## Cloud Computing (6) **Fundamentals**

### **High Availability**

- Definition
- Factors affecting availability
- Example: A web app across mulitple Azure regions with load balancing stays available if one region failes

## Scalability and Elasticity

Scalability

Elasticity

Example

#### Fault Tolerance and Disaster Recovery

- Fault tolerance
- Disaster Recovery
- Example

## **Economic Benefits of Cloud** Computing

- CapEx & OpEx
- Economies of Scale
- Example

### **Shared Responsibility Model**

- Definition
- Example
- Key Point

## **Cloud Service Models**

- Infrastructure as a Service
- Platform as a Service
- Software as a Service
- Serverless Computing

Cloud Deployment Models (3)

# **Public Cloud**

- Definition
- Charactertics
- Example

Benefit

Drawbacks

### **Private Cloud**

- Definition
- Charactertics
- Example
- Benefit
- Drawbacks

### **Hybrid Cloud**

- Benefit

- Definition
- Drawbacks

## Example

# **Networking in Azure**

Virtual Networks (VNet)

**Core Azure Services (8)** 

Zones

Definition

Functions

Examples

Definition

Examples

Relationships

Containers

App Services

Azure Functions

Relationships

**Azure Resource Groups** 

**Azure Computer Services** 

Virtual Machines (VMs)

Compute relationships

Detailed Explanation

**Azure Regions and Availability** 

- Load Balancers
- Azure DNS
- VPN Gateway
- Network relationships

## Storage in Azure

- Azure storage services provide scalable, durable options for different data types
- Blob Storage
- File Storage
- Queue Storage
- Disk Storage
- Relationship

## **Databases in Azure**

- Azure SQL Database
- Cosmos DB
- Azure Database for MySQL/PostgreSQL
- Relationalships

## **Azure Marktplace**

- A platform offering pre-built solutions and services from Microsoft and partners
- Marketplace provides templates (e.g., VM images, apps) to accelerate deployment, often integrating multiple Azure services.
- Examples

## **Key Relations Summary**

- Compute + Networking
- Compute + Storage Compute + Database
- Storage + DB
- All services + Regions/Zones
- Resource Groups

## **Security and Compliance (2)**

#### **Azure Security Tools**

- Azure Security Center
- Azure Key Vault
- Azure Fiewall
- Azure DDos Protection
- Azure Sentinel
- Azure Information Protection (AIP)
- Azure Advisor

### **Azure Compliance Offerings**

- Certifications and tools for regulatory
- Key offerings

compliance

## Identity, Governance, Privacy, and Compliance

# **Azure Active Directory (Azure**

(6)

- Cloud-based identity and access
- management SSO across Microsoft 365 and Azure

### **Role-Based Access Control** (RBAC)

- Fine-gained access control for Azure resources
- Contgributor for devs, Reader for production

### **Azure Policy**

- A service used to create, assign, and mange policies that control or audit resources
- Features
- Mandating storage encryption

### **Azure Blueprints**

- A service that enable creating, defining and deploying repeatable sets of Azure resources
- Feature
- Setting up a compliant dept infrastructure

#### MFA & Conditional Access

- MFA
- Conditional Access

## **Microsoft Purview**

- Data governance and compliance
- Tracking data lineage across Azure and on-premises

## Core Solutions and (4) Management Tools

### IoT Solutions

- Azure IoT Hub
- Azure IoT Central
- Azure Sphere

## Big data & Analytics

- Azure Synapse Analytics
- Azure Databricks HDInsight

## Artificial Intelligence (AI)

- Azure Machine Learning
- Cognitive Services

DevOps & Management Tools

- Azure DevOps
- GitHub
- Azure Resource Manager (ARM) Templates
- Azure CLI & PowerShell

Azure Monitor

Professional Direct

Basic

Developer

Standard

Subscription Free account: 12 months of popular free

services, \$200 credit for the first 30 days

Azure Pricing, SLAs and (6)

**Service Lifecycles** 

Pay-as-you-go

Spot pricing

Tools

for breaches

multi-service apps

**Azure Support Plans** 

Reserved Instance

**Azure Pricing Models** 

**Azure Cost Management** 

Service Level Agreements (SLAs)

Uptime guarantees with service credits

VM offer 99.9% (single) to 99.99%(zones);

composites SLAs reflect lowest uptime in

- Pay-as-you-go
- Enterprise Agreements

**Azure Free Trail and** 

Student Subscription

## Service Lifecycle

- Preview Stage General Availability (GA)
- Deprecated Service