Disaster Recovery Options in the AWS

1. **Backup and Restore**
    - **Description:** This is the simplest and least expensive DR strategy. It involves regularly backing up your data to AWS S3 (often cross-region) and, in the event of a disaster, restoring that data to a new environment.
    - **RTO/RPO:** Typically the highest (longest) RTO and RPO among the options, as it involves restoring data and provisioning new infrastructure from scratch.
    - **Use Case:** Suitable for non-critical applications where longer downtime and some data loss are acceptable.
2. **Pilot Light**
    - **Description:** In this strategy, a minimal, scaled-down version of your environment is continuously running in the recovery region. This "pilot light" infrastructure includes core services and data, but not the full capacity. When a disaster occurs, you scale up the existing resources and deploy the full application stack.
    - **RTO/RPO:** Lower than Backup and Restore. RPO is generally good as data is continuously replicated. RTO is improved because the basic infrastructure is already in place.
    - **Use Case:** Good for applications that require faster recovery than backup and restore, but where a full warm standby is too costly.
3. **Warm Standby**
    - **Description:** This strategy involves maintaining a fully functional, but scaled-down, version of your application in the recovery region. All core services are running, and data is continuously replicated. In a disaster, you simply scale up the existing resources to handle full production load and redirect traffic.
    - **RTO/RPO:** Significantly lower than Pilot Light. RPO is very good due to continuous data replication, and RTO is low because the application is already running and only needs to be scaled.
    - **Use Case:** Ideal for critical applications that require quick recovery with minimal data loss, balancing cost and performance.
4. **Multi-Site Active/Active (Hot Standby)**
    - **Description:** This is the most robust and expensive DR strategy. Your application runs simultaneously in two or more active regions, handling live traffic in both. Data is replicated synchronously or asynchronously between regions. In a disaster, traffic is simply redirected away from the affected region, and the remaining active regions seamlessly handle the full load.
    - **RTO/RPO:** The lowest (best) RTO and RPO, often near-zero downtime and data loss.
    - **Use Case:** Reserved for mission-critical applications where any downtime or data loss is unacceptable, such as financial systems or real-time services.