AND IDENTITY FUNDAMENTALS

หลังจากเรียนจบประมาณ 5 วันทำการ ท่านจะได้รับเมลแจ้งลิงค์เพื่อทำการลงทะเบียนสอบ หากไม่ได้รับเมล หรือได้รับแล้วไม่สามารถลงทะเบียนสอบได้ ให้เข้าลิงค์นี้เพื่อแจ้งได้ที่ **Certification support** ที่นี่ <https://aka.ms/certificationsupportth>

11

Join LINE OpenChat

You've been invited to join "**Microsoft Cloud Squad**" by Spark Tech Thailand. Visit the link below to join the OpenChat.

ข้อมูลข่าวสารทั้งหมดจะได้รับการแจ้งผ่านทาง
Line OpenChat
<https://line.me/ti/g2/cUJu4AdnVTyxN9GXCAxI5Q>

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Join LINE OpenChat by Spark Tech Thailand (ไลน์ OpenChat ของพันธมิตรในโครงการนี้ของเรา เพื่อเอาไว้สื่อสารรายละเอียดโครงการครับ)



You've been invited to join "Microsoft Cloud Squad" by Spark Tech Thailand. Visit the link below to join the OpenChat.

ข้อมูลข่าวสารทั้งหมดจะได้รับการแจ้งผ่านทาง Line OpenChat นี้ครับ

<https://line.me/ti/g2/cUJu4AdnVTyxN9GXCAXI5Q>



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Microsoft Azure

Microsoft Azure Fundamentals
[AZ-900]

14

Tissana Tanaklang

Software and Solution Development Trainer
Iverson Training Center Co., Ltd.
tissana@iverson.co.th , tissana_t@hotmail.com

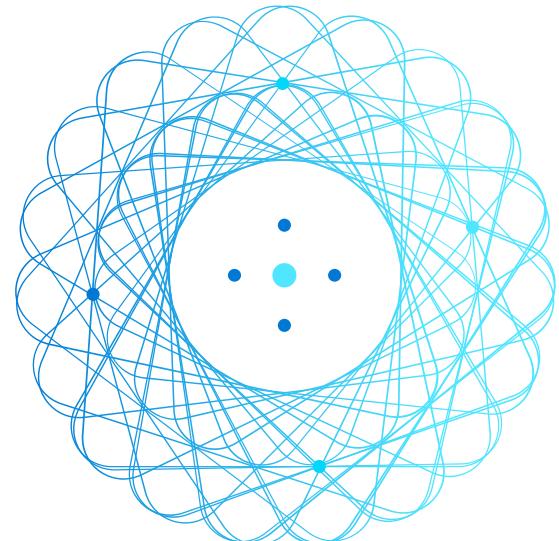
- Microsoft Certified Trainer (MCT)
- Microsoft Certified Azure Data Engineer Associate
- Microsoft Certified Azure Data Scientist Associate
- Microsoft Certified Power BI Data Analyst Associate
- Microsoft Certified Azure Data Fundamentals
- Microsoft Certified Azure AI Engineer Associate
- Microsoft Certified Azure AI Fundamentals
- Microsoft Certified Azure Fundamentals
- Microsoft Certified Power Platform Fundamentals



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Cloud Concepts

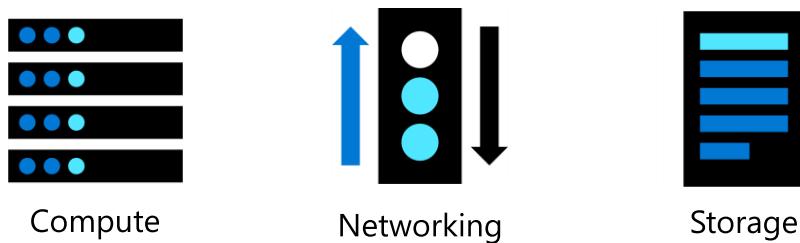


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What is cloud computing?

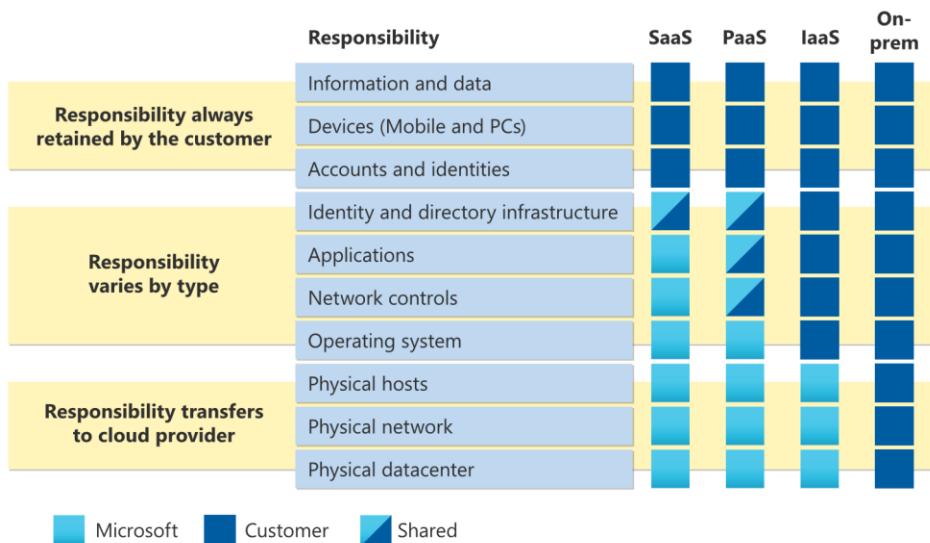
Cloud Computing is the delivery of computing services over the internet, enabling faster innovation, flexible resources, and economies of scale.



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Shared responsibility model



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Public cloud

- Owned by cloud services or hosting provider.
- Provides resources and services to multiple organizations and users.
- Accessed via secure network connection (typically over the internet).

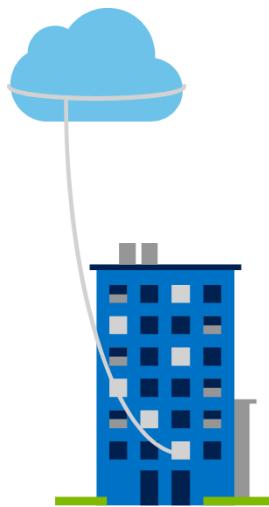


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Private cloud

- Organizations create a cloud environment in their datacenter.
- Organization is responsible for operating the services they provide.
- Does not provide access to users outside of the organization.



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Hybrid cloud



Combines **Public** and **Private** clouds to allow applications to run in the most appropriate location.

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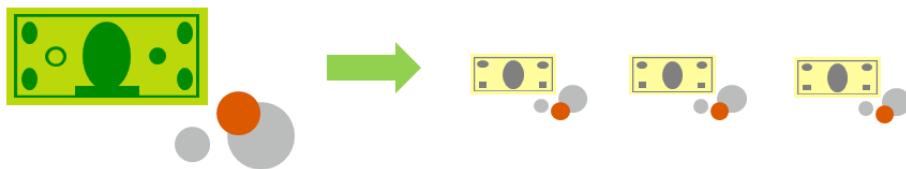
Compare CapEx vs. OpEx

Capital Expenditure (CapEx)

- The up-front spending of money on physical infrastructure.
- Costs from CapEx have a value that reduces over time.

Operational Expenditure (OpEx)

- Spend on products and services as needed, pay-as-you-go
- Get billed immediately



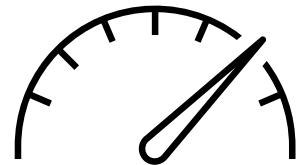
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Consumption-based model

Cloud service providers operate on a consumption-based model, which means that end users only pay for the resources that they use. Whatever they use is what they pay for.

