AWS vs Azure vs GCP: Core Services Compared

⚙️ 1. Compute Services

Feature	AWS	Azure	GCP
Virtual Machines	EC2 (Elastic Compute Cloud)	Azure Virtual Machines	Compute Engine
Serverless	AWS Lambda	Azure Functions	Cloud Functions
Container Services	ECS, EKS	Azure Kubernetes Service (AKS)	GKE (Google Kubernetes Engine)
Autoscaling	Auto Scaling Groups (ASG)	VM Scale Sets	Managed Instance Groups

- **Highlight**: AWS offers more instance types and customization; GCP emphasizes fast boot and billing per second.

🌐 3. Networking Services

Feature	AWS	Azure	GCP
Virtual Network	VPC	Virtual Network (VNet)	VPC
Load Balancer	Elastic Load Balancing	Azure Load Balancer / App GW	Cloud Load Balancing
DNS	Route 53	Azure DNS	Cloud DNS

Feature	AWS	Azure	GCP
CDN	CloudFront	Azure CDN	Cloud CDN

- **Highlight**: GCP provides global load balancers that aren't region-bound, making it strong for multi-region apps.

📊 5. Databases

Type	AWS	Azure	GCP
Relational	RDS (MySQL, PostgreSQL, etc.)	Azure SQL Database	Cloud SQL
NoSQL	DynamoDB	Cosmos DB	Firestore / Bigtable
Data Warehousing	Redshift	Synapse Analytics	BigQuery

- **Highlight**: BigQuery is highly optimized for analytics; Cosmos DB is globally distributed and multi-model.

🛠️ 7. DevOps & CI/CD Tools

Feature	AWS	Azure	GCP
CI/CD	CodePipeline, CodeBuild	Azure DevOps, GitHub Actions	Cloud Build, Cloud Deploy
Infrastructure as Code	CloudFormation	ARM/Bicep	Deployment Manager, Terraform
Monitoring	CloudWatch	Azure Monitor	Cloud Operations Suite

🔁 Summary Table

Category	AWS	Azure	GCP
Compute	EC2, Lambda	VM, Functions	Compute Engine
Object Storage	S3	Blob Storage	Cloud Storage
Container Orchestration	ECS, EKS	AKS	GKE
DB & Data	RDS, DynamoDB	SQL DB, Cosmos	Cloud SQL, BQ
IAM & Identity	IAM	AAD	IAM
AI/ML	SageMaker	Azure ML	Vertex AI
CI/CD	CodePipeline	Azure DevOps	Cloud Build

📌 Conclusion

- **AWS** is the most mature and has the largest ecosystem.
- **Azure** integrates deeply with Windows environments and Active Directory.
- **GCP** excels at data analytics, ML, and developer-friendly pricing.