

JON BONSO, GEROME PAGATPATAN AND
ACE BATA CANDULO

**AZURE
CERTIFIED
AZ-104
Microsoft Azure
Administrator**



Tutorials Dojo Study Guide



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INTRODUCTION

With the rapid advancement of technology, enterprises are adopting newer technologies that will help their businesses transform and grow. Microsoft Azure is one of the emerging technologies that you can leverage in this age since a lot of companies are shifting their existing infrastructures in the cloud. Unlike the traditional setup, cloud computing allows you to obtain resources on-demand with just one click on their platform, including the servers, storage, databases, networking, analytics, artificial intelligence, and a lot more.

Microsoft Azure offers a range of cloud services, depending on your business needs. These services are continuously upgrading, and new features are being added every year to deliver customer satisfaction. Since Azure's resources and services are too vast, the **Microsoft Azure Certification** program offers different certification paths that will help aspiring candidates and IT professionals validate their skills and knowledge to maximize the solutions created in the cloud.

Microsoft Azure is the second biggest cloud service provider in the market next to AWS, and a lot of companies are now adopting a **multicloud** strategy, which makes it all the more beneficial for IT professionals like you to expand your skill set and learn multiple cloud technologies. Learning is a lot more fun if you merge it with various cloud services. It will be an exciting and enjoyable journey for you, and the first step is to become **AZ-104 Microsoft Azure Administrator** certified. This eBook will help familiarize yourself with the basic cloud concepts as well as the core services of Microsoft Azure, which are the building blocks that will help you pass the exam and make a successful career shift to cloud computing.

Note: We took extra care to come up with these study guides and cheat sheets, however, this is meant to be just a supplementary resource when preparing for the exam. We highly recommend working on **hands-on sessions** and **practice exams** to further expand your knowledge and improve your test-taking skills.



AZ-104 MICROSOFT AZURE ADMINISTRATOR EXAM OVERVIEW

The Microsoft Azure Certification Program validates the technical skills and knowledge for building secure and reliable cloud-based applications using the Azure platform. By successfully passing the Microsoft Azure exam, individuals can prove their expertise to their current and future employers.

Exam Details

The AZ-104 Microsoft Azure Administrator examination is intended for IT Professionals who implement, manage and monitor an organization's cloud infrastructure. You can take this exam from a local testing center or online from the comfort of your home. The exam is composed of different types of questions.

For multiple-choice types of questions, you will have to choose one correct response out of four options.

A company is planning to deploy its suite of enterprise applications to Microsoft Azure, where each application has several dependencies and subcomponents. The company must also control and manage the patching activities of the underlying operating system of the servers.

What type of cloud deployment solution should you recommend?

☐ Infrastructure as a Service (IaaS)

☐ Platform as a Service (PaaS)

☐ Software as a Service (SaaS)

☐ Functions as a service (FaaS)

For Drag and Drop questions, match the items by dragging them to their correct descriptions.



Instructions: Drag the appropriate item from the column on the left to its description on the right. Each correct match is worth one point.

ANSWER OPTIONS

- NIST
- Azure Government
- ISO
- GDPR

ANSWER AREA

	A non-regulatory agency of the United States government that defines industry standards.
	An independent, non-governmental organization that defines international standards that are used in all industries across the globe.
	A regulation on data protection and privacy in the European Union and the European Economic Area.
	A dedicated cloud for US federal, state, and other partner agencies.

For Dropdown types of questions, select the correct answer from the drop-down list of options.

Azure App Service and Azure Virtual Machines are services that you can use in Azure. For each service, you have to determine its correct type of cloud service model.

Select the correct answer from the drop-down list of options. Each correct selection is worth one point.

Azure Virtual Machines

Azure App Service

For Hotspot types of questions such as multiple Yes/No, evaluate whether the presented statements relating to a certain topic are correct/incorrect.



For each of the following items, choose **Yes** if the statement is true or choose **No** if the statement is false. Take note that each correct item is worth one point.

Questions	Yes	No
Azure virtual machines are billed on a per-hour basis.	☐	☐
When you delete a virtual machine in Azure, by default, any disks that are attached to the VM are deleted.	☐	☐
Disks attached to stopped virtual machines do not incur costs.	☐	☐

You can take the exam via online proctoring or from a testing center close to you.

