AMAZON WEB SERVICES

V/S

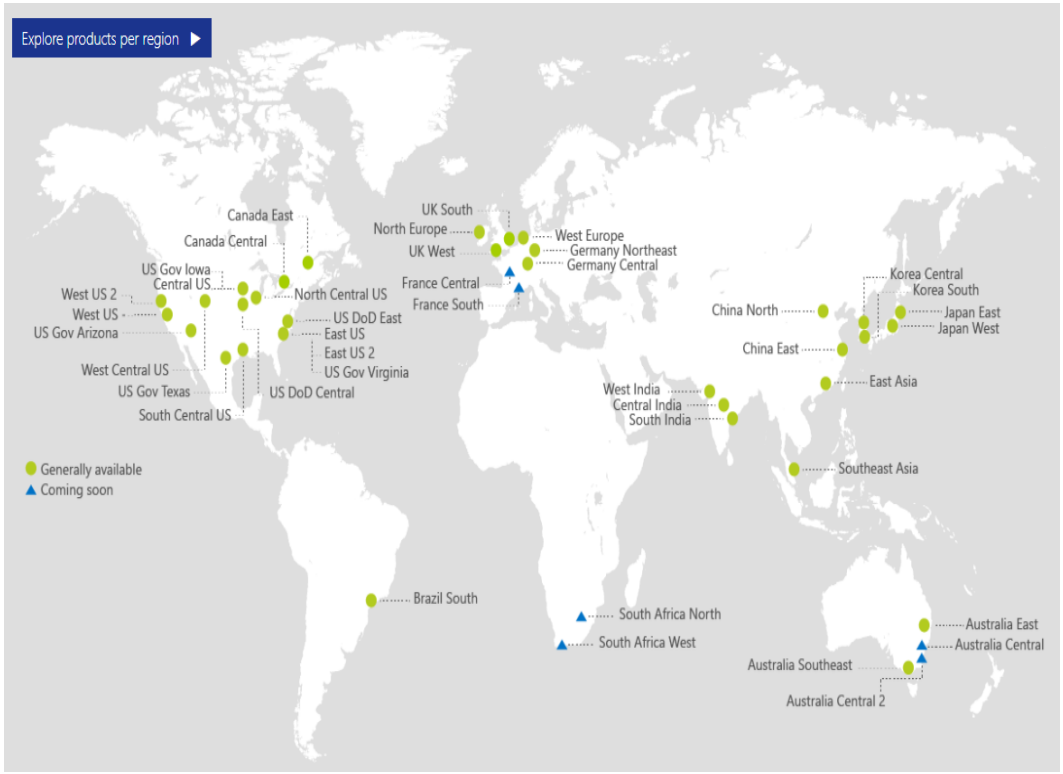
GOOGLE CLOUD PLATFORM

V/S

MICROSOFT AZURE

AVAILABLE REGIONS

Amazon Web Service	Google Cloud Platform	Microsoft Azure
AWS GLOBAL INFRASTRUCTURE (REGIONS + AVAILABILITY ZONES)	Google Compute Regions and Zones	Azure Regions
Regions = 18 Availability Zones = 53	Regions = 15 Zones =4	Regions = 36



Networking Services

	Amazon Web Service	Google Cloud Platform	Microsoft Azure
Virtual Private Network	Service: **Virtual Private Cloud**	Service: **Cloud Virtual Network**	Service: **VPN Gateway** •Classified into two types. Policy Based VPN and Route Based VPN.
SUBNETS	•Subnets in AWS VPC are mapped to Azs • Subnets can be public or private • Communication between subnets are through the AWS backbone • A default vpc and subnets ae created for each region	• Subnets cannot be public or private • Default Vnet is not provided • Resources connected to a Vnet have access to the internet by default	• Require a gateway subnet • Gateway subnets must be named GatewaySubnet
Security	•Two levels of security for resources deployed to the network 1. Security Group 2. NACLs	•Provides Network Security Groups (Combines the function of security group and NACLs)	• Provides Security using industry standard protocols 1. IPSec 2. Internet Key Exchange
DNS Service	Service: **Route53**	Service: **Google DNS**	Service: **Azure DNS**

COMPUTE SERVICES

Amazon Web Service	Google Cloud Platform	Microsoft Azure
Service- El**astic Compute Cloud**	Service- **Compute Engine**	Service- **Virtual Machines**
Technology behind AWS EC2 VMs is XEN	Technology behind Google Clouds VMs Kernel Virtual Machine	
7 Instance Families 40 Instance types	4 Instance Families 18 Intance types	4 Instance Families 33 nstance types
There are four ways to pay for the pricing 1. Spot Instance 2. Reserved Instance 3. On-Demand Instance 4. Dedicated Instance	Set price for predefined Virtal Machines	There are two ways to pay for the virtual machines 1. Pay for compute capacity by second 2. Reserved Virtual Machine Instances(1year/ 3 year)
Also provides Burstable Performance Instances (Have the ability to burst above the baseline level of CPU performance)		

