

What is the AZ-900?



The **Azure Fundamentals** is the entry-level cloud certification for Microsoft Azure.

This certification is generally referred to by its course code **AZ-900**.

The AZ-900 is about knowing the Azure core services, the fundamentals of cloud computing and having a bit of hands-on experience working with the Azure Portal.

The Azure Roadmap

Fundamentals



AZ-900
Fundamentals

Associate



Administrator

- AZ-103



Developer

- AZ-203



AI Engineer

- A1-100



Data Scientist

- DP-100



Data Engineer

- DP-200
- DP-201



Security

- AZ-500

Expert



Solutions Architect Expert

- AZ-300
- AZ-301



DevOps Engineer Expert

- AZ-400

Specialty



Azure for SAP Workloads

- AZ-120



IoT Developer

- AZ-220

Who is the AZ-900 for?



Commonly obtained by **sales** and **management** to help inform VPs or CEOs reasons for their company to utilize Microsoft Azure

The AZ-900 focuses on billing, security and business-centric concepts.

Also **popular among developers** to show they have familiar knowledge with Cloud Concepts.

What value does the AZ-900 hold?



Not recognized as an important certification for developers on their résumé

If you're a developer **who already has cloud knowledge in another cloud provider**, it can indicate that you can transfer your skills to Azure to perform cross-cloud work.

Great for 💪 **building confidence** before you take a harder Azure Certification. Gets you familiar with the exam experience.

How long to study to pass AZ-900?



If you're a
Developer...

If you're a
Bootcamp Grad...

If you're **Sales**
or **Management...**

8 hrs
of study

15 hrs
of study

20 hrs
of study

Recommend to study **1-3 hours** a day for 7 days.

Where do you take the AZ-900 exam?



At an **in-person test center** or **online from the convenience of your own home**.

“proctor” is a supervisor, or person who monitors students during an examination.

What does it take to pass the exam?



1. Watch video lecture and memorize key information
2. Do hands-on labs and follow along within your own Azure Account
3. Do paid online practice exams that simulate the real exam.



<https://www.exampro.co>





Azure Fundamentals

Introduction

Exam Guide Walkthrough

Exam Guide – Content Outline



15-25% Cloud Concepts

30-35% Azure Core Services

25-30% Security, Privacy, Compliance and Trust

20-25% Pricing and Support

Exam Guide – Grading



Passing Grade is ***700/1000**

You need to get “*around*” 70% to pass



Azure uses Scaled Scoring

Exam Guide – Response Types



There are 40-60 Questions

You can afford to get *12-18 questions wrong

Format of Questions

- Multiple Choice
- Multiple Answer
- Drag and Drop
- Hot Area

Exam Guide – Duration



Duration of 60mins

You get ~1mins per question

Exam Time is: **60mins**

Seat Time is: **90mins**

Seat time refer to the amount of that you should allocate for the exam.

It includes:

- Time to review instructions
- Read and accept NDA
- Complete the exam
- Provide feedback at the end.

Exam Guide – Valid Until



Valid for 24 months
2 years before recertification



Azure Fundamentals

Cloud Concepts

What is Cloud Computing?

What is Cloud Computing?

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

cloud com·put·ing

noun

the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.



On-Premise

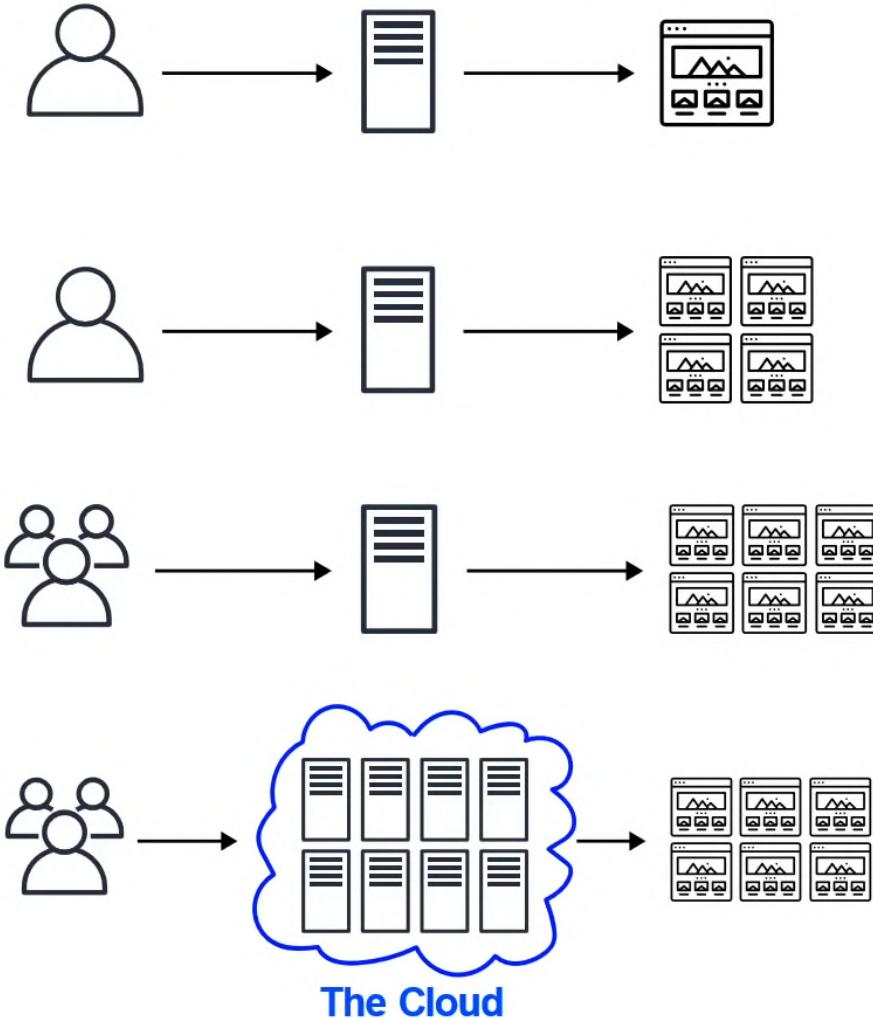
- You own the servers
- You hire the IT people
- You pay or rent the real-estate
- You take all the risk

Cloud Providers

- Someone else owns the servers
- Someone else hires the IT people
- Someone else pays or rents the real-estate
- You are responsible for your configuring cloud services and code, someone else takes care of the rest.

What is Cloud Computing?

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Dedicated Server

One physical machine dedicated **to single a business**.

Runs a single web-app/site.

Very Expensive, High Maintenance, High Security*

Virtual Private Server

One physical machine dedicated **to a single business**.

The physical machine is virtualized **into sub-machines**

Runs multiple web-apps/sites

Shared Hosting

One physical machine, shared by **hundred of businesses**

Relies on most tenants under-utilizing their resources.

Very Cheap, Very Limited.

Cloud Hosting

Multiple physical machines that act as one system.

The system is abstracted into multiple **cloud services**

Flexible, Scalable, Secure, Cost-Effective, High Configurability



Azure Fundamentals

Cloud Concepts

Common Cloud Services

Common Cloud Services

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A cloud provider **can have hundreds of cloud services** that are grouped various types of services.
The four most common types of cloud services for Infrastructure as a Service (IaaS) would be:



Compute

Imagine having a virtual computer that can run application, programs and code.



Networking

Imagine having the a virtual network being able to define internet connections or network isolations



Storage

Imagine having a virtual hard-drive that can store files



Databases

Imagine a virtual database for storing reporting data or a database for general purpose web-application

The term “Cloud Computing” can be used to refer to all categories, even though it has “compute” in the name.



Azure Fundamentals

Cloud Concepts

What is Microsoft and Azure?

What is Microsoft?

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Microsoft

An American multinational computer technology corporation headquartered **in Redmond, Washington**

Microsoft makes software, phones, tablets, game consoles, **cloud services**, a search engine and more!

Microsoft has been around since the late 1970s and is well known for their **Operation System**.



What is Azure?

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Microsoft calls their cloud provider service

Microsoft Azure

Commonly referred to just **Azure**



Azure literally means “bright blue color of the cloudless sky”

Cloud Service Providers can be initialized as **CSPs**



Azure Fundamentals

Cloud Concepts

Benefits of Cloud Computing

Benefits of Cloud Computing

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Cost-effective	You pay for what you consume , no up-front cost . Pay-as-you-go (PAYG) thousands of customers sharing the cost of the resources
Global	Launch workloads anywhere in the world , Just choose a region
Secure	Cloud provider takes care of physical security. Cloud services can be secure by default or you have the ability to configure access down to granular level.
Reliable	data backup, disaster recovery, and data replication, and fault tolerance
Scalable	Increase or decrease resources and services based on demand
Elastic	Automate scaling during spikes and drop in demand
Current	The underlying hardware and managed software is patched, upgraded and replaced by the cloud provider without interruption to you.



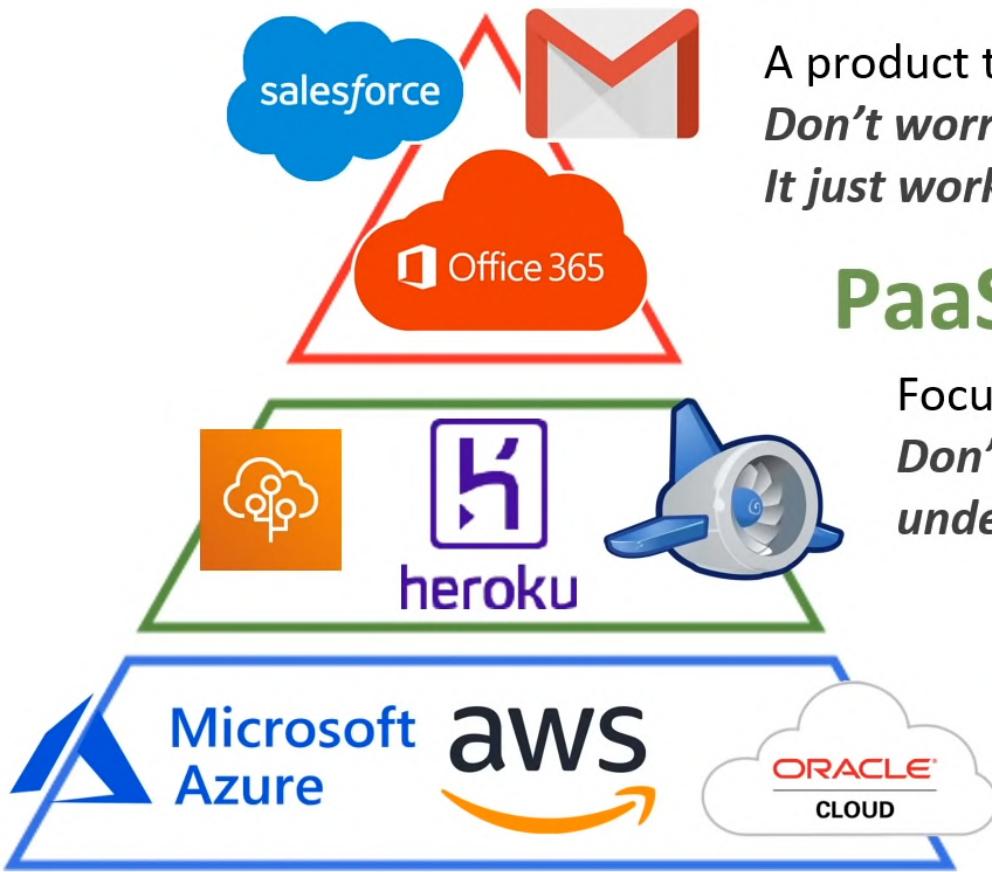
Azure Fundamentals

Cloud Concepts

Types of Cloud Computing

Types of Cloud Computing

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SaaS Software as a Service **For Customers**

A product that is run and managed by the service provider
*Don't worry about how the service is maintained.
It just works and remains available.*

PaaS Platform as a Service **For Developers**

Focus on the deployment and management of your apps.
Don't worry about, provisioning, configuring or understanding the hardware or OS.

IaaS Infrastructure as a Service **For Admins**

The basic building blocks for cloud IT. Provides access to networking features, computers and data storage space.
Don't worry about IT staff, data centers and hardware.



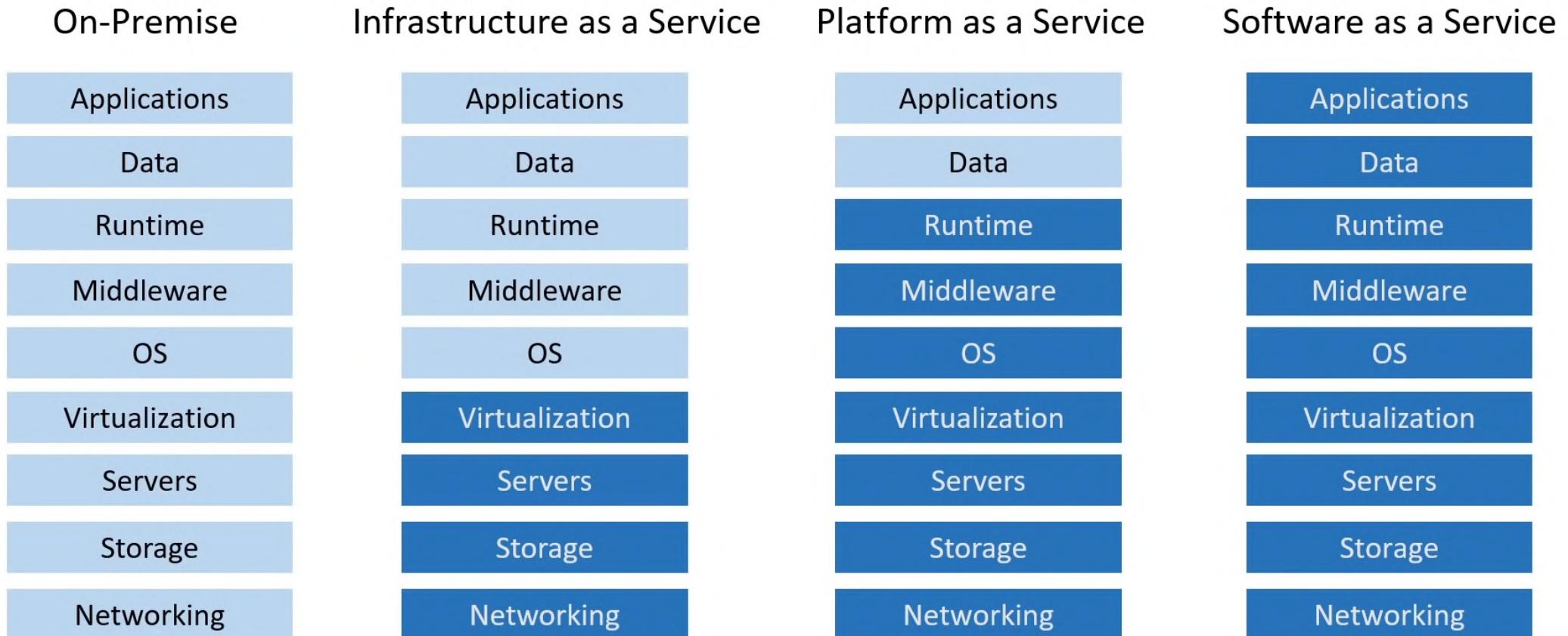
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Cloud Concepts

Types of Cloud Computing Responsibilities

Types of Cloud Computing Responsibilities

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Legend:

Customer is Responsible

CSP is Responsible



Azure Fundamentals

Cloud Concepts

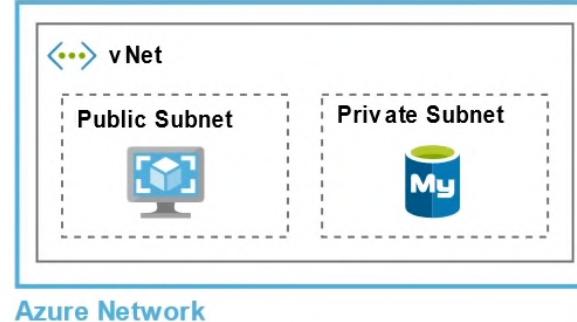
Cloud Deployment Models

Azure's Deployment Models

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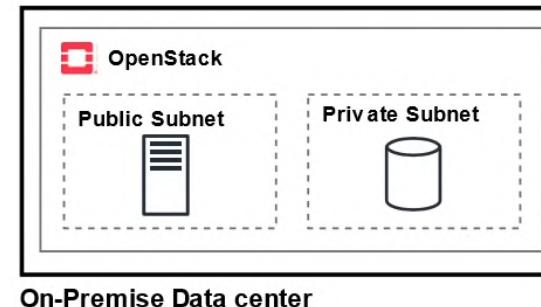
Public Cloud

Everything built on the Cloud Provider
Also known as: Cloud-Native



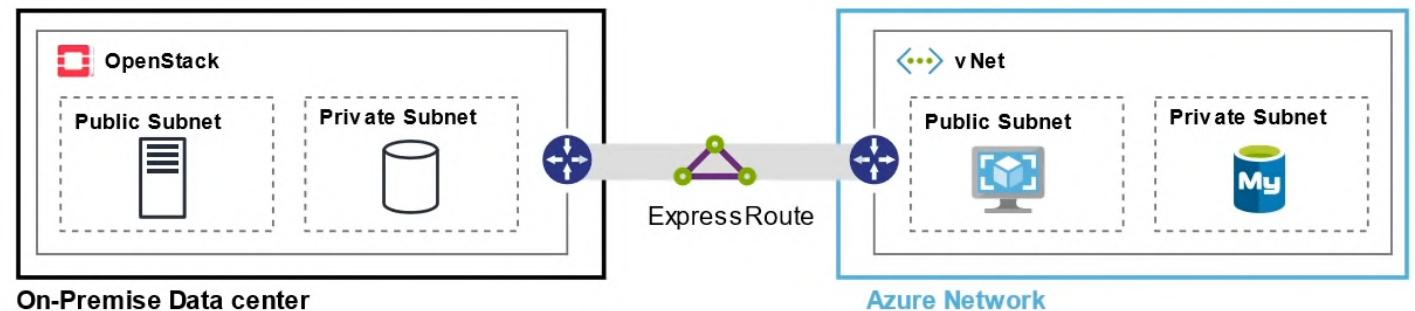
Private Cloud

Everything built on company's datacenters
Also known as **On-Premise**
The cloud could be **OpenStack**



Hybrid

Using both **On-Premise** and
A **Cloud Service Provider**



Azure's Deployment Models

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	Cost	Security	Level of Configuration	Technical Knowledge
Public Cloud	 Most cost-effective	 Security Controls by Default  Might not meet security requirements	 Limited based on what the Cloud Service Provider exposes to you.	 You don't need in-depth knowledge of underlying infrastructure
Private Cloud	 Most expensive	 no guarantee its secure  can meet any security compliance requirement if you put in the work.	 You can configure the infrastructure however you like.	 You need to know in-depth how to configure all levels of your infrastructure
Hybrid	  Could be more cost-effective based on what you offload to the cloud.	 you now have to secure your connection to the cloud  can meet all security requirements	 You get the best of both worlds.	 You need to know in-depth how to configure all levels of your infrastructure and know the CSPs services.

Deployment Models

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Cross-Cloud

Using **Multiple Cloud Providers**

Aka multi-cloud, hybrid-cloud





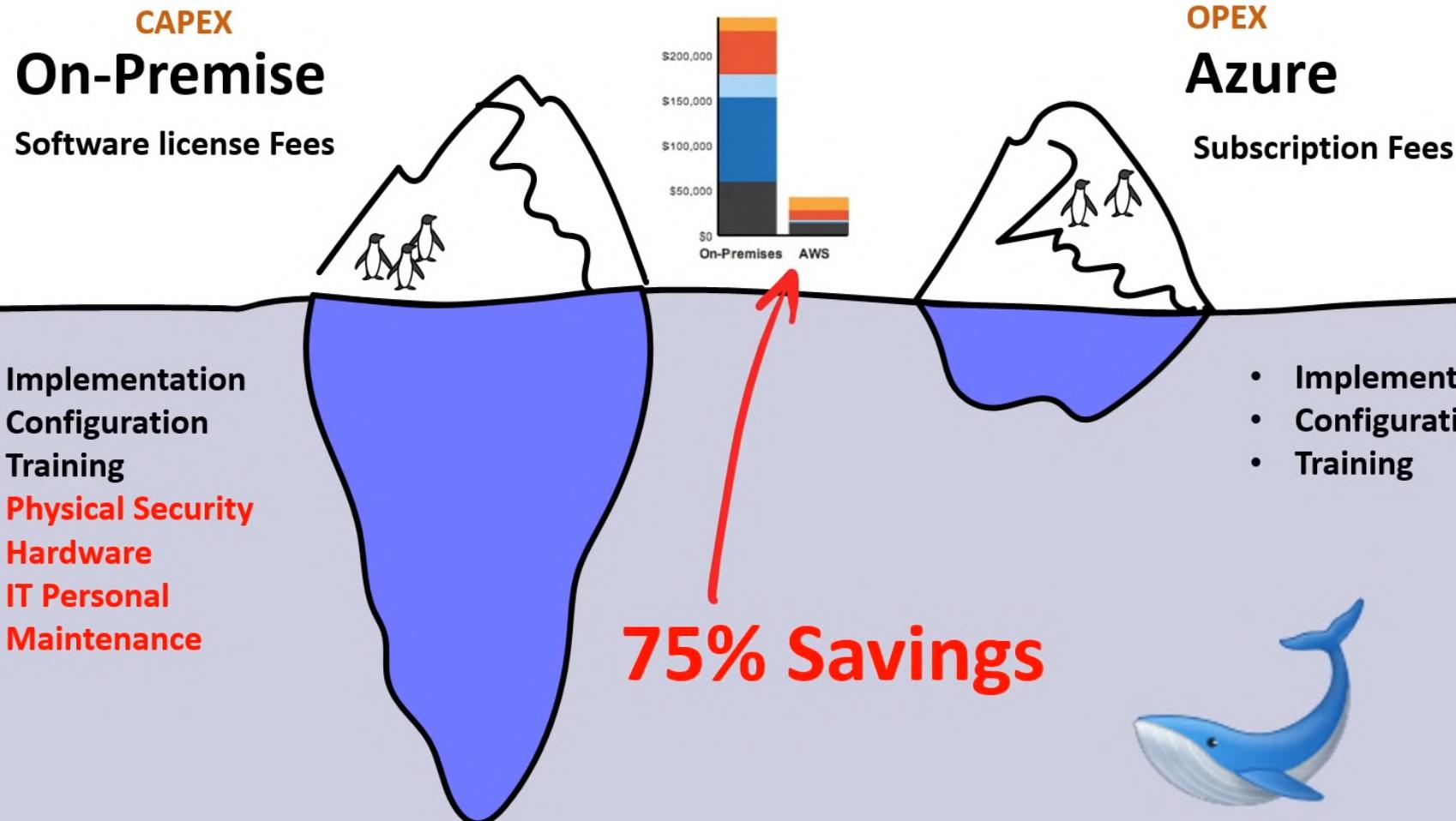
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Total Cost of Ownership

Total Cost of Ownership (TCO)

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Cloud Concepts

CAPEX vs OPEX

Capital vs Operational Expenditure

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Capital Expenditure (CAPEX)

Spending money upfront on **physical infrastructure**

Deducting that expense from your tax bill over time.

- Server Costs (computers)
- Storage Costs (hard drives)
- Network Costs (Routers, Cables, Switches)
- Backup and Archive Costs
- Disaster Recovery Costs
- Datacenter Costs (Rent, Cooling, Physical Security)
- Technical Personal

With Capital Expenses **you have to guess upfront** what you plan to spend

Operational Expenditure (OPEX)

The costs associated with an on-premises datacenter that has shifted the cost to the service provider. The customer only has to be concerned with non-physical costs.

- Leasing Software and Customizing features
- Training Employees in Cloud Services
- Paying for Cloud Support
- Billing based on cloud metrics eg.
 - compute usage
 - storage usage

With Operation Expenses you can try a product or service **without investing in equipment**



Azure Fundamentals

Cloud Concepts

Cloud Architecture Terminologies

Cloud Architecture Terminologies

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Availability - Your ability to ensure a service remains available

Highly Available (HA)

Scalability – Your ability to grow rapidly or unimpeded

Elasticity – Your ability to shrink and grow to meet the demand

Fault Tolerance – Your ability to prevent a failure

Disaster Recovery - Your ability to recover from a failure

Highly Durable (DR)



Azure Fundamentals

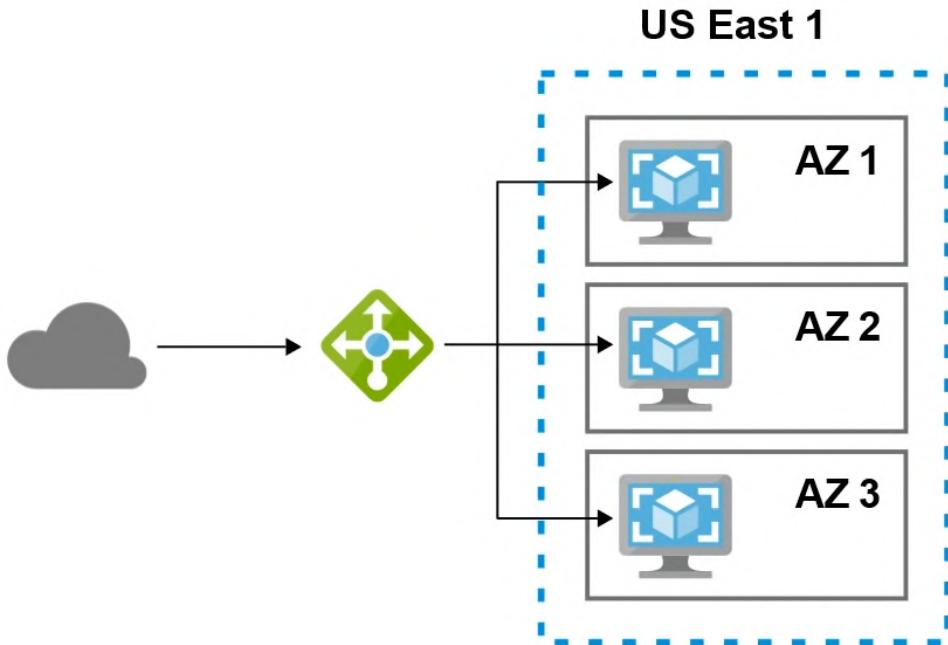
Cloud Concepts

High Availability

High Availability

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Your ability for your service to **remain available** by ensuring there is
***no single point of failure** and/or ensure a certain level of performance



Azure Load Balancer

A load balancer allows you to evenly distribute traffic to multiple servers in one or datacenter. If a datacenter or server becomes unavailable (unhealthy) the load balancer will route the traffic to only available datacenters with servers.

Running your workload across multiple **Availability Zones** ensures that if 1 or 2 AZs become unavailable your service / applications remains available.



Azure Fundamentals

Cloud Concepts

High Scalability

High Scalability

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Your ability to **increase your capacity** based on the increasing demand of traffic, memory and computing power



Vertical Scaling
Scaling **Up**

Upgrade to a bigger server



Horizontal Scaling
Scaling **Out**



Azure Fundamentals

Cloud Concepts

High Elasticity

High Elasticity

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Your ability to **automatically** increase or decrease your capacity based on the current demand of traffic, memory and computing power



Azure VM Scale Sets

Automatically increase or decrease in response to demand or a defined schedule.

SQL Server Stretch Database

Dynamically stretch warm and cold transactional data from Microsoft SQL Server 2016 to Microsoft Azure

Horizontal Scaling

Scaling **Out** — Add more servers of the same size

Scaling **In** — Removing more servers of the same size

Vertical Scaling is generally hard for traditional architecture so you'll usually only see horizontal scaling described with Elasticity.



Azure Fundamentals

Cloud Concepts

Fault Tolerance

High Durability

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Your ability to **recover** from a disaster and to prevent **the loss** of data
Solutions that recover from a disaster is known as **Disaster Recovery (DR)**

- Do you have a backup?
- How fast can you restore that backup?
- Does your backup still work?
- How do you ensure current live data is not corrupt?