Exam Code:	AZ-104
Prerequisites:	None
No. of Questions:	50-60
Score Range:	100-1000
Cost:	165 USD
Passing Score:	700
Time Limit:	100 - 120 minutes

Exam Domains

The AZ-104 Microsoft Azure Administrator exam evaluates your skills across several domains, with the following updated weightage and topic coverage: Manage Azure identities and governance (20–25%), Implement and manage storage (15–20%), Deploy and manage Azure compute resources (20–25%), Implement and manage virtual networking (15–20%), and Monitor and maintain Azure resources (10–15%). These domains focus on your ability to manage and configure Azure services, including identity and governance tasks, storage solutions, compute resources, networking, and monitoring. The exam tests your proficiency in managing Azure environments and ensuring they are optimized for performance, security, and availability.



Manage Azure identities and governance

- Manage Microsoft Entra users and groups
- Manage access to Azure resources
- Manage Azure subscriptions and governance

Implement and manage storage

- Configure access to storage
- Configure and manage storage accounts
- Configure Azure Files and Azure Blob Storage

Deploy and manage Azure compute resources

- Automate deployment of resources by using Azure Resource Manager (ARM) templates or Bicep files
- Create and configure virtual machines
- Provision and manage containers in the Azure portal
- Create and configure an Azure App Service

Implement and manage virtual networking

- Configure and manage virtual networks in Azure
- Configure secure access to virtual networks
- Configure name resolution and load balancing

Monitor and backup Azure resources

- Monitor resources in Azure Monitor
- Implement backup and recovery

Exam Scoring System

You can get a score from 100 to 1,000 with a minimum passing score of 700 when you take the AZ-104 Microsoft Azure Administrator exam. Microsoft uses a scaled scoring model to associate scores across multiple exam types that may have different levels of difficulty. Your complete score report will be sent to you by email 1 - 5 business days after your exam. However, as soon as you finish your exam, you'll immediately see a pass or fail notification on the testing screen.

For individuals who unfortunately do not pass their exams, you must wait 24 hours before you are allowed to retake the exam. There is no hard limit on the number of attempts you can retake an exam.

Once you receive your score report via email, the result should also be saved in your Microsoft Certification account. The score report contains a table of your performance in each domain and it will indicate whether you have met the level of competency required for these. Take note that you do not need to achieve competency in all areas for you to pass the exam. In the first part of the report, there will



be a performance summary by exam section that highlights your strengths and weaknesses, which can help you determine the areas you need to improve on.

Exam Benefit

If you successfully pass any Microsoft Certification exam, you will receive a **Certified Digital Badge**. You can showcase your achievements to your colleagues and employers by adding these digital badges to your email signatures, LinkedIn profile, or on your social media accounts. To view your badges, simply go to the “Dashboard” section of your Acclaim Account.

You can visit the official Microsoft Certification FAQ page to view the frequently asked questions about getting certified and other information about the Microsoft Certification: <https://docs.microsoft.com/en-us/learn/certifications/certification-exam-policies>.



AZ-104 MICROSOFT AZURE ADMINISTRATOR EXAM - STUDY GUIDE AND TIPS

The [AZ-104 Microsoft Azure Administrator](#) certification exam is designed for people who have experience in implementing, managing, and monitoring a Microsoft Azure environment. The exam will test your technical skills in implementing solutions based on different scenarios. Having prior experience in infrastructure management will help you understand the concepts and services easily.

The content of the exam will test your ability to perform the following:

- Manage Azure identities and governance
- Implement and manage storage
- Deploy and manage Azure compute resources
- Configure and manage virtual networking
- Monitor and backup Azure resources

For more information about the AZ-104 exam, you can check out this [exam skills outline](#). This study guide will provide you with comprehensive review materials to help you pass the exam with flying colors.

Study Materials

For the Microsoft Azure Administrator exam, we recommend that you check out these study materials first before you take the actual exam. These resources will help you understand complex concepts and services that will be useful on your exam day.

1. **[Microsoft Learn](#)** – this website provides different learning paths for various Microsoft certifications. For the AZ-104 certification exam, you can focus on the following modules:
 - [Prerequisites for Azure administrators](#)
 - [Manage identities and governance in Azure](#)
 - [Implement and manage storage in Azure](#)
 - [Deploy and manage Azure compute resources](#)
 - [Configure and manage virtual networks for Azure administrators](#)
2. **[Azure Documentation](#)** – these documentations contain an overview, tutorials, examples, and how-to guides that will help broaden your knowledge on different Azure services.
3. **[Azure Blog](#)** – to get updated on new technologies and offerings of Microsoft Azure, you can subscribe to their newsletter.