- Better cost prediction
- Prices for individual resources and services are provided
- Billing is based on actual usage



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Cloud Benefits

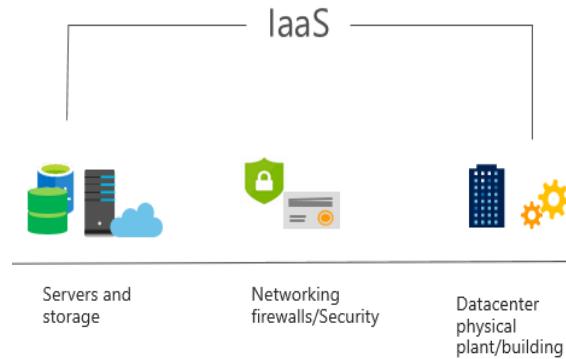
High availability	Scalability
Reliability	Predictability
Security	Governance
Manageability	

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Infrastructure as a Service (IaaS)

Build pay-as-you-go IT infrastructure by renting servers, virtual machines, storage, networks, and operating systems from a cloud provider.

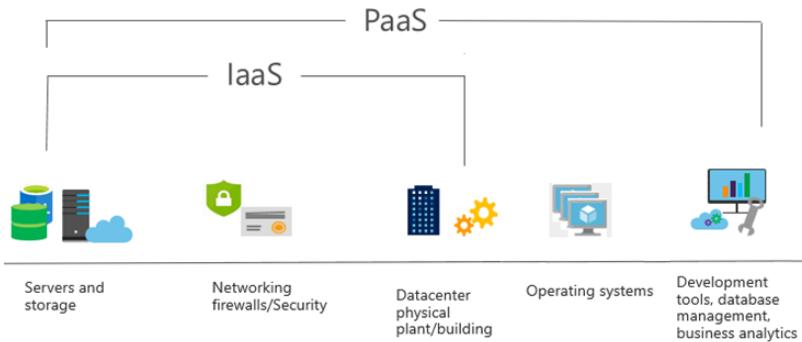


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Platform as a Service (PaaS)

Provides environment for building, testing, and deploying software applications; without focusing on managing underlying infrastructure.

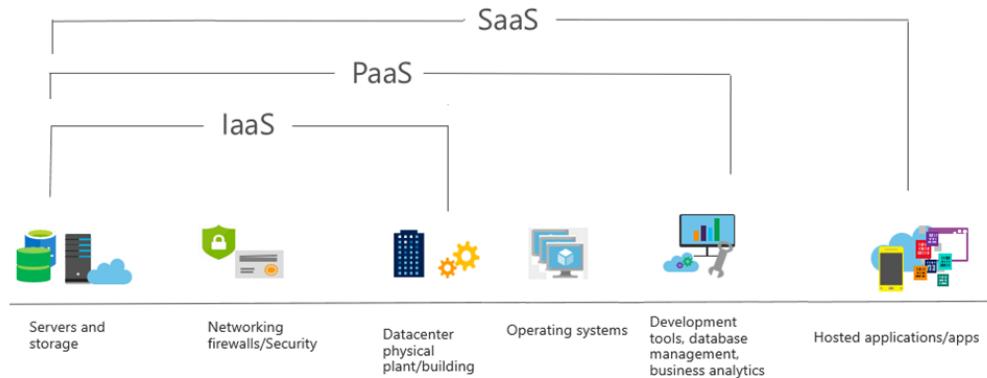


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Software as a Service (SaaS)

Users connect to and use cloud-based apps over the internet: for example, Microsoft Office 365, email, and calendars.



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Cloud service comparison

IaaS	PaaS	SaaS
The most flexible cloud service. You configure and manage the hardware for your application.	Focus on application development. Platform management is handled by the cloud provider.	Pay-as-you-go pricing model. Users pay for the software they use on a subscription model.

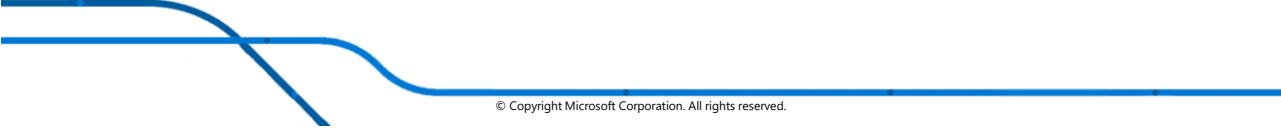
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Question

What is cloud computing?

- Deliver of computing services over the internet.
- Delivery of storage services over the internet.
- Delivery of websites accessible via the internet.



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29

Answer

What is cloud computing?

- Deliver of computing services over the internet.
- Delivery of storage services over the internet.
- Delivery of websites accessible via the internet.



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Question

Which cloud model uses some datacenters focused on providing cloud services to anyone that wants them, and some data centers that are focused on a single customer?

- Public cloud
- Hybrid cloud
- Multi-cloud

31

Answer

Which cloud model uses some datacenters focused on providing cloud services to anyone that wants them, and some data centers that are focused on a single customer?

- Public cloud
- Hybrid cloud
- Multi-cloud

32

Question

According to the shared responsibility model, which cloud service type places the most responsibility on the customer?

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

33

Answer

According to the shared responsibility model, which cloud service type places the most responsibility on the customer?

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

34

Question

Which cloud service type is most suited to a lift and shift migration from an on-premises datacenter to a cloud deployment?

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

35

Answer

Which cloud service type is most suited to a lift and shift migration from an on-premises datacenter to a cloud deployment?

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

36

Question

What type of cloud service type would a Finance and Expense tracking solution typically be in?

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

37

A decorative graphic consisting of three horizontal blue lines. The top line is straight. The middle line starts at the same point as the top line, curves down and to the left, then curves back up and to the right, ending at the same point as the top line. The bottom line is straight and sits below the middle line.

Answer

What type of cloud service type would a Finance and Expense tracking solution typically be in?

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

38

A decorative graphic consisting of three horizontal blue lines. The top line is straight. The middle line starts at the same point as the top line, curves down and to the left, then curves back up and to the right, ending at the same point as the top line. The bottom line is straight and sits below the middle line.

Question

Statements	Yes	No
A platform as a service (PaaS) solution that hosts web apps in Azure provides full control of the operating systems that host applications.	<input type="radio"/>	<input type="radio"/>
A platform as a service (PaaS) solution that hosts web apps in Azure provides the ability to scale the platform automatically.	<input type="radio"/>	<input type="radio"/>
A platform as a service (PaaS) solution that hosts web apps in Azure provides professional development services to continuously add features to custom applications.	<input type="radio"/>	<input type="radio"/>

39

Answer

Statements	Yes	No
A platform as a service (PaaS) solution that hosts web apps in Azure provides full control of the operating systems that host applications.	<input type="radio"/>	<input checked="" type="radio"/>
A platform as a service (PaaS) solution that hosts web apps in Azure provides the ability to scale the platform automatically .	<input checked="" type="radio"/>	<input type="radio"/>
A platform as a service (PaaS) solution that hosts web apps in Azure provides professional development services to continuously add features to custom applications.	<input checked="" type="radio"/>	<input type="radio"/>

40

Question

Statements	Yes	No
Azure provides flexibility between capital expenditure (CapEx) and operational expenditure (OpEx).	<input type="radio"/>	<input type="radio"/>
If you create two Azure virtual machines that use the B2S size, each virtual machine will always generate the same monthly costs.	<input type="radio"/>	<input type="radio"/>
When an Azure virtual machine is stopped, you continue to pay storage costs associated to the virtual machine.	<input type="radio"/>	<input type="radio"/>

41

Answer

Statements	Yes	No
Azure provides flexibility between capital expenditure (CapEx) and operational expenditure (OpEx).	<input checked="" type="radio"/>	<input type="radio"/>
If you create two Azure virtual machines that use the B2S size, each virtual machine will always generate the same monthly costs.	<input type="radio"/>	<input checked="" type="radio"/>
When an Azure virtual machine is stopped, you continue to pay storage costs associated to the virtual machine.	<input checked="" type="radio"/>	<input type="radio"/>

42

Question

When you are implementing a Software as a Service (SaaS) solution, you are responsible for

- configuring high availability.
- defining scalability rules.
- installing the SaaS solution.
- configuring the SaaS solution.