Azure Fundamentals

Evolution of Compute

Dedicated Services

The Evolution of Computing

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*Dedicated



VMs



Containers



Functions

Wasted Space

App

App

App

Host Operation System

physical server

- A physical server **wholly utilized by a single customer**.
- You have to guess your capacity, you'll overpay for an underutilized server
- Upgrading beyond your capacity will be slow and expensive
- You are limited by your Operating System
- Multiple apps can result in conflicts in resource sharing
- You have a ***guarantee of security, privacy and full utility of underlying resources**



Azure Fundamentals

Evolution of Compute

Virtual Machines

The Evolution of Computing

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*Dedicated



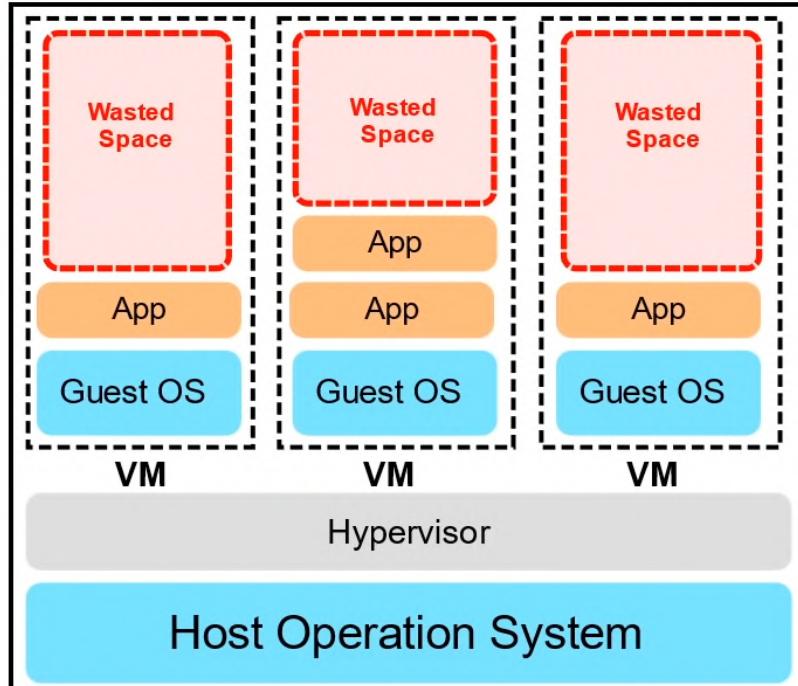
VMs



Containers



Functions



- You can run **multiple Virtual Machines on one machine**.
- **Hypervisor** is the software layer that lets you run the VMs
- A physical server shared by multiple customers
- You are pay for a fraction of the server
- You'll overpay for an underutilized Virtual Machine
- You are limited by your Guest Operating System
- Multiple apps on a single Virtual Machine can result in conflicts in resource sharing

physical server



Azure Fundamentals

Evolution of Compute

Containers

The Evolution of Computing

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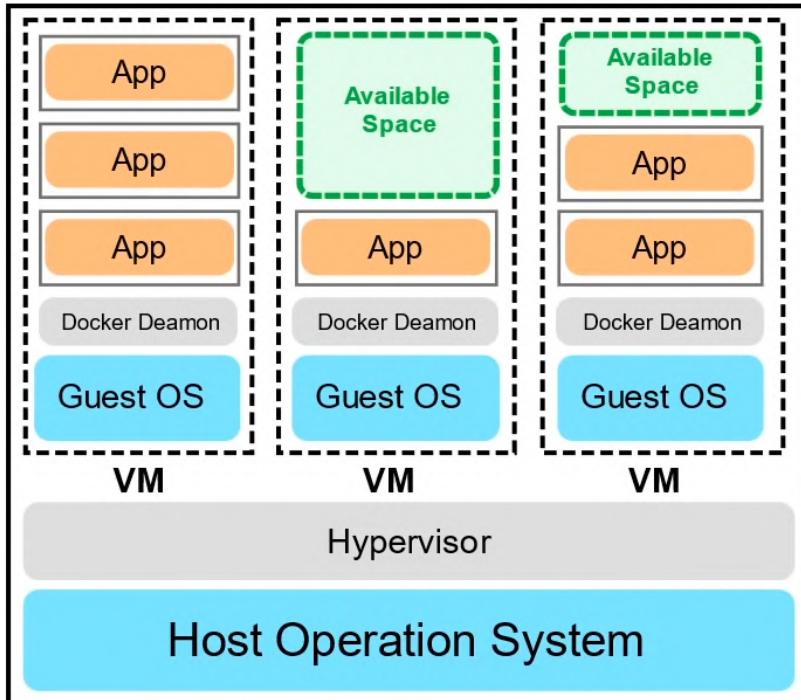
*Dedicated



VMs

Containers

Functions



- Virtual Machine running multiple containers
- **Docker Daemon** is the name of the software layer that lets you run multiple containers.
- You can maximize the utilize the available capacity which is more cost-effective
- Your containers share the same underlying OS so containers are more efficient than multiple VMs
- Multiple apps can run side by side without being limited to the same OS requirements and will not cause conflicts during resource sharing

physical server



Azure Fundamentals

Evolution of Compute

Functions

The Evolution of Computing

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*Dedicated

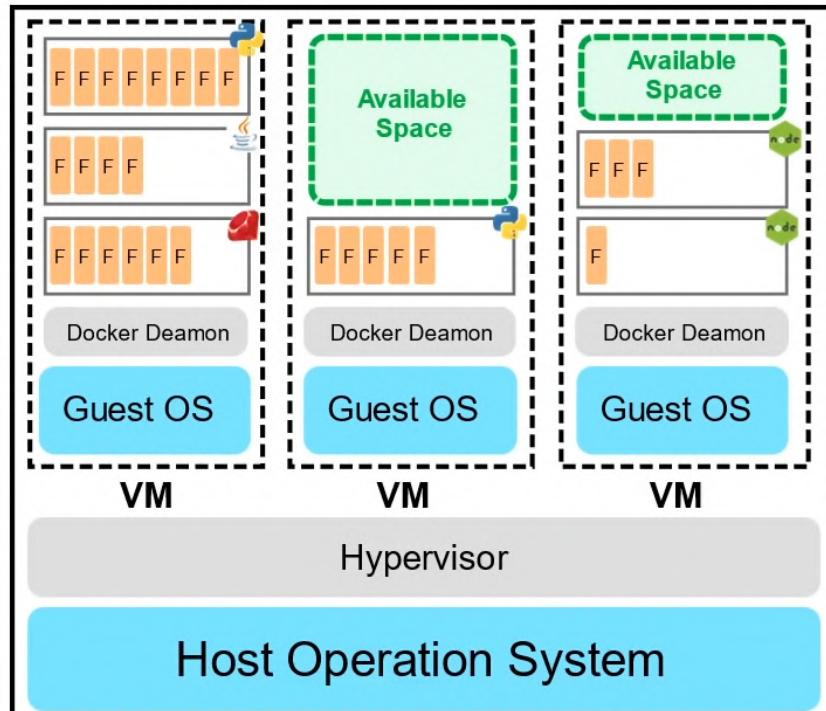


VMs

Containers



Functions



- A managed VMs running managed containers.
- Known as **Serverless Compute**
- You upload a piece of code choose the amount of memory and duration.
- Only responsible for code and data, nothing else
- Very cost-effective, only pay for the time code is running, VMs only run when there is code to be executed
- Cold Starts is a side-effect of this setup

physical server



Azure Fundamentals

Global Infrastructure

Regions and Geographies

Global Infrastructure – Regions and Geographies

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A **region** is a grouping of multiple datacenters (Availability Zones)

Azure has **58 Regions** available across **140 Countries**

A **Geography** is discreet market of two or more regions that preserves **data residency and compliance boundaries.**

Azure Geographies

- United States
- Azure Government (US)
- Canada
- Brazil
- Mexico



Imagine you are in Canada and **you want a guarantee that data will remain within Canada.**
You would want to use Canada Azure Geographies

Global Infrastructure – Regions and Geographies

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US East 1



(Europe) Norway East



You choose the region when you launch a new cloud resource

Recommended ⓘ

- (US) East US
- (US) East US 2
- (US) South Central US
- (US) West US 2
- (Asia Pacific) Australia East
- (Asia Pacific) Southeast Asia
- (Europe) North Europe
- (Europe) UK South

(US) East US





Azure Fundamentals

Global Infrastructure

Paired Regions

Global Infrastructure – Paired Regions

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Each region is paired with another region **300 miles** away.

Only one region is updated at a time to ensure no outages

Some Azure Services rely on Paired Regions for **Disaster Recovery**

Eg. **Azure Geo-redundant Storage (GRS)** replicates data to a secondary region automatically, ensuring that data is durable even in the event that the primary region isn't recoverable.

Canada	Canada Central	Canada East
North America	East US	West US
Germany	Germany Central	Germany Northeast



Azure Fundamentals

Global Infrastructure

Region Types and Service Availability

Global Infrastructure – Region Types and Service Availability

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Not all Azure cloud services are available in every Region.

Recommended region

A region that provides the broadest range of service capabilities and is **designed to support Availability Zones** now, or in the future.

Alternate (other) region

A region that extends Azure's footprint within a data residency boundary where a recommended region also exists. **Not designed to support AZs.**
These Regions are labeled as **Other** in the Azure Portal

General availability (GA) is when a service is considered ready to be used publicly by everyone.

Azure Cloud services are grouped into **three** categories.

Their category determines when cloud services become available:

- 1. Foundational.** When GA, immediately or in 12 months in Recommended and Alternate Regions
- 2. Mainstream** When GA immediately or in 12 months in Recommended Regions
May become available in Alternate Regions based on customer demand
- 3. Specialized.** Available in Recommended or Alternate Region based on customer demand.



Azure Fundamentals

Global Infrastructure

Special Regions

Global Infrastructure – Special Regions

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Azure has specialized regions to meet **compliance or legal reasons**



- US DoD Central
- US Gov Virginia
- US Gov Iowa

*Three Azure Government
secret locations undisclosed



- China East
- China North

* Available through a unique partnership between Microsoft and 21Vianet. Microsoft does not directly maintain the datacenters.

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Azure Fundamentals

Global Infrastructure

Availability Zones

Global Infrastructure – AZs

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An **Availability Zone** (AZ) is physical location made up of one or more datacenter.

A datacenter is a secured building that contains hundreds of thousands of computers.

A region will ***generally** contain 3 Availability Zones

Datacenters within a region will be isolate from each other (so different buildings). But they will be close enough to provide low-latency.

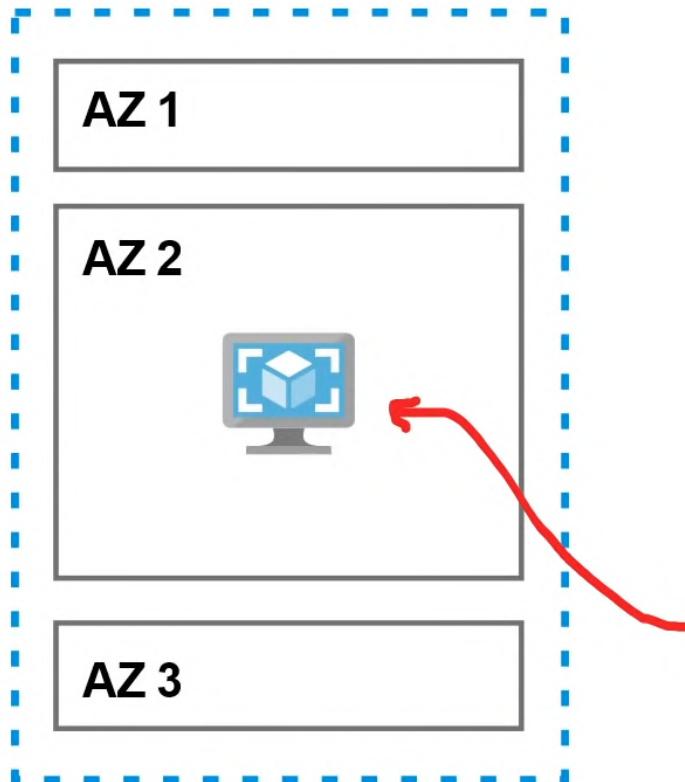
Its common practice to run workloads in at least 3 AZs to ensure services remain available in case one or two datacenters fail. (High Availability)



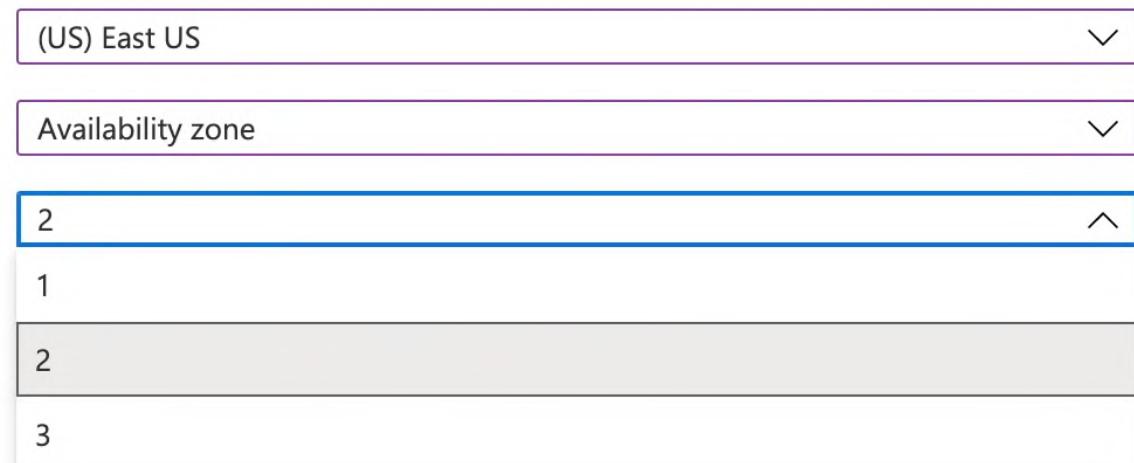
Global Infrastructure – AZs

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US East 1



If you region has multiple AZs you choose a number. Choosing 2 means AZ-2 not that you have chosen a quantity Of 2 AZs.



(US) East US

Availability zone

2
1
2
3

A red arrow points from the text "Choosing 2 means AZ-2 not that you have chosen a quantity Of 2 AZs." towards the "Availability zone" dropdown menu.



Azure Fundamentals

Global Infrastructure

AZ Supported Regions

Global Infrastructure – AZ Supported Regions

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Not Every Region has support for Availability Zones

These regions are known as **Alternate** or **Other**

Recommended Regions are suppose to have at least 3 AZs.

The following Regions

have a minimum of 3 AZs

- Central US
- East US 2
- West US 2
- West Europe
- France Central
- North Europe
- Southeast Asia

You don't choose an AZ.

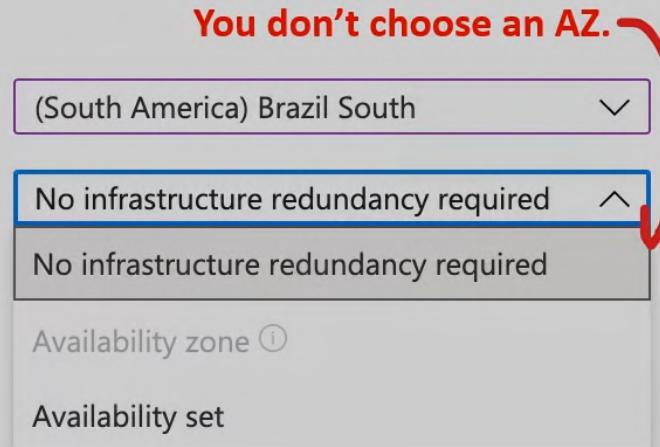
(South America) Brazil South

No infrastructure redundancy required

No infrastructure redundancy required

Availability zone ⓘ

Availability set



(South America) Brazil South





Azure Fundamentals

Global Infrastructure

Availability Sets Fault and Update Domains

Global Infrastructure – Fault and Update Domains

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An Availability Zone (AZ) in an Azure region is
a combination of a **fault domain** and an **update domain**.

Fault Domain

A logical grouping of hardware to avoid a single point of failure within an AZ.
group of virtual machines that share a common power source and network switch.

Update Domain

Azure may need to apply updates to the underlying hardware and software.
Update domains ensure your resources do not go offline.

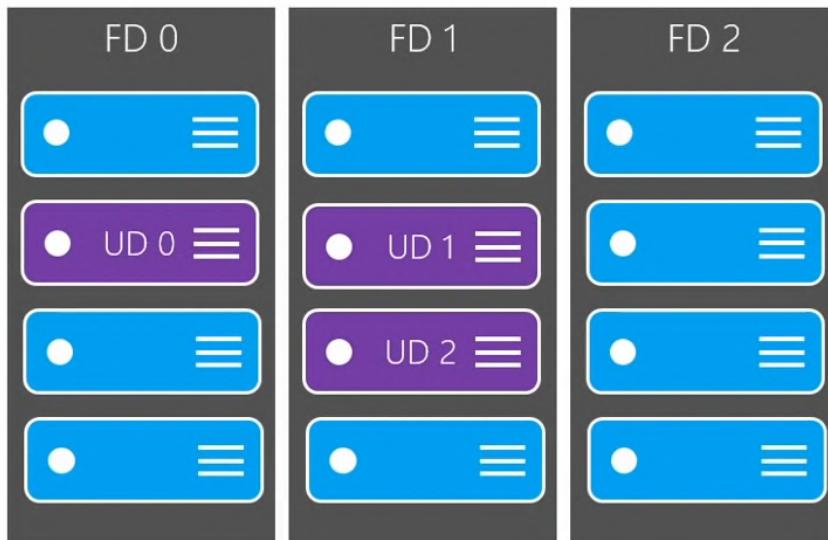
Availability Set

A logical grouping that you can use in Azure to ensure that the VMs you place in the Availability Set are different fault/update domains to avoid downtime.

Global Infrastructure – Fault and Update Domains

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

Each Virtual Machine in an Availability Set
is assigned a Fault Domain and Update
Domain.



**Creating a Availability Set.
Choosing the amount of domains**

Group two or more VMs in an availability set to ensure that at least one is available during planned or unplanned maintenance events.
[Learn more](#)

Name *

Fault domains ⓘ

Update domains ⓘ

Use managed disks ⓘ

No (Classic) Yes (Aligned)





Azure Fundamentals

Technology Overview

Computing Services

Computing Services

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Azure Virtual Machines

Windows or Linux virtual machines (VMs). The most common type of compute.
You choose your OS, Memory, CPU, Storage. You share hardware with other customers



Azure Container Instances

Docker as a Service Run containerized apps on Azure without provisioning servers or VMs



Azure Kubernetes Service (AKS)

Kubernetes as a Service. Easy to deploy, manage and scale containerized applications.
Uses the open source Kubernetes (K8) software.



Azure Service Fabric

Tier-1 Enterprise Containers as a Service

Distributed systems platform. Runs in Azure or on-premises.

Easy to package, deploy, and manage scalable and reliable **microservices**.



Azure Functions

Event-driven, serverless compute (functions) run code without provisioning or managing servers.
You pay only for the compute time you consume.



Azure Batch

Plans, schedules and executes your batch computer workloads across running 100+ jobs in parallel.
Use Spot VMs to save money (previously used Low-priority VMs to save on compute)



Azure Fundamentals

Technology Overview

Storage Services

Storage Services

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Azure Blob Storage

Object Serverless Storage. Store very large files and large amounts of unstructured files.
Pay for what you store, unlimited storage, no-resizing volumes, filesystem protocols.



Azure Disk Storage

A virtual volume. Choose SSD or HDD, encryption by default, attach volume to VMs



Azure File Storage

A shared volume that you can access and manage like a file server. eg SMB



*Azure Queue Storage

Messaging Queue A data store for queuing and reliably delivering messages between applications



*Azure Table Storage

Wide-Column NoSQL Database A NoSQL store that hosts unstructured data independent of any schema



Azure Data Box / Azure Databox Heavy

A rugged briefcase computer and storage designed to move terabytes or petabytes of data



Azure Archive Storage

Long term cold storage for when you need to hold onto files for years on the cheapest storage options



Azure Data Lake Storage

A centralized repository that allows you to store all your structured and unstructured data at any scale.



Azure Fundamentals

Technology Overview

Database Services

Database Services

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Azure Cosmos DB

A fully managed **NoSQL databases**. Designed for scale with guarantee of 99.999% availability



Azure SQL Database

Fully managed MS SQL database with auto-scale, integral intelligence, and robust security



Azure Database for MySQL / PostgreSQL / MariaDB

Fully managed and scalable **MySQL / PostgreSQL / MariaDB database** with high availability and security



SQL Server on VMs

Host enterprise SQL Server apps in the cloud. Lift-and-shift MS SQL servers from on-premise to Azure Cloud.



Azure Synapse Analytics (Azure SQL Data Warehouse)

Fully managed **data warehouse** with integral security at every level of scale at no extra cost



Azure Database Migration Service

Migrates your databases to the cloud with no application code changes



Azure Cache for Redis

Caches frequently used and static data to reduce data and application latency



*Azure Table Storage

Wide-Column NoSQL Database A NoSQL store that hosts unstructured data independent of any schema



Azure Fundamentals

Technology Overview

Application Integration

Application Integration Services

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure Notifications Hub

Pub/Sub Send push notifications to any platform from any back end



Azure API Apps

API Gateway Quickly build and consume APIs in the cloud. Route APIs to Azure Services



Azure Service Bus

Service Bus Reliable cloud messaging as a service (MaaS) and simple hybrid integration



Azure Stream Analytics

Serverless **real-time analytics**, from the cloud to the edge



Azure Logic Apps

Schedule, automate and orchestrate tasks, businesses processes and workflows.

Integration with Enterprise SaaS and Enterprise applications.



Azure API Management

Hybrid, multi-cloud management platform for APIs across all environments.

Put in-front of existing APIs to add additional functionality.



*Azure Queue Storage

Messaging Queue A data store for queuing and reliably delivering messages between applications



Azure Fundamentals

Technology Overview

Developer and Mobile Tools

Developer and Mobile Tools

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure SignalR Service

Real-Time Messaging Easily add real-time web functionality to applications

Think of it like the Pusher for Azure



Azure App Service

Easy to use service for deploying and scaling web-applications with .Net, Node.js Java, Python and PHP
Developer focus on building their web-apps, and not worry about the underlying infrastructure

Think of it like Heroku for Azure



Visual Studio (Microsoft-owned)

Code Editor The integrated development environment (IDE) designed for creating powerful, scalable applications for Azure



Xamarin (Microsoft-owned)

Mobile-App Framework Create powerful and scalable native mobile apps with .NET and Azure



Azure Fundamentals

Technology Overview

Azure DevOps Services

Azure DevOps Services

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure DevOps

Plan smarter, collaborate , and ship faster with a set of modern dev services.



Azure Boards

Kanban Deliver value to your users faster using proven agile tools to plan, track, and discuss work across your teams.



Azure Pipelines

Build, test, and deploy with **CI/CD** that works with any language, platform, and cloud. Connect to GitHub or any other Git provider and deploy continuously.



Azure Repos

Get unlimited, cloud-hosted private **Git repos** and collaborate to build better code with pull requests and advanced file management.



Azure Test Plans

Test and ship with confidence using **manual and exploratory testing tools**.



Azure Artifacts

Create, host, and share packages with your team, and add artifacts to CI/CD pipelines with a single click.



Azure DevTest Labs

Fast, easy, and lean dev-test environments



Azure Fundamentals

Technology Overview

Azure Resource Manager (ARM)

Azure Resource Manager

Cheat sheets, Practice Exams and Flash cards  www.exapro.co/az-900

What is Infrastructure as code (IaC)?

The process of managing and provisioning computer data centers through machine-readable definition files, rather than physical hardware configuration or interactive configuration tools.



Azure Resource Manager (ARM) allows you to programmatically create Azure resources via JSON template.



Launch VM



```
{  
    "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",  
    "resources": [  
        {  
            "type": "Microsoft.Compute/virtualMachines",  
            "name": "MyServer",  
            "properties": {  
                "hardwareProfile": {  
                    "vmSize": "Standard_A4"  
                }  
            }  
        }  
    ]  
}
```



Azure Fundamentals

Technology Overview

Azure Quickstart Templates

Azure QuickStart Templates

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Azure QuickStart is a library of a **pre-made ARM templates** provided by the community and partners to help you quickly launch new projects for a variety of stack scenarios:

Deploy a Django app

This template uses the Azure Linux CustomScript extension to deploy an application. This example creates an Ubuntu VM, does a silent install of Python, Django...



by [Madhan Arumugam Ramakrishnan](#),

Last updated: 5/2/2019

Deploy an Ubuntu VM with Docker Engine

This template allows you to deploy an Ubuntu VM with Docker (using the Docker Extension). You can later SSH into the VM and run Docker containers.



by [Corey Sanders](#),

Last updated: 12/11/2019

CI/CD & Containerized App Deploy Docker Enterprise & Jenkins

This quick start launches a stack that allows you to Build, Run & Ship Containerized Applications using Docker Enterprise Edition and CloudBees Jenkins. This integrated sta...



by [Mazhar Hussain Warsi](#),

Last updated: 12/6/2019

Web App on Linux with PostgreSQL

This template provides a easy way to deploy Web App on Linux with Azure database for PostgreSQL.



by [Sunitha Muthukrishna](#),

Last updated: 5/5/2020



Azure Fundamentals

Technology Overview

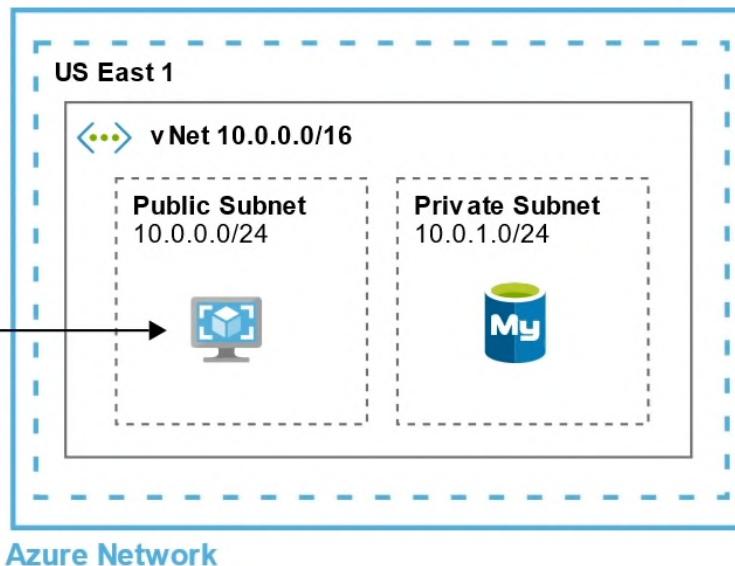
vNets and Subnets

Azure Virtual Network (vNet) and Subnets

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

Virtual Network (vNet) is a logically isolated section of the Azure Network where you launch your Azure resources. You choose a **range of IPs using CIDR Range**

CIDR Range of **10.0.0.0/16 = 65,536** IP Addresses



Subnets a logical partition of an IP network into multiple smaller network segments. **You are breaking up your IP range for VNet** into smaller networks.

Subnets **need to have a smaller CIDR range than to the vNet** represent their portion.
eg Subnet CIDR Range 10.0.0.0/24 = 256 IP Addresses

A Public Subnet is one that can reach the internet

A Private Subnet is one that cannot reach the internet



Azure Fundamentals

Technology Overview

Cloud-Native Networking Services

Cloud-Native Networking Services

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Azure DNS

Provides ultra-fast DNS responses and ultra-high domain availability



Azure Virtual Network (vNET)

A logical isolated section of the Azure network for customers to launch Azure resources within.



Azure Load Balancer

OSI Level 4 (Transport) Load Balancer



Azure Application Gateway

OSI Level 7 (HTTP) Load Balancer, can apply a Web Application Firewall



Network Security Groups

A virtual firewall at the subnet level



Azure Fundamentals

Technology Overview

Enterprise/Hybrid Networking Services

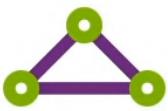
Enterprise/Hybrid Networking Services

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure Front Door

Scalable and secure entry point for fast delivery of your global applications



Azure Express Route

A connection between your on-premise to Azure cloud from 50 Mbps to 10 Gbps



Virtual WAN

a networking service that brings many networking, security, and routing functionalities together to provide a single operational interface



Azure Connection

A VPN connection securely connects two Azure local network via (IPsec).



Virtual Network Gateway

A site-to-site VPN connection between an Azure virtual network and your local network



Azure Fundamentals

Technology Overview

Azure Traffic Manager

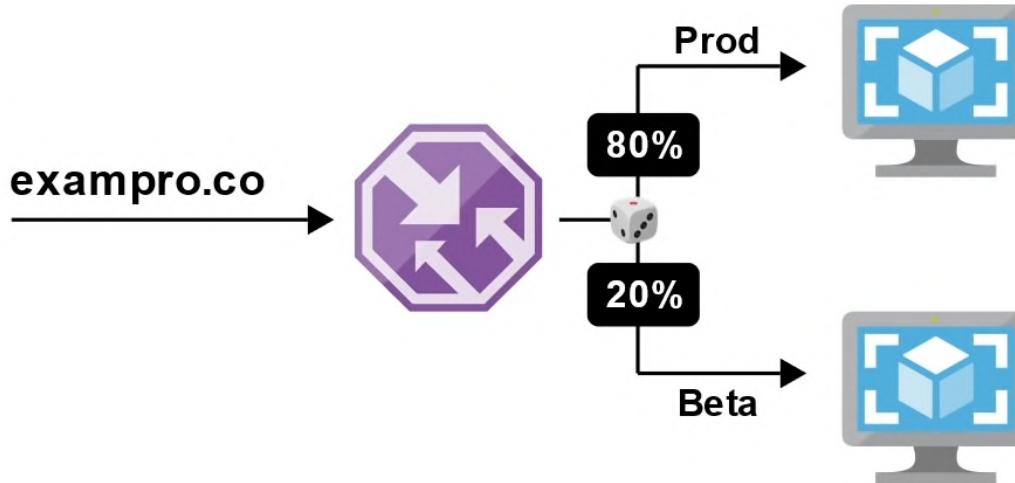
Azure Traffic Manager

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure Traffic Manager operates at the **DNS layer** to quickly and efficiently direct incoming DNS requests based on the **routing method of your choice**.

- Route traffic to servers the geographically near by to reduce latency
- Fail-over to redundant systems in-case primary systems become unhealthy.
- Route to random VM to simulate A/B testing



A screenshot of the Azure portal interface for creating a new Traffic Manager profile. The profile is named `exampro` and is associated with the domain `.trafficmanager.net`. The **Routing method** dropdown menu is open, showing several options: **Weighted** (which is highlighted with a red arrow), **Performance**, **Weighted** (another entry), **Priority**, **Geographic**, **MultiValue**, and **Subnet**.



Azure Fundamentals

Technology Overview

Azure DNS

Azure DNS

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure DNS allows you to host your domains names on Azure.
You can create DNS Zones and **manage your DNS records**.

Azure DNS **does not allow you to purchase domains**.
Only the ability to manage DNS records.

Search record sets			
Name	Type	TTL	Value
@	NS	172800	ns1-08.azure-dns.com. ns2-08.azure-dns.net. ns3-08.azure-dns.org. ns4-08.azure-dns.info.
@	SOA	3600	Email: azuredns-host... Host: ns1-08.azure-d... Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 300 Serial number: 1

Add record set

exampro.co

Name

beta .exampro.co

Type

A

Alias record set ⓘ

Yes No

Alias type

Azure resource Zone record set

Choose a subscription *

Free Trial

Azure resource *

exampro



Azure Fundamentals

Technology Overview

Azure Load Balancer

Azure Load Balancer

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

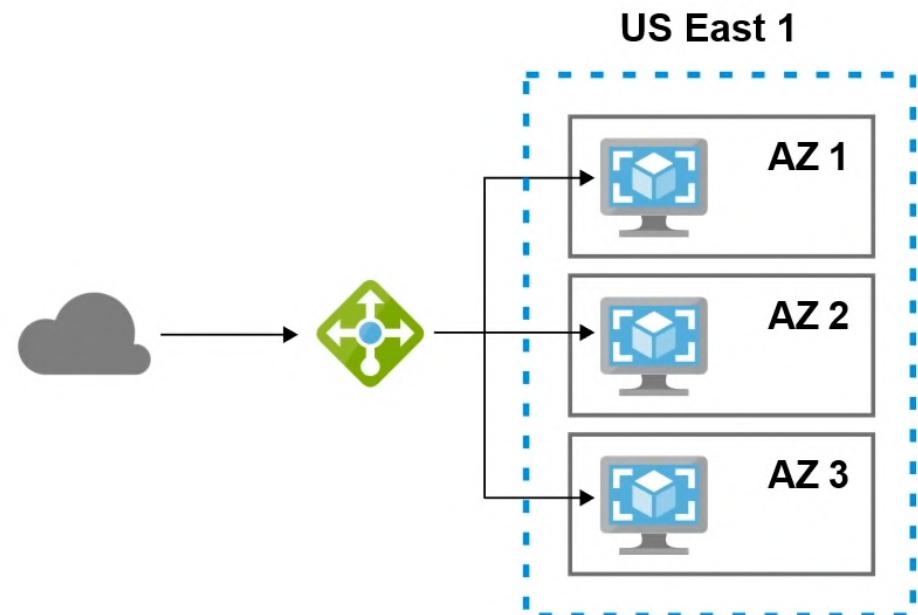


Azure Load Balancer is used for evenly distributing incoming network traffic across a group of backend resources or servers.