4. **Azure FAQs** – you can find the FAQs section on the Azure documentation. The FAQs section is a compiled list of commonly asked questions, use cases, and a comparison of several Azure services.
5. **Azure free account** – the Azure portal will help you get hands-on experience with its 12-month trial. You'll also get free credits that you can spend for the first 30 days.
6. **Tutorials Dojo's Azure Cheat Sheets** – with the help of our cheat sheets, you can easily understand the information found in the Azure documentation. These are presented in bullet point format to highlight the important concepts.
7. **Tutorials Dojo's AZ-104 Microsoft Azure Administrator Practice Exams** – our practice exams have always been regarded as the best in the market. Each question in our practice tests contains detailed explanations at the end of each set to help you digest important concepts that will help you pass your Microsoft Azure certification exam on your first try.

Azure Services to Focus On

Your primary source of information when studying for the AZ-104 certification exam is the Azure documentation. To comprehend the different scenarios in the exam, you should have a thorough understanding of the following services:

1. **Azure Virtual Network** – you should know how to create a VNet peering, security rules, configuration of private/public IP addresses, network interface, subnets, and virtual networks.
2. **Azure DNS** – the configuration of custom DNS, private, and public DNS zone.
3. **Azure Application Gateway** – you should know when to use a load balancer and a web traffic load balancer, and how to create a web application firewall.
4. **Azure Load Balancer** – the types of load balancing rules, the difference between a public load balancer, and an internal load balancer.
5. **Azure VPN Gateway** – know how to configure VPN and VPN gateway.
6. **Azure ExpressRoute** – understand the concepts of ExpressRoute and how you would implement it in your environment.



7. **Azure Virtual Machines** – learn how to deploy and configure a VM, scale sets, highly available solutions, moving and redeploying of VM, creating a backup, backup policy, and recovery services vaults.
8. **Azure App Service** – learn how to create an app service plan and what run time can be put in the same app service plan.
9. **Azure Container Instances** – understand the concepts of containers and how to use ACI.
10. **Azure Blob Storage** – you need to learn how to configure storage accounts, import/export of data, storage tiers, replication, and authentication.
11. **Azure Files** – learn how to create a file share, file sync, copy data using AZCopy.
12. **Microsoft Entra ID** – you should know how to manage a user, group, guest accounts, joined devices, device settings, and best practices.
13. **Azure RBAC** – learn how to create and assign a role and the types of built-in roles.
14. **Azure Policy** – you need to learn how to read and create a policy.
15. **Azure Monitor** – you should know how to interpret metrics, the configuration of monitor agent, query and analyze logs, set up alerts and actions, and other service features.

We suggest that you check out **Tutorials Dojo's Azure Cheat Sheets**, which provide bullet-point summaries of the most important concepts on different Azure services.

Validate Your Knowledge

If you're feeling confident because you've followed the recommended materials above, it's time to test your knowledge of various Azure concepts and services. For high-quality practice exams, you can use the Tutorials Dojo **AZ-104 Microsoft Azure Administrator Associate practice exams**.

These **practice tests** cover the relevant topics that you can expect from the real exam. It also contains different types of questions such as single choice, multiple responses, hotspot, yes/no, drag and drop, and case studies. Every question on these practice exams has a detailed explanation and adequate reference links that help you understand why the correct answer is the most suitable solution. After you've taken the exams, it will highlight the areas that you need to improve on. Together with our **cheat sheets**, we're confident that you'll be able to pass the exam and have a deeper understanding of how Azure works.



Sample Practice Test Questions:

Question 1

Your company has an Microsoft Entra tenant named tutorialsdojo.onmicrosoft.com and a public DNS zone for tutorialsdojo.com.

You added the custom domain name tutorialsdojo.com to Microsoft Entra ID. You need to verify that Azure can verify the domain name.

What DNS record type should you use?

1. SRV
2. NSEC
3. NSEC3
4. MX

Correct Answer: 4

Microsoft Entra ID is Microsoft's cloud-based identity and access management service, which helps your employees sign in and access resources in:



- External resources, such as Microsoft Office 365, the Azure portal, and thousands of other SaaS applications.
- Internal resources, such as apps on your corporate network and intranet, along with any cloud apps developed by your own organization.

