Cyber Security - Virtualization And Cloud Basics

1. What is Cloud Computing?

- Cloud computing is the delivery of computing services like servers, storage, databases, networking, and software over the internet ("the cloud") to allow faster innovation, flexible resources, and cost savings

2. Describe Cloud Computing Deployment Models.

- Public Cloud: Open for all, provided by third-party vendors (AWS, Azure).
- Private Cloud: Dedicated to one organization, more secure.-
- Hybrid Cloud: Combination of public and private.
- Community Cloud: Shared by organizations with common goals.

3. What are the Components of Cloud Computing?
   - Client Infrastructure
   - Application
   - Services (IaaS, PaaS, SaaS
   - Storage
   - Infrastructure (servers, networking)
   - Management
   - Security

4. Advantages and Disadvantages of Cloud Computing?

Advantages

- Cost-effective
- Scalabl
- Flexible and accessible
- Automatic update
- Disaster recovery

Disadvantages

- Security risks
- Downtime
- Limited control
- Vendor lock-in

5. What is Virtualization and its Types?

- Virtualization is the creation of a virtual version of computing resources like OS, storage, or network.

Types

- Server Virtualization
- Storage Virtualization
- Network Virtualization
- Desktop Virtualization
- Application Virtualization

6. Types of Hypervisors and How to Manage Them?

- Type 1 (Bare Metal): Runs directly on hardware (VMware ESXi, Hyper-V)
- Type 2 (Hosted): Runs on top of OS (VirtualBox, VMware Workstation).
- Management Tools: vCenter, Hyper-V Manager, CLI, cloud dashboards

7. Roles of Virtualization in Cloud Computing?

- Enables resource pooling
- Provides scalability & flexibility
- Better hardware utilization
- Reduces cost
- Supports multi-tenancy