Azure Load Balancer operates on **OSI Layer 4 (Transport)**

You can create a:

- **Public Load Balancer** incoming traffic from the internet **to public-facing servers** (Public IPs)
- **Internal (Private) Load Balancer** incoming internal network traffic to **private-facing servers** (Private IPs)





Azure Fundamentals

Technology Overview

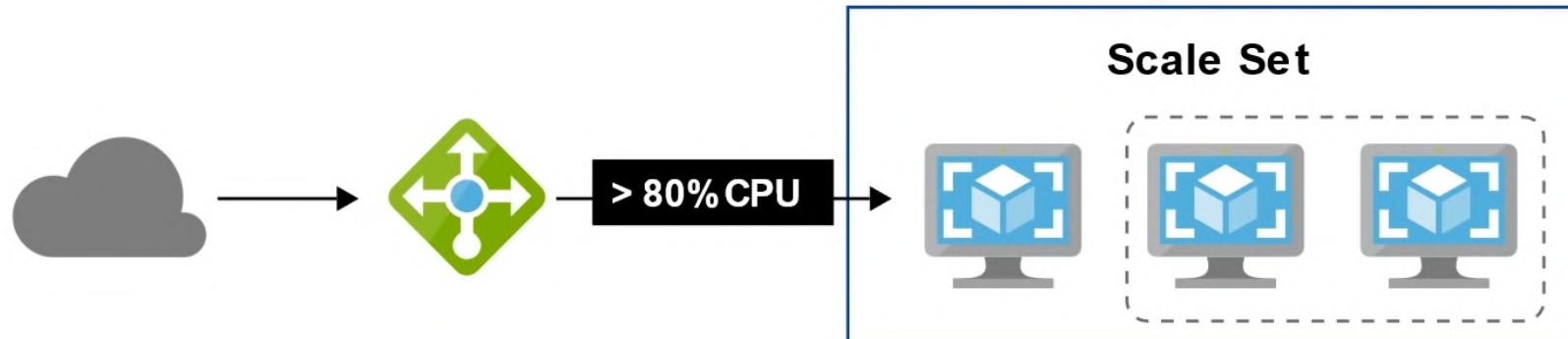
Scale Sets

Scale Sets

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Allows you group together identical Virtual Machines (VMs) and **automatically increase or decrease the amount of servers** based on:

- change in CPU, memory, disk, and network performance
- On a predefined schedule





Azure Fundamentals

Technology Overview

IoT Services

IoT Services

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What is Internet of Things (IoTs)?

A network of Internet connected objects (usually hardware) able to collect and exchange data.



- Smart Bulbs
- Smart Fridges
- Smart Light Switches
- Narrowband vs Wideband hardware
- Security Cameras
- Voice Command Speakers
- Temperature, Pressure or Humidity Sensors
- Drones
- Phones
- Buttons

IoT Services

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IoT Central

Connects your IoT devices to the cloud



IoT Hub

Enable highly secure and reliable communication between your IoT application and the devices it manage



IoT Edge

A fully managed service built on Azure IoT Hub. . It allows data processing and analysis nearest the **IoT** devices. Edge computing is when you offload compute from the cloud to local computing hardware such as IoT devices, phones or home computers



Windows 10 IOT Core Services

A cloud services subscription that provides the essential **services** needed to commercialize a device on **Windows 10 IoT Core**. Long-term OS support and services to manage device updates and assess device health



Azure Fundamentals

Technology Overview

Big Data and Analytics Services

Big Data and Analytics Services

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What is BigData?

A term used to describe **massive volumes of structured/unstructured data** that is so large it is difficult to **move and process** using traditional database and software techniques..



Azure Synapse Analytics (*formally known as SQL Data Warehouse*)

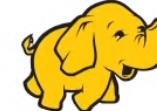
Enterprise **data warehousing and Big Data analytics**.

Intended to **run SQL queries** against large databases for things such as reporting.



HDInsight

Run **open-source analytics software** such as Hadoop, Kafka and Spark



Azure Databricks

An Apache Spark-based analytics platform optimized for the Microsoft Azure cloud services platform.

Third-Party Databricks cloud services supported within Azure.



Data Lake Analytics

An on-demand analytics job service that simplifies big data.

A **data lake** is a storage repository that holds a vast amount of raw **data** in its native format until it is needed.



Azure Fundamentals

Technology Overview

AI/ML Services Introduction

AI/ML Services

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

What is Artificial Intelligence (AI)?

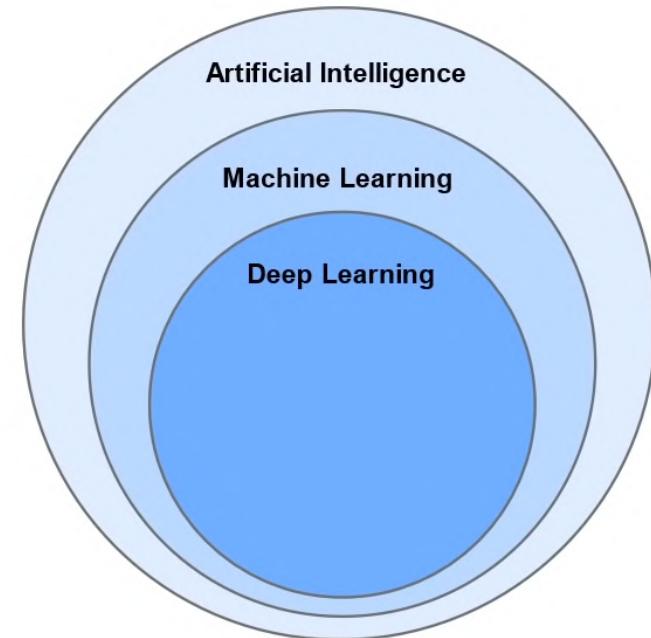
Machines that perform jobs that mimic human behavior

What is Machine Learning (ML)?

Machines that get better at a task without explicit programming

What is Deep Learning (DL)?

Machines that have an artificial neural network inspired by the human brain to solve complex problems.



Azure Machine Learning Service

A service for that simplifies running AI/ML related workloads allowing you to build flexible Pipelines to automate workflow. Use Python and R, Run DL workloads such as Tensorflow

Azure Machine Learning Studio (classic)

An older service that manages AI/ML workloads. Does not have a pipeline and other limitations. Workloads are not easily transferable to from classic to the new service.



Azure Fundamentals

Technology Overview

AI/ML Services

AI/ML Services

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Personalizer Deliver rich, personalised experiences for every user.



Translator Add real-time, multi-language text translation to your apps, website and tools.



Anomaly detector Detect anomalies in data to quickly identify and troubleshoot issues.



Azure Bot Service Intelligent, serverless bot service that scales on demand



Form Recogniser Automate the extraction of text, key/value pairs and tables from your documents.



Computer Vision Easily customise computer vision models for your unique use case.



Language Understanding Build natural language understanding into apps, bots and IoT devices.

AI/ML Services

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



QnA Maker Create a conversational question-and-answer bot from your existing content.



Text Analytics Extract information such as sentiment, key phrases, named entities and language from your text.



Content moderator Moderate text and images to provide a safer, more positive user experience.



Face Detect and identify people and emotions in images.



Ink Recogniser Recognise digital ink content, such as handwriting, shapes and document layout.

Serverless Services

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What is Serverless?

When the underlying servers, infrastructure and OS is taken care of by the Cloud Service Provider (CSP) It will generally be highly available, scalable and cost-effective.

Event-Driven Scale

A serverless function can be triggered or trigger other events allowing you to compose complex applications and its just scales.

Abstraction of Servers

Servers are abstracted away. Your code is described as functions. These functions can be running on different compute instances.

Micro-Billing

Serverless compute could run for a fraction of a second.

Billing into micro-seconds will save you money.

Serverless Services

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Azure Functions

Run small amounts of code known as serverless functions in your favorite language:
C#, Java, JavaScript, Python and PowerShell



Blob Storage

Serverless Object Storage. Just upload files, don't think about the underlying file-systems, resizing



Logic Apps

Allows you to build serverless workflows composed of Azure Functions
Building a state machines for serverless compute.



Event Grid

Uses Pub/Sub messaging system to allow you react to events and trigger other Azure cloud services such as Azure Functions.



Azure Fundamentals

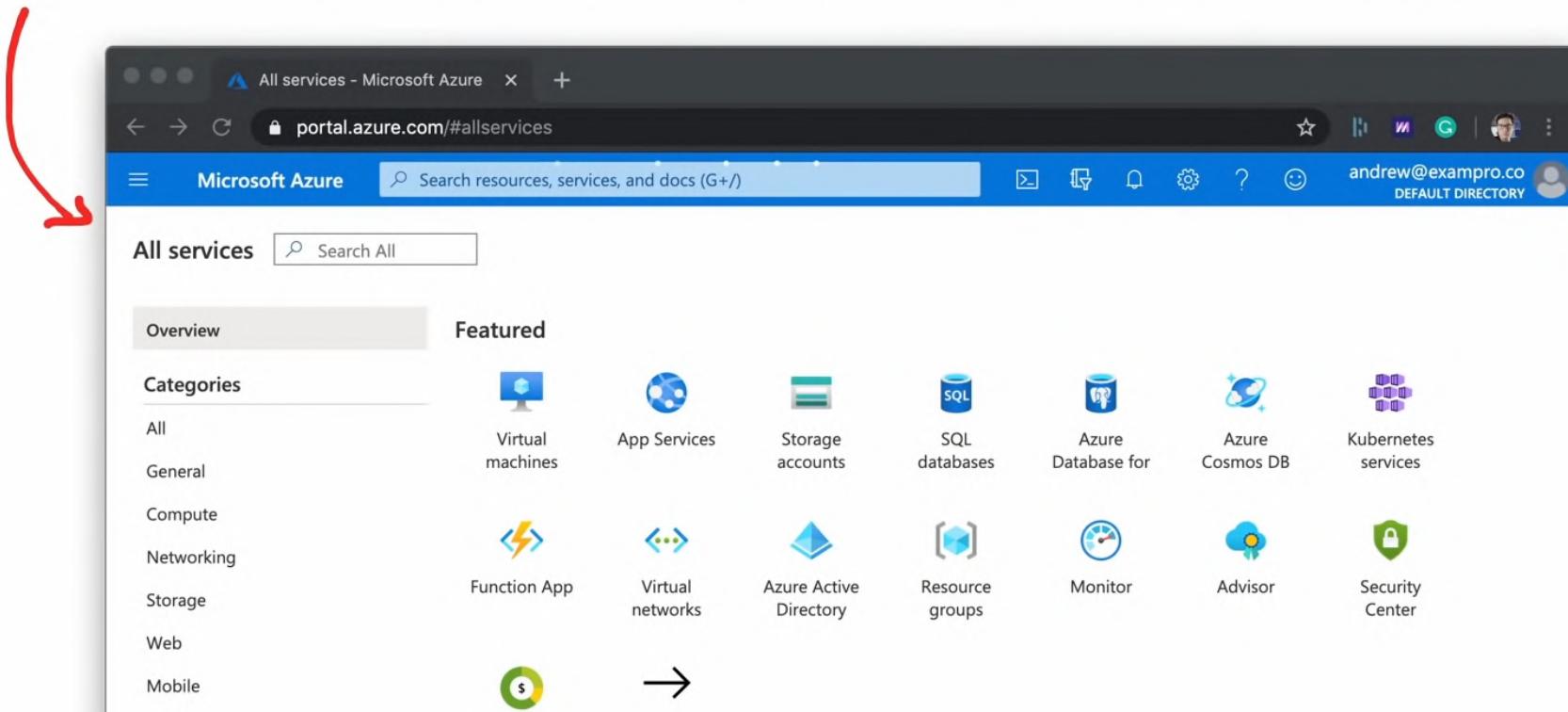
Azure Management Tools

Azure Portal

Azure Portal

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The Azure portal is **a web-based, unified console** that provides an alternative to command-line tools. You can manage your Azure subscription with the Azure portal. Build, manage, and monitor everything from simple web apps to complex cloud deployments.



Azure Preview Portal

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

You can utilize new features that are in

- **Preview**
- **Beta**
- **Other pre-release**

- If you want to **test preview features** should use **preview.portal.azure.com**
- if you **stable-release and production-ready** features you should you use **portal.azure.com**

[Overview](#) [Solutions](#) [Products](#) [Documentation](#) [Pricing](#) [Training](#) [Marketplace](#) [Partners](#) [Support](#) [Blog](#) [More](#)[Contact Sales](#)[Search](#)[My account](#)[Portal](#)[azure@exampro.co](#)[Free account](#)

We're in this together. Explore Azure resources and tools to help you navigate COVID-19 >

Learn, connect, and code with Azure at Microsoft Build. Invent with purpose.

[Watch the keynote](#)[Try Azure for free](#)

Explore the latest Azure announcements from the premier Microsoft developer event



Introducing Azure Synapse Link

Get clarity in an instant on real-time operational data with no ETL—only on Azure.



Code from anywhere

Bring on-premises productivity and collaboration to your remote work with Visual Studio, GitHub, and Azure.



Build machine learning responsibly

Understand model behavior, help protect privacy, mitigate unfairness, and build securely with Azure Machine Learning.



Developer Velocity

Empower your developers—wherever they are—to drive business outcomes with best-in-class tools.



Azure Fundamentals

Azure Management Tools

PowerShell

Azure PowerShell

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



What is PowerShell?

PowerShell is a task automation and configuration management framework.

A **command-line shell** and a **scripting language**.

Unlike most shells, which accept and return text, PowerShell is built on top of the .NET Common Language Runtime (CLR), and accepts and returns .NET objects.



Azure PowerShell

A set of cmdlets for managing Azure resources directly from the PowerShell command line



```
Windows PowerShell
Link-local IPv6 Address . . . . . : fe80::541f:9e31:7df6:9847%22
IPv4 Address . . . . . : 10.0.75.1
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

Ethernet adapter vEthernet (New Virtual Switch):

Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . . : fe80::2c0d:8306:9bcf:8247%14
IPv4 Address . . . . . : 10.0.0.100
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.0.0.254

Unknown adapter Local Area Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :

Ethernet adapter Ethernet 4:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
PS C:\Users\Andrew>
```

The screenshot shows the Microsoft Azure portal homepage. At the top, there's a navigation bar with links for Home - Microsoft Azure, portal.azure.com/#home, Microsoft Azure, Upgrade, and a search bar. The main content area is titled "Azure services" and includes icons for Create a resource, Monitor, Virtual machines, Marketplace, SQL databases, Storage accounts, Virtual networks, Resource groups, Subscriptions, and More services. Below this is a section for "Recent resources" with a table showing one item: "exampro-vnet" (Virtual network) last viewed 15 hours ago. A "Navigate" bar at the bottom has links for Subscriptions, Resource groups, All resources, and Dashboard. A PowerShell terminal window is open at the bottom, showing the Cloud Shell connecting and displaying a welcome message and MOTD.

Home - Microsoft Azure

portal.azure.com/#home

Microsoft Azure Upgrade

Search resources, services, and docs (G+)

azure@exampro.co
DEFAULT DIRECTORY

Azure services

Create a resource Monitor Virtual machines Marketplace SQL databases Storage accounts Virtual networks Resource groups Subscriptions More services

Recent resources

Name	Type	Last Viewed
exampro-vnet	Virtual network	15 hours ago

Navigate

Subscriptions Resource groups All resources Dashboard

PowerShell | Requesting a Cloud Shell. **Succeeded**. Connecting terminal...

Welcome to Azure Cloud Shell

Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

MOTD: Install modules from PowerShell Gallery: `Install-Module <module name>`

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/andrew>



Azure Fundamentals

Azure Management Tools

Visual Studio Code

Visual Studio Code

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Visual Studio Code is a free source-code editor made by Microsoft for Windows, Linux and macOS.

The screenshot shows a code editor in VS Code with the following file structure:

- EXPLORER
- .lock
- { } package.json
- JS api.js
- JS serviceWorker.js
- # index.css
- JS App.test.js
- JS index.js

The current file is `api.js`, which contains the following code:

```
1 // @ts-check
2
3 import * as config from './config';
4 import * as moment from 'moment';
5
6 /**
7 * @param {boolean} [testMode] Enable demo mode.
8 *
9 * @return {Promise<number>} Number of users.
10 */
11 export async function getUserCount(testMode = false) {
12   const response = await fetch(`${config.apiEndpoint}/v0/numberServed`);
13   const data = await response.json();
14   if (testMode) {
15     return data.numberServed * moment.no
16   }
17   return data.number
18 }
```

A tooltip is displayed over the `moment.no` call, showing the definition of the `now()` method from the `moment` library:

function `moment.now(): number`

Returns unix time in milliseconds. Overwrite for profit.



Azure Fundamentals

Azure Management Tools

Cloud Shell

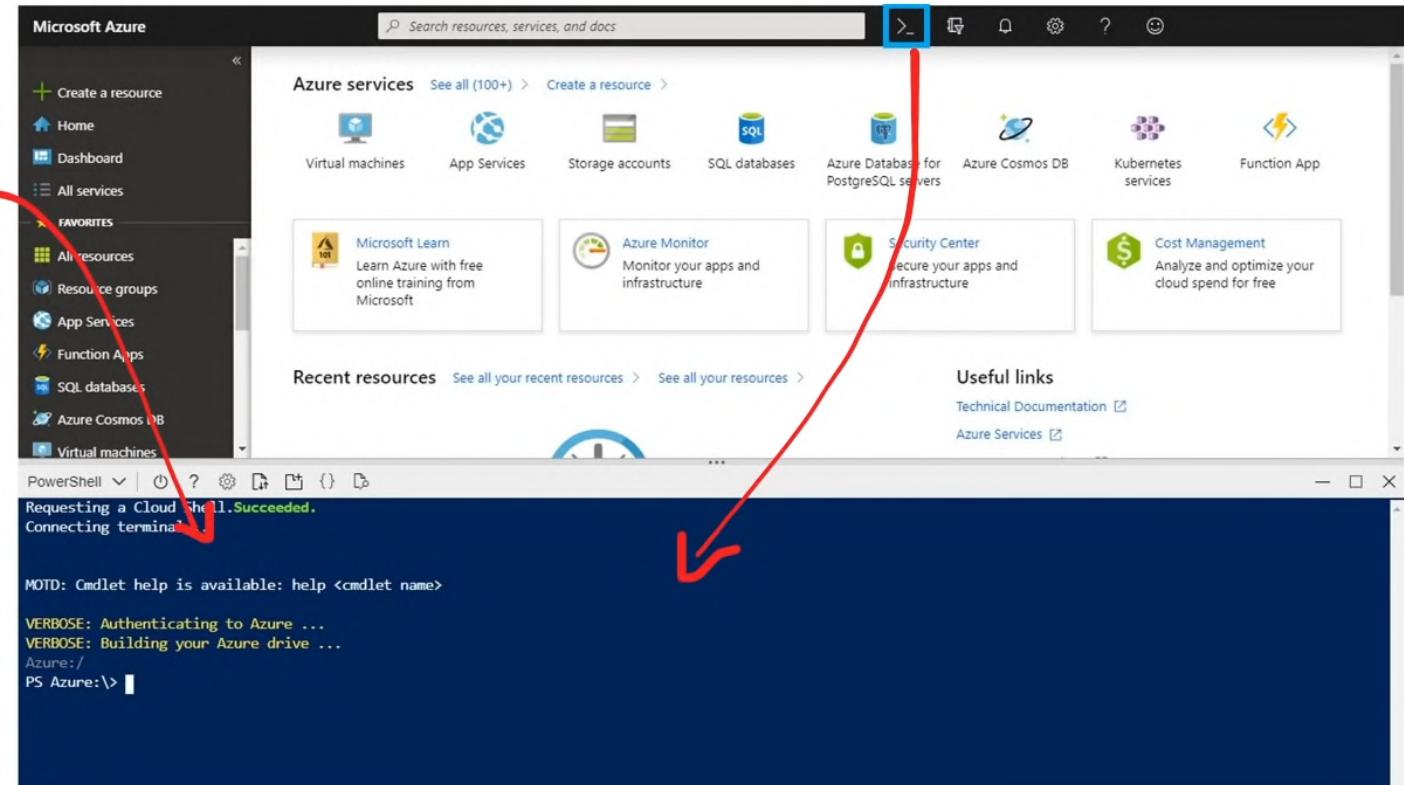
Azure Cloud Shell

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure Cloud Shell is an interactive, authenticated, **browser-accessible shell** for managing Azure resources.

It provides the flexibility of choosing the shell experience that best suits the way you work, either **Bash** or **PowerShell**.





Azure Fundamentals

Azure Management Tools

Azure CLI

Azure CLI

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What is a CLI?

A Command Line Interface (CLI) **processes commands to a computer program in the form of lines of text**. Operating systems implement a command-line interface in a shell or terminal

The Azure CLI can be installed on Windows, Mac and Linux. Once installed you can type **az** followed by other commands to create, update, delete, view and manage Azure resources.

```
#!/bin/bash
# Create a resource group.
az group create --name myResourceGroup --location westeurope
# Create a new virtual machine, this creates SSH keys if not present.
az vm create --resource-group myResourceGroup --name myVM --image UbuntuLTS --generate-ssh-keys
```



Azure Fundamentals

Follow Alongs

Create a Resource Group



Follow Along

Microsoft Azure Upgrade

Home > Resource groups >

Create a resource group

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can contain all resources for the solution, or only those resources that you want to manage as a group. You decide where and how to allocate resources to resource groups based on what makes the most sense for your organization.

Project details

Subscription * Free Trial

Resource group * examplerg

Resource details

Region * (US) East US

A mouse cursor icon pointing at the "examplerg" input field.

Home - Microsoft Azure x +

portal.azure.com/?quickstart=true#home

Microsoft Azure Upgrade

resource group

Azure services

Create a resource

Services

- Subscriptions
- Resource groups +
- Resource Graph Explorer
- Resource Graph queries
- Resource Explorer
- Groups
- All resources
- Application groups
- Host groups
- IP Groups

See all

Marketplace

Resource group

Documentation

Manage resource groups - Azure portal - Azure Resource ...

Overview - Azure Resource Manager | Microsoft Docs

Manage resource groups - Azure PowerShell - Azure Resource ...

Resource access management in Azure - Cloud Adoption ...

Resource Groups

No results were found.

Navigate

Subscriptions

Tools

Microsoft Learn

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Useful links

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Azure Migration Tools

Azure Services ↗

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Quickstart Center

Azure mobile app

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Resource groups - Microsoft Azure +

portal.azure.com/?quickstart=true#blade/HubsExtension/BrowseResourceGroups

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Resource groups

Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Feedback

Filter by name... Subscription == all Location == all Add filter

Showing 0 to 0 of 0 records. No grouping

Name ↑



No resource groups to display

Try changing your filters if you don't see what you're looking for.

[Learn more](#)

[Create resource group](#)

Create a resource group - Microsoft Azure

portal.azure.com/?quickstart=true#create/Microsoft.ResourceGroup

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Resource groups >

Create a resource group

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

Subscription * ⓘ Free Trial

Resource group * ⓘ exampro

Resource details

Region * ⓘ (US) East US

Review + create < Previous Next : Tags >

Create a resource group - Microsoft Azure +

portal.azure.com/?quickstart=true#create/Microsoft.ResourceGroup

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Resource groups >

Create a resource group

Validation passed.

Basics Tags Review + create

Basics

Subscription	Free Trial
Resource group	exampro
Region	East US

Create < Previous Next >

Resource groups - Microsoft Azure +

portal.azure.com/?quickstart=true#blade/HubsExtension/BrowseResourceGroups

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Resource groups ✎

Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Feedback

Filter by name... Subscription == all Location == all Add filter

Showing 0 to 0 of 0 records. No grouping

Name ↑↓ Subscription ↑↓ Location ↑↓

No resource groups to display

Try changing your filters if you don't see what you're looking for.

Learn more ↗

Create resource group



Resource groups - Microsoft Azure +

portal.azure.com/?quickstart=true#blade/HubsExtension/BrowseResourceGroups

Microsoft Azure  Search resources, services, and docs (G+)

Home > Home

Resource groups

Default Directory

+ Add  Refresh Export to CSV Assign tags Feedback

Filter by name... Subscription == all Location == all 

Showing 1 to 1 of 1 records. 

<input type="checkbox"/> Name ↑↓	Subscription ↑↓	Location ↑↓
<input type="checkbox"/>  exipro	Free Trial	East US

< Previous Page of 1 Next >

<https://portal.azure.com/?quickstart=true#home>



Azure Fundamentals

Follow Alongs

Create a vNet



Follow Along

Microsoft Azure Upgrade

Home > Virtual networks >

Create virtual network

Basics IP Addresses Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation

IPv4 address space

10.0.0.0/16 10.0.0.0 - 10.0.255.255 (65536 addresses)

Add IPv6 address space

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the network.

Add subnet Remove subnet

Subnet name Subnet address range
10.0.0.0/24

default

Home - Microsoft Azure + ×

portal.azure.com/?quickstart=true#home

Microsoft Azure Upgrade

azure@exampro.co DEFAULT DIRECTORY

Search: vnet

Azure services

Create a resource

Navigate

Subscriptions

Tools

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Technical Documentation Change

Azure Migration Tools

Azure services

Virtual networks

Network interfaces

Network Watcher

Kubernetes services

Managed networks

Network security groups

Azure NetApp Files

Local network gateways

Internet Analyzer profiles

Network security groups (classic)

Services

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Marketplace

See all

KoçSistem Azure Virtual Network (VNet)

Cisco CSR 1000V DMVPN Transit VNET

Virtual Network

Integration Service Environment

Documentation

See all

Azure Virtual Network | Microsoft Docs

Azure Virtual Network FAQ | Microsoft Docs

Azure Virtual Network peering | Microsoft Docs

Create a virtual network - quickstart - Azure portal ...

Resource Groups

No results were found.

Useful links

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Azure mobile app

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GET IT ON Google Play

Virtual networks - Microsoft Azure

portal.azure.com/?quickstart=true#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Network%2FvirtualNetworks

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Virtual networks

Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Feedback

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 0 to 0 of 0 records. No grouping

Name ↑↓ Resource group ↑↓ Location ↑↓ Subscription ↑↓

No virtual networks to display

Create a virtual network to securely connect your Azure resources to each other. Connect your virtual network to your on-premises network using an Azure VPN Gateway or ExpressRoute.

Learn more

Create virtual network



Create virtual network - Microsoft

portal.azure.com/?quickstart=true#create/Microsoft.VirtualNetwork

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Virtual networks >

Create virtual network

Basics IP Addresses Security Tags Review + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation. [Learn more about virtual network](#)

Project details

Subscription * ⓘ Free Trial

Resource group * ⓘ exampro

Create new

Instance details

Name * exampro-vnet

Region * (US) East US

Review + create < Previous Next : IP Addresses > Download a template for automation

Create virtual network - Microsoft

portal.azure.com/?quickstart=true#create/Microsoft.VirtualNetwork

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Home > Virtual networks >

Create virtual network

Basics IP Addresses Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

10.0.0.0/16 10.0.0.0 - 10.0.255.255 (65536 addresses)

Add IPv6 address space ⓘ

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

+ Add subnet Remove subnet

Subnet name Subnet address range

default 10.0.0.0/24

Review + create < Previous Next : Security > Download a template for automation

Create virtual network - Microsoft

portal.azure.com/?quickstart=true#create/Microsoft.VirtualNetwork

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Virtual networks >

Create virtual network

Basics IP Addresses Security Tags Review + create

DDoS protection: Basic Standard

Firewall: Disabled Enabled

Review + create < Previous Next : Tags > Download a template for automation

The screenshot shows the Microsoft Azure portal interface for creating a new virtual network. The top navigation bar includes the Microsoft logo, upgrade information, a search bar, and user account details. Below the header, the breadcrumb path indicates the current location is 'Virtual networks'. The main title 'Create virtual network' is displayed above the configuration tabs. The 'Security' tab is active, highlighted by a blue border. Under the 'Security' tab, there are two sections: 'DDoS protection' (with options 'Basic' and 'Standard') and 'Firewall' (with options 'Disabled' and 'Enabled', where 'Disabled' is currently selected). At the bottom of the page, there are navigation links for 'Review + create', '< Previous' and 'Next : Tags >', and a link to 'Download a template for automation'.

Create virtual network - Microsoft

portal.azure.com/?quickstart=true#create/Microsoft.VirtualNetwork

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Virtual networks >

Create virtual network

Basics IP Addresses Security Tags Review + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation. [Learn more about virtual network](#)

Project details

Subscription * ⓘ Free Trial

Resource group * ⓘ exampro

Create new

Instance details

Name * exampro-vnet

Region * (US) East US

Review + create < Previous Next : IP Addresses > Download a template for automation

Home >



Microsoft.VirtualNetwork-20200607212856 | Overview

X

 Search (Ctrl+ /) «

 Delete  Cancel  Redeploy  Refresh

 Overview

 Inputs

 Outputs

 Template

✓ Your deployment is complete

 Deployment name: Microsoft.VirtualNetwork-20200607212856
Subscription: [Free Trial](#)
Resource group: [exampro](#)

Start time: 6/7/2020, 9:30:16 PM
Correlation ID: 5e2d899c-6013-46b6-9cf3-5d35142ec78c

▼ Deployment details [\(Download\)](#)

^ Next steps

 Go to resource

 Go to resource



Security Center

Secure your apps and infrastructure

[Go to Azure security center >](#)

Free Microsoft tutorials

[Start learning today >](#)

Work with an expert

Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.

[Find an Azure expert >](#)

exampro-vnet - Microsoft Azure +

portal.azure.com/?quickstart=true#home

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Microsoft.VirtualNetwork-20200607212856 | Overview >

exampro-vnet

Virtual network

Search (Ctrl+ /) Refresh Move Delete

Resource group (change) : exampro Address space : 10.0.0.0/16
Location : East US DNS servers : Azure provided DNS service
Subscription (change) : Free Trial
Subscription ID : 01e4963a-16c4-4154-b4e6-33fd85b97d40
Tags (change) : Click here to add tags

Connected devices

Device	Type	IP Address	Subnet
No results.			

Address space
Connected devices
Subnets
DDoS protection
Firewall
Security
DNS servers
Peerings
Service endpoints
Private endpoints
Properties
Locks
Export template

Monitoring

Diagnostic settings
Logs
Connection monitor
Diagram

Support + troubleshooting

<https://portal.azure.com/?quickstart=true#home>

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Azure Fundamentals

Follow Alongs

Launching a Server



Follow Along

Microsoft Azure (Upgrade) Search resources

Home > Virtual machines > Create a virtual machine

Subscription * Free Trial
Resource group * exampro
[Create new](#)

Instance details

Virtual machine name * myVM

Region * (US) East US

Availability options No infrastructure redundancy required

Image * Ubuntu Server 18.04 LTS
[Browse all public and private images](#)

Azure Spot instance No

Size * Select size
Standard_B1ls + 1 vcpu, 0.5 GiB memory (CA\$4.86/month)

Administrator account

Authentication type SSH public key Password

Username * AzureUser

SSH public key * Learn more about creating and using SSH keys in Azure

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited network access on the Networking tab.