Microsoft Online business services, such as Office 365 or Microsoft Azure, require Microsoft Entra ID for sign-in and to help with identity protection. If you subscribe to any Microsoft Online business service, you automatically get Microsoft Entra ID with access to all the free features.

[Home](#) > [Default Directory](#) | [Custom domain names](#) >

tddemo.com ...

Custom domain name

 Delete |  Got feedback?

 To use tddemo.com with your Microsoft Entra tenant, create a new TXT record with your domain name registrar using the info below.

Record type

TXT MX

Alias or host name

@

Destination or points to address

MS=ms89457514

TTL

3600

[Share these settings via email](#)

Verification will not succeed until you have configured your domain with your registrar as described above.



Every new Microsoft Entra ID tenant comes with an initial domain name, `<domainname>.onmicrosoft.com`. You can't change or delete the initial domain name, but you can add your organization's names. Adding custom domain names helps you to create user names that are familiar to your users, such as `azure@tutorialsdojo.com`.

You can verify your custom domain name by using TXT or MX record types.

Hence, the correct answer is: **MX**.

SRV, NSEC, and NSEC3 are incorrect because these record types are not supported by Microsoft Entra ID for verifying your custom domain. Only TXT and MX record types are supported.

References:

<https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/add-custom-domain>

<https://docs.microsoft.com/en-us/azure/active-directory/fundamentals/active-directory-what-is>

Check out this Microsoft Entra ID Cheat Sheet:

<https://tutorialsdojo.com/microsoft-entra-id/>

Question 2

You plan to automate the deployment of Windows Servers using a virtual machine scale set.

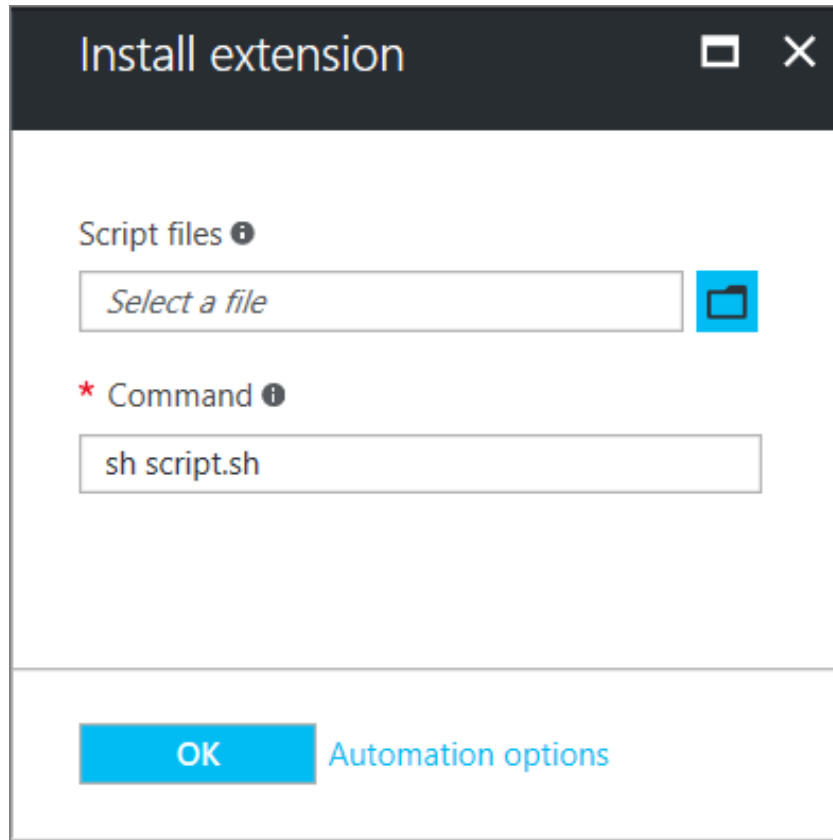
You need to make sure that the web components are installed in the virtual machines.

Which two actions should you perform?

1. Create a configuration script.
2. Create an automation account.
3. Create a policy.
4. Configure the extensionProfile section of the ARM template.
5. Create a new scale set.

Correct Answer: 1, 4

Azure virtual machine scale sets let you create and manage a group of load-balanced VMs. The number of VM instances can automatically increase or decrease in response to demand or a defined schedule. Scale sets provide high availability to your applications and allow you to centrally manage, configure, and update a large number of VMs.



The Custom Script Extension downloads and executes scripts on Azure virtual machines. This extension is useful for post-deployment configuration, software installation, or any other configuration or management tasks.

