Module : 26 Cloud Computing Business Continuity In The Cloud

1) Configuration

- Define Cloud Security Policies
- Access Controls
- Encryption
- Network Security
- Development
- Secure Design
- Automated Testing
- Continuous Integration/Continuous Deployment (CI/CD)
- Maintenance
- Regular Audits and Assessments
- Update and Patch Management
- Monitoring and Incident Response
- Employee Training

2) Portability in cloud computing refers to the ability to seamlessly move applications and data across different cloud environments. This includes public clouds, private clouds, and hybrid clouds, or even to and from on-premise systems.

3) Reliability in the cloud refers to the ability of a system or service to consistently perform its intended function without failure over a specified period.

- High Availability ensures that a system or service is operational and accessible for a very high percentage of time.

4) Mobile Cloud Computing is the integration of cloud computing with mobile devices.

- It allows mobile applications to access cloud resources such as storage, computing power, and software through the internet.
- This enables mobile devices to run more complex applications and store more data than would be possible using their limited on-device resources.

5) Amazon Web Services (AWS)

- Extensive Services: Offers over 200 fully featured services for compute, storage, databases, analytics, machine learning, and more.
- Global Reach: With a vast global infrastructure, it allows users to deploy applications in multiple regions and availability zones.
- Scalability and Flexibility**:** Provides scalable computing power that can be adjusted based on demand.

- Security: Prioritizes security with a variety of compliance certifications and encryption services.
- Microsoft Azure
- Integrated with Microsoft Products**:** Seamlessly integrates with Microsoft's software, including Windows Server, Active Directory, and Office 365.
- Hybrid Cloud Capabilities**:** Supports hybrid cloud scenarios, offering flexibility for on-premises, multi-cloud, and edge services.
- AI and Machine Learning**:** Provides a suite of AI and machine learning services, enabling developers to build intelligent applications.
- Enterprise-Grade Security**:** Ensures robust security and compliance, suitable for businesses of all sizes.
- Google Cloud Platform (GCP)
- Data and Analytics**:** Known for its powerful data analytics and machine learning tools, such as BigQuery and TensorFlow.
- Developer-Friendly**:** Offers an array of development tools and services that support open-source technologies.
- Global Network**:** Leverages Google's infrastructure, ensuring low-latency and high-reliability services.
- Sustainability**:** Focuses on sustainability, aiming to be the cleanest cloud in the industry.

6) Amazon Web Services (AWS)

- Go to AWS Management Console**:** AWS Management Console
- Sign In/Create Account**:** You'll need an AWS account. Use your Amazon account credentials to sign in, or create a new AWS account if you don't have one.
- Explore Services: Once logged in, you can navigate through various services like EC2 (for virtual servers), S3 (for storage), and many more.
- Microsoft Azure
- Go to Azure Portal: Azure Portal
- Sign In/Create Account: Use your Microsoft account credentials to sign in, or create a new Azure account if you don't have one.
- Explore Services**:** After logging in, you can explore different services, such as Azure Virtual Machines, SQL Databases, and more.
- Google Cloud Platform (GCP)
- Go to Google Cloud Console**:** Google Cloud Console
- Sign In/Create Account**:** Use your Google account credentials to sign in, or create a new Google Cloud account if needed.
- Explore Services: Once logged in, you can access services like Compute Engine, Cloud Storage, BigQuery, among others.

7) Amazon Web Services (AWS)

- Create Compute: (EC2 Instance)
- Sign in to the AWS Management Console.
- Navigate to EC2 under Compute.
- Click on Launch Instance.
- Choose an Amazon Machine Image (AMI).
- Select an Instance Type.
- Configure Instance Details, add Storage, Tags, and Security Group.
- Review and launch your instance.
- Create Network: (VPC)
- Sign in to the AWS Management Console.
- Navigate to the VPC section.
- Click on Create VPC.
- Fill in the necessary details like the name and IP range.
- Click Create.
- Create Storage: (S3 Bucket)
- Sign in to the AWS Management Console.
- Navigate to S3 under Storage.
- Click on Create Bucket.
- Enter the bucket name and region.
- Set permissions and configurations as required.
- Click Create Bucket.
- Microsoft Azure
- Create Compute: (Virtual Machine)
- Sign in to the Azure Portal.

- Go to Virtual Machines.
- Click on Add, then select Virtual Machine.
- Fill in the necessary details like the resource group, VM name, and region.
- Choose an Image and Size.
- Review and create your VM.
- Create Network: (Virtual Network)
- Sign in to the Azure Portal.
- Navigate to Virtual Networks.
- Click on Add.
- Enter the network details like name, address space, and subnets.
- Review and create the network.
- Create Storage: (Storage Account)
- Sign in to the Azure Portal.
- Navigate to Storage Accounts.
- Click on Add.
- Fill in the necessary details like the resource group, storage account name, region, and performance.
- Review and create the storage account.
- Google Cloud Platform (GCP)
- Create Compute: (Compute Engine VM Instance)
- Sign in to Google Cloud Console.
- Go to Compute Engine -> VM Instances.
- Click on Create Instance.
- Fill in details such as name, region, and machine type.

- Select an Operating System image.
- Review and click Create.
- Create Network: (VPC Network)
- Sign in to Google Cloud Console.
- Navigate to VPC Network -> VPC Networks.
- Click on Create VPC Network.
- Enter details like the name, subnet details, and region.
- Click Create.
- Create Storage: (Cloud Storage Bucket)
- Sign in to Google Cloud Console.
- Go to Cloud Storage -> Buckets.
- Click on Create Bucket.
- Enter the bucket name and choose the storage class and location.
- Set permissions and configurations as needed.
- Click Create.

8) Amazon Web Services (AWS)

- Compute (EC2) Pricing:
- On-Demand Instances: Pay for compute capacity by the hour with no long-term commitments2.
- Savings Plans: Save up to 72% over On-Demand costs by committing to a consistent amount of usage (measured in $/hour) for a one- or three-year term.

- Spot Instances: Purchase unused capacity at significant discounts—up to 90% compared to On-Demand prices.
- Reserved Instances: Pay in advance and reduce overall cost compared to On-Demand instances.
- Storage (S3) Pricing:
- Standard Storage: $0.023 per GB for the first 50 TB per month.
- S3 Intelligent-Tiering: $0.023 per GB for frequently accessed data, $0.0125 per GB for infrequently accessed data.
- S3 Glacier: $0.004 per GB for archival storage with rapid retrieval4.
- Storage Classes: Various pricing tiers based on access patterns and retrieval times.
- Networking (VPC) Pricing:
- Data Transfer Out to the Internet: Costs start at $0.09 per GB for the first 10 TB per month.
- Inter-Region Data Transfer: Data transfer between AWS regions is free for the first GB per month, then charged at varying rates.