Public inbound ports * None Allow selected ports

Microsoft Trust Center Overview x Home - Microsoft Azure x +

portal.azure.com/#home

Microsoft Azure Upgrade azure@exampro.co DEFAULT DIRECTORY

Azure services

Create a resource

Recent resources

Name exapro-vnet

Navigate

Subscriptions

Services

Virtual machines

Virtual machine scale sets

SQL virtual machines

Recovery Services vaults

Virtual networks

Virtual machines (classic)

CloudSimple Virtual Machines

Free services

Machine Learning

Virtual clusters

Resources

No results were found.

Marketplace

ELIS (virtual machine)

Exact Synergy (virtual machine)

Red Hat Enterprise Linux 7

Free account virtual machine

Documentation

Create Recovery Services vaults - Azure Backup | Microsoft ...

Overview of Windows VMs in Azure - Azure Windows Virtual ...

Quickstart - Configure a Windows virtual machine in Azure ...

Move Azure VMs to new subscription or resource group ...

Resource Groups

No results were found.

Tools

Microsoft Learn
Learn Azure with free online training from Microsoft

Azure Monitor
Monitor your apps and infrastructure

Security Center
Secure your apps and infrastructure

Cost Management
Analyze and optimize your cloud spend for free

Useful links

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Microsoft Trust Center Overview x Create a virtual machine - Micro: +

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Virtual machines >

Create a virtual machine

Subscription * ⓘ Free Trial

Resource group * ⓘ exampro

Create new

Instance details

Virtual machine name * ⓘ myVM

Region * ⓘ (US) East US

Availability options ⓘ No infrastructure redundancy required

Image * ⓘ Ubuntu Server 18.04 LTS

Browse all public and private images

Azure Spot instance ⓘ Yes No

Size * ⓘ Standard_D2s_v3 - 2 vcpus, 8 GiB memory (CA\$89.70/month)

Select size

Administrator account

Authentication type ⓘ SSH public key Password

Username * ⓘ AzureUser

SSH public key * ⓘ

[Learn more about creating and using SSH keys in Azure](#)

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * ⓘ None Allow selected ports

Review + create < Previous Next : Disks >

Select a VM size

Search by VM size... Display cost : **Monthly** vCPUs : All RAM (GiB) : All Add filter

Most used sizes by Azure users

Showing 12 of 300 VM sizes. | Subscription: Free Trial | Region: East US | Current size: Standard_D2s_v3 | Image: Ubuntu Server 18.04 LTS | [Learn more about VM sizes](#)

VM Size ↑↓	Family ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓	Data disks ↑↓	Max IOPS ↑↓	Temp storage (GiB) ↑↓	Premium disk ↑↓	Cost/month ↑↓
B1ls	General purpose	1	0.5	2	160	4	Supported	CA\$4.86
B1s	General purpose	1	1	2	320	4	Supported	CA\$9.72
B1ms	General purpose	1	2	2	640	4	Supported	CA\$19.34
B2s	General purpose	2	4	4	1280	8	Supported	CA\$38.87
DS1_v2	General purpose	1	3.5	4	3200	7	Supported	CA\$68.21
B2ms	General purpose	2	8	4	1920	16	Supported	CA\$77.74
D2s_v3	General purpose	2	8	4	3200	16	Supported	CA\$89.70
DS2_v2	General purpose	2	7	8	6400	14	Supported	CA\$136.42
B4ms	General purpose	4	16	8	2880	32	Supported	CA\$155.11
D4s_v3	General purpose	4	16	8	6400	32	Supported	CA\$179.40
DS3_v2	General purpose	4	14	16	12800	28	Supported	CA\$273.78
D8s_v3	General purpose	8	32	16	12800	64	Supported	CA\$358.81

[See all sizes](#)

Select Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View Azure pricing calculator](#).

Microsoft Trust Center Overview x Create a virtual machine - Micros... +

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Virtual machines > Create a virtual machine

Virtual machine name * myVM

Region * (US) East US

Availability options No infrastructure redundancy required

Image * Ubuntu Server 18.04 LTS
Browse all public and private images

Azure Spot instance No

Size * Standard_B1ls - 1 vcpu, 0.5 GiB memory (CA\$4.86/month)
Select size

Administrator account

Authentication type Password

Username * AzureUser

Password *
Confirm password *

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * None Allow selected ports

Select inbound ports Select one or more ports

! All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create < Previous Next : Disks >

Microsoft Trust Center Overview x Create a virtual machine - Micro... +

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Virtual machines >

Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * Resource group * [Create new](#)

Instance details

Virtual machine name * Region * Availability options Image * [Browse all public and private images](#)

Azure Spot instance Yes No

Size * [Select size](#)

Administrator account

Authentication type SSH public key Password

Username * Password

Review + create < Previous Next : Disks >

Microsoft Trust Center Overview x Create a virtual machine - Microx +

portal.azure.com/#create/Microsoft.VirtualMachine

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Home > Virtual machines >

Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk type * ① Premium SSD

Encryption type * Standard HDD

Standard SSD

Premium SSD

Enable Ultra Disk compatibility ①

Data disks

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching
-----	------	------------	-----------	--------------

Create and attach a new disk [Attach an existing disk](#)

Advanced

Review + create < Previous Next : Networking >

Microsoft Trust Center Overview x Create a virtual machine - Micros... +

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Virtual machines > Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk type * Premium SSD

Encryption type * (Default) Encryption at-rest with a platform-managed key

Enable Ultra Disk compatibility Yes No
Ultra Disk compatibility is not available for this VM size and location.

Data disks

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching
-----	------	------------	-----------	--------------

Create and attach a new disk Attach an existing disk

Advanced

Review + create < Previous Next : Networking >

Microsoft Trust Center Overview x Create a virtual machine - Microsoft Azure +

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Virtual machines > Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.
[Learn more](#)

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * ⓘ Create new

Subnet * ⓘ Manage subnet configuration

Public IP ⓘ Create new

NIC network security group ⓘ None Basic Advanced

Public inbound ports * None Allow selected ports

Select inbound ports ⓘ

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Accelerated networking ⓘ On Off
The selected VM size does not support accelerated networking.

Load balancing

You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Place this virtual machine behind an existing load balancing solution? Yes No

Review + create < Previous Next : Management >

Microsoft Trust Center Overview x Create a virtual machine - Micros... +

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Virtual machines > Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Configure monitoring and management options for your VM.

Azure Security Center

Azure Security Center provides unified security management and advanced threat protection across hybrid cloud workloads.
[Learn more](#)

Your subscription is protected by Azure Security Center basic plan.

Monitoring

Boot diagnostics On Off

OS guest diagnostics On Off

Diagnostics storage account *

Identity

System assigned managed identity On Off

Auto-shutdown

Enable auto-shutdown On Off

Backup

Enable backup On Off

Review + create < Previous Next : Advanced >

Microsoft Trust Center Overview x Create a virtual machine - Microsoft Azure +

portal.azure.com/#create/Microsoft.VirtualMachine

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Home > Virtual machines >

Create a virtual machine

Advanced

Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

Extensions

Extensions provide post-deployment configuration and automation.

Extensions ⓘ Select an extension to install

Custom data and cloud init

Pass a cloud-init script, configuration file, or other data into the virtual machine while it is being provisioned. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#)

Custom data

Your image must have a code to support consumption of custom data. If your image supports cloud-init, custom-data will be processed by cloud-init. [Learn more about custom data and cloud init](#)

Host

Azure Dedicated Hosts allow you to provision and manage a physical server within our data centers that are dedicated to your Azure subscription. A dedicated host gives you assurance that only VMs from your subscription are on the host, flexibility to choose VMs from your subscription that will be provisioned on the host, and the control of platform maintenance at the level of the host. [Learn more](#)

Host group ⓘ No host group found

Proximity placement group

Proximity placement groups allow you to group Azure resources physically closer together in the same region. [Learn more](#)

Review + create < Previous Next : Tags >

Microsoft Trust Center Overview x Create a virtual machine - Micros... +

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Virtual machines >

Create a virtual machine

⚠️ Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

Region * (US) East US

Availability options No infrastructure redundancy required

Image * Ubuntu Server 18.04 LTS
Browse all public and private images

Azure Spot instance No

Size * Standard_B1ls - 1 vcpu, 0.5 GiB memory (CA\$4.86/month)
Select size

Administrator account

Authentication type Password

Username * AzureUser

Password *
Confirm password *

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * None Allow selected ports

Select inbound ports Select one or more ports

Info All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Review + create < Previous Next : Disks >

Microsoft Trust Center Overview x Create a virtual machine - Microsoft Azure + – star w g user

portal.azure.com/#create/Microsoft.VirtualMachine

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Virtual machines > Create a virtual machine x

Validation passed

Basics Disks Networking Management Advanced Tags Review + create

PRODUCT DETAILS

Standard B1s by Microsoft Subscription credits apply ① 0.0067 CAD/hr Pricing for other VM sizes

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Basics

Subscription	Free Trial
Resource group	exampro
Virtual machine name	myVM
Region	East US
Availability options	No infrastructure redundancy required
Image	Ubuntu Server 18.04 LTS
Size	Standard B1s (1 vcpu, 0.5 GiB memory)
Authentication type	Password
Username	AzureUser
Public inbound ports	None
Azure Spot	No

Create < Previous Next > Download a template for automation

Home >

CreateView
Deployment

8 Search (Ctrl + /)

 Delete  Cancel  Redeploy  Refresh

 Deployment name: CreateVm-Canonical.UbuntuServer-18.04-LTS-... Start time: 6/7/2020, 10:18:26 PM
Subscription: Free Trial Correlation ID: d0e93189-275c-4b0e-8d55-7109500be0
Resource group: example

✓ Deployment details (Download)

^ Next step

Setup auto-shutdown Recommended

Monitor VM health, performance and network dependencies Recommend

Run a script inside the virtual machine Recommended

[Go to resource](#)



Security Center

Secure your apps and infrastructure

[Go to Azure security center >](#)

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Work with an expert

Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.

Microsoft Trust Center Overview x myVM - Microsoft Azure x +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exapro/providers/Microsoft.Compute/virtualMachines/myVM/overview

Microsoft Azure Upgrade Search resources, services, and docs (G+)

azure@exampro.co DEFAULT DIRECTORY

Home > CreateVm-Canonical.UbuntuServer-18.04-LTS-20200607221513 | Overview >

myVM Virtual machine

Search (Ctrl+/) Connect Start Restart Stop Capture Delete Refresh

Resource group (change) : exapro

Status : Running

Location : East US

Subscription (change) : Free Trial

Subscription ID : 01e4963a-16c4-4154-b4e6-33fd85b97d40

Computer name : myVM

Operating system : Linux (ubuntu 18.04)

Size : Standard B1s (1 vcpus, 0.5 GiB memory)

Azure Spot : N/A

Public IP address : 52.150.15.215

Private IP address : 10.0.0.4

Public IP address (IPv6) : -

Private IP address (IPv6) : -

Virtual network/subnet : exapro-vnet/default

DNS name : Configure

Tags (change) : Click here to add tags

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

CPU (average)

Network (total)

Disk bytes (total)

Disk operations/sec (average)

Monitoring Insights

Available memory and additional detailed monitoring can be

<https://portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exapro/providers/Microsoft.Compute/virtualMachines/myVM/overview>

Microsoft Trust Center Overview x myVM | Size - Microsoft Azure +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Compute/virtualMachines/myVM/size

Microsoft Azure Upgrade Search resources, services, and docs (G+)

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Home > CreateVm-Canonical.UbuntuServer-18.04-LTS-20200607221513 | Overview >

myVM | Size

Virtual machine

Search (Ctrl+/)

If the virtual machine is currently running, changing its size will cause it to be restarted. Stopping the virtual machine may reveal additional sizes. →

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Networking Connect Disks Size Security Advisor recommendations Extensions Continuous delivery Availability + scaling Configuration Identity Properties Locks Export template

See all sizes

Display cost: Monthly vCPUs: All RAM (GiB): All Add filter

Most used sizes by Azure users

Showing 12 of 132 VM sizes. | Subscription: Free Trial | Region: East US | Current size: Standard_B1ls | Learn more about VM sizes

VM Size ↑↓	Family ↑↓	vCPUs ↑↓	RAM (GiB) ↑↓	Data disks ↑↓	Max IOPS ↑↓	Temp storage (GiB) ↑↓	Premium disk ↑↓	Cost/month ↑↓
DS1_v2 ↗	General purpose	1	3.5	4	3200	7	Supported	CA\$68.21
D2s_v3 ↗	General purpose	2	8	4	3200	16	Supported	CA\$89.70
B2s ↗	General purpose	2	4	4	1280	8	Supported	CA\$38.87
B1s ↗	General purpose	1	1	2	320	4	Supported	CA\$9.72
B2ms ↗	General purpose	2	8	4	1920	16	Supported	CA\$77.74
B1ms ↗	General purpose	1	2	2	640	4	Supported	CA\$19.34
B1ls ↗	General purpose	1	0.5	2	160	4	Supported	CA\$4.86
DS2_v2 ↗	General purpose	2	7	8	6400	14	Supported	CA\$136.42
B4ms ↗	General purpose	4	16	8	2880	32	Supported	CA\$155.11
D4s_v3 ↗	General purpose	4	16	8	6400	32	Supported	CA\$179.40
DS3_v2 ↗	General purpose	4	14	16	12800	28	Supported	CA\$273.78
D8s_v3 ↗	General purpose	8	32	16	12800	64	Supported	CA\$358.81

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View Azure pricing calculator.](#)

Resize

https://portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd...

Microsoft Trust Center Overview x myVM | Networking - Microsoft +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Compute/virtualMachines/myVM/networking

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > CreateVm-Canonical.UbuntuServer-18.04-LTS-20200607221513 | Overview >

myVM | Networking

Virtual machine

Search (Ctrl+/) Attach network interface Detach network interface

IP configuration ① ipconfig1 (Primary)

Network Interface: myvm525 Effective security rules Topology

Virtual network/subnet: exampro-vnet/default NIC Public IP: 52.150.15.215 NIC Private IP: 10.0.0.4 Accelerated networking: Disabled

Inbound port rules Outbound port rules Application security groups Load balancing

Network security group myVM-nsg (attached to network interface: myvm525)
Impacts 0 subnets, 1 network interfaces

Add inbound port rule

Priority	Name	Port	Protocol	Source	Destination	Action	...
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow	...
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow	...
65500	DenyAllInBound	Any	Any	Any	Any	Deny	...

Networking

Connect Disks Size Security Advisor recommendations Extensions Continuous delivery Availability + scaling Configuration Identity Properties Locks Export template

Bastion Auto-shutdown Backup Disaster recovery

https://portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd...

Microsoft Trust Center Overview x myVM - Microsoft Azure x +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Compute/virtualMachines/myVM/overview

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > CreateVm-Canonical.UbuntuServer-18.04-LTS-20200607221513 | Overview >

myVM Virtual machine

Search (Ctrl+/) Connect Start Restart Stop Capture Delete Refresh

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

Settings Networking Connect Disks Size Security Advisor recommendations Extensions Continuous delivery Availability + scaling Configuration Identity Properties Locks Export template

Operations Bastion Auto-shutdown Backup Disaster recovery

Delete virtual machine

This action will permanently delete the virtual machine 'myVM'. Associated resources (disks, virtual networks, etc) will not be deleted and can be removed manually. Do you want to continue?

Yes No

Computer name : myVM
Operating system : Linux (ubuntu 18.04)
Size : Standard B1s (1 vcpus, 0.5 GiB memory)
Tags (change) : Click here to add tags

Virtual network/subnet : exampro-vnet/default
DNS name : Configure

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

CPU (average)

Percentage CPU (Avg) myvm 0.08 %

Network (total)

Network In Total (Sum) myvm 0 B Network Out Total (Sum) myvm 490 B

Disk bytes (total)

Disk Read Bytes (Sum) myvm 0 B Disk Write Bytes (Sum) myvm 0 B

Disk operations/sec (average)

Disk Read Operations... myvm 0 /s Disk Write Operations... myvm 0 /s

Monitoring Insights

Available memory and additional detailed monitoring can be accessed at Insights from the menu.

Microsoft Trust Center Overview x myVM - Microsoft Azure x +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Compute/virtualMachines/myVM/overview

Microsoft Azure Upgrade ? Notifications

myVM Virtual machine

Search (Ctrl+ /)

Connect Start Restart

Resource group (change) : exampro

Status : Deleting

Location : East US

Subscription (change) : Free Trial

Subscription ID : 01e4963a-16c4-4154-b4e6-33fd85b97d40

Computer name : (not available)

Operating system : Linux

Size : Standard B1ls (1 vCPU, 2 GB memory)

Tags (change) : Click here to add tags

No results were found.

Searching all subscriptions. Change

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days 30 days

CPU (average)

Network (total)

Disk bytes (total)

Monitoring Insights

Available memory and additional detailed monitoring can be accessed at Insights from the menu.

Services See all

- Virtual machines
- Virtual networks
- Virtual clusters
- Virtual WANs
- Virtual network gateways
- Virtual networks (classic)
- Virtual machine scale sets
- Virtual machines (classic)
- SQL virtual machines
- Windows Virtual Desktop

Marketplace See all

- eCare21 Virtual Care Platform
- Virtual Network
- Virtual machine scale set
- Virtual WAN

Documentation See all

- Create a tenant in Windows Virtual Desktop - Azure ...
- Reference table for all Azure Security Center ...
- Connect to Windows Virtual Desktop Windows 10 or 7 - Azure ...
- ExpressRoute: Link a VNet to a circuit: Azure portal ...

Resource Groups

No results were found.

Notifications

More events in the activity log → Dismiss all

Successfully deleted the virtual machine Successfully deleted the virtual machine 'myVM'. a few seconds ago

Deployment succeeded Deployment 'CreateVm-CanonicalUbuntuServer-18.04-LTS-20200607221513' to resource group 'exampro' was successful.

Go to resource Pin to dashboard

CA\$260.00 credit remaining Subscription 'Free Trial' has a remaining credit of CA\$260.00.

Click here to upgrade to a Pay-As-You-Go subscription. 7 minutes ago

You have free Azure Advisor recommendations! Azure Advisor is a free offering that analyzes your Azure usage and provides recommendations on how you can save money, improve performance, be more secure, and improve reliability of the solutions you already have running in Azure. Learn more

View my free recommendations 7 minutes ago

Home >

Virtual machines

Default Directory

Documentation 

+ Add  Reservations  Edit columns  Refresh  Assign tags  Start  Restart  Stop  Delete  Services

Subscriptions: Free Trial

Filter by name... All resource groups All types All locations All tags No grouping

1 items

<input type="checkbox"/> Name ↑↓	Type ↑↓	Status	Resource group ↑↓	Location ↑↓	Source	Maintenance status	Subscription ↑↓	...
 myVM	Virtual machine	Unknown	exampro	East US	Disk	-	Free Trial	...

Default Directory

+ Add Reservations Edit columns Refresh | Assign tags Start Restart Stop Delete Services

Subscriptions: Free Trial

Filter by name... All resource groups All types All locations All tags No grouping

0 items

Name ↑↓	Type ↑↓	Status	Resource group ↑↓	Location ↑↓	Source	Maintenance status	Subscription ↑↓
---------	---------	--------	-------------------	-------------	--------	--------------------	-----------------

No virtual machines to display

Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.

[Learn more about Windows virtual machines](#) [Learn more about Linux virtual machines](#)

[Create virtual machine](#)



Azure Fundamentals

Follow Alongs

Creating a Azure Function



Follow Along

The screenshot shows the Microsoft Azure portal interface for managing an Azure Function. The top navigation bar includes the Microsoft Azure logo, an 'Upgrade' button, and a search bar. Below the navigation is a breadcrumb trail: Home > Microsoft.Web-FunctionApp-Portal-4fc1a5da-a476 | Overview > exampro-app > HttpTrigger1 | Code + Test. The main content area is titled 'HttpTrigger1 | Code + Test' and shows the 'Function' tab selected. On the left, there's a 'Developer' sidebar with options: Code + Test (selected), Integration, Monitor, and Function Keys. The main pane displays the function code in a syntax-highlighted text editor:

```
1 module.exports = async function (context) {
2   context.log('JavaScript');
3
4   if (req.query.name || (req.body.name)) {
5     context.res = {
6       status: 200,
7       body: "Hello " + req.query.name || req.body.name
8     };
9   } else {
10     context.res = {
11       status: 400,
12       body: "Please pass a name parameter"
13     };
14   }
15 }
16 }
```

Microsoft Trust Center Overview x Home - Microsoft Azure x +

portal.azure.com/#home

Microsoft Azure Upgrade

function

Azure services

Create a resource

Services

- Function App
- Image definitions
- Service catalog managed application definitions
- App Services
- Static Web Apps (Preview)

Recent resources

Name

- myVM
- exapro-vnet

Resources

No results were found.

Marketplace

- Function App
- MAKANA Python Function
- Koçsistem Azure Functions
- Static Web App (Preview)

Documentation

See all

- Stored functions management overview - Azure Data Explorer ...
- Data Factory Functions and System Variables - Azure Data ...
- User-Defined Functions - Azure Data Explorer | Microsoft Docs
- Expression and functions in Azure Data Factory - Azure ...

Resource Groups

No results were found.

Search bar: Searching all subscriptions. Change

Subscriptions

Resource groups

All resources

Dashboard

Navigate

Tools

Microsoft Learn

Learn Azure with free online training from Microsoft

Azure Monitor

Monitor your apps and infrastructure

Security Center

Secure your apps and infrastructure

Cost Management

Analyze and optimize your cloud spend for free

Useful links

Technical Documentation

Azure Migration Tools

Azure Services

Find an Azure expert

Recent Azure Updates

Quickstart Center

Azure mobile app

Download on the App Store

GET IT ON Google Play

azure@exapro.co

DEFAULT DIRECTORY

Microsoft Trust Center Overview x Function App - Microsoft Azure +

portal.azure.com/#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Web%2Fsites/kind/functionapp

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Function App ✎

Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Start Restart Stop Delete Feedback Leave preview

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 0 to 0 of 0 records.

No grouping

Name ↑↓ Status ↑↓ Location ↑↓ Pricing T... ↑↓ App Ser... ↑↓ Subscription ↑↓ App Type ↑↓

No Function App to display

The resources are currently filtered and not all resources may be displayed, such as hidden resources.

Try changing your filters if you don't see what you're looking for.

Learn more about App Service ↗

Create Function App Clear filters / Show hidden

Microsoft Trust Center Overview x Function App - Microsoft Azure x +

portal.azure.com/#create/Microsoft.FunctionApp

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Function App > Function App

Basics Hosting Monitoring Tags Review + create

Create a function app, which lets you group functions as a logical unit for easier management, deployment and sharing of resources. Functions lets you execute your code in a serverless environment without having to first create a VM or publish a web application.

Project Details

Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * ⓘ Free Trial

Resource Group * ⓘ exampro

Create new

Instance Details

Function App name * exampro-app .azurewebsites.net

Publish * **Code** Docker Container

Runtime stack * Node.js

Version * 12

Region * East US

Review + create < Previous Next : Hosting >

Microsoft Trust Center Overview x Function App - Microsoft Azure x +

portal.azure.com/#create/Microsoft.FunctionApp

Microsoft Azure Upgrade Search resources, services, and docs (G+/-)

azure@exampro.co DEFAULT DIRECTORY

Home > Function App >

Function App

Basics Hosting Monitoring Tags Review + create

Storage

When creating a function app, you must create or link to a general-purpose Azure Storage account that supports Blobs, Queue, and Table storage.

Storage account * (New) storageaccountexamp8a32 [Create new](#)

Operating system

The Operating System has been recommended for you based on your selection of runtime stack.

Operating System * Linux Windows

Plan

The plan you choose dictates how your app scales, what features are enabled, and how it is priced. [Learn more](#)

Plan type * Consumption (Serverless)

Review + create < Previous Next : Monitoring >

Microsoft Trust Center Overview x Function App - Microsoft Azure x +

portal.azure.com/#create/Microsoft.FunctionApp

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Function App >

Function App

Basics Hosting Monitoring Tags Review + create

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Subscription * ⓘ Free Trial

Resource Group * ⓘ exampro

Create new

Instance Details

Function App name * exampro-app .azurewebsites.net

Publish * **Code** Docker Container

Runtime stack * Node.js

Version * 12

Region * East US

Review + create < Previous Next : Hosting >

 Deployment

Search (Ctrl+ /) « Delete Cancel Redeploy Refresh

 Overview

 Inputs

 Outputs

 Template

Your deployment is complete

Deployment name: Microsoft.Web-FunctionApp-Portal-4fc1a5da-a... Start time: 6/7/2020, 10:24:32 PM
Subscription: [Free Trial](#) Correlation ID: c469d7df-a9cb-405f-ba0f-52e24ce7f062
Resource group: [exampro](#)

Deployment details ([Download](#))

Next steps

[Go to resource](#)

 Security Center
Secure your apps and infrastructure
[Go to Azure security center >](#)

 Free Microsoft tutorials
[Start learning today >](#)

 Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
[Find an Azure expert >](#)

Microsoft Trust Center Overview x exapro-app - Microsoft Azure +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exapro/providers/Microsoft.Web/sites/exapro/appServices

Microsoft Azure Upgrade Search resources, services, and docs (G+)

azure@exampro.co DEFAULT DIRECTORY

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-a476 | Overview >

exampro-app

App Service

Search (Ctrl+)

Browse Refresh Stop Restart Swap Get publish profile Reset publish profile Delete Classic Function App Management

Having issues? Click to go back to the classic Function App management experience →

Resource group (change) : exampro

Status : Running

Location : East US

Subscription (change) : Free Trial

Subscription ID : 01e4963a-16c4-4154-b4e6-33fd85b97d40

Tags (change) : Click here to add tags

URL : https://exampro-app.azurewebsites.net

Operating System : Windows

App Service Plan : ASP-exampro-a789 (Y1: 0)

Properties : See More

Runtime version : 3.0.13353.0

Metrics Features (9) Notifications (0) Quickstart

Memory working set

The chart shows memory usage in bytes (B) from 0B to 100B. The x-axis represents time from 9:30 PM to UTC-04:00. The y-axis represents memory usage. A single data series is shown as a blue bar at 0B.

Time	Memory working set (Sum)
9:30 PM	0 B
9:45 PM	0 B
10 PM	0 B
10:15 PM	0 B
UTC-04:00	0 B

Function Execution Count

The chart shows execution count from 0 to 100. The x-axis represents time from 9:30 PM to UTC-04:00. The y-axis represents execution count. A single data series is shown as a blue bar at 0.

Time	Function Execution Count (Sum)
9:30 PM	0
9:45 PM	0
10 PM	0
10:15 PM	0
UTC-04:00	0

GB Seconds

The chart shows GB Seconds from 90 to 100. The x-axis represents time from 9:30 PM to UTC-04:00. The y-axis represents GB Seconds. A single data series is shown as a blue bar at 0.

Time	GB Seconds
9:30 PM	0
9:45 PM	0
10 PM	0
10:15 PM	0
UTC-04:00	0

Scale up (App Service plan)

https://portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd...

Microsoft Trust Center Overview x exapro-app | Functions - Micro +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exapro/providers/Microsoft.Web/sites/exapro-app/functionsList

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Microsoft.Web-FunctionApp-Portal-4fc1a5da-a476 | Overview >

exapro-app | Functions

App Service

Search (Ctrl+ /) « Add Develop Locally Refresh Enable Disable Delete

Filter by name...

Name ↑↓	Trigger ↑↓	Status ↑↓
No results.		

Functions

- Functions
- App keys
- App files
- Proxies

Deployment

- Deployment slots
- Deployment Center

Settings

- Configuration
- Authentication / Authorization
- Application Insights
- Identity
- Backups
- Custom domains
- TLS/SSL settings
- Networking
- Scale up (App Service plan)

Microsoft Trust Center Overview x exapro-app | Functions - Micro +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exapro/providers/Microsoft.Web/sites/exapro-app/functionsList

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-a476 | Overview >

exapro-app | Functions

App Service

Search (Ctrl+/) Add Develop Locally Refresh Enable Disable Delete

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Security Events

Functions

- Functions
- App keys
- App files
- Proxies

Deployment

- Deployment slots
- Deployment Center

Settings

- Configuration
- Authentication / Authorization
- Application Insights
- Identity
- Backups
- Custom domains
- TLS/SSL settings
- Networking
- Scale up (App Service plan)

New Function

Create a new function in this function app. Start by selecting a template below.

Templates Details

Search by template name

- HTTP trigger**
A function that will be run whenever it receives an HTTP request responding based on data in the body or query string
- Timer trigger**
A function that will be run on a specified schedule
- Azure Queue Storage trigger**
A function that will be run whenever a message is added to a specified Azure Storage queue
- Azure Service Bus Queue trigger**
A function that will be run whenever a message is added to a specified Service Bus queue
- Azure Service Bus Topic trigger**
A function that will be run whenever a message is added to the specified Service Bus topic
- Azure Blob Storage trigger**
A function that will be run whenever a blob is added to a specified container
- Azure Event Hub trigger**
A function that will be run whenever an event hub receives a new event
- Azure Cosmos DB trigger**
A function that will be run whenever documents change in a document collection
- IoT Hub (Event Hub)**
- SendGrid**

Microsoft Trust Center Overview x exapro-app | Functions - Micro +

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exapro/providers/Microsoft.Web/sites/exapro-app/functionsList

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-a476 | Overview >

x

exampro-app | Functions

App Service

Search (Ctrl+/) « Add Develop Locally Refresh Enable Disable Delete

Filter by name...

Name ↑ Trigger ↑

No results.

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Security

Events

Functions

Functions

App keys

App files

Proxies

Deployment

Deployment slots

Deployment Center

Settings

Configuration

Authentication / Authorization

Application Insights

Identity

Backups

Custom domains

TLS/SSL settings

Networking

Scale up (App Service plan)

New Function

Create a new function in this function app. Start by selecting a template below.

Templates Details

New Function* HttpTrigger1

Authorization level* Function

Create Function

Microsoft Azure

Search resources, services, and docs (G+)

azure@exampro.co
DEFAULT DIRECTORY

Home > Microsoft.Web-FunctionApp-Portal-4fc1a5da-a476 | Overview > exampro-app | Functions

{fx} HttpTrigger1 ⚡

Search (Ctrl+F)

Enable Disable Delete Get Function Url Refresh

Application Insights : exampro-a

{fx} Overview

Status : Enabled

Status : Enabled

Resource group (change) : exampro

Subscription (change) : Free Trial

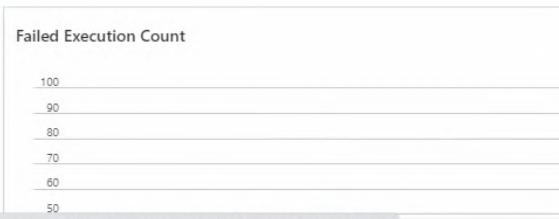
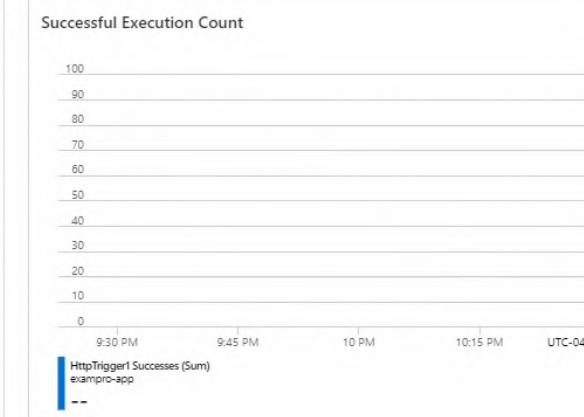
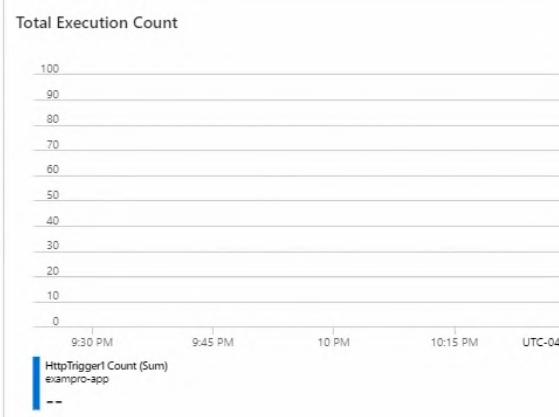
Subscription ID : 01e4963a-16c4-4154-b4e6-33fd85b97d40

Integration

 Monitor

Function Keys

Function Keys



Microsoft Trust Center Overview x HttpTrigger1 | Code + Test - Micr +

portal.azure.com/#blade/WebsitesExtension/FunctionMenuBlade/code/resourceId/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Web%2Fsites%2Fexampro-app%2Ffunctions%2...

