

Oracle Cloud Infrastructure (OCI)

1. OCI Networking Services

- **Dynamic Routing Gateway (DRG):**
 - Provides private connection between a VCN and on-premises network.
 - Enables hybrid cloud deployments.
- **Network Security Group (NSG):**
 - Controls traffic flow between specific resources within a VCN.
 - Offers granular control compared to Security Lists.

2. OCI Compute Services

- **Instance Configuration:**
 - Combination of instance shape, base image, and metadata.
 - Allows pre-defining settings for quick deployment.
- **Compute Workload Options:**
 - **OCI Compute (VMs):** Full OS control, legacy apps, Windows workloads.
 - **Managed Nodes (OKE):** Kubernetes control, stateful workloads, GPU workloads.
 - **Virtual Nodes:** Serverless Kubernetes infra, batch jobs, spiky workloads.
 - **Run Containers:** Run containers without Kubernetes, ephemeral workloads, Dev/Test.
 - **OCI Functions:** Serverless, event-driven code execution, simple API implementation.

3. OCI Storage Services

- **Block Volume Performance Levels:**
 - Lower Cost, Balanced, Higher Performance, Ultra High Performance.
 - Ultra High Performance suitable for extremely high IOPS workloads.
- **Object Storage Tiers:**
 - **Standard:** Frequently accessed data.
 - **Infrequent Access:** Occasionally accessed data.
 - **Archive:** Rarely accessed, long-term storage, lowest cost, restore time up to 1 hour, minimum storage duration 90 days.
- **Pre-Authenticated Request (PAR) URLs:**
 - Provide temporary, secure access to specific objects.

4. OCI Security Services

- **OCI Security Zones:**
 - Enforce security best practices automatically.
 - Restrict resource creation based on policies.
 - Continuously monitor security posture.
 - Do NOT store/manage encryption keys or secrets.
- **OCI Vault:**
 - Securely stores and manages encryption keys, secrets, and certificates.
 - Centralized repository for sensitive data.
- **OCI Cloud Guard:**
 - Monitors resources for security issues.
 - Components: Targets, Detectors, Problems.
 - Responders are not a Cloud Guard component.

5. OCI Pricing & Budgeting

- **Pricing Factors:**
 - Number of virtual machines running.
 - VM instance size (OCPUs, memory).
 - Operating system used.
 - Data transfer (egress to the internet).
- **Factors Not Affecting Cost:**
 - Region used by VM instance does not directly impact cost.
- **Budget Notifications:**
 - Email alerts can be configured when spending thresholds are reached.

6. OCI Regions & Availability Domains

- **Region:** Geographically distinct area containing multiple data centers.
- **Availability Domain (AD):** Fault-isolated data center within a region.
- **Relationship:** Each AD belongs to a region.
- **Fault Domains:** Protect against failures within a single AD.