43

Answer

When you are implementing a Software as a Service (SaaS) solution, you are responsible for

- configuring high availability.
- defining scalability rules.
- installing the SaaS solution.
- configuring the SaaS solution.

44

Question

You have an on-premises network that contains several servers.

You plan to migrate all the servers to Azure.

You need to recommend a solution to ensure that some of the servers are available if a single Azure data center goes offline for an extended period.

What should you include in the recommendation?

- A. fault tolerance
- B. elasticity
- C. scalability
- D. low latency

45

Answer

You have an on-premises network that contains several servers.

You plan to migrate all the servers to Azure.

You need to recommend a solution to ensure that some of the servers are available if a single Azure data center goes offline for an extended period.

What should you include in the recommendation?

- A. fault tolerance**
- B. elasticity
- C. scalability
- D. low latency

46

Question

An organization that hosts its infrastructure

in a private cloud
in a hybrid cloud
in the public cloud
on a Hyper-V host

▼ no longer requires a data center.

47



Answer

An organization that hosts its infrastructure

in a private cloud
in a hybrid cloud
in the public cloud
on a Hyper-V host

▼ no longer requires a data center.

48



Question

What are two characteristics of the public cloud? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A.** dedicated hardware
- B.** unsecured connections
- C.** limited storage
- D.** metered pricing
- E.** self-service management



49

Answer

What are two characteristics of the public cloud? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A.** dedicated hardware
- B.** unsecured connections
- C.** limited storage
- D.** metered pricing
- E.** self-service management



50

Question

When planning to migrate a public website to Azure,
you must plan to

- deploy a VPN.
- pay monthly usage costs.
- pay to transfer all the website data to Azure.
- reduce the number of connections to the website.

51

Answer

When planning to migrate a public website to Azure,
you must plan to

- deploy a VPN.
- pay monthly usage costs.
- pay to transfer all the website data to Azure.
- reduce the number of connections to the website.


52

Question

Your company hosts an accounting application named App1 that is used by all the customers of the company. App1 has low usage during the first three weeks of each month and very high usage during the last week of each month. Which benefit of Azure Cloud Services supports cost management for this type of usage pattern?

- A. high availability
- B. high latency
- C. elasticity
- D. load balancing



53

Answer

Your company hosts an accounting application named App1 that is used by all the customers of the company. App1 has low usage during the first three weeks of each month and very high usage during the last week of each month. Which benefit of Azure Cloud Services supports cost management for this type of usage pattern?

- A. high availability
- B. high latency
- C. elasticity**
- D. load balancing



54

Question

Azure virtual machines:

▼

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Azure SQL databases:

▼

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

55



Answer

Azure virtual machines:

▼

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

Azure SQL databases:

▼

Infrastructure as a service (IaaS)
Platform as a service (PaaS)
Software as a service (SaaS)

56



Question

You have an on-premises network that contains 100 servers.

You need to recommend a solution that provides additional resources to your users. The solution must minimize capital and operational expenditure costs.

What should you include in the recommendation?

- A. a complete migration to the public cloud
- B. an additional data center
- C. a private cloud
- D. a hybrid cloud

57



Answer

You have an on-premises network that contains 100 servers.

You need to recommend a solution that provides additional resources to your users. The solution must minimize capital and operational expenditure costs.

What should you include in the recommendation?

- A. a complete migration to the public cloud
- B. an additional data center
- C. a private cloud
- D. a hybrid cloud**

58



Question

Azure Site Recovery provides [] for virtual machines.

▼
fault tolerance
disaster recovery
elasticity
high availability

59

Answer

Azure Site Recovery provides [] for virtual machines.

▼
fault tolerance
disaster recovery
elasticity
high availability

60

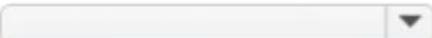
Question

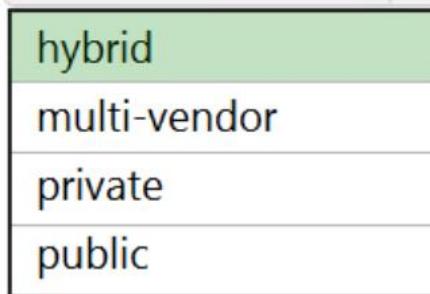
An Azure web app that queries an on-premises Microsoft SQL server is an example of a  cloud.



61

Answer

An Azure web app that queries an on-premises Microsoft SQL server is an example of a  cloud.



62

Question

Statements**Yes No**

A Platform as a Service (PaaS) solution provides full control of operating systems that host applications.

A Platform as a Service (PaaS) solution provides additional memory to apps by changing pricing tiers.

A Platform as a Service (PaaS) solution can automatically scale the number of instances.

63

Answer

Statements**Yes No**

A Platform as a Service (PaaS) solution provides full control of operating systems that host applications.

A Platform as a Service (PaaS) solution provides additional memory to apps by changing pricing tiers.

A Platform as a Service (PaaS) solution can automatically scale the number of instances.

64

Question

Statements	Yes	No
Azure Pay-As-You-Go pricing is an example of CapEx.	<input type="radio"/>	<input type="radio"/>
Paying electricity for your datacenter is an example of OpEx.	<input type="radio"/>	<input type="radio"/>
Deploying your own datacenter is an example of CapEx.	<input type="radio"/>	<input type="radio"/>

65

Answer

Statements	Yes	No
Azure Pay-As-You-Go pricing is an example of CapEx.	<input type="radio"/>	<input checked="" type="radio"/>
Paying electricity for your datacenter is an example of OpEx.	<input type="radio"/>	<input checked="" type="radio"/>
Deploying your own datacenter is an example of CapEx.	<input checked="" type="radio"/>	<input type="radio"/>

66

Question

You plan to provision Infrastructure as a Service (IaaS) resources in Azure. Which resource is an example of IaaS?

- A.** an Azure web app
- B.** an Azure virtual machine
- C.** an Azure logic app
- D.** an Azure SQL database

67

Answer

You plan to provision Infrastructure as a Service (IaaS) resources in Azure. Which resource is an example of IaaS?

- A.** an Azure web app
- B.** an Azure virtual machine
- C.** an Azure logic app
- D.** an Azure SQL database

68

Question

To which cloud models can you deploy physical servers?

- A. private cloud and hybrid cloud only
- B. private cloud only
- C. private cloud, hybrid cloud and public cloud
- D. hybrid cloud only

69

Answer

To which cloud models can you deploy physical servers?

- A. private cloud and hybrid cloud only
- B. private cloud only
- C. private cloud, hybrid cloud and public cloud
- D. hybrid cloud only

70

Question

Cloud model	Work Area
Hybrid Cloud	No required capital expenditure.
Private Cloud	Provides complete control over security.
Public Cloud	Provides a choice to use on-premises or cloud-based resources.

71

Answer

Cloud model	Work Area
Hybrid Cloud	Public Cloud
Private Cloud	Private Cloud
Public Cloud	Hybrid Cloud

72

Question

Azure Cosmos DB is an example of a offering.

- platform as a service (PaaS)
- infrastructure as a service (IaaS)
- serverless
- software as a service (SaaS)

73

Answer

Azure Cosmos DB is an example of a offering.

- platform as a service (PaaS)
- infrastructure as a service (IaaS)
- serverless
- software as a service (SaaS)

74

Question

Statements	Yes	No
Microsoft SQL Server 2019 installed on an Azure virtual machine is an example of platform as a service (PaaS).	<input type="radio"/>	<input type="radio"/>
Azure SQL Database is an example of platform as a service (PaaS).	<input type="radio"/>	<input type="radio"/>
Azure Cosmos DB is an example of software as a service (SaaS).	<input type="radio"/>	<input type="radio"/>

75

Answer

Statements	Yes	No
Microsoft SQL Server 2019 installed on an Azure virtual machine is an example of platform as a service (PaaS).	<input type="radio"/>	<input checked="" type="radio"/>
Azure SQL Database is an example of platform as a service (PaaS).	<input checked="" type="radio"/>	<input type="radio"/>
Azure Cosmos DB is an example of software as a service (SaaS).	<input checked="" type="radio"/>	<input type="radio"/>

76

Question

A Microsoft SQL Server database that is hosted in the cloud and has software updates managed by Azure is an example of

- disaster recovery as a service (DRaaS).
- infrastructure as a service (IaaS).
- platform as a service (PaaS).
- software as a service (SaaS).