Microsoft Azure Upgrade

Search resources, services, and docs (G+)

Home > Microsoft.Web-FunctionApp-Portal-4fc1a5da-a476 | Overview > exampro-app | Functions >

HttpTrigger1 | Code + Test

Function

Search (Ctrl+/) Save Discard Refresh Test/Run Get function URL

Overview exampro-app \ HttpTrigger1 \ index.js

Developer

Code + Test (selected)

Integration Monitor Function Keys

```
1 module.exports = async function (context, req) {
2     context.log('JavaScript HTTP trigger function processed a request.');
3     console.log('Hello World!');
4     if (req.query.name || (req.body && req.body.name)) {
5         context.res = {
6             // status: 200, /* Defaults to 200 */
7             body: "Hello " + (req.query.name || req.body.name)
8         };
9     }
10    else {
11        context.res = {
12            status: 400,
13            body: "Please pass a name on the query string or in the request body"
14        };
15    }
16};
```

Logs

Microsoft Trust Center Overview x HttpTrigger1 | Code + Test - Micr +

portal.azure.com/#blade/WebsitesExtension/FunctionMenuBlade/code/resourceId/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Web%2Fsites%2Fexampro-app%2Ffunctions%2...

Microsoft Azure Upgrade

Search resources, services, and docs (G+)

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-a476 | Overview > exampro-app | Functions >

HttpTrigger1 | Code + Test

Function

Search (Ctrl+/) Save Discard Refresh Test/Run Get function URL

Overview exampro-app \ HttpTrigger1 \ index.js

Developer

Code + Test (selected)

Integration Monitor Function Keys

```
1 module.exports = async function (context, req) {
2   context.log('JavaScript HTTP trigger function processed a request.');
3   console.log('Hello World!');
4   if (req.query.name || (req.body && req.body.name)) {
5     context.res = {
6       // status: 200, /* Defaults to 200 */
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8     };
9   }
10  else {
11    context.res = {
12      status: 400,
13      body: "Please pass a name on the query string or in the request body"
14    };
15  }
16};
```

Logs

Connected!

Log Level Stop Copy Clear Maximize

Microsoft Trust Center Overview x Microsoft Azure + HttpTrigger1 | Code + Test - Microsoft Azure

portal.azure.com/#blade/WebsitesExtension/FunctionMenuBlade/code/resourceId/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Web%2Fsites%2Fexampro-app%2Ffunctions%2F

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-a476 | Overview > exampro-app | Functions >

HttpTrigger1 | Code + Test

Function

Search (Ctrl+ /) Save Discard Refresh Test/Run Get function URL

Overview exampro-app \ HttpTrigger1 \ index.js

Developer

- Code + Test
- Integration
- Monitor
- Function Keys

```
1 module.exports = async function (context, req) {
2     context.log('JavaScript HTTP trigger function processed a request.');
3     console.log('Hello World!')
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8         };
9     }
10    else {
11        context.res = {
12            status: 400,
13            body: "Please pass a name on the query string or in the request body"
14        };
15    }
16};
```

Logs Connected!

Log Level Stop Copy Clear Maximize

Input Output

Provide parameters to test the HTTP request. Results can be found in the Output tab.

HTTP method POST

Key master (Host key)

Query + Add parameter

Headers + Add header

Body

Run Close

Microsoft Trust Center Overview x Microsoft Azure + HttpTrigger1 | Code + Test - Microsoft Edge portal.azure.com/#blade/WebsitesExtension/FunctionMenuBlade/code/resourceId/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Web%2Fsites%2Fexampro-app%2Ffunctions%2F

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-a476 | Overview > exampro-app | Functions >

HttpTrigger1 | Code + Test

Function

Search (Ctrl+ /) Save Discard Refresh Test/Run Get function URL

Overview exampro-app \ HttpTrigger1 \ index.js

Developer

- Code + Test
- Integration
- Monitor
- Function Keys

```
1 module.exports = async function (context, req) {
2     context.log('JavaScript HTTP trigger function processed a request.');
3     console.log('Hello World!');
4     if (req.query.name || (req.body && req.body.name)) {
5         context.res = {
6             // status: 200, /* Defaults to 200 */
7             body: "Hello " + (req.query.name || req.body.name)
8         };
9     }
10    else {
11        context.res = {
12            status: 400,
13            body: "Please pass a name on the query string or in the request body"
14        };
15    }
16};
```

Input Output

HTTP response code
400 Bad Request

HTTP response content

Logs

Log Level Stop Copy Clear Maximize

Connected!

Run Close

Microsoft Azure

HttpTrigger1 | Code + Test

 Search (Ctrl+ /)

```
exampro-app \ HttpTrigger1 \ index.js <input type="button" value="Run" />

1 module.exports = async function (context, req) {
2   context.log('JavaScript HTTP trigger function processed a request.');
3   console.log('Hello World!!!')
4   if (req.query.name || (req.body && req.body.name)) {
5     context.res = {
6       // status: 200, /* Defaults to 200 */
7       body: "Hello " + (req.query.name || req.body.name)
8     };
9   }
10  else {
11    context.res = {
12      status: 400,
13      body: "Please pass a name on the query string or in the request body"
14    };
15  }
16}
```

✓ Logs

 Log Level ▾ Stop Copy Clear Maxim

Connected!

Input Out

Provide parameters to test the HTTP request. Results can be found in the Output tab.

HTTP methods

POST

One

Name _____ Value _____

name	Andrew
------	--------

+ Add param

Boc

1

1

Close

Microsoft Trust Center Overview x HttpTrigger1 | Code + Test - Mic x HttpTrigger1 | Monitor - Micro x - +

portal.azure.com/#blade/WebsitesExtension/FunctionMenuBlade/code/resourceblade/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Web%2Fsites%2Fexampro-app%2Ffunctions%2...

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-a476 | Overview > exampro-app | Functions >

HttpTrigger1 | Code + Test

Function

Search (Ctrl+ /) Save Discard Refresh Test/Run Get function URL

Overview exampro-app \ HttpTrigger1 \ index.js

Developer

- Code + Test
- Integration
- Monitor
- Function Keys

```
1 module.exports = async function (context, req) {
2   context.log('JavaScript HTTP trigger function processed a request.');
3   console.log('Hello World!!')
4   if (req.query.name || (req.body && req.body.name)) {
5     context.res = {
6       // status: 200, /* Defaults to 200 */
7       body: "Hello " + (req.query.name || req.body.name)
8     };
9   }
10  else {
11    context.res = [
12      {
13        status: 400,
14        body: "Please pass a name on the query string or in the request body"
15      }
16    ];
17  }
18};
```

Input Output

HTTP response code
200 OK

HTTP response content
Hello Andrew

Logs

Connected!

Log Level Stop Copy Clear Maximize Run Close

<https://portal.azure.com/#blade/HubsExtension/DeploymentDetailsBlade/overview/id/%2Fsubscriptions%2F01e4963...>

Microsoft Azure Upgrade function

Home > Microsoft.Web.FunctionApp-Portal-4fc1a5da-... Deployment

Search (Ctrl+ /) Delete Cancel Redeploy

Overview Inputs Outputs Template

Your deployment is complete.

Deployment name: Microsoft.Web.FunctionApp-Portal Subscription: Free Trial Resource group: exampro

Deployment details (Download) Next steps

Go to resource

No results were found.

Services

- Function App
- Image definitions
- Service catalog managed application definitions
- App Services
- Static Web Apps (Preview)

Marketplace

- Function App
- MAKANA Python Function
- Koçsistem Azure Functions
- Static Web App (Preview)

Documentation See all

- Stored functions management overview - Azure Data Explorer ...
- Data Factory Functions and System Variables - Azure Data ...
- User-Defined Functions - Azure Data Explorer | Microsoft Docs
- Expression and functions in Azure Data Factory - Azure ...

Resources

No results were found.

Resource Groups

No results were found.

Searching all subscriptions. Change

Security Center Secure your apps and infrastructure Go to Azure security center >

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Microsoft Trust Center Overview x Function App - Microsoft Azure x HttpTrigger1 | Monitor - Microsoft Azure x +

portal.azure.com/#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Web%2Fsites/kind/functionapp

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Function App ✎

Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Start Restart Stop Delete Feedback Leave preview

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 1 to 1 of 1 records. No grouping

Name	Status	Location	Pricing Tier	App Service	Subscription	App Type
exampro-app	Running	East US	Dynamic	ASP-exam...	Free Trial	Function App

< Previous Page 1 of 1 Next >

Microsoft Trust Center Overview x Delete Resources - Microsoft Azure x HttpTrigger1 | Monitor - Microsoft Azure x portal.azure.com/#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Web%2Fsites/kind/functionapp

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Function App Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Start Restart Stop Delete Feedback Leave preview

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 1 to 1 of 1 records.

Name	Status	Location	Pricing Tier	App Service	Subscription
exampopro-app	Running	East US	Dynamic	ASP-exa...	Free Trial

< Previous Page 1 of 1 Next >

Delete Resources Deleting 1 resource

Do you want to delete all the selected resources?

⚠ Warning! Deleting the selected web apps is irreversible. This will permanently delete the selected web apps and their deployment slots. Premium extensions will need to be repurchased. This action cannot be undone. Do you want to continue?

Confirm delete yes

Selected resources exampopro-app (App Service)

Delete Cancel



Azure Fundamentals

Follow Alongs

Storing files in Blob Storage



Follow Along

A screenshot of the Microsoft Azure Blob Storage interface. The top navigation bar shows "Microsoft Azure" and "Upgrade". Below it, the URL is "Home > examproblobstorage | Containers > startrek". The "startrek" container is selected, indicated by a highlighted box. The container details show it is a "Container". There is a "Search (Ctrl+ /)" input field. To the right, there are "Upload" and "Change access level" buttons. A note says "Authentication method: Access key ()" and "Location: startrek". Below the container name, there is a "Search blobs by prefix (case-sensitive)" input field with "Name" and "data.jpg" selected. On the left, there is a sidebar with "Overview" (selected), "Access Control (IAM)", "Settings", "Access policy", "Properties", and "Metadata".

Home - Microsoft Azure +

portal.azure.com/#home

Microsoft Azure Upgrade

blob

Azure services

Create a resource

Recent resources

Name

- exapro-app
- myVM
- exapro-vnet

Services

- Storage accounts
- Azure Blockchain Service
- Storage explorer
- Free services

Resources

No results were found.

Marketplace

- Flexify.IO - Azure Blob/Amazon S3 Data Migration
- Storage account - blob, file, table, queue
- Flexify.IO - Amazon S3 API for Azure Blob Storage
- Azure Blob Storage on IoT Edge

Documentation

- Introduction to Blob (object) storage - Azure Storage ...
- Blob versioning (preview) - Azure Storage | Microsoft Docs
- Quickstart: Azure Blob storage library v12 - .NET ...
- Azure Blob storage documentation | Microsoft Docs

Resource Groups

No results were found.

Searching all subscriptions. Change

Navigate

Subscriptions

Resource groups

All resources

Dashboard

Tools

Microsoft Learn ↗
Learn Azure with free online training from Microsoft

Azure Monitor
Monitor your apps and infrastructure

Security Center
Secure your apps and infrastructure

Cost Management
Analyze and optimize your cloud spend for free

Useful links

Technical Documentation ↗
Azure Migration Tools

Azure Services ↗
Find an Azure expert

Recent Azure Updates ↗
Quickstart Center

Azure mobile app

Download on the App Store ↗

GET IT ON Google Play

https://portal.azure.com

Storage accounts - Microsoft Azure

portal.azure.com/#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Storage%2FStorageAccounts

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Storage accounts

Default Directory

Add Manage view Refresh Export to CSV Assign tags Delete Feedback

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 1 to 2 of 2 records. No grouping

Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓
<input type="checkbox"/> examprodig721	Storage account	Storage	exampro	East US	Free Trial
<input type="checkbox"/> storageaccountexamp8a32	Storage account	Storage	exampro	East US	Free Trial

< Previous Page 1 of 1 Next >

Create storage account - Microsoft Azure

portal.azure.com/#create/Microsoft.StorageAccount

Microsoft Azure Upgrade Search resources, services, and docs (G+)

azure@exampro.co DEFAULT DIRECTORY

Home > Storage accounts >

Create storage account

Basics Networking Advanced Tags Review + create

Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below.
[Learn more about Azure storage accounts](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * Free Trial

Resource group * exampro [Create new](#)

Instance details

The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. [Choose classic deployment model](#)

Storage account name * examproblobstorage

Location * (US) East US

Performance Standard Premium

Account kind BlobStorage

Replication Read-access geo-redundant storage (RA-GRS)
Accounts with the selected kind, replication and performance type only support block and append blobs. Page blobs, file shares, tables, and queues will not be available.

Access tier (default) Cool Hot

[Review + create](#) < Previous Next : Networking >

Create storage account - Microsoft Azure +

portal.azure.com/#create/Microsoft.StorageAccount

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Storage accounts >

Create storage account

Basics Networking Advanced Tags Review + create

Advanced

Network connectivity

You can connect to your storage account either publicly, via public IP addresses or service endpoints, or privately, using a private endpoint.

Connectivity method *

Public endpoint (all networks)
 Public endpoint (selected networks)
 Private endpoint

ⓘ All networks will be able to access this storage account.
[Learn more about connectivity methods](#)

Review + create < Previous Next : Advanced >

Create storage account - Microsoft Azure

portal.azure.com/#create/Microsoft.StorageAccount

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Storage accounts >

Create storage account

Basic Networking Advanced Tags Review + create

Security

Secure transfer required Disabled Enabled

Data protection

Blob soft delete Disabled Enabled

File share soft delete Disabled Enabled

The current combination of storage account kind and performance does not support file share soft delete. [Learn more about file share soft delete](#)

Versioning Disabled Enabled

The current combination of subscription, storage account kind, performance, replication and location does not support versioning.

Data Lake Storage Gen2

Hierarchical namespace Disabled Enabled

NFS v3 Disabled Enabled

Sign up is currently required to utilize the NFS v3 feature on a per-subscription basis. [Sign up for NFS v3](#)

Review + create < Previous Next : Tags >

Create storage account - Microsoft Azure

portal.azure.com/#create/Microsoft.StorageAccount

Microsoft Azure Upgrade Search resources, services, and docs (G+)

azure@exampro.co DEFAULT DIRECTORY

Home > Storage accounts >

Create storage account

Basics Networking Advanced Tags Review + create

Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below.
[Learn more about Azure storage accounts](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * Free Trial

Resource group * exampro [Create new](#)

Instance details

The default deployment model is Resource Manager, which supports the latest Azure features. You may choose to deploy using the classic deployment model instead. [Choose classic deployment model](#)

Storage account name * examproblobstorage

Location * (US) East US

Performance Standard Premium

Account kind BlobStorage

Replication Read-access geo-redundant storage (RA-GRS)

Accounts with the selected kind, replication and performance type only support block and append blobs. Page blobs, file shares, tables, and queues will not be available.

Access tier (default) Cool Hot

Review + create < Previous Next : Networking >

Home >



Microsoft.StorageAccount-20200607223624 | Overview

X

Search (Ctrl+ /)

 Delete  Cancel  Redeploy  Refresh

 Overview

 Inputs

 Outputs

 Template

✓ Your deployment is complete

 Deployment name: Microsoft.StorageAccount-20200607223624
Subscription: [Free Trial](#)
Resource group: [exampro](#)

Start time: 6/7/2020, 10:37:31 PM
Correlation ID: 52f10a35-e2aa-4956-bd9b-15fc9da74be8

▼ Deployment details [\(Download\)](#)

^ Next steps

 Go to resource



Security Center

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examproblobstorage - Microsoft [+](#)

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Storage/storageAccounts/examproblobstorage/overview

Microsoft Azure [Upgrade](#) Search resources, services, and docs (G+)

Home > Microsoft.StorageAccount-20200607223624 | Overview >

examproblobstorage

Storage account

Search (Ctrl+/) Open in Explorer Move Refresh Delete Feedback

Available

Classic alerts in Azure Monitor is announced to retire in 2021, it is recommended that you upgrade your classic alert rules to retain alerting functionality with the new alerting platform. For more information, see Continue alerting with ARM storage accounts.

Resource group (change) : exampro

Status : Primary: Available, Secondary: Available

Location : East US, West US

Subscription (change) : Free Trial

Subscription ID : 01e4963a-16c4-4154-b4e6-33fd85b97d40

Tags (change) : Click here to add tags

Performance/Access tier : Standard/Hot

Replication : Read-access geo-redundant storage (RA-GRS)

Account kind : BlobStorage

Containers
Scalable, cost-effective storage for unstructured data
[Learn more](#)

Tools and SDKs

Storage Explorer (preview) PowerShell Azure CLI .NET Java Python Node.js

Monitoring

Show data for last: 1 hour 6 hours 12 hours 1 day 7 days

Show data for: Account

Total egress: 100B 80B

Total ingress: 100B 80B

Average latency: 100ms 80ms

Request breakdown: 100 80

<https://portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Storage/storageAccounts/examproblobstorage/overview>

New container - Microsoft Azure

portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Storage/storageAccounts/examproblobstorage/containersList

Microsoft Azure Upgrade Search resources, services, and docs (G+)

Home > Microsoft.StorageAccount-20200607223624 | Overview >

examproblobstorage | Containers

Storage account

Search (Ctrl+/) Container Change access level Refresh Delete

Search containers by prefix

Name	Last modified	Public access level	Lease state
You don't have any containers yet. Click '+ Container' to get started.			

Name * startrek

Public access level Private (no anonymous access)

Create Discard

Access keys

Geo-replication

CORS

Configuration

Encryption

Shared access signature

Firewalls and virtual networks

Private endpoint connections

Advanced security

Properties

Locks

Export template

Blob service

Containers

Custom domain

Data protection

Azure CDN

Add Azure Search

Lifecycle Management

Monitoring

Insights

Alerts

Metrics

Workbooks

Advisor recommendations

New container

examproblobstorage | Container + portal.azure.com/#@azureexampro.onmicrosoft.com/resource/subscriptions/01e4963a-16c4-4154-b4e6-33fd85b97d40/resourcegroups/exampro/providers/Microsoft.Storage/storageAccounts/examproblobstorage/containersList

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > Microsoft.StorageAccount-20200607223624 | Overview >

examproblobstorage | Containers

Storage account

Search (Ctrl+ /) + Container Change access level Refresh Delete

Search containers by prefix

Name	Last modified	Public access level	Lease state	...
<input type="checkbox"/> startrek	6/7/2020, 10:38:28 PM	Private	Available	...

Access keys
Geo-replication
CORS
Configuration
Encryption
Shared access signature
Firewalls and virtual networks
Private endpoint connections
Advanced security
Properties
Locks
Export template

Blob service

Containers Custom domain Data protection Azure CDN Add Azure Search Lifecycle Management

Monitoring

Insights Alerts Metrics Workbooks Advisor recommendations

Successfully created storage container 10:38 PM
Successfully created storage container 'startrek'.

startrek - Microsoft Azure

portal.azure.com/#blade/Microsoft_Azure_Storage/ContainerMenuBlade/overview/storageAccountId/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Storage%2FstorageAccounts...

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > examproblobstorage | Containers >

startrek Container

Search (Ctrl+ /) Upload Change access level Refresh Delete Change tier Acquire lease Break lease View snapshots Create snapshot

Authentication method: Access key (Switch to Azure AD User Account)
Location: startrek

Search blobs by prefix (case-sensitive)

Show deleted blobs

Access policy Properties Metadata

Name	Modified	Access tier	Blob type	Size	Lease state
No results					

Upload blob - Microsoft Azure - + portal.azure.com/#blade/Microsoft_Azure_Storage/ContainerMenuBlade/overview/storageAccountId/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Storage%2FstorageAccounts... starrek

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

Home > examproblobstorage | Containers >

startrek Container

Search (Ctrl+/« Upload Change access level Refresh Delete Change tier Acquire lease Break lease View snapshots Create snapshot

Authentication method: Access key (Switch to Azure AD User Account)
Location: startrek

Search blobs by prefix (case-sensitive) Show

Name	Modified	Access tier	Blob type
No results			

Settings

Access policy Properties Metadata

Upload blob x

startrek/

Files (1) "data.jpg" Upload

Overwrite if files already exist

Advanced

Authentication type (1) Azure AD user account Account key

Blob type (1) Block blob ▼

Upload .vhf files as page blobs (recommended)

Block size (1) 4 MB ▼

Access tier (1) Hot (Inferred) ▼

Upload to folder ▼

Upload Upload

startrek - Microsoft Azure

portal.azure.com/#blade/Microsoft_Azure_Storage/ContainerMenuBlade/overview/storageAccountId/%2Fsubscriptions%2F01e4963a-16c4-4154-b4e6-33fd85b97d40%2Fresourcegroups%2Fexampro%2Fproviders%2FMicrosoft.Storage%2FstorageAccounts...

Microsoft Azure Upgrade

Search resources, services, and docs (G+)

Home > examproblobstorage | Containers >

startrek Container

Search (Ctrl+/) Upload Change access level R

Overview

Access Control (IAM)

Authentication method: Access key (Switch to Location: startrek)

Search blobs by prefix (case-sensitive)

Name

data.jpg

Recent services

Show deleted blobs

Storage accounts Function App Virtual machines Virtual networks Monitor Resource groups Subscriptions Multi-Factor Authentication

Recent resources

examproblobstorage Storage account

exampro-vnet Virtual network

Searching all subscriptions. Change

blob function virtual virtual machine vnet

tier	Blob type	Size	Lease state
(Standard)	Block blob	30.33 KiB	Available

Storage accounts - Microsoft Azure

portal.azure.com/#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Storage%2FStorageAccounts

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Storage accounts

Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Delete Feedback

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 1 to 3 of 3 records. No grouping

Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓	Subscription ↑↓	
<input checked="" type="checkbox"/> examproblobstorage	Storage account	BlobStorage	exampro	East US	Free Trial	...
<input type="checkbox"/> examprodiaq721	Storage account	Storage	exampro	East US	Free Trial	...
<input type="checkbox"/> storageaccountexamp8a32	Storage account	Storage	exampro	East US	Free Trial	...

< Previous Page 1 of 1 Next >

Microsoft Azure - Delete Resources - Microsoft Azure

portal.azure.com/#blade/HubsExtension/BrowseResource/resourceType/Microsoft.Storage%2FStorageAccounts

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

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Home > Storage accounts

Default Directory

+ Add Manage view Refresh Export to CSV Assign tags Delete Feedback

Filter by name... Subscription == all Resource group == all Location == all Add filter

Showing 1 to 3 of 3 records.

Name ↑↓	Type ↑↓	Kind ↑↓	Resource group ↑↓	Location ↑↓
<input checked="" type="checkbox"/> examproblobstorage	Storage account	BlobStorage	exampro	East US
<input type="checkbox"/> examprodiaq721	Storage account	Storage	exampro	East US
<input type="checkbox"/> storageaccountexamp8a32	Storage account	Storage	exampro	East US

< Previous Page 1 of 1 Next >

Delete Resources

Deleting 1 resource

Do you want to delete all the selected resources?

⚠ Warning! Deleting the selected storage accounts is irreversible. This will permanently delete the selected storage accounts and their contents. This action cannot be undone. Do you want to continue?

Confirm delete yes

Selected resources examproblobstorage (Storage account)

Delete Cancel



Azure Fundamentals

Follow Alongs

Exploring Azure Cloud Shell



Follow Along

```
PowerShell v | ⚡ ? ⚙️ 📁 🔍 ⌂ 🔍
Your cloud drive has been created in:

Subscription Id: 01e4963a-16c4-4154-b4e6-33fd85b97d40
Resource group: cloud-shell-storage-eastus
Storage account: cs210032000c6a6cb51
File share: cs-azure-exampro-co-10032000c6a6cb51

Initializing your account for Cloud Shell...\n
Requesting a Cloud Shell.Succeeded.\n
Connecting terminal...\n

Welcome to Azure Cloud Shell\n

Type "az" to use Azure CLI\n
Type "help" to learn about Cloud Shell\n

MOTD: To provide feedback about Azure PowerShell, take a look at https://aka.ms/motd\n

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/andrew> █
```

Home - Microsoft Azure +

portal.azure.com/#home

Microsoft Azure Upgrade

Search resources, services, and docs (G+/-)

azure@exampro.co DEFAULT DIRECTORY

Azure services

Create a resource SQL databases Storage accounts Virtual machines Virtual networks Monitor Resource groups Subscriptions Multi-Factor Authentication More services

Recent resources

Name	Type	Last Viewed
examproblobstorage	Storage account	3 minutes ago
exampro-vnet	Virtual network	an hour ago

Navigate

Subscriptions Resource groups All resources Dashboard

Tools

Microsoft Learn Learn Azure with free online training from Microsoft Azure Monitor Monitor your apps and infrastructure Security Center Secure your apps and infrastructure Cost Management Analyze and optimize your cloud spend for free

Useful links

Technical Documentation Find an Azure expert Azure Services Quickstart Center Recent Azure Updates Quickstart Center

Azure mobile app

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<https://portal.azure.com/#>

Home - Microsoft Azure x +

portal.azure.com/#home

Microsoft Azure Upgrade Search resources, services, and docs (G+/-)

azure@exampro.co DEFAULT DIRECTORY

Azure services

Create a resource SQL databases Storage accounts Virtual machines Virtual networks Monitor Resource groups Subscriptions Multi-Factor Authentication More services

Recent resources

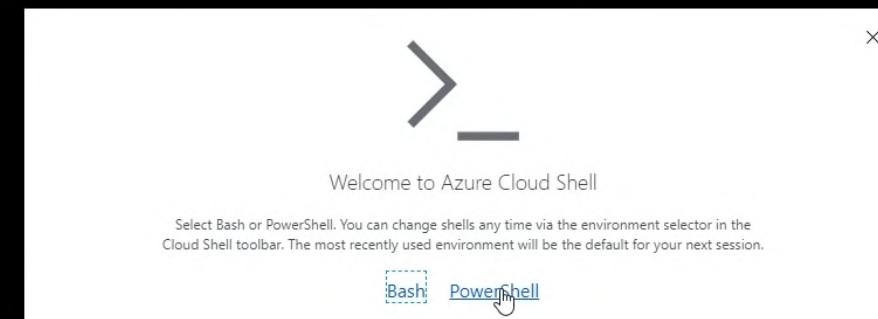
Name	Type	Last Viewed
examproblobstorage	Storage account	3 minutes ago
exampro-vnet	Virtual network	an hour ago

Navigate

Subscriptions Resource groups All resources Dashboard

Tools

Microsoft Learn  Learn Azure with free online training from Microsoft Azure Monitor  Monitor your apps and infrastructure Security Center  Secure your apps and infrastructure Cost Management  Analyze and optimize your cloud spend for free



Welcome to Azure Cloud Shell

Select Bash or PowerShell. You can change shells any time via the environment selector in the Cloud Shell toolbar. The most recently used environment will be the default for your next session.

Bash PowerShell

Home - Microsoft Azure + -

portal.azure.com/#home

Microsoft Azure Upgrade Search resources, services, and docs (G+/-)

azure@exampro.co DEFAULT DIRECTORY

Azure services

Create a resource SQL databases Storage accounts Virtual machines Virtual networks Monitor Resource groups Subscriptions Multi-Factor Authentication More services

Recent resources

Name	Type	Last Viewed
examproblobstorage	Storage account	3 minutes ago
exampro-vnet	Virtual network	an hour ago

Navigate

Subscriptions Resource groups All resources Dashboard

Tools

Microsoft Learn  Learn Azure with free online training from Microsoft Azure Monitor  Monitor your apps and infrastructure Security Center  Secure your apps and infrastructure Cost Management  Analyze and optimize your cloud spend for free

You have no storage mounted X

Azure Cloud Shell requires an Azure file share to persist files. [Learn more](#)

This will create a new storage account for you and this will incur a small monthly cost. [View pricing](#)

* Subscription Show advanced settings

[Create storage](#) [Close](#)

```
PowerShell ✘ | ⌂ ? ⌂ ⌂ {} ⌂
Your cloud drive has been created in:

Subscription Id: 01e4963a-16c4-4154-b4e6-33fd85b97d40
Resource group: cloud-shell-storage-eastus
Storage account: cs210032000c6a6cb51
File share:      cs-azure-exampro-co-10032000c6a6cb51

Initializing your account for Cloud Shell...
Requesting a Cloud Shell.Succeeded.
Connecting terminal...

Welcome to Azure Cloud Shell

Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

clear
MOTD: To provide feedback about Azure PowerShell, take a quick survey: https://aka.ms/azpssurvey?Q\_CHL=SHELL

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/andrew> a
```




Azure Fundamentals

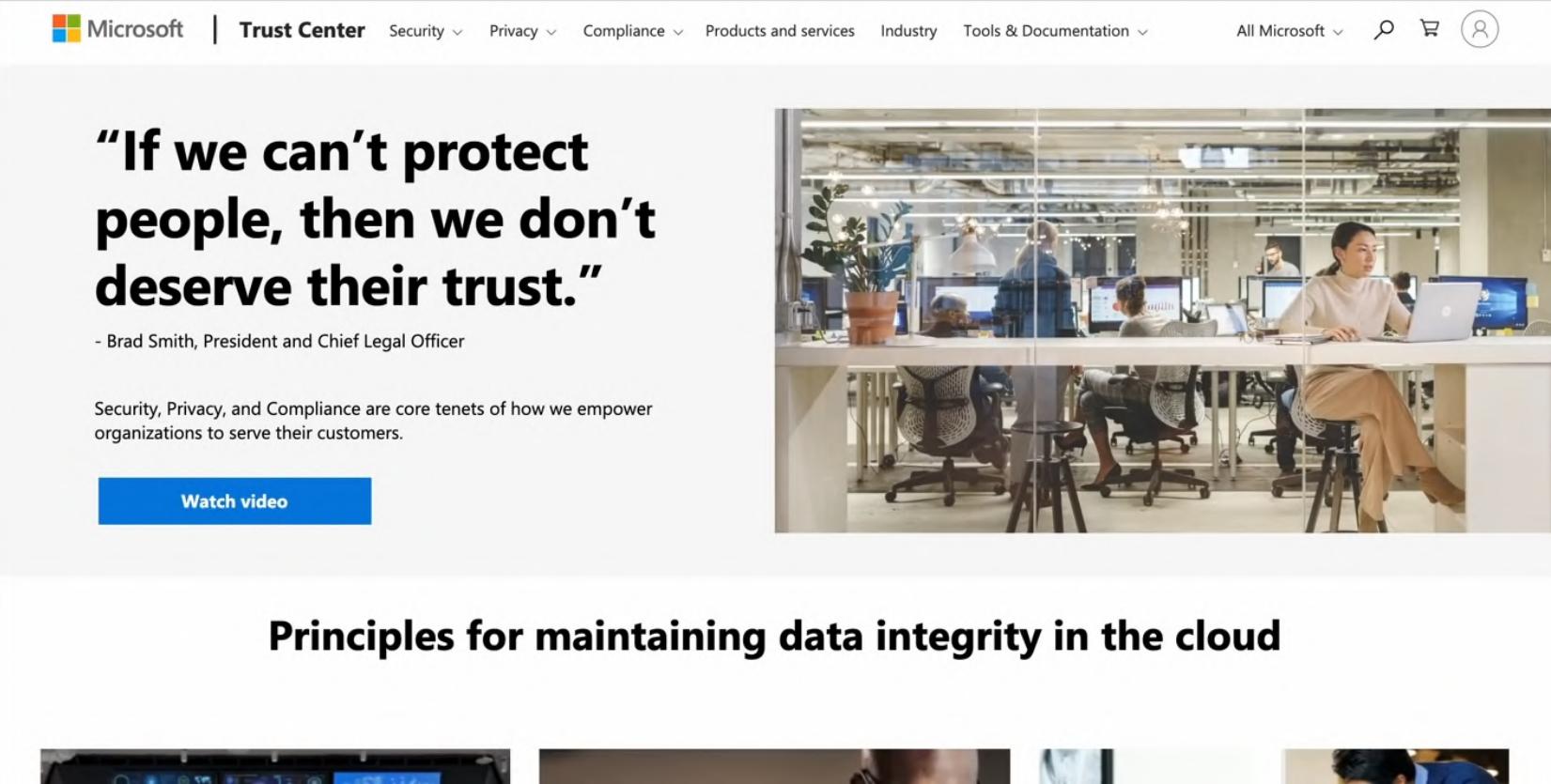
Security

Azure Trust Center

Azure Trust Center

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

A public-facing website portal providing easy access to
privacy and **security** and **regulatory compliance** information.