Hence, the correct answers are:

- **Create a configuration script.**
- **Configure the extensionProfile section of the ARM template.**

The option that says: **Create an automation account** is incorrect because an automation account wouldn't help you automatically install web components. You still need to create a configuration script and extensionProfile in the ARM template.

The option that says: **Create a policy** is incorrect because this option only evaluates resources in Azure. Take note that you don't need to create a policy to install web components.

The option that says: **Create a new scale set** is incorrect because this wouldn't install the required web components. Instead of creating a new scale set, you should use a custom script extension to install the web components in the VMs.



References:

<https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-deploy-app>

<https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/tutorial-install-apps-template#what-is-the-azure-custom-script-extension>

<https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-deploy-app#already-provisioned>

Check out this Azure Virtual Machines Cheat Sheet:

<https://tutorialsdojo.com/azure-virtual-machines/>

For more **AZ-104 practice exam** questions with detailed explanations, check out the **Tutorials Dojo Portal**:



AZ-900 Microsoft Azure Fundamentals
Practice Exams



AZ-104 Microsoft Azure Administrator
Practice Exams

Final Remarks

It is not enough to understand the concepts at a high level. You also need to get hands-on experience by using the Microsoft Azure Portal. Simulate different scenarios that will help you deepen your understanding of various services. The combination of practical and theoretical knowledge will help you analyze difficult questions in the exam.

A few reminders that we can give is to always check the time and review your answers before proceeding to the next question (especially in the case study and yes/no questions). Before your scheduled exam day, don't forget to take a good rest. If you're not feeling confident yet, there's always an option to reschedule your exam. Good luck, and we wish you all the best.



CLOUD COMPUTING CONCEPTS

Cloud computing is the delivery of services over the Internet that helps you reduce your operating costs, run your infrastructure efficiently, and scale as business requirements change.

Cloud Service Models

- The three cloud computing service models are IaaS, PaaS, and SaaS.
- You can also use serverless computing to eliminate the need to manage infrastructure.
- The shared responsibility model determines the security tasks that are handled by the cloud provider and handled by the customer.
 - Azure is responsible for protecting the infrastructure such as hosts, network, and data center.
 - The customer is responsible for protecting their data, endpoints, account, and access management.
- IaaS, PaaS, and SaaS have different levels of managed services:

IaaS	PaaS	SaaS
Applications	Applications	Applications
Data	Data	Data
Runtime	Runtime	Runtime
Middleware	Middleware	Middleware
O/S	O/S	O/S
Virtualization	Virtualization	Virtualization
Servers	Servers	Servers
Storage	Storage	Storage
Networking	Networking	Networking



You Manage



Vendor Manages



Infrastructure as a service (IaaS)

- Most user management
- You are responsible for managing the **operating systems, data, and applications**.
- IaaS helps you to extend resources rapidly to meet the spikes required for your application.
- Used in the following scenarios:
 - **Migrating workloads** – move existing applications to the cloud.
 - **Test and development** – quickly set up and dismantle test and development environments. IaaS makes scaling development and testing environments fast and economical.
 - **Storage, backup, and recovery** – simplify the planning and management of backup and recovery systems.
 - **Website hosting** – less expensive than traditional web hosting.
 - **High-performance computing (HPC)** – clusters of computers that help solve complex problems involving millions of variables or calculations.
 - **Big data analysis** – for massive data sets that require a huge amount of processing power.

Platform as a service (PaaS)

- Less user management
- The operating systems are managed by the cloud provider, while the user is responsible for the applications and data they run and store.
- PaaS offers all the functionality you need to support the entire lifecycle of web applications: **building, testing the application, deploying the source code, managing, and updating** within the same integrated environment.
- Used in the following scenarios:
 - **Development framework** – a framework for creating or customizing cloud-based applications.
 - **Analytics or business intelligence** – find insights and patterns, and predict outcomes to improve business decisions.

Software as a service (SaaS)

- Least amount of management
- The cloud provider is responsible for managing everything, and the end-user just uses the software.

Serverless Computing

- Function as a Service (FaaS)
- You simply deploy the code with a serverless platform, and it runs at high availability.
- Dynamically scales up and down to meet the demands of each workload within seconds.



- A **pay-per-execution model** that charges sub-second billing only for the time and resources required to execute the code.

Cloud Architecture Models

- Three deployment methods of cloud computing: **Public vs Private vs Hybrid**.
- The model you choose for cloud deployment depends on your budget, security, scalability, and maintenance needs.

