Cloud services

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Introduction

This document is based on looking into the top 2 largest cloud service providers (Amazon AWS, Microsoft Azure) to what is important for the Care web application as cloud service provider.

The provider will be chosen based on different criteria such as ease of use, pricing and security.

Table of Contents

Ease of use

Aws

- Recommended for newcomer and people who are unfamiliar with cloud platforms.
- Feature-rich, straightforward dashboard.
- Comprehensive documentation.
- Handling users and access is a bit complex.

Azure

- Adding users and access is maintained in a single directory.
- Lack of documentation and recommendations.

Conclusion

To conclude, Aws is the winner for ease of use, for the reason that the service is recommended for people unfamiliar with cloud platforms such as myself and the extensive documentation they provide.

Cloud security

AWS

Aws is one of the most mature cloud providers with extensive documentation, knowledge and trained experts.

Aws list of infrastructure security:

- Security development lifecycle (SDL) - A set of practices that “help developers build more secure software by reducing the number and severity of vulnerabilities in software, while reducing development cost.”
- Intrusion and DoS detection.
- Network access control

Azure

Azure can’t compare to AWS and is outperformed by the service regarding security. The reason to why azure is mostly used, is that many companies have a relationship with Microsoft.

Azure critical security points:

- Security development lifecycle (SDL) - A set of practices that “help developers build more secure software by reducing the number and severity of vulnerabilities in software, while reducing development cost.”
- Intrusion and DoS detection.
- Network access control

Conclusion

When it comes to security AWS is better in that regards with extensive documentation.

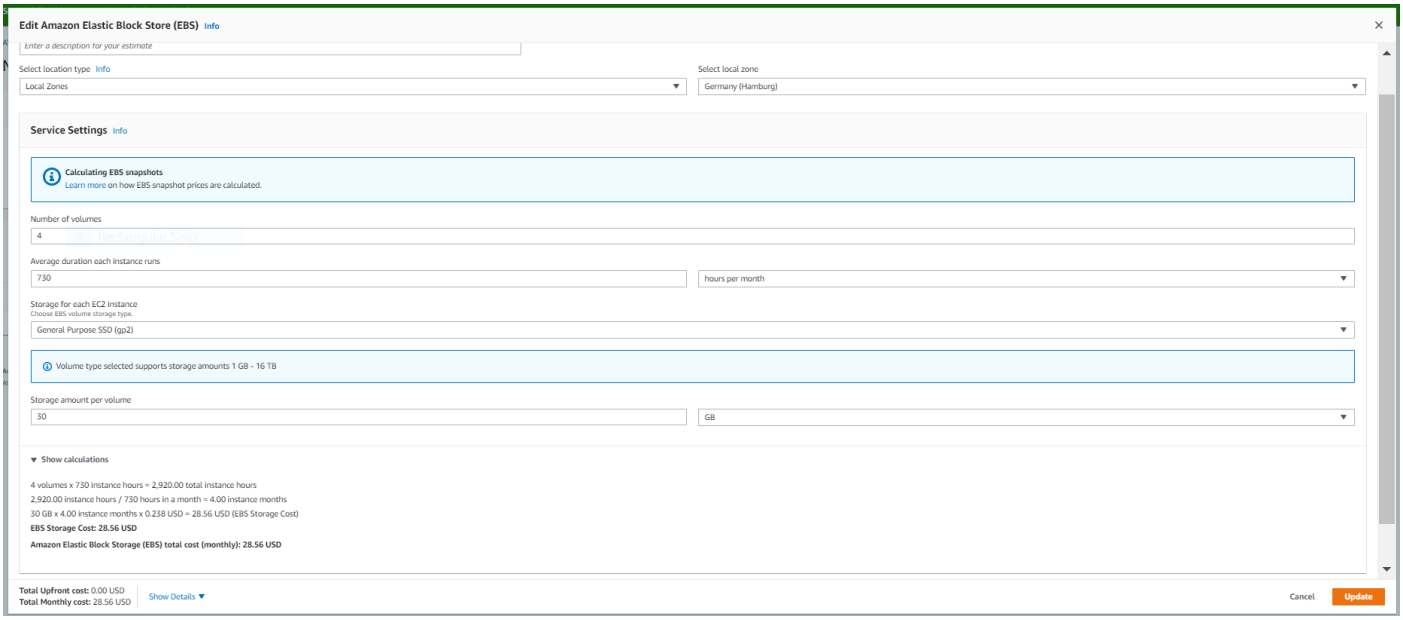
Costs

Using the AWS and Azure price calculator and basing the service and amount I would be using from each service did I have a total amount to what I would be spending.

AWS

Using [AWS pricing calculator](), I have come to realize that the best service that AWS offers that fits the project is Amazon Elastic Block Store.

Pricing



Amazon Elastic Block Store (EBS)

Elastic Block Store (Amazon EBS) is an easy-to-use, scalable, high-performance block-storage service designed for Amazon Elastic Compute Cloud (Amazon EC2).

Scale fast for your most demanding, high-performance workloads, including mission-critical applications such as SAP, Oracle, and Microsoft products. ›

Protect against failures with 99.999% availability, including replication within Availablity Zone (AZs), and 99.999% durability with io2 Block Express volumes. ›

Select the storage that best fits your workload. Volumes range from cost-effective dollar-per-GB to high performance with the fastest IOPS and throughput. ›

Use cases

Build your SAN in the cloud for I/O intensive applications

Migrate mid-range, on-premises storage area network (SAN) workloads to the cloud. Attach high-performance and high-availability block storage for mission-critical applications.