The screenshot shows the Microsoft Trust Center homepage. At the top, there's a navigation bar with links for Microsoft, Trust Center, Security, Privacy, Compliance, Products and services, Industry, Tools & Documentation, All Microsoft, a search icon, a shopping cart icon, and a user profile icon. Below the navigation, a large quote is displayed: "If we can't protect people, then we don't deserve their trust." - Brad Smith, President and Chief Legal Officer. A paragraph below the quote states: "Security, Privacy, and Compliance are core tenets of how we empower organizations to serve their customers." A blue "Watch video" button is located below this text. To the right of the quote is a photograph of several people working at desks in an office environment. At the bottom of the page, the text "Principles for maintaining data integrity in the cloud" is visible, along with three small thumbnail images.

[Microsoft Azure](#)

[Microsoft 365](#)

[Microsoft Power Platform](#)

[Other products and services](#)



Azure

Get the same security, privacy, and compliance protections used by 95% of Fortune 500 companies.

[Security](#) | [Privacy](#) | [GDPR](#) | [Data location](#) | [Compliance](#) | [Learn more](#)

Azure DevOps Services

Execute projects with security and governance technologies, operational practices, and compliance policies.

[Security](#) | [Privacy](#) | [GDPR](#) | [Data location](#) | [Compliance](#) | [Learn more](#)

Azure Cognitive Services

Meet the additional communications needs of users with the enhanced security and privacy of Azure.

[Security](#) | [Privacy](#) | [GDPR](#) | [Data location](#) | [Compliance](#) | [Learn more](#)

Microsoft 365

[Learn more >](#)

Explore Azure compliance offerings in the Microsoft Trust Center					
Global	US Government	Region / Country Specific	Industry Specific		
CIS Benchmark	CJIS	BIR 2012 (Netherlands)	IT-Grundschutz (Germany)	23 NYCRR 500 (US)	GLBA (US)
CSA STAR Attestation	CNSSI	CS (Germany)	LOPD (Spain)	AFM/DNB (Netherlands)	GxP
CSA STAR Certification	DFARS	CS Mark Gold (Japan)	MeitY (India)	AMF/ACPR (France)	HIPAA (US)
CSA STAR Self-Assessment	DoD I 2.4.5	Cyber Essentials Plus (US)	MTCS Level 3 (Singapore)	APRA (Australia)	HITRUST (US)
ISO 20000	DoE 10	DJCP (China)	My Number Act (Japan)	CDSA	KNF (Poland)
ISO 22301	EAR	EN 301 549 (EU)	New Zealand CC Framework	CFTC 131 (US)	MARS-E (US)
ISO 27001	FDA CFR Title 21	ENISA IAF (EU)	PASE (UK)	DPP (UK)	MAS/ABS (Singapore)
ISO 27017	FedRAMP	ENS (Spain)	PIPEDA (Canada)	EBA (EU)	MPAA (US)
ISO 27701	FIPS 140-2	EU Model Clauses	PDPA (Argentina)	FACT (UK)	NBB/FSMA (Belgium)
ISO 27018	IRS 1075	EU-US Privacy Shield	TISAX (Germany)	FCA/PRA (UK)	NEN 7510 (Netherlands)
ISO 9001	ITAR	GB 18030 (China)	TRUCS (China)	FERPA (US)	NERC
SOC 1,2,3	NIST CSF	G-Cloud OFFICIAL (UK)		FFIEC (US)	OSFI (Canada)
WCAG 2.0	NIST 800-171	GDPR		FINMA (Switzerland)	PCI DSS
	Section 508 VPATs	HDS (France)		FINRA (US)	RBI/IRDAI (India)
		JRAP (Australia)		FISC (Japan)	SEC 17a-4
		JSMS (Korea)		FSA (Denmark)	SEC Regulation SCI
				Shared Assessments	
				SOX (US)	
				TruSight	

[Microsoft Azure](#)

[Microsoft 365](#)

[Microsoft Power Platform](#)

[Other products and services](#)



Azure

Get the same security, privacy, and compliance protections used by 95% of Fortune 500 companies.

[Security](#) | [Privacy](#) | [GDPR](#) | [Data location](#) | [Compliance](#) | [Learn more](#)

Azure DevOps Services

Execute projects with security and governance technologies, operational practices, and compliance policies.

[Security](#) | [Privacy](#) | [GDPR](#) | [Data location](#) | [Compliance](#) | [Learn more](#)

Azure Cognitive Services

Meet the additional communications needs of users with the enhanced security and privacy of Azure.

[Security](#) | [Privacy](#) | [GDPR](#) | [Data location](#) | [Compliance](#) | [Learn more](#)

Microsoft 365

[Learn more >](#)



Azure Fundamentals

Security

Compliance Programs

Azure Security – Compliance Programs

Cheat sheets, Practice Exams and Flash cards ➡ www.exampro.co/az-900

Enterprise Companies WILL NOT BUY your software solutions unless its  secure.

How are you going **to meet their security compliance requirements?**

We'll only do business with you if you are...

- **NIST 800-53**
- **PIPEDA Compliant**
- **HIPPA Compliant**
- **FIPS-140-2 Compliant**



Azure Security – Compliance Programs

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Criminal Justice Information Services (CJIS)

Any US state or local agency that wants to access the FBI's CJIS database is required to adhere to the CJIS Security Policy.



Cloud Security Alliance (CSA) STAR Certification

Independent third-party assessment of a cloud provider's security posture



General Data Protection Regulation (GDPR)

A European privacy law. Imposes new rules on companies, government agencies, non-profits, and other organizations that offer goods and services to people in the European Union (EU), or that collect and analyze data tied to EU residents.



EU Model Clauses

Contractual guarantees around transfers of personal data outside of the EU

Azure Security – Compliance Programs

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Health Insurance Portability and Accountability Act (HIPAA).

US federal law that regulates patient Protected Health Information



International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) 27018.

Code of practice, covering the processing of personal information by cloud service providers.



Multi-Tier Cloud Security (MTCS) Singapore.

Operational Singapore security management Standard. A common standard that cloud service providers (CSPs) can apply to address customer concerns about the security and confidentiality of data in the cloud, and the impact on businesses of using cloud services.



Service Organization Controls (SOC) 1, 2, and 3.

independent third-party examination reports that demonstrate how the company achieves key compliance controls and objectives

Azure Security – Compliance Programs

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF)

Voluntary Framework that consists of standards, guidelines, and best practices to manage cybersecurity-related risks.



UK Government G-Cloud.

Cloud computing certification for services used by government entities in the United Kingdom



Federal Information Processing Standard (FIPS) 140-2

US and Canadian government standard that specifies the security requirements for cryptographic modules that protect sensitive information.



Azure Fundamentals

Security

Azure Active Directory

Azure Active Directory

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

Azure Active Directory (Azure AD) is Microsoft's cloud-based **identity and access management service**, which helps your employees sign in and access resources

External Resources

- Microsoft Office 365
- Azure Portal
- SaaS applications

Internal Resources

- Applications within your internal networking
- Access to workstations on-premise

Use Azure AD to implement **Single-Sign On (SSO)**

Azure Active Directory comes in four editions

1. **Free** MFA, SSO, Basic Security and Usage Reports, User Management
2. **Office 365 Apps** Company Branding, SLA, Two-Sync between On-Premise and Cloud
3. **Premium 1** Hybrid Architecture, Advanced Group Access, Conditional Access
4. **Premium 2** Identity Protection, Identity Governance



Azure Fundamentals

Security

Multi-factor Authentication (MFA)

Multi-Factor Authentication

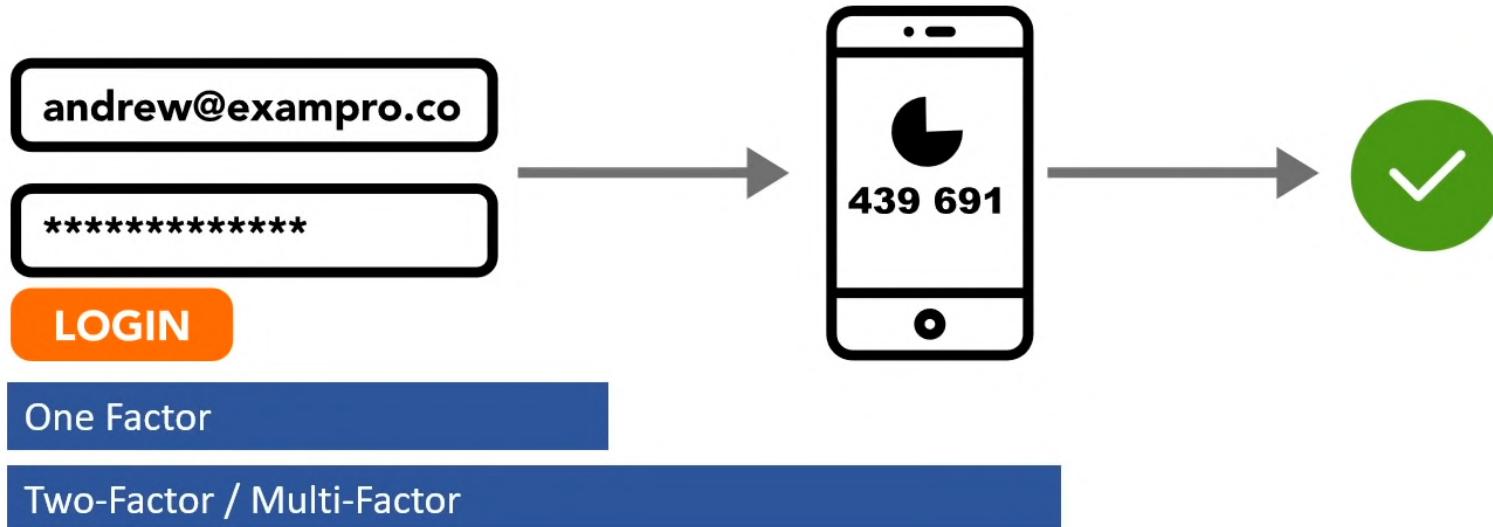
Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

What is Multi-Factor Authentication (MFA)?

A security control where after you fill in your username/email and password **you have to use a second device** such as a phone to confirm that its you logging in.

MFA **protects** against people who have stolen your password.

MFA is an option in most cloud providers and even social media websites such as Facebook.





Azure Fundamentals

Security

Azure Security Center

Azure Security Center

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Azure Security Center is a **unified infrastructure security management system**
It strengthens the security posture of your data centers, and provides advanced threat protection across your hybrid workloads in the cloud.

The screenshot shows the Azure Security Center - Overview page. On the left, a navigation menu includes links for Home, Security Center - Overview, General (Overview, Getting started, Events, Search), Policy & Compliance (Coverage, Secure score, Regulatory compliance, Security policy), Resource Security Hygiene (Recommendations, Compute & apps, Networking, IoT hubs & resources (Preview), Data & storage). The main content area has three main sections: Policy & compliance, Resource security hygiene, and a sidebar with regulatory compliance and review sections.

Policy & compliance

- Secure score: 497 OF 940 (Secure score impact changed. Learn more)
- Regulatory compliance:
 - SOC TSP: 0 of 13 passed controls
 - PCI DSS 3.2: 2 of 33 passed controls
 - ISO 27001: 2 of 22 passed controls
- Subscription coverage: 1 TOTAL, 108 Covered resources (Fully covered: 1, Partially covered: 0, Not covered: 0)

Resource security hygiene

- Recommendations: 35 TOTAL (High Severity: 17, Medium Severity: 8, Low Severity: 10)
 - Unhealthy resources: 79
- Resource health monitoring:
 - Compute & apps: 39
 - Networking: 20
 - Data & storage: 45
 - Identity & access: 4

Regulatory compliance

View your compliance posture relative to the standards and regulations that are important to you. Remediate assessments to watch your compliance posture improve.

Review and improve your secure score

Review and resolve security vulnerabilities to improve your secure score and secure your workload.



Azure Fundamentals

Security

Key Vault

Key Vault

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Azure Key Vault helps you **safeguard cryptographic keys and other secrets** used by cloud apps and services.

Secrets Management

store and tightly control access to **tokens, passwords, certificates, API keys, and other secrets**

Key Management

create and control the **encryption keys** used to encrypt your data

Certificate Management

easily provision, manage, and deploy public and private **SSL certificates** for use with Azure and internal connected resources.

Hardware Security Module

secrets and keys can be protected either by software or **FIPS 140-2 Level 2** validated HSMs

Key Vault

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

An HSM is a **Hardware Security Module**.
Its a piece of hardware designed to store
encryption keys.



Federal Information Processing Standard (FIPS) 140-2

US and Canadian government standard that specifies the security requirements for cryptographic modules that protect sensitive information.

HSM's that are **multi-tenant** are **FIPS 140-2 Compliant**
(multiple customers virtually isolated on an HSM)

HSM's that are **single-tenant** are **FIPS 140-3 Compliant**
(single customer on a dedicated HSM)



Azure Fundamentals

Security

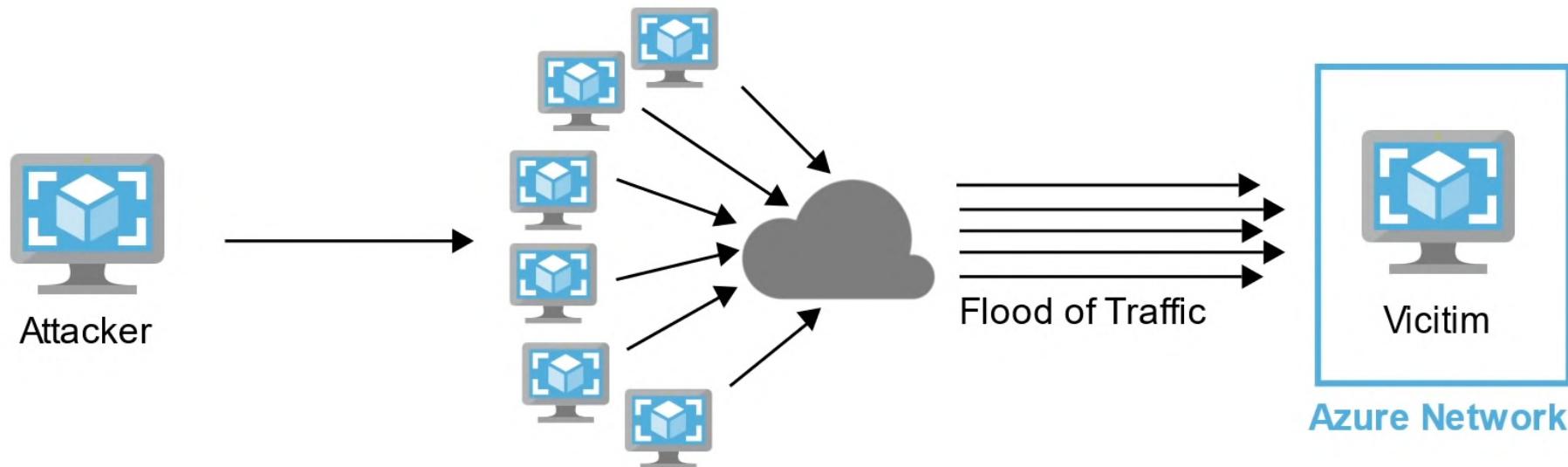
Azure DDoS Protection

Azure DDoS Protection

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What is a DDoS (Distributed Denial of Service) Attack?

A malicious attempt to disrupt normal traffic by flooding a website with large amounts of fake traffic.



Azure DDoS Protection

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

Azure offers **two tiers** of DDoS Protection

DDoS Protection Basic

- Free
- Already turned on protect Azure's global network

DDoS Protection Standard

- Starting at \$2,994/month
- Metrics, Alerts, Reporting
- DDoS Expert Support
- Application and Cost Protection SLAs



Azure Fundamentals

Security

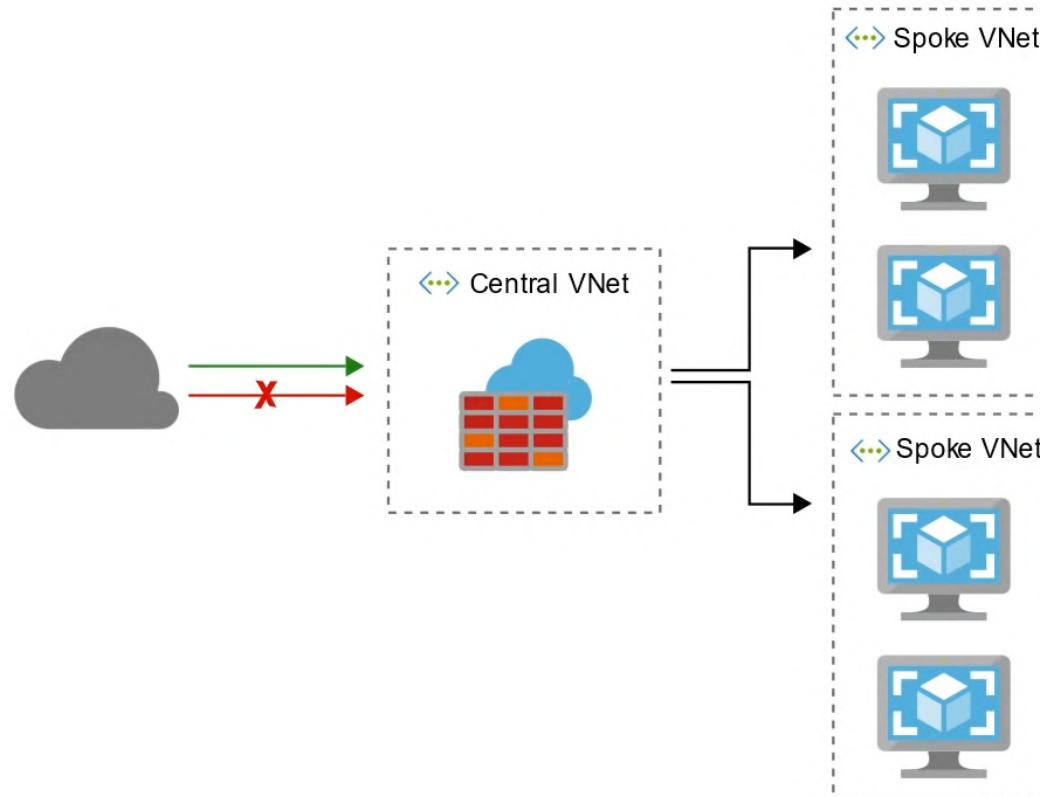
Azure Firewall

Azure Firewall

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900



Azure Firewall is a managed, **cloud-based network security service** that protects your Azure Virtual Network resources.



Azure Firewall

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Azure Firewall Features

- Centrally create, enforce, and log application and network connectivity policies **across subscriptions** and virtual networks.
- Uses a **static public IP address** for your virtual network resources allowing outside firewalls to identify traffic originating from your virtual network
- High availability is built in, **no additional load balancers are required**
- Can configure during deployment to **span multiple AZs for increased availability.**
- There's **no additional cost** for a firewall deployed in an Availability Zone (AZ)
- There are **additional costs for inbound and outbound data transfers** associated with AZs



Azure Fundamentals

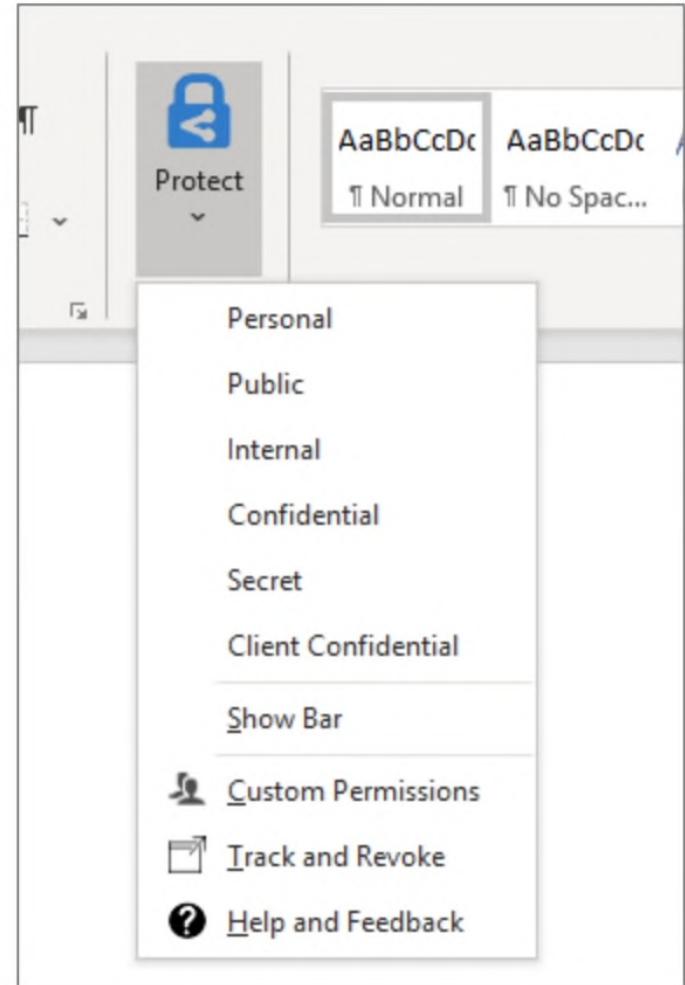
Security

Azure Information Protection

Azure Information Protection (AIP)

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Protects sensitive information such as emails and documents with encryption, restricted access and rights, and integrated security in Office apps





Azure Fundamentals

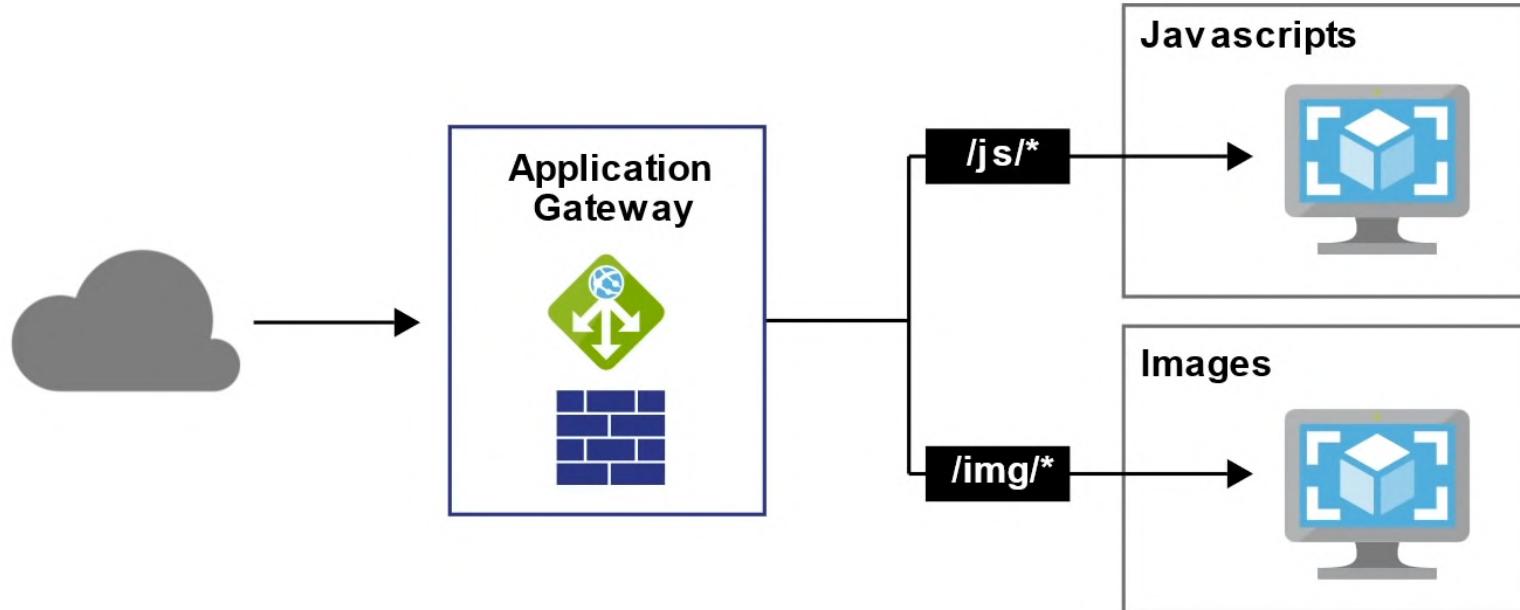
Security

Application Gateway

Azure Application Gateway

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Application Gateway is a **web-traffic load balancer** (Layer 7 HTTP) that re-route traffic based on a set of rules. A Web Application Firewall (WAF) can be attached for additional protection on OSI Layer 7.





Azure Fundamentals

Security

Advanced Threat Protection (ATP)

Azure Advanced Threat Protection (ATP)

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What is IDS/IPS?

Intrusion Detection System and Intrusion Protection System

A device or software application that monitors a network or systems for malicious activity or policy violations.



Azure Advanced Threat Protection (ATP) is a cloud-based security solution that **leverages your on-premises Active Directory signals to identify, detect, and investigate advanced threats, compromised identities, and malicious** insider actions directed at your organization.



Azure Fundamentals

Security

Microsoft Security Development Lifecycle (SDL)

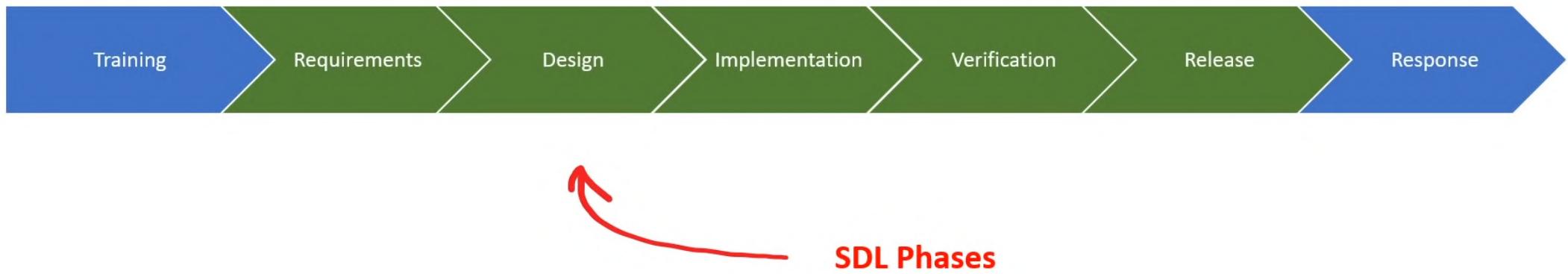
Microsoft Security Development Lifecycle (SDL)

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

**Microsoft Security Development Lifecycle (SDL) is
an industry-leading software security assurance process.**

A Microsoft-wide initiative and a mandatory policy since 2004, the SDL has played a critical role in embedding security and privacy in Microsoft software and culture.

Building security into each **SDL phase** of the development lifecycle helps you catch issues early, and it helps you reduce your development costs.





Azure Fundamentals

Security

Azure Policies

Azure Security – Policies

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Azure Policy is a service you can use to create, assign, and manage policies. A policy allows you to enforce or control the properties of a resource

Azure Policy evaluates resources in Azure by comparing the properties of those resources to business rules. These business rules, described in **JSON** format, are known as **Policy Definitions**.



Azure Fundamentals

Security

Role-Based Access Control (RBAC)

Azure Role-Based Access Control (RBAC)

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Azure role-based access control (Azure RBAC) helps you manage **who has access to Azure resources**, what they can do with those resources, and what areas they have access to.

Role Assignments the way you control access to resources

A Role Assignment is consist of these three elements

1. security principal
2. role definition
3. scope

Azure Role-Based Access Control (RBAC)

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A Security Principal represents the identities requesting access to an Azure resource such as:

User An individual who has a profile in Azure Active Directory

Group A set of users created in Azure Active Directory.