Public Cloud

- Focus on maintaining your applications without having to worry about purchasing, managing, or maintaining the hardware on which it runs.
- You can use multiple public cloud providers of varying scale.

Advantages	Disadvantages
High scalability/agility.	Specific security requirements.
Pay-as-you-go pricing.	Government policies, industry standards, or legal requirements.
You are not responsible for the updates and maintenance of the hardware.	You don't own the hardware or services and you also can't manage them as you may want to.
The required technical knowledge is minimal.	Maintaining a legacy application might be hard to meet.

Private Cloud

- A dedicated on-premises datacenter configured to be a cloud environment that provides users in your organization with self-service access to compute resources.
- You are responsible for the purchase and maintenance of the hardware and software services.
- You can use a private cloud when an organization has data that cannot be put in the public cloud, perhaps for legal reasons.

Advantages	Disadvantages
Any scenario or legacy application configuration is supported.	CapEx involved – principal cost is the procurement of the equipment.



You have control (and responsibility) over security.	To scale, you must buy, install, and set up new hardware.
Compliance or security requirements in your organization.	Private clouds require IT skills and expertise.

Hybrid Cloud

- Data and applications can move between **private** and **public clouds**.
- When there is a spike in demand in your private cloud, you can “burst through” to the public cloud for additional computing resources.

Advantages	Disadvantages
Maintain a private infrastructure for sensitive assets.	More expensive than selecting one deployment model since it involves some CapEx cost upfront
Take advantage of the resources in the public cloud when needed.	It can be more complicated to set up and manage
With the ability to scale to the public cloud, you pay for extra computing power only when needed.	
Allows you to use your own equipment to meet the security and compliance requirements in your organization.	



AZURE BASICS

Azure Overview

Azure is a cloud computing platform that was introduced by Microsoft in 2010. It enables you to create, manage, and deploy applications across a large global network. Microsoft Azure also provides a variety of services to assist your business in addressing current and potential business challenges in your infrastructure and applications.

Today, Microsoft Azure has the second-largest share in the cloud industry. It also has specialized regions for compliance or legal purposes.

Advantages of Azure Cloud Computing

- **Cost** – Eliminate the capital expense of buying hardware, software, and setting up of data centers. The principle of the cloud is, you will only pay for the computing resources you have consumed.
- **Global scale** – One of the benefits of cloud computing is the ability to scale elastically. This means that you can easily add resources such as compute and storage capacity in different regions with just a few clicks.
- **Performance** – Cloud computing services are hosted on a global network of secure data centers that are upgraded with the latest generation of computing hardware on a regular basis. Compared to a single corporate datacenter, this has several advantages, including lower application network latency and greater economies of scale.
- **Security** – Cloud service providers offer a broad set of policies, technologies, and controls to protect your data and infrastructure against potential threats.
- **Speed** – In a cloud computing environment, you can provision computing resources in minutes with just a few clicks. Providing businesses with a great deal of flexibility and relieving capacity planning pressure.
- **Productivity** – The cloud provides a lot of convenience to your IT teams since it reduces the time needed to obtain additional resources, allowing them to focus solely on achieving more important business goals.
- **Reliability** – With cloud computing, you can easily manage backup data, disaster recovery and business continuity since the data can be mirrored at multiple redundant sites.



Azure Global Infrastructure

Regions

- Each region has more than one data center, which is a physical location.
- A group of data centers deployed in a latency-defined perimeter and connected through a dedicated regional low-latency network.
- Criteria in choosing a Region:
 - **Location** – a region closest to your users minimizes the latency.
 - **Features** – some features are not available in all regions.
 - **Price** – the price of services varies from region to region.
- Each Region is paired within the same geographic area.
- If the primary region has an outage, you can **failover** to the secondary region.
- You can use paired regions for **replication**.
- Regions that are unique when it comes to compliance:
 - **Azure Government Cloud** – only US federal, state, local, and tribal governments and their partners have access to this dedicated instance.
 - **China Region** – data center is physically located within China and has no connection outside of China, including other Azure regions.

Availability Zones

- Each availability zone is a physical location within a region.
- A zone is composed of one or more data centers with independent power, cooling, and networking facilities.
- Azure services that support Availability Zones fall into two categories:
 - **Zonal services** – a resource is pinned to a specific zone.
 - **Zone-redundant services** – replicates automatically across zones.