



# Describe the benefits of using cloud services

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## Sergio Rubio

- SRE Nivel 3
- 17+ years in IT industry
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## Important Notes



Identify yourself in Zoom, using your name and last name



Mute your microphone along the course unless you have questions



Raise the hand if you have questions during the session



Focus your questions on the presented topic

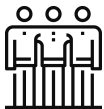


Turn off your camera in case of connection issues

## DSA Code of Conduct



Be respectful, there are no bad questions or ideas.



Be welcoming and patient



Be careful in the words that you choose

## Session Goal

**At the end of this session, you will be able to:**

- Understand the benefits of high availability and scalability in the cloud
- Understand the benefits of reliability and predictability in the cloud
- Understand the benefits of security and governance in the cloud
- Understand the benefits of manageability in the cloud

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## High availability and scalability

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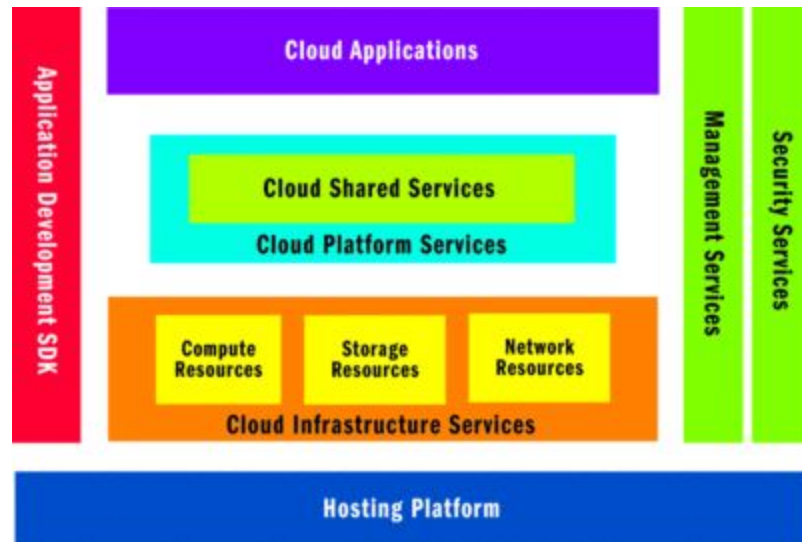


# High availability and scalability

Describe the benefits of high availability and scalability in the cloud

## Cloud computing

A cloud computing platform enables applications to be hosted in an Internet-accessible virtual environment that supplies the necessary hardware, software, network, and storage capacities and provides for security and reliability, removing much of the burden of purchasing and maintaining hardware and software in-house.





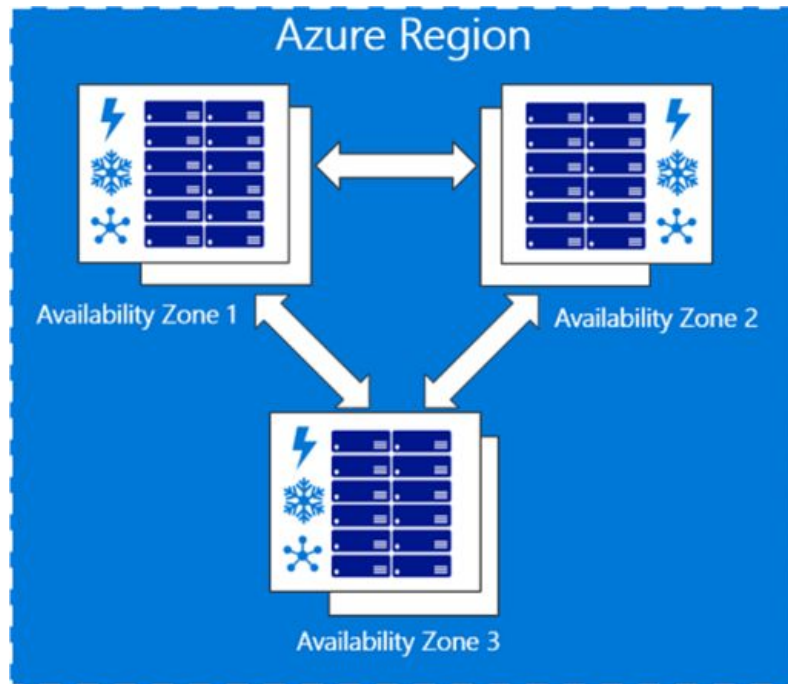
## High Availability

High Availability in Azure is the ability of a system to operate continuously without failing for a designated period of time. It works to ensure a system meets an agreed-upon operational performance level.