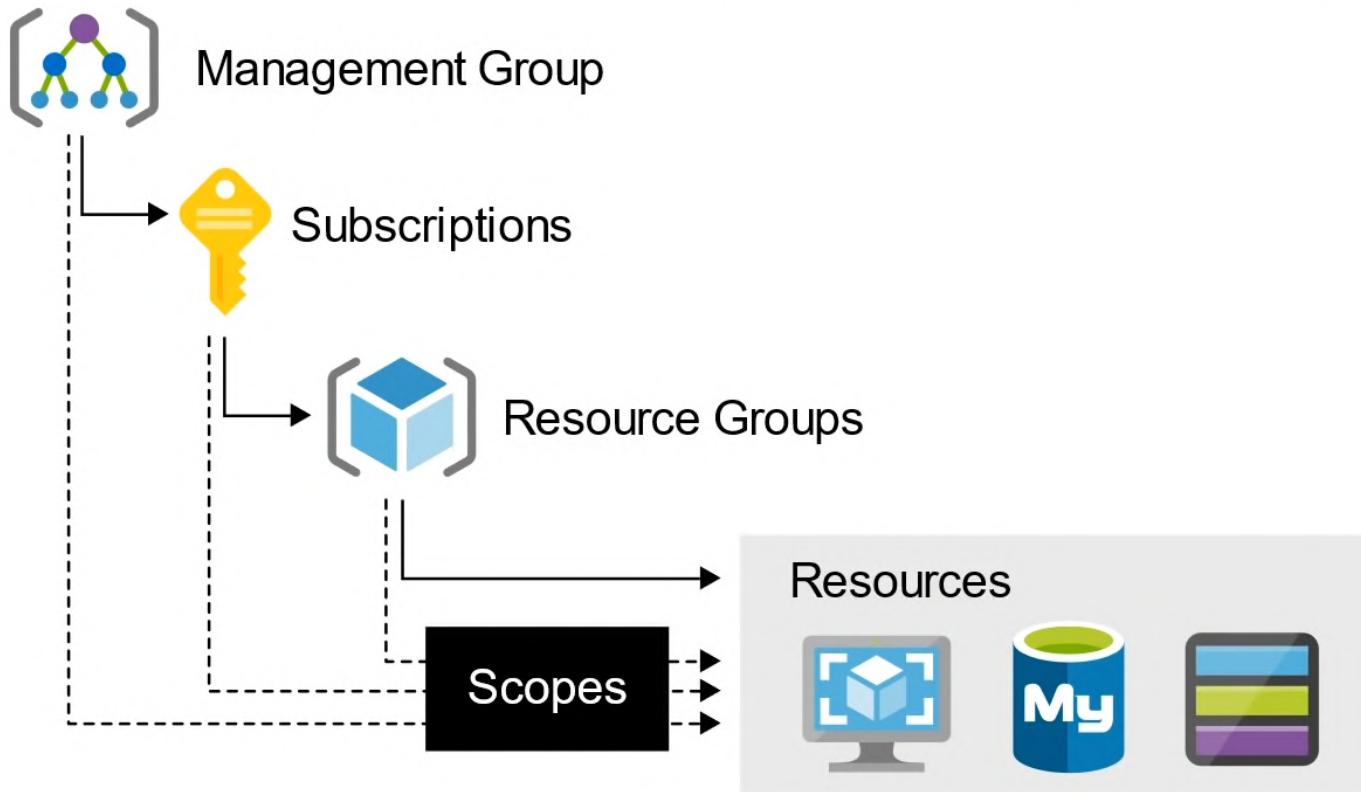
Service Principal A security identity used by applications or services to access specific Azure resources.

Managed identity An identity in Azure Active Directory that is automatically managed by Azure.

Azure Role-Based Access Control (RBAC)

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Scope is the **set of resources** that access for the Role Assignment applies to.
Scope Access Controls at the Management, Subscription or Resource Group level.



Azure Role-Based Access Control (RBAC)

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A Role Definition is a collection of permissions.

A role definition lists the operations that can be performed, such as **read, write, and delete**.
Roles can be high-level, like owner, or specific, like virtual machine reader.

Azure has **built-in roles** and you can define **custom roles**



	Read	Grant	Create, Update, Delete
Owner	Green	Green	Green
Contributor	Green	Red	Green
Reader	Green	Red	Red
User Access Administrator	Red	Green	Red

These are the four fundamental built-in role



Azure Fundamentals

Security

Lock resources

Lock resources

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As an admin, you may need to **lock a subscription, resource group, or resource** to **prevent other users from accidentally deleting or modifying critical resources.**

In the **Azure Portal** you can set the following lock levels.

CanNotDelete (Delete)

authorized users can still read and modify a resource, but they can't delete the resource.

ReadOnly (Read-only)

authorized users can read a resource, but they can't delete or update the resource



Azure Fundamentals

Security

Management Groups

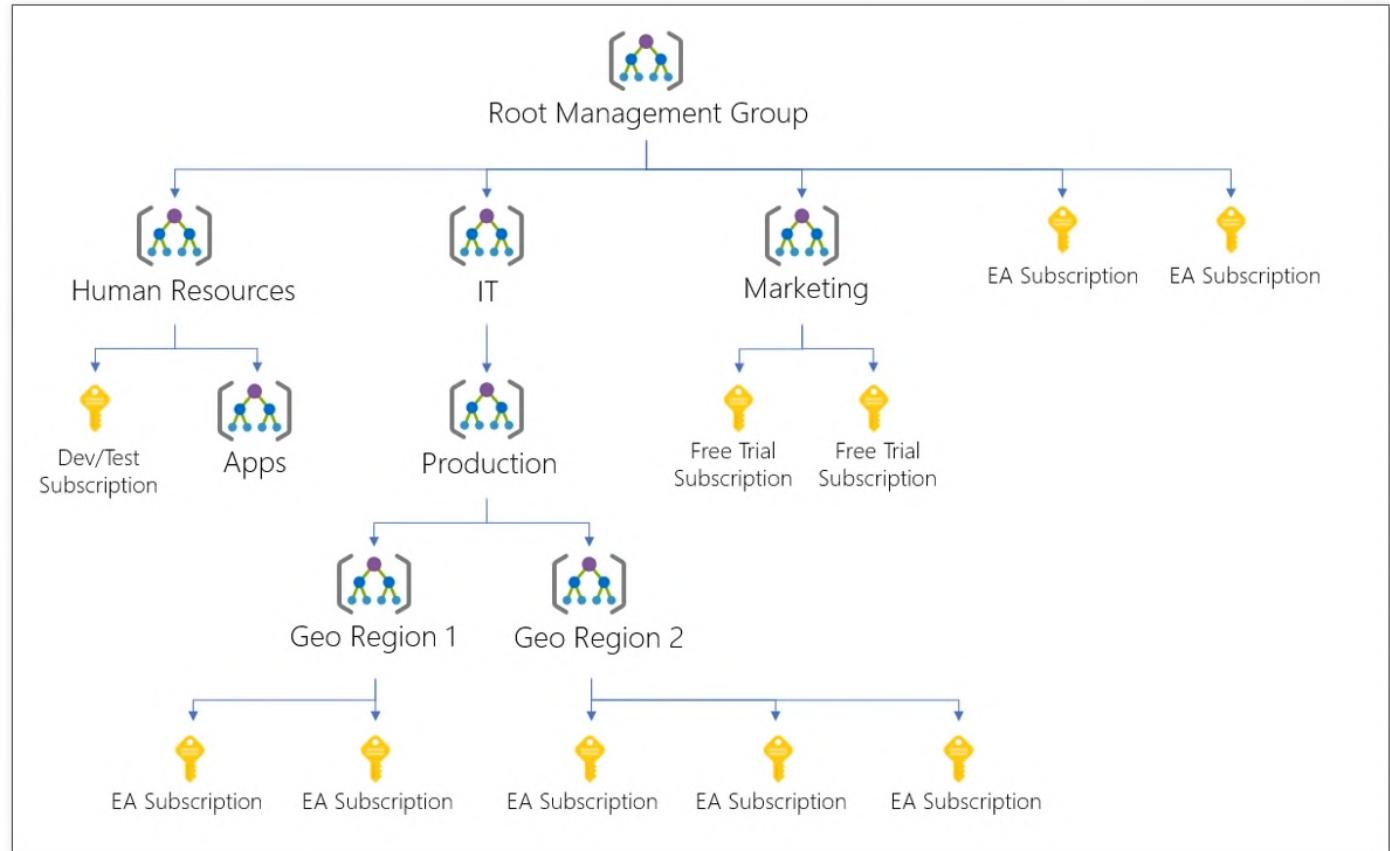
Azure Management Groups

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Managing multiple subscriptions (accounts) into a hierachal structure.

Each directory is given a single top-level management group called the "Root" management group.

All subscriptions within a management group automatically inherit the conditions applied to the management group.





Azure Fundamentals

Security

Azure Monitor

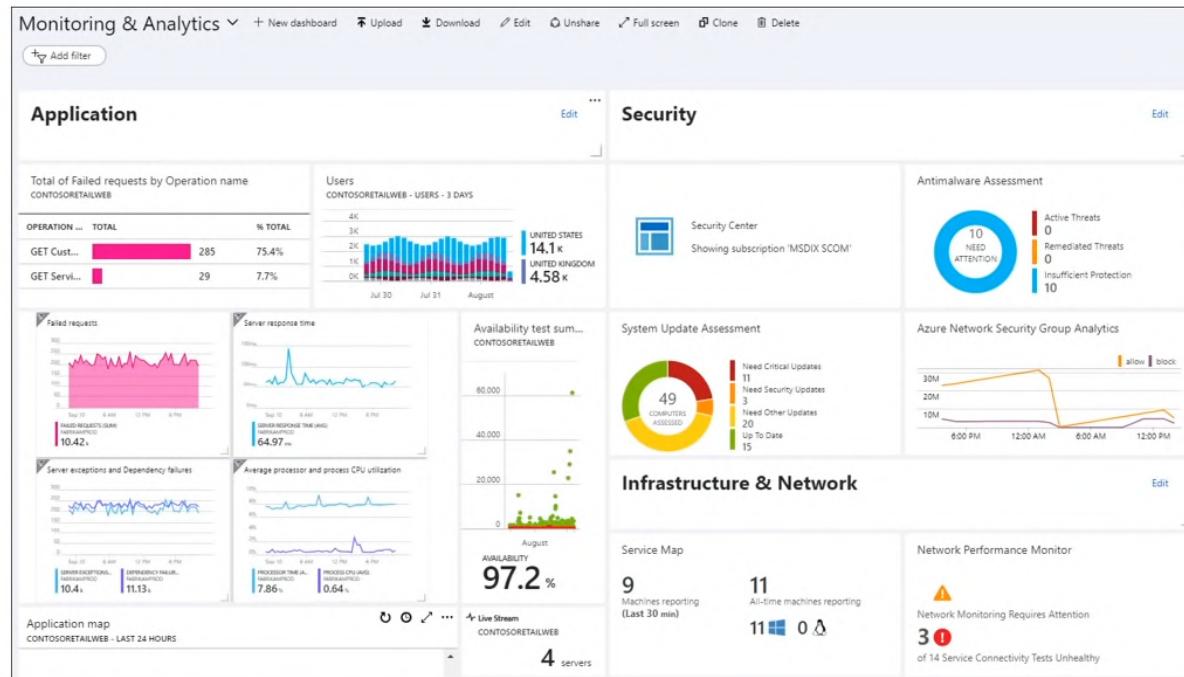
Azure Monitor

Cheat sheets, Practice Exams and Flash cards ➡ www.exampro.co/az-900



Azure Monitor comprehensive solution **for collecting, analyzing, and acting on telemetry** from your cloud and on-premises environments

- ⌚ Overview
- 💻 Activity log
- ❗ Alerts
- 📊 Metrics
- 🌐 Logs
- ❤️ Service Health
- 📁 Workbooks



- Create Visual Dashboards
- Smart Alerts
- Automated Actions
- Log Monitoring



Azure Fundamentals

Security

Service Health

Azure Service Health

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Information about **current and upcoming issues** such as:

- service impacting events
- planned maintenance
- and other changes that may affect your availability.

1. **Azure Status** informs you of service outages in Azure
2. **Azure service health** a personalized view of the health of the Azure services and regions you're using.
3. **Azure resource health** information about the health of your individual cloud resources eg. VM



Azure Fundamentals

Security

Azure Advisor

Azure Advisor

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Azure Advisor is a personalized cloud consultant that helps you follow best practices to optimize your Azure deployments.

The Advisor dashboard displays personalized recommendations for all your subscriptions for the following 5 categories:

1. High Availability
2. Security
3. Performance
4. Cost
5. Operational Excellence





Azure Fundamentals

Billing and Pricing

Service Level Agreements

Pricing and Support – SLAs

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Service Level Agreement (SLA) describes Azure's commitments for **uptime** and **connectivity**

SLA's are individualized per Azure service

Uptime and connectivity is described as **Performance Targets**

A Performance Target is represented as a **percentage %**.

- 99% (two nines)
- 99.9% (three nines)
- 99.999% (five nines)
- 99.999999% (nine nines)

Azure does not provide SLAs for Free Tier or the shared tiers.

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Service-level Agreements

Read the SLAs to learn about our uptime guarantees and downtime credit policies

The Service Level Agreement (SLA) describes Microsoft's commitments for uptime and connectivity. The SLAs for individual Azure services are listed below.

 [AI + Machine Learning](#)[Internet of Things](#)[Analytics](#)[Management](#)[Blockchain](#)[Media](#)[Compute](#)[Migration](#)[Containers](#)[Mobile](#)[Databases](#)[Networking](#)[Developer Tools](#)[Storage](#)[DevOps](#)[Security](#)[Hybrid](#)[Web](#)[Identity](#)[Windows Virtual Desktop](#)[Integration](#)

Databases

Azure Cosmos DB

Globally distributed multi-model database for any scale

Azure Database for MySQL

Managed MySQL database service for app developers

Azure Database for PostgreSQL

Managed PostgreSQL database service for app developers

Azure Cache for Redis

Power applications with high-throughput, low-latency data access

Azure SQL Database

Managed, intelligent SQL in the cloud

Azure Database for MariaDB

Managed MariaDB database service for app developers

Azure Synapse Analytics

Limitless analytics service with unmatched time to insight (formerly SQL Data Warehouse)

[LEGAL: SERVICE LEVEL AGREEMENTS](#) / Azure DNS

SLA for Azure DNS

Last updated: May 2018

We guarantee that valid DNS requests will receive a response from at least one Azure DNS name server 100% of the time.

Introduction



This Service Level Agreement for Microsoft Online Services (this "SLA") is a part of your Microsoft volume licensing agreement (the "Agreement"). Capitalized terms used but not defined in this SLA will have the meaning assigned to them in the Agreement. This SLA applies to the Microsoft Online Services listed herein (a "Service" or the "Services"), but does not apply to separately branded services made available with or connected to the Services or to any on-premises software that is part of any Service.

If we do not achieve and maintain the Service Levels for each Service as described in this SLA, then you may be eligible for a credit towards a portion of your monthly service fees. We will not modify the terms of your SLA during the initial term of your subscription; however, if you renew your subscription, the version of this SLA that is current at the time of renewal will apply throughout your renewal term. We will provide at least 90 days' notice for adverse material changes to this SLA.

General Terms



Definitions

"Applicable Monthly Period" means, for a calendar month in which a Service Credit is owed, the number of days that you are a subscriber for a Service.

"Applicable Monthly Service Fees" means the total fees actually paid by you for a Service that are applied to the month in which a Service Credit is owed.



Azure Fundamentals

Billing and Pricing

Service Credits

Pricing and Support – Service Credits

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Service Credits

customers may **have a discount applied to their Azure bill, as compensation for an under-performing Azure product or service** based on the SLA.



Azure Virtual Machine Service Credit Calculation

Monthly Uptime %	Service Credit %
< 99.9	10
< 99	25
< 95	100



Azure Fundamentals

Billing and Pricing

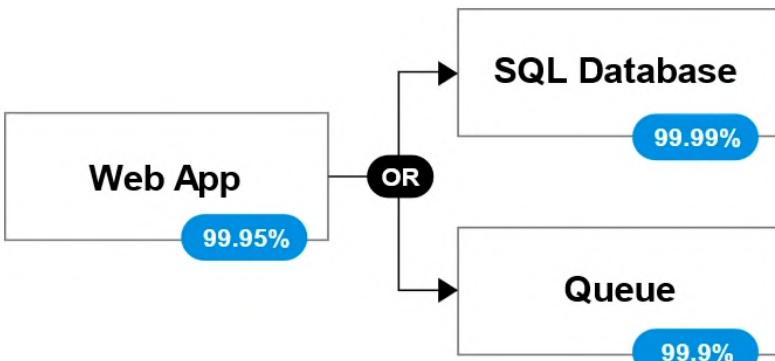
Composite SLAs

Pricing and Support – Composite SLA

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Different services have different SLAs.

A Composite SLA is when you **combine** SLAs across different service offerings.



The real SLA for a Web-App + SQL Database would be:
 $99.95\% \times 99.99\% = 99.94\%$.

Fallback systems will improve overall SLA.

Imagine SQL Database was down but you had a queue
Saving transactions attempts from Web App to Queue to write to DB.
Web app *and* (database *or* queue) = $99.95\% \times 99.99999\% = \sim 99.95\%$



Azure Fundamentals

Billing and Pricing

TCO Calculator

Pricing and Support – TCO Calculator

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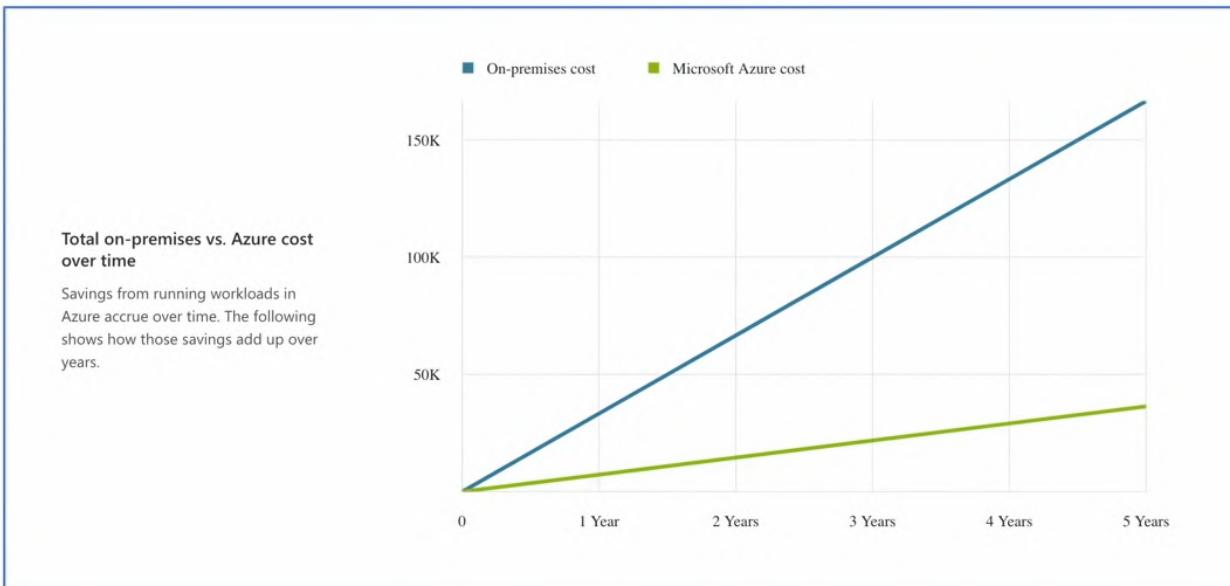
Estimate the cost savings you can realize by migrating your workloads to Azure

Generate out a detailed report and export as a PDF to send to decision makers.

azure.microsoft.com/pricing/calculator

Over 5 year(s) with Microsoft Azure, your estimated cost savings could be as

much as **\$130,191**



DEV Notifications - DEV Community x Total Cost of Ownership (TCO) C +

azure.microsoft.com/en-us/pricing/tco/calculator/

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Estimate the cost savings you can realize by migrating your workloads to Azure

1 Define your workloads 2 Adjust assumptions 3 View report

0 My saved reports

Define your workloads

Enter the details of your on-premises workloads. This information will be used to understand your current TCO and recommended services in Azure.

Servers

Enter the details of your on-premises server infrastructure. After adding a workload, select the workload type and enter the remaining details.

Workload	Environment	Operating system	Servers	Procs per server	Core(s) per proc
Windows/Linux Server	Physical Servers	Linux	10 (1 - 9999)	4 (1 - 4)	4 (1 - 8)
RAM (GB)	Optimize by	GPU			
8 (1 - 448)	CPU	None			

+ Add server workload

Databases

Enter the details of your on-premises database infrastructure. After adding a database, enter the details of your on-premises database infrastructure in the Source section. In the Destination section, select the Azure service you would like to use.

Source	Destination
MyDatabases	

Chat with Sales

azure.microsoft.com/en-us/pricing/tco/calculator/

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Storage

Enter the details of your on-premises storage infrastructure. After adding storage, select the storage type and enter the remaining details.

MyStorage

Storage type	Disk type	Capacity	Backup	Archive
Local Disk/SAN	HDD	3 TB (1 - 5000)	2 TB (0 - 5000)	1 TB (0 - 5000)

Add storage

Networking

Enter the amount of network bandwidth you currently consume in your on-premises environment.

Outbound bandwidth

5 GB (1 - 2000)

Next

Help us improve. Is the TCO calculator helpful?

DEV Notifications - DEV Community Total Cost of Ownership (TCO) +

azure.microsoft.com/en-us/pricing/tco/calculator/

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Define your workloads Adjust assumptions View report

My saved reports

Adjust assumptions

The following assumptions in the TCO model are industry averages accredited by Nucleus Research. To get a more accurate TCO report, update and customize these values to reflect your situation, which can vary by industry and location.

Currency

Software Assurance coverage (provides Azure Hybrid Benefit)

Enable this if you have purchased this benefit for your on-premises Windows or SQL Servers. If enabled, Azure Hybrid Benefit (AHB) will be applied to Azure estimates. AHB helps you get more value from your on-premises licenses — save up to 40 percent on virtual machines and up to 82 percent with Azure Reserved Virtual Machines (VM) instances.

Windows Server Software Assurance coverage

SQL Server Software Assurance coverage

[Learn more about Software Assurance >](#) [Learn more about Azure Hybrid Benefit >](#)

Geo-redundant storage (GRS)

GRS replicates your data to a secondary region that is hundreds of miles away from the primary region.

[Learn more about GRS >](#)

Virtual Machine costs

Enable this for the Calculator to not recommend Bs-series virtual machines

[Learn more about Bs-series virtual machines >](#)

Chat with Sales

DEV Notifications - DEV Community Total Cost of Ownership (TCO) +

azure.microsoft.com/en-us/pricing/tco/calculator/

Overview Solutions Products Documentation **Pricing** Training Marketplace Partners Support Blog More Portal [Free account >](#)

Storage procurement cost/USD for block storage
Annual enterprise storage software support cost
Cost per tape drive

0.4 USD
10 %
262.1 USD

IT labor costs

Number of physical servers that can be managed by a full time administrator 100

Number of virtual machines that can be managed by a full time administrator 120

Hourly rate for IT administrator 37.68 USD

Other assumptions

The following assumptions also affect the TCO model, but typically require less adjustment by customers. You can come back to this section at any time and adjust the assumptions.

- [Hardware costs](#)
- [Software costs](#)
- [Electricity costs](#)
- [Virtualization costs](#)
- [Data center costs](#)
- [Networking costs](#)
- [Database costs](#)
- [Datawarehouse costs](#)

[Back](#) [Next](#)

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4 Proc, 8 Core/Proc, 224 GB RAM	38882.51	USD
4 Proc, 8 Core/Proc, 448 GB RAM	44982.3	USD
2 Proc, 6 Core/Proc, 64 GB RAM	14427.75	USD
2 Proc, 8 Core/Proc, 64 GB RAM	23109.6	USD
2 Proc, 10 Core/Proc, 128 GB RAM	23142.4	USD
2 Proc, 16 Core/Proc, 256 GB RAM	35658.14	USD
2 Proc, 32 Core/Proc, 1000 GB RAM	57942	USD
4 Proc, 32 Core/Proc, 2000 GB RAM	161849.3	USD
Repurchase hardware cost as % of hardware cost	80	%
Hardware maintenance cost as a % of hardware cost	20	%
K80 cost	8192	USD
M60 cost	9830.4	USD

 [Software costs](#) [Electricity costs](#) [Virtualization costs](#) [Data center costs](#) [Networking costs](#) [Database costs](#) [Datawarehouse costs](#)[Back](#)[Next](#) [Chat with Sales](#)

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Overview

Solutions

Products ▼

Documentation

Pricing

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Marketplace

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Blog

More ▼Free account >

Total Cost of Ownership (TCO) Calculator

Estimate the cost savings you can realize by migrating your workloads to Azure

- 1 Define your workloads
- 2 Adjust assumptions
- 3 View report

 [My saved reports](#)[View report](#)Timeframe ⓘ

5 Years

1 Year selected

2 Years

3 Years

4 Years

5 Years

Region ⓘ

East US

Licensing program ⓘ

Microsoft Online Services Program

Over 5 year(s) with Microsoft Azure, your estimated cost savings could be as

much as **\$666,158**

[Chat with Sales](#)

[Compute cost](#)

Azure compute cost

[Data center cost](#)

Azure data center cost

[Networking cost](#)

Azure networking cost

[Storage cost](#)

Azure storage cost

[IT labor cost](#)

Azure IT labor cost

Total on-premises cost over one year(s)

\$432,569.00

Total Azure cost over one year(s)

\$51,242.00

A total **savings** of **\$381,327.00** with Microsoft Azure[Download](#)[Share](#)[Save](#)[Contact me](#)[Create a free account](#)[Back](#)

Create your Azure free account
and start exploring as you plan
your migration



Estimate your expected monthly bill using our Azure pricing calculator.



Azure Fundamentals

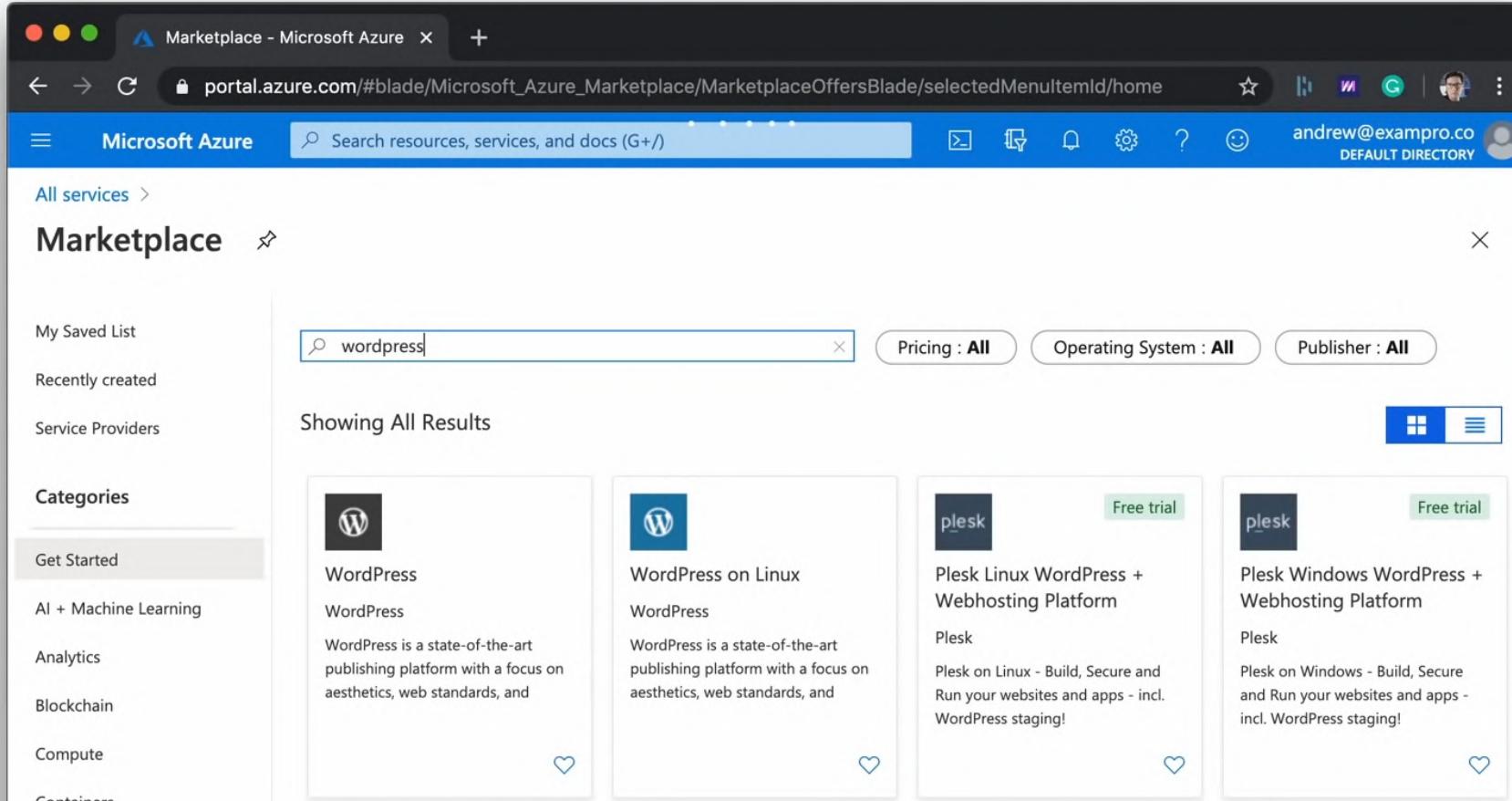
Billing and Pricing

Azure Marketplace

Azure Marketplace

Cheat sheets, Practice Exams and Flash cards  www.exampro.co/az-900

Azure Marketplace are **apps and services** made available by **third-party publishers** to quickly get started.
The available apps and services can be Free, Free-Trial, Pay-As-You-Go, Bring-Your-Own-License (BYOL)



The screenshot shows the Microsoft Azure Marketplace interface. The search bar at the top contains the text "wordpress". Below the search bar, there are three filter buttons: "Pricing : All", "Operating System : All", and "Publisher : All". The main area displays four search results:

Image	Name	Status	Description
	WordPress		WordPress is a state-of-the-art publishing platform with a focus on aesthetics, web standards, and
	WordPress on Linux		WordPress is a state-of-the-art publishing platform with a focus on aesthetics, web standards, and
	Plesk Linux WordPress + Webhosting Platform	Free trial	Plesk on Linux - Build, Secure and Run your websites and apps - incl. WordPress staging!
	Plesk Windows WordPress + Webhosting Platform	Free trial	Plesk on Windows - Build, Secure and Run your websites and apps - incl. WordPress staging!

On the left sidebar, under "Categories", "Get Started" is selected. Other categories listed include AI + Machine Learning, Analytics, Blockchain, Compute, and Containers.

Home - Microsoft Azure x +

portal.azure.com/#home

Microsoft Azure Upgrade

marketp

Marketplace

Services

- Marketplace
- Classic Dev Services
- Cost Management + Billing
- Managed applications center (preview)

Resources

No results were found.

Recent resources

Name

- examproblobstorage
- exampro-vnet

Searching all subscriptions. Change

Virtual network

15 hours ago

Marketplace

See all

- Marketplace_test_offer
- marketplace_vm_test
- ServiceChannel Marketplace Offering
- DHS Through Azure Marketplace

Documentation

No results were found.