77

Answer

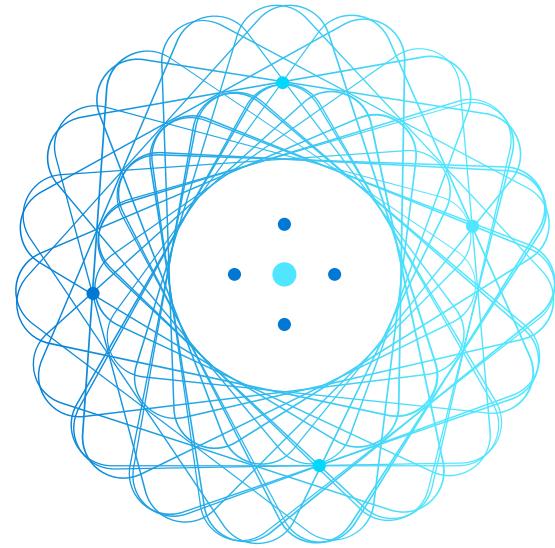
A Microsoft SQL Server database that is hosted in the cloud and has software updates managed by Azure is an example of

- disaster recovery as a service (DRaaS).
- infrastructure as a service (IaaS).
- platform as a service (PaaS).
- software as a service (SaaS).

78



Azure Architecture and Services



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79

Regions

Azure offers more global regions than any other cloud provider with 60+ regions representing over 140 countries



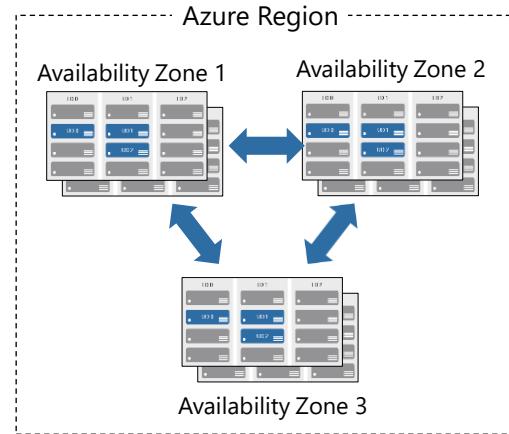
- Regions are made up of one or more datacenters in close proximity.
- Provide flexibility and scale to reduce customer latency.
- Preserve data residency with a comprehensive compliance offering.

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80

Availability zones

- Provide protection against downtime due to datacenter failure.
- Physically separate datacenters within the same region.
- Each datacenter is equipped with independent power, cooling, and networking.
- Connected through private fiber-optic networks.



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81

Region Pairs

- At least 300 miles of separation between region pairs.
- Automatic replication for some services.
- Prioritized region recovery in the event of outage.
- Updates are rollout sequentially to minimize downtime.

Web Link: <https://aka.ms/PairedRegions>

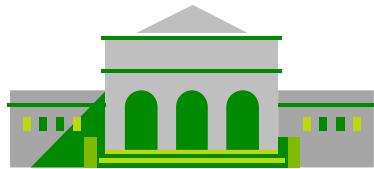
Region	Region
North Central US	South Central US
East US	West US
West US 2	West Central US
US East 2	Central US
Canada Central	Canada East
North Europe	West Europe
UK West	UK South
Germany Central	Germany Northeast
South East Asia	East Asia
East China	North China
Japan East	Japan West
Australia Southeast	Australia East
India South	India Central
Brazil South (Primary)	South Central US

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Azure Sovereign Regions (US Government services)

Meets the security and compliance needs of US federal agencies, state and local governments, and their solution providers.



Azure Government:

- Separate instance of Azure.
- Physically isolated from non-US government deployments.
- Accessible only to screened, authorized personnel.

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Azure Sovereign Regions (Azure China)

Microsoft is China's first foreign public cloud service provider, in compliance with government regulations.

10101
01010
00100

Azure China features:

10101
01010
00100

- Physically separated instance of Azure cloud services operated by 21Vianet
- All data stays within China to ensure compliance

10101
01010
00100

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84

Azure Resources

Azure **resources** are components like storage, virtual machines, and networks that are available to build cloud solutions.



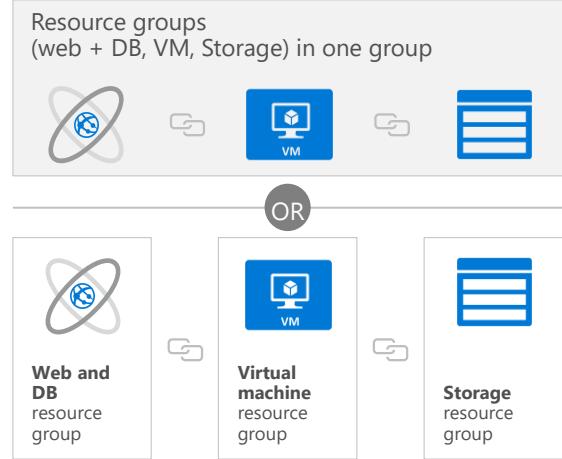
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85

Resource groups

A **resource group** is a container to manage and aggregate resources in a single unit.

- Resources can exist in only one resource group.
- Resources can exist in different regions.
- Resources can be moved to different resource groups.
- Applications can utilize multiple resource groups.



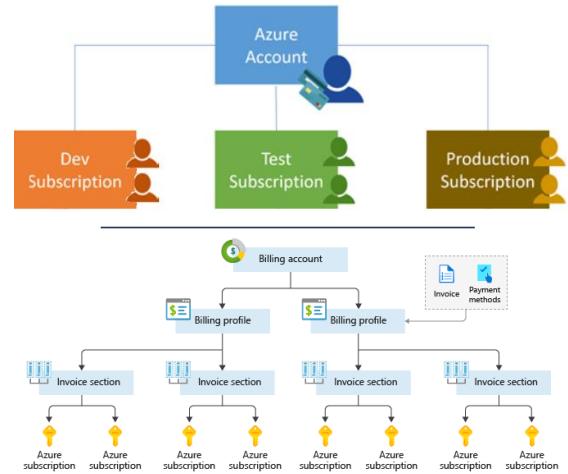
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86

Azure Subscriptions

An Azure subscription provides you with authenticated and authorized access to Azure accounts.

- **Billing boundary:** generate separate billing reports and invoices for each subscription.
- **Access control boundary:** manage and control access to the resources that users can provision with specific subscriptions.



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87

Azure compute services

Azure **compute** is an on-demand computing service that provides computing resources such as disks, processors, memory, networking, and operating systems.



Virtual
Machines



App
Services



Container
Instances



Azure Kubernetes
Services (AKS)



Azure Virtual
Desktop

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88

Azure virtual machines

Azure **Virtual Machines (VM)** are software emulations of physical computers.

- Includes virtual processor, memory, storage, and networking.
- IaaS offering that provides total control and customization.

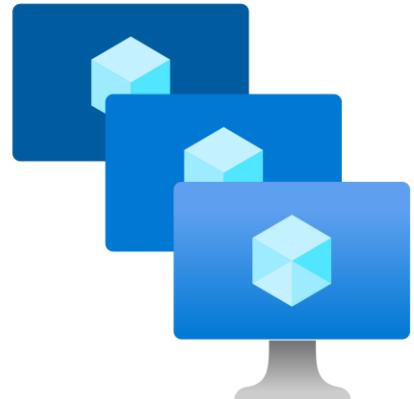


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VM scale sets

Scale sets provide a load-balanced opportunity to automatically scale resources.



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Azure Functions

Azure Functions



Event based code running your service and not the underlying infrastructure.

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Azure App Services



Azure **App Services** is a fully managed platform to build, deploy, and scale web apps and APIs quickly.

