Maintenance

1. Introduction
   1. The Maintenance Window in Amazon RDS is a set time for AWS to perform maintenance on your database.
   2. During this time, AWS may apply security patches, software updates, and minor version upgrades.
   3. This keeps your RDS instance secure and running smoothly
2. Key Points
   1. Why It's Important — Maintenance helps fix security issues, improve performance, and ensure the database is up-to-date
   2. Choosing a Maintenance Window
      1. You can pick a day, time, and duration (up to 8 hours) for maintenance.
      2. It's best to select low-traffic hours to avoid disruptions
   3. Automatic Minor Upgrades
      1. AWS can automatically apply minor updates during the window, keeping your database safe and stable.
         1. 5.6.1 to 5.6.2 is a minor update within the 5.6 series
         2. Moving from 5.6 to 5.7 is a major version change
      2. Major upgrades are only done manually
         1. These are larger updates (e.g., going from MySQL 5.6 to 5.7), which might include changes to features or configurations.
         2. You must initiate these upgrades manually because they might require testing or adjustments on your part to ensure compatibility with your applications
   4. Tasks Done in Maintenance
      1. Security Patches
      2. Software Updates
      3. Hardware Maintenance
   5. Adjusting the Window Later — If needed, you can change the maintenance window at any time in the RDS settings.
   6. Notifications — AWS sends alerts about upcoming maintenance so you can prepare
3. Maintenance Considerations
   1. Single-AZ
      1. Maintenance causes downtime, so it's best for non-critical workloads
      2. Choosing a low-traffic maintenance window is essential
   2. Multi-AZ
      1. During maintenance, AWS applies updates first to the standby instance.
      2. Once the standby is updated, RDS performs a quick failover, promoting the updated standby to primary.
      3. This process keeps downtime short because the main instance is only offline for a little while during the switch
   3. Multi-AZ DB Cluster
      1. Maintenance in a Multi-AZ cluster is handled in a way that doesn't impact the primary instance.
      2. Updates can be applied in stages across instances, allowing for maintenance with no downtime or service interruption
4. Deletion Protection
   1. in Amazon RDS is a feature that prevents accidental deletion of your database instance
   2. When enabled, it blocks any deletion attempts, adding an extra layer of protection, especially for production databases or critical environments
   3. To delete a protected instance, you must first disable Deletion Protection, adding a extra step to the process