Resource Groups

No results were found.

Navigate

Subscriptions

Resource groups

All resources

Dashboard

Tools

Microsoft Learn Learn Azure with free online training from Microsoft

Azure Monitor Monitor your apps and infrastructure

Security Center Secure your apps and infrastructure

Cost Management Analyze and optimize your cloud spend for free

Useful links

Technical Documentation Find an Azure expert

Azure Services Find an Azure expert

Recent Azure Updates Quickstart Center

Azure mobile app

Download on the App Store

GET IT ON Google Play

azure@exampro.co

DEFAULT DIRECTORY

https://portal.azure.com

Marketplace - Microsoft Azure

portal.azure.com/#blade/Microsoft_Azure_Marketplace/MarketplaceOffersBlade/selectedMenuItemId/home

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Marketplace

My Saved List Recently created Service Providers

Categories

- Get Started
- AI + Machine Learning
- Analytics
- Blockchain
- Compute
- Containers
- Databases
- Developer Tools
- DevOps
- Identity
- Integration
- Internet of Things
- IT & Management Tools
- Media
- Mixed Reality
- Networking
- Security
- Software as a Service (SaaS)
- Storage
- Web

Showing All Results

Search: wordpress Pricing : All Operating System : All Publisher : All

 WordPress WordPress WordPress is a state-of-the-art publishing platform with a focus on aesthetics, web standards, and security.	 WordPress on Linux WordPress WordPress is a state-of-the-art publishing platform with a focus on aesthetics, web standards, and security.	 WordPress Multi-Tier Bitnami Production ready, up-to-date, and secure.	 Free trial Plesk Linux WordPress + Webhosting Platform Plesk Plesk on Linux - Build, Secure and Run your websites and apps - incl. WordPress staging!	 WordPress (LEMP) Websoft9 Websoft9 WordPress stack is a pre-configured, ready to run image for running WordPress on Azure	 Free trial Plesk Windows WordPress + Webhosting Platform Plesk Plesk on Windows - Build, Secure and Run your websites and apps - incl. WordPress staging!	 WordPress Certified by Bitnami Bitnami Up-to-date, secure, and ready to run.
 WordPress (LAMP) Websoft9 Websoft9 WordPress stack is a pre-configured, ready to run image for running WordPress on Azure	 Plesk WordPress Edition PREMIUM Plesk Build, secure and run better websites, domains and applications. Plus WordPress staging /cloning.	 WordPress Container Image Bitnami Up-to-date, customizable, and secure.	 WordPress Multisite Certified by Bitnami Bitnami Up-to-date, secure, and ready to run.	 WordPress with NGINX Container Image Bitnami Up-to-date, customizable, and secure.	 Wordpress with Windows Server 2019 Cognosys Inc. Wordpress with Windows Server 2019	 WordPress with Azure Database for MariaDB Bitnami Up-to-date, secure, and enterprise-ready solution with a fully-managed Azure DB.
 OpenLiteSpeed WordPress LiteSpeed Technologies Blazing-fast WordPress with LSCache, ready to use in production	 WordPress with NGINX and SSL Certified by Bitnami Bitnami Up-to-date, secure, and ready to run.	 wordpress 4.9.7 Miri Infotech Pvt. Ltd. Wordpress - Blog Tool, Publishing Platform, and CMS	 Wordpress LEMP Max Performance Jetware Wordpress 4 running on optimized LEMP stack with the latest PHP 7	 Secured WordPress on CentOS 7.3 Cognosys Inc. 1 cent/hr in CentOS 7.3	 Secured Wordpress on Ubuntu 14.04 LTS Cognosys Inc. 1 cent/hr in Ubuntu kernel.	

WordPress - Microsoft Azure

portal.azure.com/#blade/Microsoft_Azure_Marketplace/MarketplaceOffersBlade/selectedMenuItemId/home

Microsoft Azure Upgrade Search resources, services, and docs (G+/)

azure@exampro.co DEFAULT DIRECTORY

Home > Marketplace >

WordPress

WordPress

WordPress Save for later

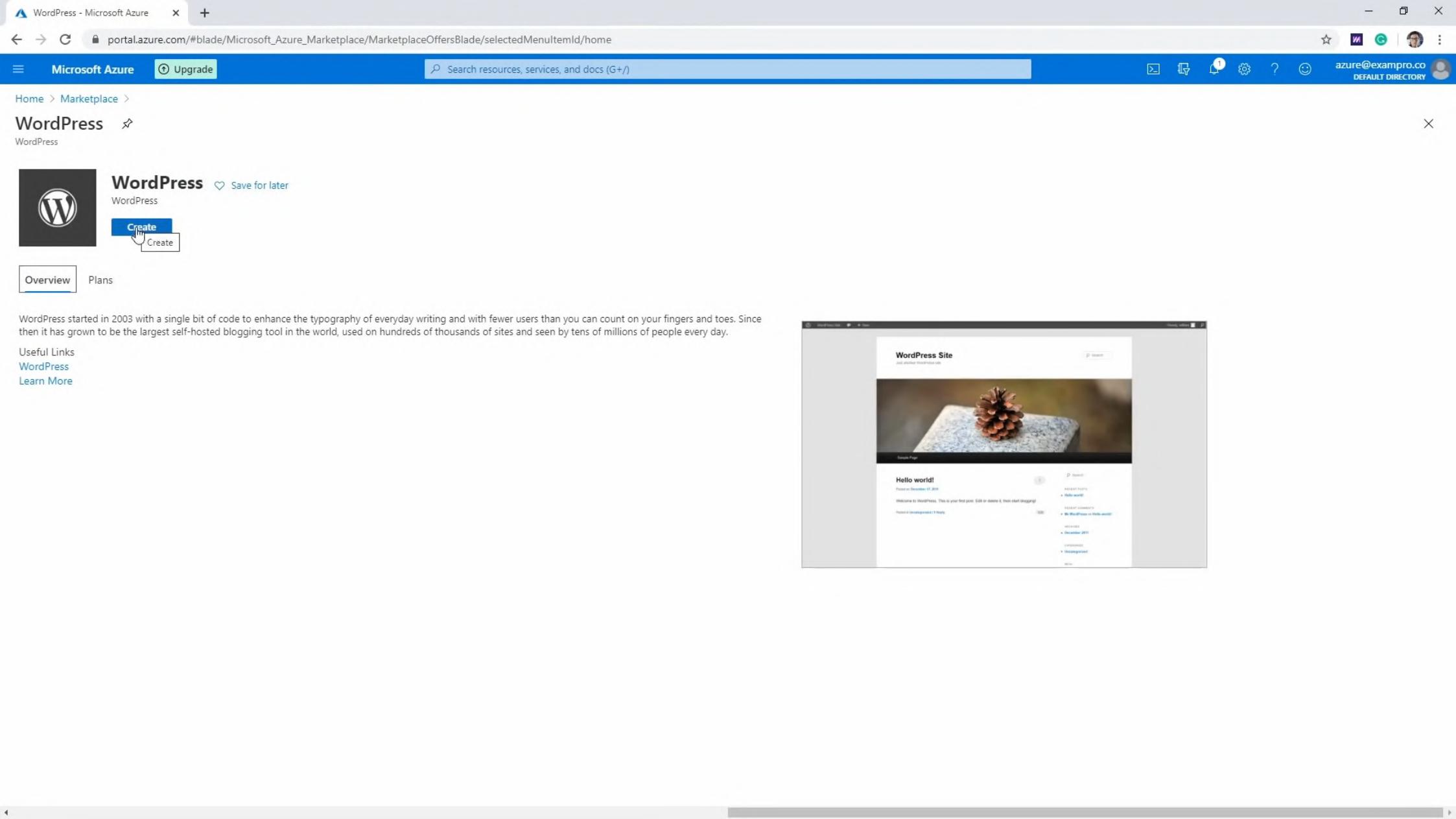
Create Create

Overview Plans

WordPress started in 2003 with a single bit of code to enhance the typography of everyday writing and with fewer users than you can count on your fingers and toes. Since then it has grown to be the largest self-hosted blogging tool in the world, used on hundreds of thousands of sites and seen by tens of millions of people every day.

Useful Links

WordPress Learn More



The screenshot shows the Microsoft Azure Marketplace interface. At the top, there's a search bar and various navigation icons. Below the header, the 'Marketplace' section is visible, with 'WordPress' selected. The main content area displays the 'WordPress' listing, featuring a large thumbnail image of a pine cone, a 'Create' button with a hand cursor icon, and tabs for 'Overview' (which is selected) and 'Plans'. A brief history of WordPress is provided, followed by a 'Useful Links' section with links to 'WordPress' and 'Learn More'. To the right, a large preview window shows the WordPress dashboard with a post titled 'Hello world!' and a sidebar with site statistics. The overall theme is white with blue and grey accents.



Azure Fundamentals

Billing and Pricing

Azure Support

Azure Support Plans

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Basic

Email Support only
For Billing and Account

Developer

 Email Tech Support

Reply during Business Hours

Standard

 24/7 Phone Support

Third Party Software Support

Minimal business impact (Sev C)

< 8 hours

(Sev C)

< 4 hours

Moderate (Sev B)

< 4 hours

(Sev B)

< 2 hours

Critical business impact (Sev C)

< 1 hour

Azure Advisor, Azure Health Status, Community Support, Azure Documentation

Architecture General Guidance



Architecture, Operational Support and Proactive Guidance by pool **ProDirect** delivery managers



Webinars led by Azure Engineers

\$0 USD / month

\$29 USD / month

\$100 USD / month

\$1000 USD / month

Azure Support Plans Comparison

azure.microsoft.com/en-us/support/plans/

Microsoft Azure

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Compare support plans

Explore the range of Azure support options and choose the plan that best fits, whether you're a developer just starting your cloud journey or a large organization deploying business-critical, strategic applications.

If you're looking for a comprehensive, organization-wide support plan that includes Azure, Microsoft 365, and Dynamics 365, explore [enterprise support](#).

	Basic	DEVELOPER	STANDARD	PROFESSIONAL DIRECT
	Request support	Purchase support	Purchase support	Purchase support
Price	Included for all Azure customers	\$29 per month	\$100 per month	\$1,000 per month
Scope	Included for all Azure customers	Trial and non-production environments	Production workload environments	Business-critical dependence
Billing and subscription management support	✓	✓	✓	✓
24/7 self-help resources, including Microsoft Learn , Azure portal how-to videos , documentation , and community support	✓	✓	✓	✓
Ability to submit as many support tickets as you need	✓	✓	✓	✓
Azure Advisor —your free, personalized guide to Azure best practices	✓	✓	✓	✓
Azure health status and notifications	✓	✓	✓	✓
24/7 access to technical support by email and phone		Available during business hours by email only.	✓	✓



Azure Fundamentals

Billing and Pricing

Azure Licensing

Azure Licensing – Azure Hybrid Benefit

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Many customers have invested in **Windows Server licenses** and would like to **repurpose this investment** on Azure.



Azure Hybrid Use Benefit (HUB)

Gives customers the right to use these licenses for virtual machines on Azure.

- Windows Servers
 - SQL Servers
-
- HUB can be turned on and off at anytime for existing VMs
 - HUB can be applied at deployment time for new VMs

Bring your own license (BYOL)

Azure Hybrid Benefit – hybrid clo +

azure.microsoft.com/en-ca/pricing/hybrid-benefit/

Microsoft Azure

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Azure Hybrid Benefit

Bring Windows Server and SQL Server on-premises licences with Software Assurance to Azure

- ✓ Migrate your workloads to Azure, the best cloud for Windows Server and SQL Server
- ✓ AWS is five times more expensive than Azure for Windows Server and SQL Server*
- ✓ Apply savings across Azure Virtual Machines, Azure SQL Database PaaS services and Azure Dedicated Host

Chat with sales

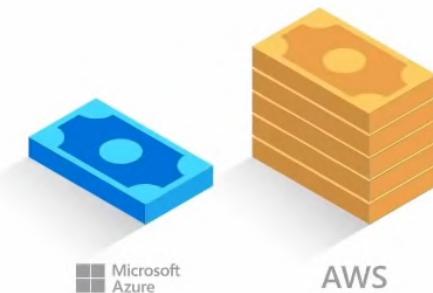
Call sales 1-855-270-0615

AWS is five times more expensive than Azure for Windows Server and SQL Server

Achieve the lowest cost of ownership when you combine the Azure Hybrid Benefit, [reservation pricing](#) and [extended security updates](#).

- Receive free extended security updates when you migrate your Windows Server and SQL Server 2008 and 2008 R2 workloads to Azure virtual machines.
- Save when you prepay your compute capacity on a one or three-year term with reservation pricing, which not only improves budget forecasting but also provides flexibility to exchange or cancel should business needs change.

[Learn more >](#)



Azure Hybrid Benefit – hybrid clo + Azure.microsoft.com/en-ca/pricing/hybrid-benefit/

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Azure Hybrid Benefit Savings Calculator

Windows Server VMs SQL Server VMs SQL Database

Enter the number of core licences that you own that are covered with active Software Assurance or Windows Server Subscriptions
 ⓘ

Enter planned Azure deployment of Windows Virtual Machines

Learn more about Windows Server instances >

Region

Instance size

Hours/month

Eligible Virtual Machines based on instance size selection

Learn more about eligibility >

Monthly estimates

Without Azure Hybrid Benefit per month	\$3,679.20
With Azure Hybrid Benefit per month	\$2,135.25
Savings across eligible Virtual Machines per month	\$1,543.950 (42.0% savings)

Annual estimates

Your estimated annual savings on Azure across all virtual machines	\$18,527.400
--	--------------

Calculator is to help estimate savings range when using the Azure Hybrid Benefit for Windows Server licences that include Software Assurance. Your actual savings may vary.

Activate your Azure Hybrid Benefit



Azure Fundamentals

Billing and Pricing

Azure Subscriptions

Azure Subscriptions

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An Azure Subscription is the same as saying our Azure Account.

There are **4 tiers** of Azure Subscriptions:



Free Subscription

- Credit Card Required
- \$200 USD credits free for 30 days
- Certain Azure products free for 12 months



Pay-As-You-Go (PAYG) Subscription

- Credit Card Required
- Charged end at the end of the month based on consumed cloud resources



Enterprise Agreement

- An Enterprise and Azure agree on receiving discounted price for licenses and cloud services



Student Subscription

- No Credit Card Required
- \$100 USD credits for 12 months
- Requires valid student email



Azure Fundamentals

Billing and Pricing

Pricing Calculator

Azure Pricing Calculator

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Configure and estimate the costs for Azure products. No Sign-in required.
Download an **Excel spreadsheet** and share with your boss.

azure.microsoft.com/pricing/calculator

Virtual Machines

REGION:	OPERATING SYSTEM:	TYPE:	TIER:
West US	Windows	(OS Only)	Standard

INSTANCE: D2 v3: 2 vCPU(s), 8 GB RAM, 50 GB Temporary storage, US\$0.209/hour

VIRTUAL MACHINES: 1 x 730 Hours

Savings Options

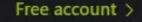
Save up to 72% on pay-as-you-go prices with 1-year or 3-year Reserved Virtual Machine Instances. Reserved Instances are great for applications with steady-state usage and applications that require reserved capacity. [Learn more about Reserved VM Instances pricing.](#)

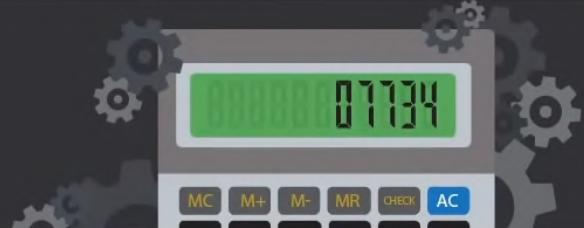
Compute (D2 v3)	OS (Windows)	Total Cost
<input checked="" type="radio"/> Pay as you go	<input checked="" type="radio"/> License included	US\$152.57
<input type="radio"/> 1 year reserved (~62% discount)	<input type="radio"/> Azure Hybrid Benefit	Average per month (US\$0.00 charged upfront)
<input type="radio"/> 3 year reserved (~76% discount)		
US\$85.41	US\$67.16	= US\$152.57
Average per month (US\$0.00 charged upfront)	Average per month (US\$0.00 charged upfront)	Average per month (US\$0.00 charged upfront)
<input type="checkbox"/> Managed Disks		US\$0.00
<input type="checkbox"/> Storage transactions		US\$0.05
		Upfront cost US\$0.00
		Monthly cost US\$152.62

Pricing calculator | Microsoft Azure +

azure.microsoft.com/en-ca/pricing/calculator/  Microsoft Azure

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Pricing calculator
Configure and estimate the costs for Azure products

Pricing Calculator has been updated with a revamped design and new features. Share your thoughts using the feedback form below.  x

Products

Example Scenarios 

Saved Estimates

FAQ

Select a product to include it in your estimate.

Search products  

Featured

Compute

Networking

Storage

Web

Mobile

Containers

Databases

Analytics

AI + Machine Learning

Internet of Things

Integration

 **Virtual Machines**

Provision Windows and Linux virtual machines in seconds

 **Storage Accounts**

Durable, highly available, and massively scalable cloud storage

 **Azure SQL Database**

Managed, intelligent SQL in the cloud

 **App Service**

Quickly create powerful cloud apps for web and mobile

 **Azure Cosmos DB**

Globally distributed, multi-model database for any scale

 **Azure Kubernetes Service (AKS)**

Simplify the deployment, management, and operations of Kubernetes

 **Azure Functions**

Process events with serverless code

 **Cognitive Services**

Add smart API capabilities to enable contextual interactions

 **Cost Management + Billing**

Optimize what you spend on the cloud, while maximizing cloud potential

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Pricing calculator | Microsoft Azure

azure.microsoft.com/en-ca/pricing/calculator/

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Configure and estimate the costs for Azure products

Pricing Calculator has been updated with a revamped design and new features. Share your thoughts using the feedback form below. x

Products Example Scenarios Saved Estimates FAQ

Select an example scenario to include in your estimate. You may add or remove products in your example scenario.

Advanced analytics on big data

CI/CD for Azure Web Apps

CI/CD for Containers

Modern data warehouse

Real-time analytics

Azure Web Apps is a fast and simple way to create web apps using ASP.NET, Java, Node.js, or PHP. Deliver value faster to your customers with a continuous integration and continuous deployment (CI/CD) pipeline that pushes each of your changes automatically to Web Apps.

Learn more > Add to estimate

Chat with sales

Products

- Azure DevOps
- App Service
- Azure Monitor
- Azure Data Lake Storage

Pricing calculator | Microsoft Azure

azure.microsoft.com/en-ca/pricing/calculator/

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Configure and estimate the costs for Azure products

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Products Example Scenarios Saved Estimates FAQ

Select a product to include it in your estimate.

Search products

Featured

Compute

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Containers

Databases

Analytics

AI + Machine Learning

Internet of Things

Integration

Identity

Security

Developer Tools

DevOps

Storage Accounts
Durable, highly available, and massively scalable cloud storage

Data Box
Appliances and solutions for data transfer to Azure and edge compute

data Lake Storage Gen1
Repository for big data analytics

Azure Data Share
A simple and safe service for sharing big data with external organizations

StorSimple
Lower costs with an enterprise hybrid cloud storage solution

Azure NetApp Files
Enterprise-grade Azure file shares, powered by NetApp

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Pricing calculator | Microsoft Azure

azure.microsoft.com/en-ca/pricing/calculator/

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Portal Free account >

REGION: East US TYPE: Block Blob Storage PERFORMANCE TIER: Premium REDUNDANCY: LRS

Capacity

1000 GB = US\$150.00

Write Operations

100000 Operations × US\$0.018 Per 10,000 operations = US\$0.18

(i) The following API calls are considered Write Operations: PutBlob, PutBlock, PutBlockList, AppendBlock, SnapshotBlob and CopyBlob.

List and Create Container Operations

100000 Operations × US\$0.050 Per 10,000 operations = US\$0.50

Read operations

100000 Operations × US\$0.001 Per 10,000 operations = US\$0.01

(i) The following API calls are considered Read Operations: GetBlob, SetBlobTier (when it moves a Blob from Archive to Cool, Cool to Hot or Archive to Hot).

All other operations

1 Operations × US\$0.001 Per 10,000 operations = US\$0.01

Upfront cost	US\$0.00
Monthly cost	US\$150.69

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Pricing calculator | Microsoft Azure

azure.microsoft.com/en-ca/pricing/calculator/

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Operations Per 10,000 Operations

Upfront cost	US\$0.00
Monthly cost	US\$150.69

Support

SUPPORT:
Included US\$0.00

Programs and Offers

LICENSING PROGRAM:
Microsoft Online Services Agreement

SHOW DEV/TEST PRICING

Estimated upfront cost US\$0.00
Estimated monthly cost US\$150.69

[Export](#) [Save](#) [Save as](#) [Share](#) [US Dollar \(\\$\)](#)

DISPLAY SKUS [DISPLAY RESOURCE IDS](#)

Prices are estimates and are not intended as actual price quotes. Actual prices may vary depending upon the date of purchase, currency of payment, and type of agreement you enter with Microsoft. Contact a Microsoft sales representative for additional information on pricing.

[Purchase options >](#)



Azure Fundamentals

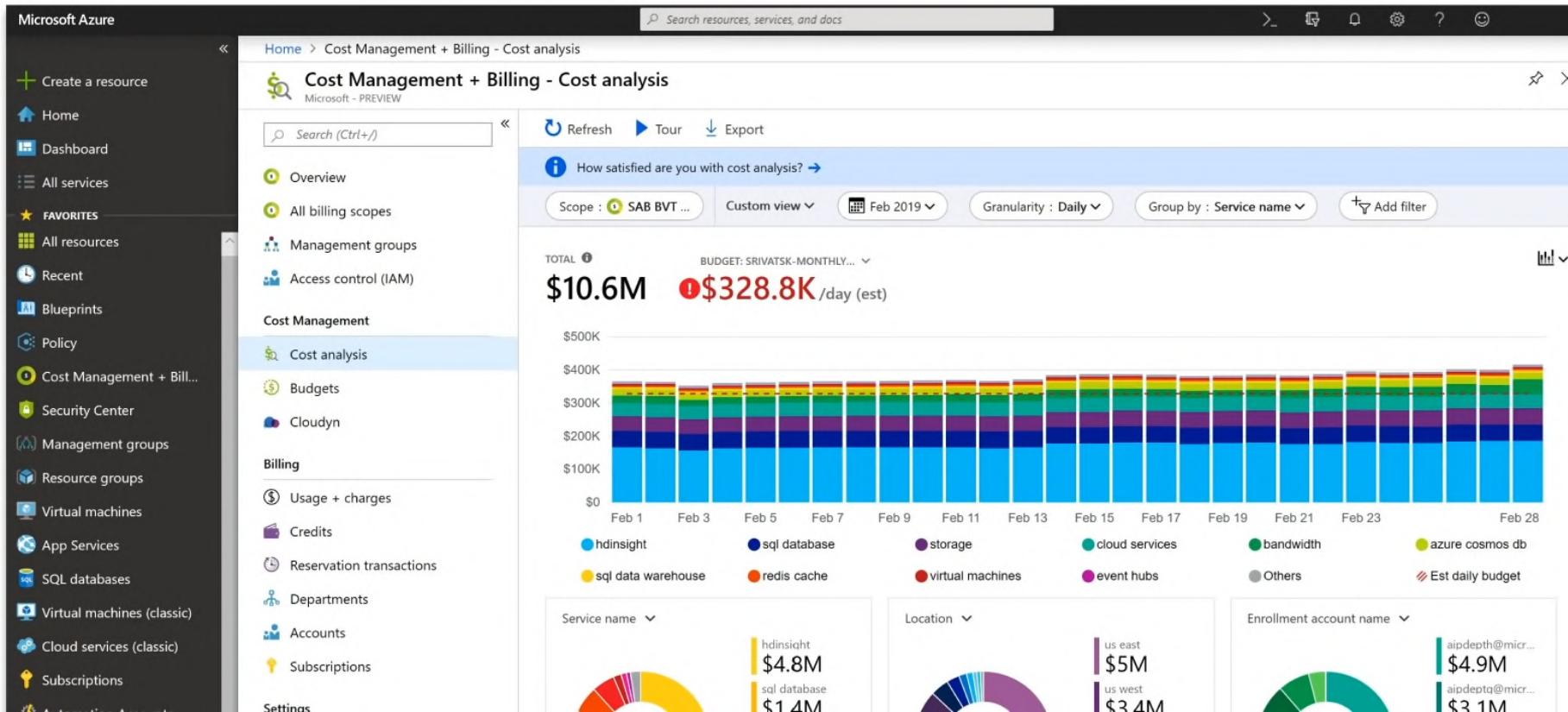
Billing and Pricing

Azure Cost Management

Azure Cost Management

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Perform **cost-analysis**, visualize the spending of your Azure cloud resources
Create **budgets**, set a budget threshold be alerted when approaching or exceeded



The screenshot displays the Microsoft Azure Cost Management + Billing - Cost analysis interface. Key elements include:

- Left Sidebar:** Includes links for Create a resource, Home, Dashboard, All services, Favorites, All resources, Recent, Blueprints, Policy, Cost Management + Bill..., Security Center, Management groups, Resource groups, Virtual machines, App Services, SQL databases, Virtual machines (classic), Cloud services (classic), and Subscriptions.
- Top Bar:** Features a search bar, navigation icons, and a help button.
- Central Header:** Shows the current view as "Cost Management + Billing - Cost analysis" and includes a "Search (Ctrl+/" input field, Refresh, Tour, Export buttons, and a satisfaction survey message.
- Filter Options:** Scope (SAB BVT ...), Custom view, Granularity (Daily), Group by (Service name), and Add filter.
- Summary Metrics:** TOTAL \$10.6M and BUDGET: SRIVATSK-MONTHLY... \$328.8K /day (est).
- Stacked Bar Chart:** Visualizes daily spending across various Azure services, with a legend below identifying hdinsight, sql database, storage, cloud services, bandwidth, azure cosmos db, sql data warehouse, redis cache, virtual machines, event hubs, Others, and Est daily budget.
- Bottom Charts:** Three donut charts showing distribution by Service name, Location, and Enrollment account name.



Azure Fundamentals

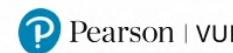
Summary

Booking Your Exam



Follow Along

Test Center	Distance <small>Show km</small>
New Horizons at Logical Operations 275 Northpointe PKWY SUITE 1 Amherst, New York 14228 United States Test Center Information	22.6 mi
triOS College 4 Hughson Street South 5th Floor Hamilton, Ontario L8N 3Z1 Canada Test Center Information	33.5 mi
SSCI 3105 Dundas Street West Suite 202 Mississauga, Ontario L5L 3R8 Canada Test Center Information	34.3 mi
CIMT-Mississauga 250 Dundas Street West Suite 105 Mississauga, Ontario L5B 1J2 Canada Test Center Information	35.1 mi
Canadian Business College 2 Bloor St. West, 22nd Floor, Suite 2200 Toronto, Ontario M4W 3F2	36.1 mi



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⚠ COVID-19 (Coronavirus) situation:

Testing candidates: Check our [COVID-19 Update Page](#) to look for testing availability and review the health and safety measures required for testing.

Appointment availability is limited due to social distancing precautions and varies by location. Please note that our customer service wait-times are also longer than usual right now. For information on rescheduling, refunds, and more, please check out our [FAQs](#).

⚠ Alert:

This website is scheduled to undergo routine maintenance on Saturday, 20 June 5:00 p.m.- Sunday, 21 June 2:00 a.m. CDT. During this time, you may not be able to schedule, reschedule or cancel test appointments. We apologize for this inconvenience and thank you for your patience.

Microsoft certifications exams can be proctored online with Pearson VUE's OnVUE.

Check to see if your computer is compatible with the online proctoring software and schedule your exam.

[LEARN MORE](#)

Microsoft

○ ○ ○ ○ ● ○

汉语 | 日本語



To schedule, reschedule or cancel an exam:

[Login](#)

⚠ COVID-19 FAQs

🔍 Find a test center

★ Find a test center on a military base

✉ U.S. military community funding eligibility options

Microsoft Certifications

A **Microsoft Certification** equips you with relevant, cutting-edge skills that will help shape a long and rewarding IT career. On average, certified employees earn 15% more than those without certification and are nearly 20% more productive.*

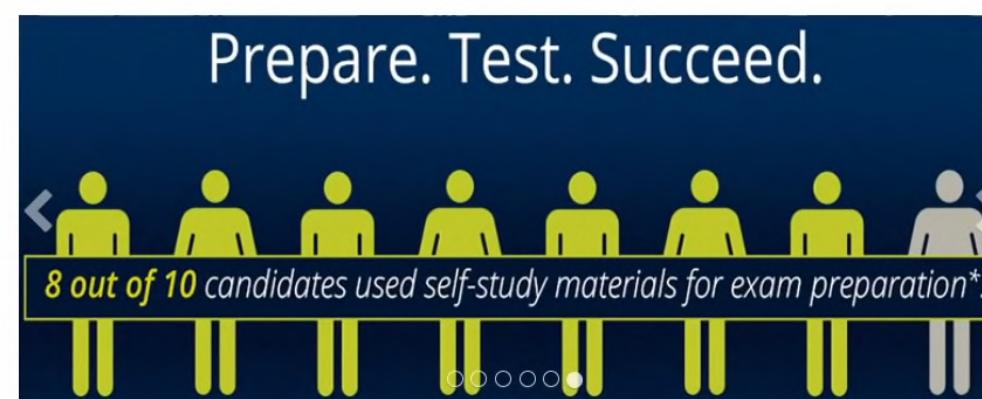
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Microsoft Certifications

A [Microsoft Certification](#) equips you with relevant, cutting-edge skills that will help shape a long and rewarding IT career. On average, certified employees earn 15% more than those without certification and are nearly 20% more productive.*

*IT Certifications: Shorter Road to Valuable Positions, November 2015 IDC/Microsoft white paper.

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To schedule, reschedule or cancel
an exam:

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az-900

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Exam X

1 results found



E X A M
Exam AZ-900: Microsoft Azure Fundamentals

Azure Developer Beginner

1

Azure Fundamentals can be used to prepare for other Azure role-based or specialty certifications, but it is not a prerequisite for any of them.

Part of the requirements for: Microsoft Certified: Azure Fundamentals

Related exams: none

Important: See details

[Go to Certification Dashboard](#)

Schedule exam

Exam AZ-900: Microsoft Azure Fundamentals

Languages: English, Japanese, Chinese (Simplified), Korean

Retirement date: none

This exam measures your ability to understand the following concepts: cloud concepts; core Azure services; security, privacy, compliance, and trust; and Azure pricing and support.

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All objectives of the exam are covered in depth so you'll be ready for any question on the exam.

Skills measured

- The content of this exam was updated on May 28, 2020. Please download the exam skills outline below to see what changed.
- Describe cloud concepts (15-20%)
- Describe core Azure services (30-35%)
- Describe security, privacy, compliance, and trust (25-30%)
- Describe Azure pricing Service Level Agreements, and Lifecycles (20-25%)

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