**Module : 3 System Management And Public Cloude**

**1. Different Types of Cloud Storage**

Cloud storage is classified based on its deployment model and purpose:

* **Public Cloud Storage**: Provided by third-party vendors like AWS, Google Cloud, or Azure; accessible via the internet.
* **Private Cloud Storage**: Dedicated infrastructure for a single organization, offering better control and security.
* **Hybrid Cloud Storage**: Combines public and private clouds for flexibility and scalability.
* **Personal Cloud Storage**: For individuals, such as Google Drive, iCloud, or OneDrive.
* **Object Storage**: For storing unstructured data (e.g., images, videos) in a scalable way.
* **File Storage**: Organizes data hierarchically, used by shared file systems like Dropbox.
* **Block Storage**: Provides high-performance storage, used in databases and applications requiring low latency.

**2. Role-Based Access Control (RBAC), Identity and Access Management (IAM), and Multi-Factor Authentication (MFA)**

* **RBAC**: Assigns permissions to users based on their roles (e.g., admin, user, viewer), ensuring that users can only access the resources relevant to their job.
* **IAM**: A framework to manage digital identities and access to resources, ensuring that only authorized users have access to specific tools or data.
* **MFA**: Adds an extra layer of security by requiring users to verify their identity in multiple ways (e.g., password + one-time code).

**3. What is Physical and Virtual Host Allocation?**

* **Physical Host Allocation**: Assigns a physical server to run workloads directly, offering better performance and resource control.
* **Virtual Host Allocation**: Uses virtualization to allocate multiple virtual machines (VMs) on a single physical server. This optimizes resource usage and scalability.

**4. How to Access Resources of Cloud Computing?**

* **Through a Cloud Provider’s Web Interface**: Use dashboards like AWS Console or Azure Portal.
* **Using APIs or SDKs**: Developers can integrate cloud services into applications programmatically.
* **Command Line Interfaces (CLI)**: Access resources via command-line tools (e.g., AWS CLI).
* **Remote Desktop or SSH**: For accessing virtual machines.

**5. Types of Backup in Cloud**

* **Full Backup**: Copies all data; resource-intensive but comprehensive.
* **Incremental Backup**: Backs up only changes since the last backup; saves time and storage.
* **Differential Backup**: Backs up data changed since the last full backup.
* **Mirror Backup**: Creates an exact replica of the source data.
* **Snapshots**: Captures the current state of a system or storage.

**6. What is Disaster Recovery?**

* **Definition**: Disaster recovery is the process of restoring IT infrastructure, systems, and data after a disruptive event (e.g., cyberattacks, natural disasters).
* **Key Components**: Backup, replication, failover mechanisms, and a disaster recovery plan (DRP).
* **Cloud-based DR**: Offers fast recovery through geographically distributed data centers and automated failover options.

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