- Works with .NET, .NET Core, Node.js, Java, Python, or php.
- PaaS offering with enterprise-grade performance, security, and compliance requirements.

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92

Azure networking services



Azure Virtual Network (VNet) enables Azure resources to communicate with each other, the internet, and on-premises networks.

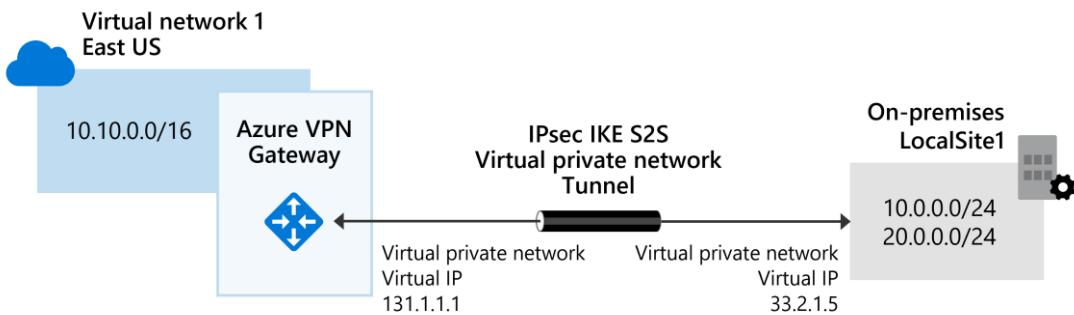
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Azure networking services



Virtual Private Network Gateway (VPN) is used to send encrypted traffic between an Azure virtual network and an on-premises location over the public internet.



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94

Storage accounts

- Must have a globally unique name
- Provide over-the-internet access worldwide
- Determine storage services and redundancy options



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95

Azure storage services



Container storage (blob) is optimized for storing massive amounts of unstructured data, such as text or binary data.



Disk storage provides disks for virtual machines, applications, and other services to access and use.



Azure Files sets up a highly available network file shares that can be accessed by using the standard Server Message Block (SMB) protocol.

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96

Azure storage access tiers

Hot	Cool	Archive
Optimized for storing data that is accessed frequently.	Optimized for storing data that is infrequently accessed and stored for at least 30 days.	Optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements.

You can switch between these access tiers at any time.

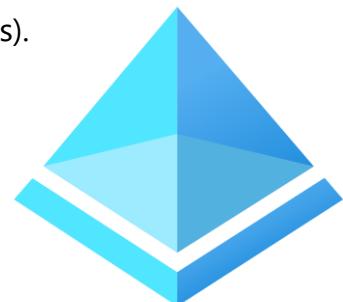
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97

Azure Active Directory (AAD)

Azure Active Directory (AAD) is Microsoft Azure's cloud-based identity and access management service.

- Authentication (employees sign-in to access resources).
- Single sign-on (SSO).
- Application management.
- Business to Business (B2B).
- Business to Customer (B2C) identity services.
- Device management.



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Compare Authentication and Authorization

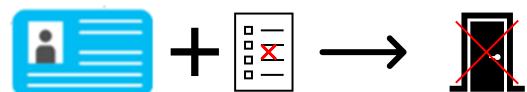
Authentication

- Identifies the person or service seeking access to a resource.
- Requests legitimate access credentials.
- Basis for creating secure identity and access control principles.



Authorization

- Determines an authenticated person's or service's level of access.
- Defines which data they can access, and what they can do with it.



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Azure Multi-Factor Authentication

Provides additional security for your identities by requiring two or more elements for full authentication.

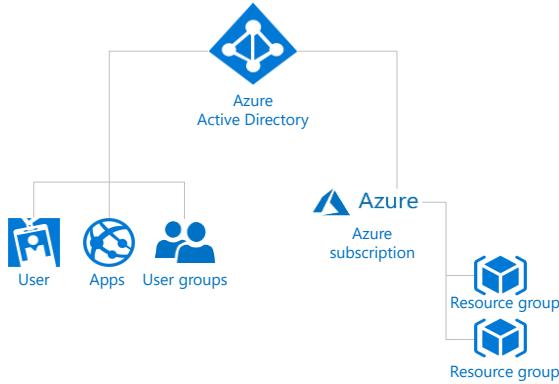
- Something you know \leftrightarrow Something you possess \leftrightarrow Something you are



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100

Azure role-based access control (Azure RBAC)



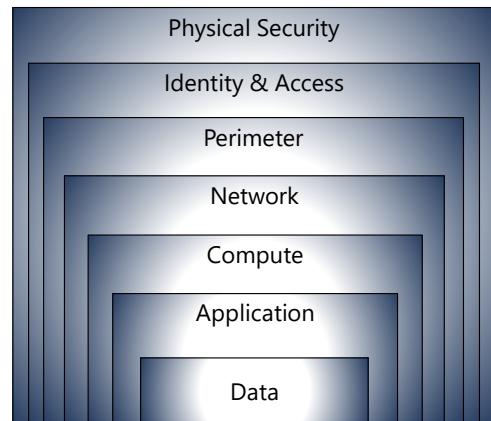
- Fine-grained access management.
- Segregate duties within the team and grant only the amount of access to users that they need to perform their jobs.
- Enables access to the Azure portal and controlling access to resources.

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101

Defense in depth

- A layered approach to securing computer systems.
- Provides multiple levels of protection.
- Attacks against one layer are isolated from subsequent layers.



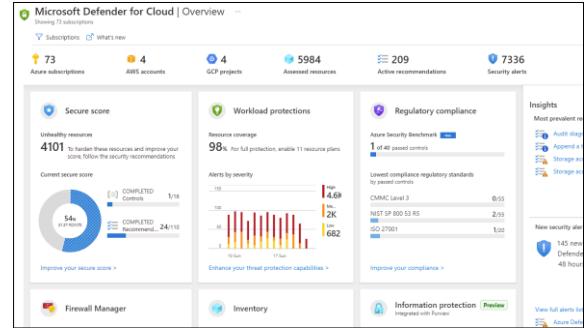
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102

Microsoft Defender for Cloud

Microsoft Defender for Cloud is a monitoring service that provides threat protection across both Azure and on-premises datacenters.

- Provides security recommendations
- Detect and block malware
- Analyze and identify potential attacks
- Just-in-time access control for ports



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103

Question

How many resource groups can a resource be in at the same time?

- One
- Two
- Three

104

Answer

How many resource groups can a resource be in at the same time?

- One
- Two
- Three



105

Question

What happens to the resources within a resource group when an action or setting at the Resource Group level is applied?

- Current resources inherit the setting, but future resources don't.
- Future resources inherit the setting, but current ones don't.
- The setting is applied to current and future resources.



106

Answer

What happens to the resources within a resource group when an action or setting at the Resource Group level is applied?

- Current resources inherit the setting, but future resources don't.
- Future resources inherit the setting, but current ones don't.
- The setting is applied to current and future resources.

107



Question

What Azure feature replicates resources across regions that are at least 300 miles away from each other?

- Region pairs
- Availability Zones
- Sovereign regions

108



Answer

What Azure feature replicates resources across regions that are at least 300 miles away from each other?

- Region pairs
- Availability Zones
- Sovereign regions

109

Question

Which Azure Virtual Machine feature staggers updates across VMs based on their update domain and fault domain?

- Availability sets
- Scale sets
- Update sets

110

Answer

Which Azure Virtual Machine feature staggers updates across VMs based on their update domain and fault domain?

- Availability sets
- Scale sets
- Update sets

111

Question

Which Azure service allows users to use a cloud hosted version of Windows from any location and connect from most modern browsers?

- Azure Virtual Desktop
- Azure Virtual Machines
- Azure Container Instances

112

Answer

Which Azure service allows users to use a cloud hosted version of Windows from any location and connect from most modern browsers?

- Azure Virtual Desktop
- Azure Virtual Machines
- Azure Container Instances

113

Question

Which Azure Storage service supports big data analytics, as well as handling text and binary data types?

- Azure Blobs
- Azure Files
- Azure Disks

114

Answer

Which Azure Storage service supports big data analytics, as well as handling text and binary data types?