OBJECT STORAGE

	Amazon Web Service	**Google Cloud Platform**	**Microsoft Azure**
SERVICE	**Simple Storage Service**	**Google Cloud Storage**	**Blob**s
Availability Service Level Agreement	99.99%	99.95%	99.99%
Hot Storage	S3 Standard	Google Cloud Storage	Hot Blob Storage
Cool Storage	S3 Standard – Infrequent Access	Google Cloud Storage Nearline	Cool Blob Storage
Cold Storage	Glacier	Google Cloud Storage Coldline	-
Size Limit	5 TB/Object	5 TB/object	500 TB/account

BLOCK STORAGE

	Amazon Web Service	Google Cloud Platform	Microsoft Azure
SERVICE	General and Provisioned IOPS SSD	SSD	Premium
Volume Size	1 GB to 16 GB 4 GB to 16 TB Provisioned IOPs	1 GB to 64 GB	1 GB to 1 TB
Max IOPs per volume	10,000 20,000 – Provisioned IOPs	40,000 read 30,000 write	5000
Max Throughput per volume (MB/s)	160	800 read 400 write	200
Replication	RAID-1	Built-in Redundancy	LRS – multiple copies within datacenter

Relational Database

	Amazon Web Service	Google Cloud Platform	Microsoft Azure
SERVICE	RDS Amazon Redshift	Cloud SQL Cloud Spanner	Azure SQL Database
Description	RDS offers a range of managed databases •SQL Server •MySql •ProgresSQL •Oracle •MariaDB	Managed MySQL database	Fully managed relational database based on SQL Server
Replication	Multizone Cross-region(MySQL, MariaDB, PostrgreSQL and Aurora)	Multizone	SQL Data Sync is used for full replication

NoSQL Database

	Amazon Web Service	Google Cloud Platform	Microsoft Azure
SERVICE	DYNAMODB	Cloud Datastore	Azure DocumentDB
DESCRIPTION	Hosted, scalable database service	Automatically scaling NoSQL Database as a Service	Globally distributed, horizontally scalable, multi-model database service
SQL	No	SQL-like query language (GQL)	SQL- like query language
Server-side scripts	No	Using Google App Engine	Javascript
Triggers	Yes	Callbacks using the Google Apps Engine	JavaScript
Foreign keys	No	Yes	no
MapReduce	No	Yes	With Hadoop Integration
User Concepts	Access rights for users and roles can be defined via the AWS Identity and Access Management (IAM)	No	Access rights can be defined down to the item level

DEPLOYMENT TOOLS

Description	Amazon Web Service	Microsoft Azure	Google Cloud Platform
Store Code in private Git Repositories	AWS CodeCommit	Azure Container Service	Cloud Source Repositories
Release Software Using continuous Integration and Delivery	AWS CodePipeline	Azure Container Service	Maven App Engine Plugin, Gradle App Engine Plugin
Build and Test Code	AWS CodeBuild	Visual Studio Team Services	Cloud Tools for Android Studio, Cloud Tools for Eclipse, Cloud Tools for Intelli J, Cloud Tools for Visual Studio
Creating and Managing Netwokr Resources	AWS Cloudformation/Tera form	Azure Resource Manager Azure Automation/ Teraform	Teraform
Automatic Code deployment	AWS CodeDeploy	Azure Visual Studio Online	Cloud Deployment Manager

CONCLUSION


CHALLENGERS
LEADERS
Amazon Web Services
Microsoft
Google
Virtustream
Alibaba Cloud
CenturyLink
IBM
Rackspace
Joyent
Skytap
Interoute
Fujitsu
Oracle
NTT Communications
NICHE PLAYERS
VISIONARIES
ABILITY TO EXECUTE
COMPLETENESS OF VISION
As of June 2017

Amazon Web Service	Microsoft Azure	Google Cloud Platform
DOMINANT MARKET POSITION	SECOND LARGEST PROVIDER	THIRD LARGEST PROVIDER
Overwhelming options	Broad feature set	Fewer features and services
Complex, intricate and diversified payment structure	Less flexible but easy payment structure	Deep discounts and easy payment structure
Extensive training and documentation available	Less enterprise ready	Designed for cloud native businesses