Run relational or NoSQL databases

Deploy and scale your choice of databases, including SAP HANA, Oracle, Microsoft SQL Server, PostgreSQL, MySQL, Cassandra, and MongoDB.

Right-size your big data analytics engines

Easily resize clusters for big data analytics engines, such as Hadoop and Spark, and freely detach and reattach volumes.

How it works

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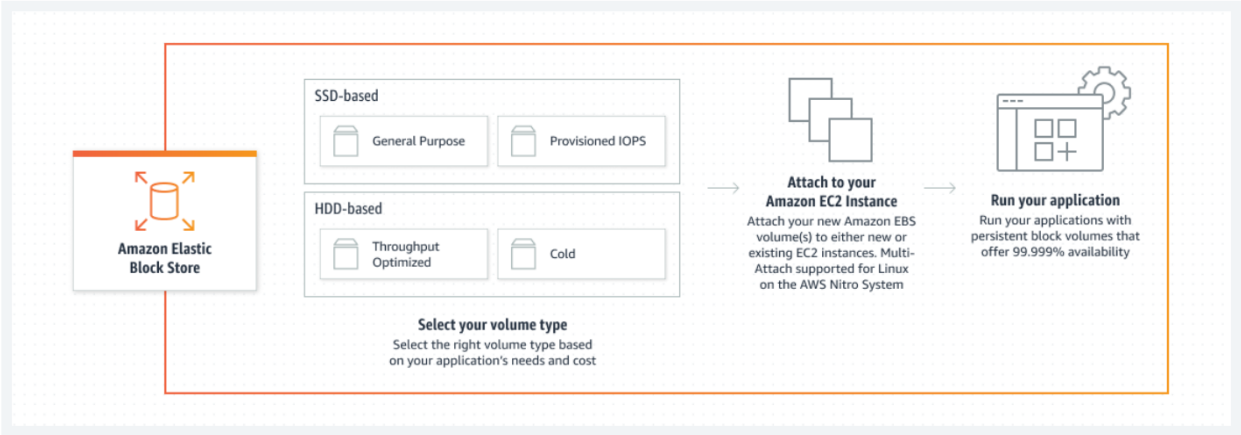

Azure

Using [Azure Price calculator](), have I come to a decision the best service is the AKS (Azure Kubernetes Service). The reason for this is that it best fits the profile of the project.

Pricing

	A	B	C	D	E	F
1	Microsoft Azure Estimate					
2	Your Estimate					
3	Service category	Service type	Custom name	Region	Description	Estimated monthly cost
4	Compute	Azure Kubernetes Service (AKS)		West Europe	2 L8as v3 (8 vCPUs, 64 GB RAM) x 84 Hours (Pay as you go), Windows (Azure Hybrid Benefit); 1 managed OS disk – E3, 1 cluster	$199.19
5	Support			Support	0	$0.00
6				Licensing Program	Microsoft Customer Agreement (MCA)	
7				Billing Account		
8				Billing Profile		
9				Total	199.192	$0.00
10						
11	Disclaimer					
12	*All prices shown are in United States – Dollar ($) USD. This is a summary estimate, not a quote. For up to date pricing information please visit https://azure.microsoft.com/pricing/calculator/*					
13	*This estimate was created at 12/3/2022 12:49:47 PM UTC.*					

Azure Kubernetes Service (AKS)

Azure Kubernetes Service (AKS) offers the quickest way to start developing and deploying cloud-native apps in Azure, datacenters, or at the edge with built-in code-to-cloud pipelines and guardrails. Get unified management and governance for on-premises, edge, and multi-cloud Kubernetes clusters. Interoperate with Azure security, identity, cost management, and migration services.

Paying for only the virtual machines, and associated storage and networking resources consumed makes AKS the most efficient and cost-effective container service on the market.

Automated management and scalability of Kubernetes clusters for enterprise-grade container orchestration

End-to-end developer productivity with debugging, CI/CD, logging, and automated node maintenance

Advanced identity and access management to monitor and maintain container security for governance at scale

Support for Linux, Windows Server, and IoT resources with AKS deployment on the infrastructure of your choice using Azure Arc

Pricing from school

We recommend limiting yourself to one of the three largest cloud service providers (2019): Amazon AWS, Microsoft Azure and Google Cloud.
Feel free to evaluate another platform for your prototypes or group project if it better supports your needs.

- **Azure** can be requested through Fontys service portal
- for **GCP, an** $300 90 days trial available.
- for **AWS,** you can subscribe for an educational account at AWS Educate

The school offers 500 euro for using Azure where with AWS you would have to use AWS Educate where there can be limitations to.

Conclusion

When it comes to costs, Azure is more on the high end compared to AWS to what is needed for the project which is why preference would be AWS but for the reason to what school offers in clear description to Azure than AWS is Azure the winner in this category.

Criteria overview

selection criteria

	Azure	AWS
Ease of use		
Pricing		
Security		

Conclusion

For this project will Azure be used a Service Provider. Overall the two providers are quiet well, there are some differences but the main factor for choosing this provider is the costs factor and the experience I have gotten to work with Azure more than AWS.

Sources

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