- Azure Blobs
- Azure Files
- Azure Disks

115

Question

When you need to delegate permissions to several Azure virtual machines simultaneously, you must deploy the Azure virtual machines

- to the same Azure region.
- by using the same Azure Resource Manager template.
- to the same resource group.
- to the same availability zone.

116

Answer

When you need to delegate permissions to several Azure virtual machines simultaneously, you must deploy the Azure virtual machines

- to the same Azure region.
- by using the same Azure Resource Manager template.
- to the same resource group.**
- to the same availability zone.

117

Question

Statements

Yes

No

Azure resources can only access other resources in the same resource group.

If you delete a resource group, all the resources in the resource group will be deleted.

A resource group can contain resources from multiple Azure regions.

118

Answer

Statements	Yes	No
Azure resources can only access other resources in the same resource group.	<input type="radio"/>	<input checked="" type="radio"/>
If you delete a resource group, all the resources in the resource group will be deleted.	<input checked="" type="radio"/>	<input type="radio"/>
A resource group can contain resources from multiple Azure regions.	<input type="radio"/>	<input checked="" type="radio"/>

119

Question

You need to identify the type of failure for which an Azure Availability Zone can be used to protect access to Azure services. What should you identify?

- A.** a physical server failure
- B.** an Azure region failure
- C.** a storage failure
- D.** an Azure data center failure

120

Answer

You need to identify the type of failure for which an Azure Availability Zone can be used to protect access to Azure services. What should you identify?

- A. a physical server failure
- B. an Azure region failure
- C. a storage failure
- D. an Azure data center failure

121



Question

Statements

Yes

No

An Azure subscription can be associated to multiple Azure Active Directory (Azure AD) tenants.

You can change the Azure Active Directory (Azure AD) tenant to which an Azure subscription is associated.

When an Azure subscription expires, the associated Azure Active Directory (Azure AD) tenant is deleted automatically.

122



Answer

Statements	Yes	No
An Azure subscription can be associated to multiple Azure Active Directory (Azure AD) tenants.	<input type="radio"/>	<input checked="" type="radio"/>
You can change the Azure Active Directory (Azure AD) tenant to which an Azure subscription is associated.	<input checked="" type="radio"/>	<input type="radio"/>
When an Azure subscription expires, the associated Azure Active Directory (Azure AD) tenant is deleted automatically.	<input type="radio"/>	<input checked="" type="radio"/>

123

Question

Statements	Yes	No
A single Microsoft account can be used to manage multiple Azure subscriptions.	<input type="radio"/>	<input checked="" type="radio"/>
Two Azure subscriptions can be merged into a single subscription.	<input checked="" type="radio"/>	<input type="radio"/>
A company can use resources from multiple subscriptions.	<input type="radio"/>	<input checked="" type="radio"/>

124

Answer

Statements	Yes	No
A single Microsoft account can be used to manage multiple Azure subscriptions.	<input checked="" type="radio"/>	<input type="radio"/>
Two Azure subscriptions can be merged into a single subscription.	<input type="radio"/>	<input checked="" type="radio"/>
A company can use resources from multiple subscriptions.	<input checked="" type="radio"/>	<input type="radio"/>

125

Question

Statements	Yes	No
Availability zones can be implemented in all Azure regions.	<input type="radio"/>	<input checked="" type="radio"/>
Only virtual machines that run Windows Server can be created in availability zones.	<input type="radio"/>	<input checked="" type="radio"/>
Availability zones are used to replicate data and applications to multiple regions.	<input type="radio"/>	<input checked="" type="radio"/>

126

Answer

Statements	Yes	No
Availability zones can be implemented in all Azure regions.	<input type="radio"/>	<input checked="" type="radio"/>
Only virtual machines that run Windows Server can be created in availability zones.	<input type="radio"/>	<input checked="" type="radio"/>
Availability zones are used to replicate data and applications to multiple regions.	<input type="radio"/>	<input checked="" type="radio"/>

127

Question

You plan to map a network drive from several computers that run Windows 10 to Azure Storage.

You need to create a storage solution in Azure for the planned mapped drive.

What should you create?

- A. an Azure SQL database
- B. a virtual machine data disk
- C. a Files service in a storage account
- D. a Blobs service in a storage account

128

Answer

You plan to map a network drive from several computers that run Windows 10 to Azure Storage.

You need to create a storage solution in Azure for the planned mapped drive.

What should you create?

- A. an Azure SQL database
- B. a virtual machine data disk
- C. a Files service in a storage account**
- D. a Blobs service in a storage account

129

Question

You plan to create an Azure virtual machine.

You need to identify which storage service must be used to store the unmanaged data disks of the virtual machine.

What should you identify? To answer, select the appropriate service in the answer area.

Hot Area:

Answer Area



 Containers Scalable, cost-effective storage for unstructured data Learn more	 File shares Serverless SMB file shares Learn more
 Tables Tabular data storage Learn more	 Queues Effectively scale apps according to traffic Learn more

130

Answer

The image displays four rectangular cards arranged in a 2x2 grid, each representing a different Azure storage service. The top-left card is green and contains the 'Containers' section. The top-right card is white and contains the 'File shares' section. The bottom-left card is white and contains the 'Tables' section. The bottom-right card is white and contains the 'Queues' section. Each card features a small icon on the left, the service name in bold blue text, a brief description, and a 'Learn more' link at the bottom.

 Containers Scalable, cost-effective storage for unstructured data Learn more	 File shares Serverless SMB file shares Learn more
 Tables Tabular data storage Learn more	 Queues Effectively scale apps according to traffic Learn more

131

Question

Your company plans to migrate all its network resources to Azure.
You need to start the planning process by exploring Azure.
What should you create first?

- A.** a subscription
- B.** a resource group
- C.** a virtual network
- D.** a management group

132

Answer

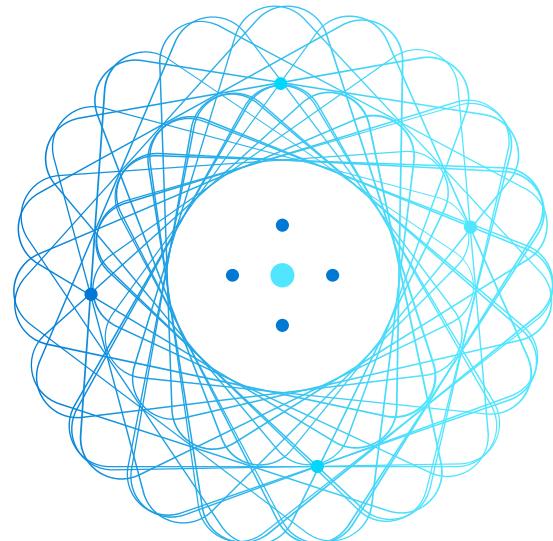
Your company plans to migrate all its network resources to Azure.
You need to start the planning process by exploring Azure.
What should you create first?

- A. a subscription**
- B. a resource group
- C. a virtual network
- D. a management group

133



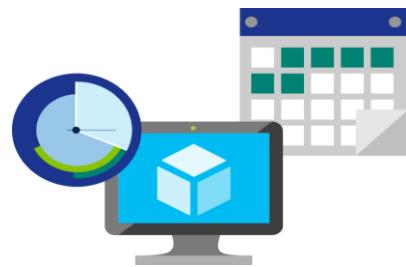
Management and Governance



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Factors affecting costs (part 1)



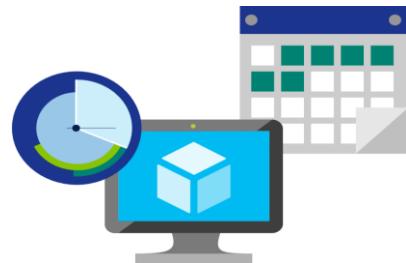
These are some of the factors affecting costs:

1) Resource Type	2) Consumption	3) Maintenance
Costs are resource-specific, so the usage that a meter tracks and the number of meters associated with a resource, depend on the resource type.	With a pay-as-you-go model, consumption is one of the biggest drivers of costs.	Monitoring your Azure footprint and maintaining your environment can help you identify and mitigate costs that aren't necessary, such as shutting down under used virtual machines.

