Azure, AWS, and GCP, oh myy

Which cloud is right for you?

Today's Agenda

An Intro to the Big 3

Service\Technical Comparison

Business Comparison
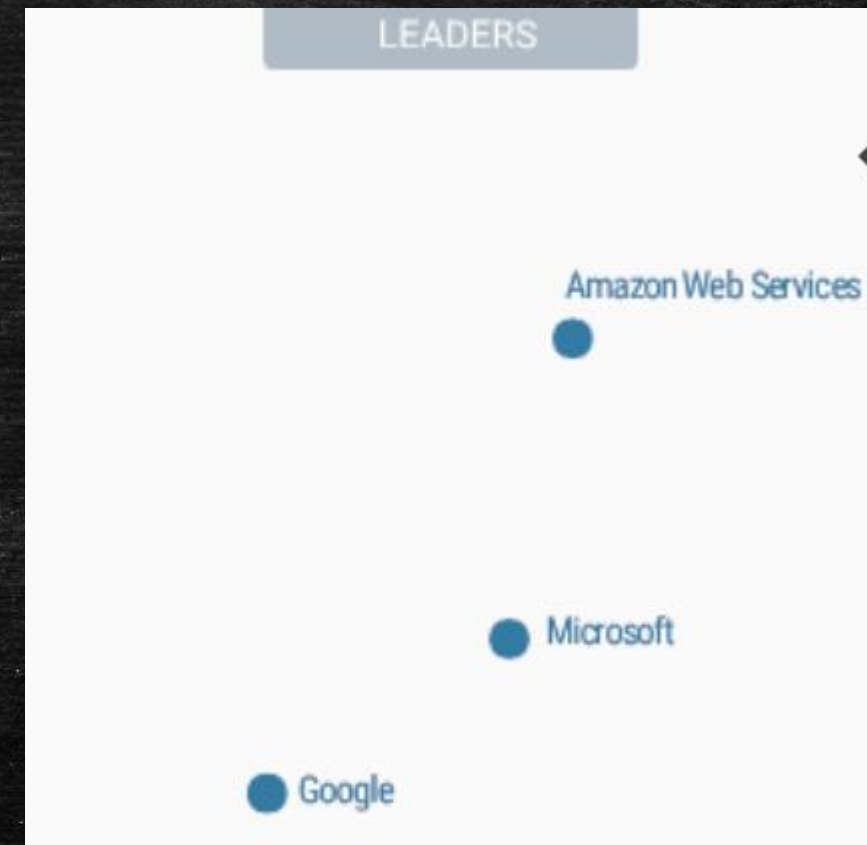
Deciding

An Intro to the Big 3

A quick look

Gartner Magic Quadrant of Cloud Providers

High-level Overview

	AWS	Azure	GCP
Year of Launch	2006	2010	2008
# of services	200+	200+	100+
Regions/Zones	26/84	64	25/77

Service\Technical Comparison

What do they offer?

Areas of Comparison

Compute resources

Databases and storage

Application integration

Analytics

Developer tools

Compute Resources – Virtual Machines

Defined as a combination of

- Number of vCPUs
- Memory
- Network Speed
- Operating System

Different ratios

- Compute optimized
- Memory optimized
- Etc

Provider Comparison

- Very similar offers for Windows and Linux across all three
- AWS is the only one to offer MacOS
- AWS has their own Linux version
- GCP and Azure offer Windows Desktop images, GCP is BYOL

Compute Resources – Containers

Types

- Kubernetes-based
- Container service(s)
- Serverless containers

Additional considerations

- Container registry
- Managed services

Provider Comparison

- Similar base offerings across all three providers
- Each has multiple additional offerings, and seemingly coming out with new, specialized ones all the time

Compute Resources – Serverless

Areas of interest

- Cold start
- Execution time-out
- Maximum Memory

Additional Considerations

- Programming language\Run-time
- Custom run-times

Provider Comparison

- All three support Linux-based running environments
- Azure 1.x Functions (still available) are the only ones to support Windows-based environment - .NET 4.8
- AWS requires API Gateway (billed separately) while Azure and GCP both support HTTP integration out-of-the-box.

Databases and Storage

Storage

- File
- Object

Databases

- RDBMS
- NoSQL
- GraphDB
- and more...

Databases

	AWS	Azure	GCP
Managed Databases	MariaDB MySQL PostgreSQL SQL Server Oracle	MySQL MariaDB PostgreSQL SQL Server	MySql PostgreSQL SQL Server
Their own managed RDBMS	X	X	X

More Database Stuff

	AWS	Azure	GCP
Own Document database	DocumentDB	CosmosDB	Firestore
Own Graph database	Neptune	CosmosDB	-
Own Key/Value database	DynamoDB	CosmosDB	-
Data migration support	X	X	X

Even More Database Stuff

	AWS	Azure	GCP
Own Blockchain database	X	-	-
In-Memory database support	Redis Memcached	Redis	Redis Memcached
Data migration support	X	X	X

Application Integration

Workflows

Messaging

Event Management

API Management

Analytics \ AI \ ML

Data storage

- Data Lake - type
- Data Warehouse - type

Reporting support

- Reporting tooling
- Data exchange tooling

AI/ML

- Infrastructure
- Training support
- Pre-defined models (speech, language, video, etc)

Developer Tools

DevOps

- Code repository
- Deployment Pipelines
- Infrastructure as Code (IaC) support

Productivity

- Languages\SDKs
- Services
- High-level libraries

Business Comparison

Why do they make the decisions the way they do?

How Did They Start?

GCP   **2008**

- Serving search results and ads
- Reliability and speed

AWS   **2006**

- Serving largest e-comm company
- Cutting-edge and specialization

Azure   **2010**

- Enterprise software
- Ease of use and standardization

- Even after all these years, their start still defines the types of services they tend to view as important

- Gives you an idea of what they tend to view as important

- Helps understand how they plan and build services

How Do They Approach New Services

GCP
- Innovation on a budget
- Market-led

AWS
- Relatively easy to innovate
- Led by "start-ups" and their needs

Azure
- Innovation is institutionalized
- Led by enterprises and their needs

- Their internal business model

- The amount of internal control over service design impacts speed of delivery

- What customer set drives them?

Deciding

Which fits you best?

Your Current IT Approach

What does your company use for day-to-day work?

- Operating systems
- Productivity software

Other areas

- IT software policies
- Technology approach
- Staff experience

Best Fits – Existing Software

	AWS	Azure	GCP
Use of Microsoft productivity products	3	1	2
Use of Microsoft enterprise products	2	1	3
Heavy OSS usage	2	2	1
Heavy use of Marketing Systems or Online Ads	2	2	1

Best Fits – IT Software Policies

	AWS	Azure	GCP
More controlling, IT limits individual user options	2	1	2
Less controlling, IT provides support for some options	1	1	1
Hands-off, IT provides minimal support, users have full control	1	3	2

Best Fits – Technology Approach

	AWS	Azure	GCP
Best-of-breed	1	2	2
Just make it work	3	1	2
Continue to use current technology products	2	2	1
Multi-environment	2	1	1

Staff Experience & Up-skilling Staff

Should impact decision making

- Positive experiences
- Negative experiences

	AWS	Azure	GCP
Documentation	1	1	3
Training	1	1	3

Summary

Finally...

Summation

Every provider can probably serve your needs

Resonance

Pricing

Q & A

@BillVest – Follow for news about the cloud!

https://www.linkedin.com/in/billpenberthy/