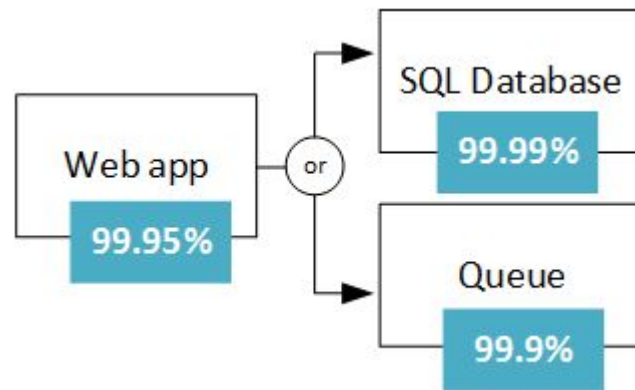
## How does Azure ensure high availability?

With zone-redundant architecture, the Azure platform automatically replicates the resource and data across zones. Microsoft manages the delivery of high availability, since Azure automatically replicates and distributes instances within the region.



## SLAs

When you're architecting your solution, you'll need to account for service availability guarantees. Azure is a highly available cloud environment with uptime guarantees depending on the service. These guarantees are part of the service-level agreements (SLAs).





# SLAs

		Downtime		
Availability %	Friendly Name	per Year	per Month	per Week
90%	one nine	36.5 days	72 hours	16.8 hours
99%	two nines	3.65 days	7.2 hours	1.68 hours
99.5%	--	1.83 days	3.6 hours	50.4 minutes
99.9%	three nines	8.76 hours	43.8 minutes	10.1 minutes
99.95%	--	4.38 hours	21.56 minutes	5.04 minutes
99.99%	four nines	52.56 minutes	4.32 minutes	1.01 minutes
99.999%	five nines	5.26 minutes	25.9 seconds	6.05 seconds
99.9999%	six nines	31.5 seconds	2.59 seconds	0.605 seconds
99.99999%	seven nines	3.15 seconds	0.259 seconds	0.0605 seconds

## High Scalability

High Scalability in Azure is the ability to increase your capacity based on the increasing demand for traffic, memory, and or computing power. If you suddenly experience peak traffic and your systems are overwhelmed, the ability to scale means you can add more resources to better handle the increased demand.

One of the benefits of scalability is that you aren't overpaying for services.



## Vertical scaling

With vertical scaling, if you were developing an app and you needed more processing power, you could vertically scale up to add more CPUs or RAM to the virtual machine. Conversely, if you realized you had over-specified the needs, you could vertically scale down by lowering the CPU or RAM specifications.

## Horizontal scaling

With horizontal scaling, if you suddenly experienced a steep jump in demand, your deployed resources could be scaled out (either automatically or manually). For example, you could add additional virtual machines or containers, scaling out. In the same manner, if there was a significant drop in demand, deployed resources could be scaled in (either automatically or manually), scaling in.

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# Reliability and predictability

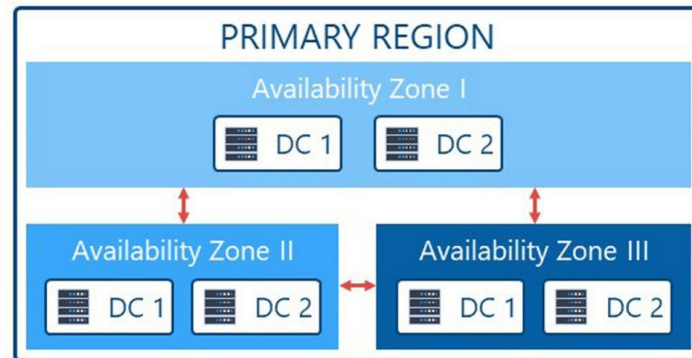
Describe the benefits of reliability and predictability in the cloud