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Factors affecting costs (part 2)



These are some of the factors affecting costs:

4) Geography	5) Network traffic	6) Subscription
The same resource type can cost different amounts depending on the geographic area, so geography has an impact on Azure costs.	While some inbound data transfers are free, the cost for outbound data or data between Azure resources is impacted by Billing zones.	The type and configuration of your subscription can also impact your cost. For example, the free trial lets you explore some Azure resources for free.

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Pricing Calculator

The **Pricing Calculator** is a tool that helps you estimate the cost of Azure products. The options that you can configure in the Pricing Calculator vary between products, but basic configuration options include:

- Region
- Tier
- Billing options
- Support options
- Programs and offers
- Azure dev/test pricing

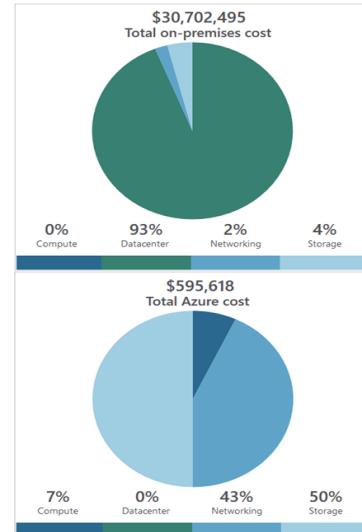
The screenshot shows the Azure Pricing Calculator interface. At the top, it displays "Your Estimate" with a total cost of \$188.57 for "1 D2 v3 (2 vCPU(s), 8 GB RAM) x 730 Hours;". Below this, there's a summary card for "Virtual Machines" with fields for REGION (West US), OPERATING SYSTEM (Windows), TYPE ((OS Only)), TIER (Standard), and INSTANCE (D2 v3: 2 vCPU(s), 8 GB RAM, 50 GB Temporary storage, \$0.209/hour). To the right of the summary card are buttons for "Clone" and "Delete", and links for "More info", "Pricing details", "Product details", and "Documentation".

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Total Cost of Ownership Calculator

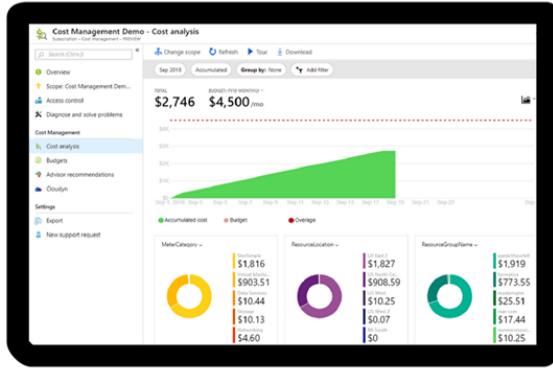
- A tool to estimate cost savings you can realize by migrating to Azure.
- A report compares the costs of on-premises infrastructures with the costs of using Azure products and services in the cloud.



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Azure Cost Management



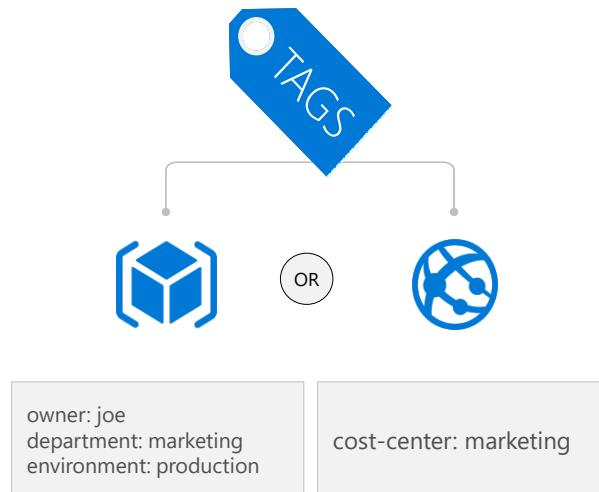
- Reporting – billing reports
- Data enrichment
- Budgets – set spend budget
- Alerting – when cost exceed limits
- Recommendation – cost recommendations

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Tags

- Provides metadata for your Azure resources.
- Logically organizes resources into a taxonomy.
- Consists of a name-value pair.
- Very useful for rolling up billing information.



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Azure Blueprints

Azure Blueprints makes it possible for development teams to rapidly build and stand up new environments. Development teams can quickly build trust through organizational compliance with a set of built-in components (such as networking) in order to speed up development and delivery.

- Role Assignments
- Policy Assignments
- Azure Resource Manager Templates
- Resource Groups



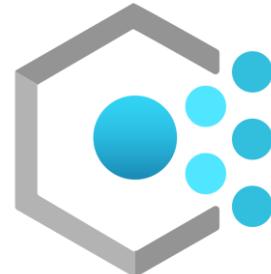
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Azure Policy

Azure Policy helps to enforce organizational standards and to assess compliance at-scale. Provides governance and resource consistency with regulatory compliance, security, cost, and management.

- Evaluates and identifies Azure resources that do not comply with your policies.
- Provides built-in policy and initiative definitions, under categories such as Storage, Networking, Compute, Security Center, and Monitoring.



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Resource locks

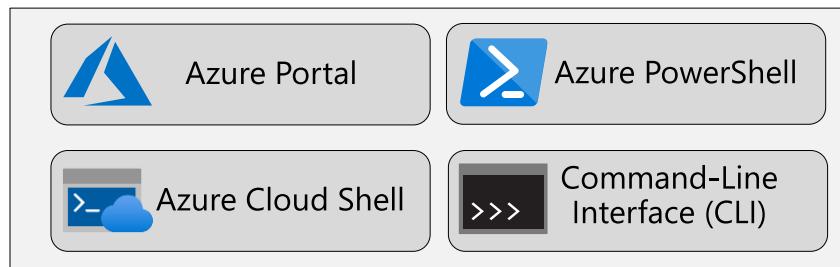
- Protect your Azure resources from accidental deletion or modification.
- Manage locks at subscription, resource group, or individual resource levels within Azure Portal.

Lock Types	Read	Update	Delete
Delete	Yes	Yes	No
ReadOnly	Yes	No	No

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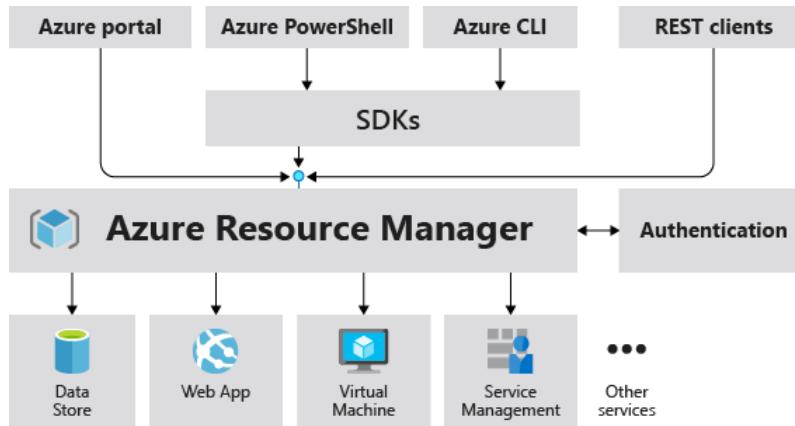
Tools for interacting with Azure



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144

Azure Resource Manager



The **Azure Resource Manager (ARM)** provides a management layer that enables you to create, update, and delete resources in your Azure subscription.

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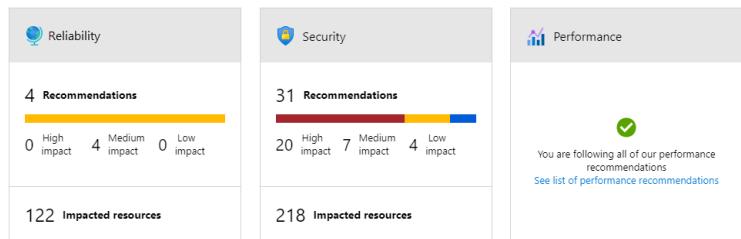
145

Azure Advisor



Azure Advisor analyzes deployed Azure resources and makes recommendations based on best practices to optimize Azure deployments.

