Cloud Service Comparison: AWS vs. Azure vs. GCP

Category	Description	AWS Service	Azure Service	GCP Service
Compute	Virtual Machines	EC2 (Elastic Compute Cloud)	Virtual Machines (VMs)	Compute Engine (GCE)
	Serverless Functions	Lambda	Functions	Cloud Functions
	Container Orchestration	EKS (Elastic Kubernetes Service)	AKS (Azure Kubernetes Service)	GKE (Google Kubernetes Engine)
	Platform-as-a-Service (PaaS)	Elastic Beanstalk	App Service	App Engine
	Serverless Containers	Fargate	Container Instances	Cloud Run
Storage	Object Storage	S3 (Simple Storage Service)	Blob Storage	Cloud Storage
	Block Storage	EBS (Elastic Block Store)	Managed Disks	Persistent Disk
	File Storage	EFS (Elastic File System)	Files	Filestore
	Archive Storage	S3 Glacier	Blob Storage Archive	Cloud Storage Archive
Databases	Relational (SQL)	RDS (Relational Database Service)	SQL Database	Cloud SQL
	NoSQL (Document)	DynamoDB	Cosmos DB (DocumentDB API)	Firestore
	NoSQL (Key-Value)	DynamoDB	Cosmos DB (Table API)	Firestore / Bigtable
	Data Warehouse	Redshift	Synapse Analytics	BigQuery
	In-Memory Cache	ElastiCache	Cache for Redis	Memorystore
Networking	Virtual Network	VPC (Virtual Private Cloud)	VNet (Virtual Network)	VPC (Virtual Private Cloud)
	Load Balancer	ELB/ALB/**		

Category	Description	AWS Service	Azure Service	GCP Service
NLB	Load Balancer	Cloud Load Balancing		
	DNS Management	Route 53	DNS	Cloud DNS
	Content Delivery (CDN)	CloudFront	Front Door / CDN	Cloud CDN
	Direct Connect	Direct Connect	ExpressRoute	Cloud Interconnect
Identity & Security	Identity & Access Mgmt	IAM (Identity & Access Mgmt)	Azure AD + IAM	Cloud IAM
	Secrets Management	Secrets Manager	Key Vault	Secret Manager
	DDoS Protection	Shield	DDoS Protection	Cloud Armor
	Web Application Firewall	WAF	Application Gateway WAF	Cloud Armor
Management & Monitoring	Monitoring & Logging	CloudWatch	Monitor	Cloud Operations (Monitoring/Logging)
	Infrastructure as Code	CloudFormation	Resource Manager (ARM Templates)	Deployment Manager
	Config & Compliance	Config	Policy	Security Command Center
Big Data & Analytics	Data Pipelines (ETL)	Glue	Data Factory	Dataflow
	Stream Processing	Kinesis	Stream Analytics	Dataflow / Pub/Sub
	Real-Time Messaging	SQS / SNS	Service Bus / Event Grid	Pub/Sub
AI/ML	Machine Learning Platform	SageMaker	Machine Learning	Vertex AI
	Vision AI	Rekognition	Computer Vision	Vision AI

Category	Description	AWS Service	Azure Service	GCP Service
	Speech AI	Transcribe	Speech Services	Speech-to-Text / Text-to-Speech
	Language AI	Comprehend	Text Analytics	Natural Language AI
DevOps	Container Registry	ECR (Elastic Container Registry)	Container Registry	Artifact Registry
	CI/CD Pipelines	CodePipeline	DevOps Pipelines	Cloud Build
	Source Repositories	CodeCommit	Repos	Cloud Source Repositories

Key Takeaways and Notes:

1. Conceptual Equivalency, Not Exact Parity: While services fall into the same categories, their features, pricing models, and performance characteristics can differ significantly. Always evaluate for your specific use case.
2. Naming Differences: Notice the patterns:
   - AWS often uses "Elastic" or simple acronyms (S3, EC2).
   - Azure services often include "Azure" in the name and are descriptively named (e.g., Virtual Machines, Blob Storage).
   - GCP services often include "Cloud" in the name and are also descriptive (e.g., Compute Engine, Cloud Storage).
3. Strengths:
   - AWS: Breadth and depth of services, largest market share and community.
   - Azure: Deep integration with Microsoft ecosystem (Windows Server, Active Directory, Office 365), strong hybrid cloud story.
   - GCP: Deep data analytics and AI/ML integration (BigQuery, Vertex AI), deep container expertise (Kubernetes), and a high-performance global network.
4. The "Hottest" Service in Each Category: Often, the most intense competition is in databases, AI, and Kubernetes. For example:
   - Database: AWS DynamoDB vs. Azure Cosmos DB vs. GCP Firestore/Bigtable.
   - Data Warehouse: AWS Redshift vs. Azure Synapse vs. GCP BigQuery.
   - Kubernetes: AWS EKS vs. Azure AKS vs. GCP GKE (the originator).