## Reliability

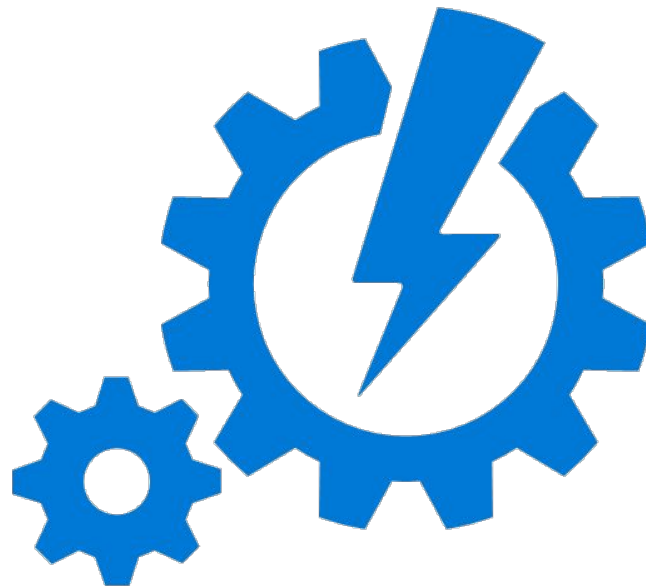
Is the ability of a system to recover from failures and continue to function. It's also one of the pillars of the Microsoft Azure Well-Architected Framework.

In some cases, your cloud environment itself will automatically shift to a different region for you, with no action needed on your part.



## Predictability

Can be focused on performance predictability or cost predictability. Both performance and cost predictability are heavily influenced by the Microsoft Azure Well-Architected Framework.



## Performance

Focuses on predicting the resources needed to deliver a positive experience for your customers. Autoscaling, load balancing, and high availability are just some of the cloud concepts that support performance predictability.

## Cost

Focused on predicting or forecasting the cost of the cloud spend. With the cloud, you can track your resource use in real time, monitor resources to ensure that you're using them in the most efficient way, and apply data analytics to find patterns and trends that help better plan resource deployments.

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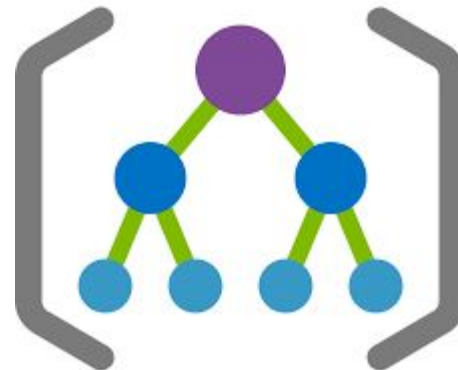


# Security and governance

Describe the benefits of security and governance in the cloud

## Governance

Cloud features support governance and compliance. Things like set templates help ensure that all your deployed resources meet corporate standards and government regulatory requirements.



## Security

Infrastructure as a service provides you with physical resources but lets you manage the operating systems and installed software, including patches and maintenance. If you want patches and maintenance taken care of automatically, platform as a service or software as a service deployments may be the best cloud strategies for you.



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# Manageability

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## Management of the cloud

Refers to managing your cloud resources. In the cloud, you can:

- Automatically scale resource deployment.
- Deploy resources based on a preconfigured template.
- Monitor the health of resources and automatically replace failing resources.
- Receive automatic alerts based on configured metrics.



## Management in the cloud

Refers to how you're able to manage your cloud environment and resources. You can manage these:

- Through a web portal.
- Using a command line interface.
- Using APIs.
- Using PowerShell.



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# Overall Recap and Takeaways



Recap:

- High availability and scalability
- Reliability and predictability
- Security and governance
- Manageability

# Resources



References of interest:

- [Well architected framework](#)
- [Availability zones video](#)
- [Interactive infrastructure map](#)
- [Service level agreements](#)

# Q&A





**Thank you**