- Reliability
- Security
- Performance
- Cost
- Operational Excellence



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Azure Service Health

Azure Service Health is a collection of services that keep you informed of general Azure status, service status that may impact you, and specific resource status that is impacting you.

Azure Status: global view of the health of all Azure services across all Azure regions

Service Health: focused view on only the services and regions that you're using. If a service is experiencing a problem in a region you're not using, it won't show up here.

Resource Health: tailored view of your actual Azure resources. It provides information about the health of your individual cloud resources



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147

Azure Monitor

Azure Monitor maximizes the availability and performance of applications and services by collecting, analyzing, and acting on telemetry from cloud and on-premises environments.

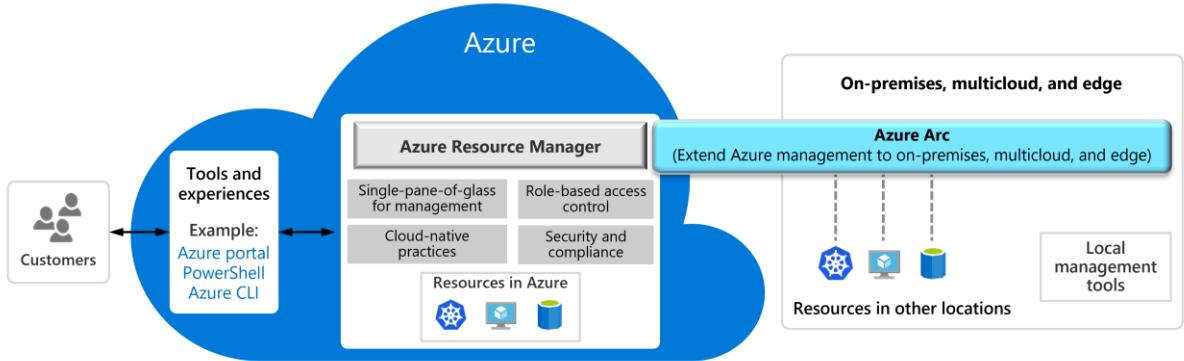
- Application Insights
- Log Analytics
- Smart Alerts
- Automation Actions
- Customized Dashboards



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Azure Arc



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149

Question

What Azure feature can help stay organized and track usage based on metadata associated with resources?

- Tags
- Tracers
- Values

150

Answer

What Azure feature can help stay organized and track usage based on metadata associated with resources?

- Tags
- Tracers
- Values

151

Question

What's the best method to estimate the cost of migrating to the cloud while incurring minimal costs?

- Migrate a small sample to the cloud and track costs over time.
- Use the Total Cost of Ownership calculator to estimate expected costs.
- Migrate to the cloud, but track usage closely using tags to rapidly understand costs.

152

Answer

What's the best method to estimate the cost of migrating to the cloud while incurring minimal costs?

- Migrate a small sample to the cloud and track costs over time.
- Use the Total Cost of Ownership calculator to estimate expected costs.
- Migrate to the cloud, but track usage closely using tags to rapidly understand costs.

153



Question

How can you prevent non-compliant resources from being created, without having to manually evaluate each resource as it's created?

- Azure Policy
- Azure Blueprints
- Azure Resource Monitor

154



Answer

How can you prevent non-compliant resources from being created, without having to manually evaluate each resource as it's created?

- Azure Policy
- Azure Blueprints
- Azure Resource Monitor

155

Question

What service helps you manage your Azure, on-premises, and multi-cloud environments?

- Azure Arc
- Azure Policy
- Azure Cloud Manager

156

Answer

What service helps you manage your Azure, on-premises, and multi-cloud environments?

- Azure Arc
- Azure Policy
- Azure Cloud Manager

157

A decorative graphic consisting of three horizontal blue lines. The top line is straight. The middle line starts at the same point as the top line, curves down and to the left, then continues straight. The bottom line starts at the same point as the top line, curves down and to the right, then continues straight.

Question

What two components could you use to implement a "infrastructure as code" deployment?

- Azure Blueprints and ARM Templates
- Azure Policy and Azure Arc
- Azure Monitor and Azure Arc

158

A decorative graphic consisting of three horizontal blue lines. The top line is straight. The middle line starts at the same point as the top line, curves down and to the left, then continues straight. The bottom line starts at the same point as the top line, curves down and to the right, then continues straight.

Answer

What two components could you use to implement a "infrastructure as code" deployment?

- Azure Blueprints and ARM Templates
- Azure Policy and Azure Arc
- Azure Monitor and Azure Arc

159

Question

Which is not one of the recommendation categories for Azure Advisor?

- Reliability
- Capacity
- Cost

160

Answer

Which is not one of the recommendation categories for Azure Advisor?

- Reliability
- Capacity
- Cost



161

Question

You receive an email notification that virtual machines (VMs) in an Azure region where you have VMs deployed is experiencing an outage. Which component of Azure Service Health will let you know if your application is impacted?

- Azure status
- Service health
- Resource health



162

Answer

You receive an email notification that virtual machines (VMs) in an Azure region where you have VMs deployed is experiencing an outage. Which component of Azure Service Health will let you know if your application is impacted?

- Azure status
- Service health
- Resource health

163

Question

You need to be notified when Microsoft plans to perform maintenance that can affect the resources deployed to an Azure subscription. What should you use?

- A.** Azure Monitor
- B.** Azure Service Health
- C.** Azure Advisor
- D.** Microsoft Trust Center

164

Answer

You need to be notified when Microsoft plans to perform maintenance that can affect the resources deployed to an Azure subscription. What should you use?

- A. Azure Monitor
- B. Azure Service Health**
- C. Azure Advisor
- D. Microsoft Trust Center

165

Question

The Azure Migrate: Server Assessment tool
The Azure Total Cost of Ownership (TCO) calculator
The Database Migration Assistant
The pricing calculator in Azure

can calculate cost savings due to reduced electricity consumption as a result of migrating on-premises Microsoft SQL servers to Azure.

166

Answer

The Azure Migrate: Server Assessment tool
The Azure Total Cost of Ownership (TCO) calculator
The Database Migration Assistant
The pricing calculator in Azure

can calculate cost savings due to reduced electricity consumption as a result of migrating on-premises Microsoft SQL servers to Azure.

167



Question

Monitor threats by using sensors:

Azure Monitor
Azure Security Center
Azure Active Directory (Azure AD) Identity Protection
Azure Advanced Threat Protection (ATP)

Enforce Azure MFA based on a condition:

Azure Monitor
Azure Security Center
Azure Active Directory (Azure AD) Identity Protection
Azure Advanced Threat Protection (ATP)

168



Answer

Monitor threats by using sensors:

Azure Monitor
Azure Security Center
Azure Active Directory (Azure AD) Identity Protection
Azure Advanced Threat Protection (ATP)

Enforce Azure MFA based on a condition:

Azure Monitor
Azure Security Center
Azure Active Directory (Azure AD) Identity Protection
Azure Advanced Threat Protection (ATP)

169



Question

is the process of verifying a user's credentials.

Authorization
Authentication
Federation
Ticketing

170



Answer

Authorization
Authentication
Federation
Ticketing

is the process of verifying a user's credentials.

171



Question

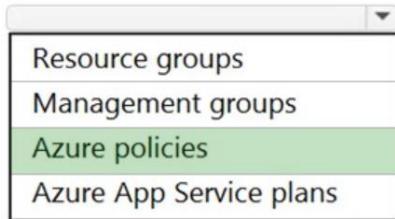
Resource groups
Management groups
Azure policies
Azure App Service plans

provide organizations with the ability to manage the compliance of Azure resources across multiple subscriptions.

172



Answer



provide organizations with the ability to manage the compliance of Azure resources across multiple subscriptions.

173



174