Primary Database and CNAME

Cloud architects and engineers often like to have multiple instances of the same database running in multiple Availability Zones (or AZs; discussed in the next section) in order to maintain high availability and low-latency, among a whole host of other reasons. When spinning off RDS databases into a multi-AZ setup however, we must designate one of the database instances as the primary or main database instance.

This so-called primary database instance is also the holder of something called a Canonical name, or CNAME for short. A CNAME is a type of DNS record that allows one domain name to act as an alias for another, essentially mapping an alias name to a true or canonical domain name. This means that when an application connects to the CNAME, it will resolve to the actual endpoint of the database instance, ensuring smooth communication.

In the event that the primary database fails, the Canonical Name (CNAME) record in the Domain Name System (DNS) is automatically updated to redirect database requests to the standby instance, a process that is considered essential for seamless failover. By updating the CNAME, the system ensures that applications continue to connect to the standby instance without interruption. This process minimizes downtime and enhances the overall reliability and resilience of your database services, allowing for high availability even in the event of a failure.