AWS Route 53 to Google Cloud DNS Migration

Clean technical case study prepared by Hariharan J

Executive Summary

This case study describes a controlled DNS migration from an AWS Route 53 hosted zone to Google Cloud DNS. The work focuses on inventory, record replication, name server cutover, validation, rollback readiness, and avoiding downtime during propagation.

Primary services	AWS Route 53, Google Cloud DNS, DNS records, SSL/TLS validation
Scenario	Move DNS hosting for haridns.qzz.io from Route 53 to Cloud DNS
Goal	Preserve DNS availability and validate all important records after cutover

Architecture

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Users -> public DNS resolvers -> registrar delegation -> Cloud DNS managed zone ->
A/CNAME/TXT records for the domain. Route 53 remains active until Cloud DNS propagation is
verified.
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Implementation Steps

- Inventory existing Route 53 records and document A, CNAME, TXT, NS, and SOA behavior.
- Create a public Cloud DNS managed zone with the same DNS name.
- Replicate application records into Cloud DNS with appropriate TTL values.
- Validate Cloud DNS answers directly before changing delegation.
- Update name servers at the registrar to Cloud DNS name servers.
- Keep Route 53 active during propagation and remove it only after validation is complete.

Validation

- Use dig or nslookup to confirm NS records point to Cloud DNS.
- Verify apex A record, www CNAME, and TXT records from multiple resolvers.
- Check HTTPS certificate/domain validation after DNS propagation.

Risks and Controls

- Missing records can break application or email routing; mitigate with a DNS inventory checklist.
- Propagation delay can cause inconsistent answers; mitigate by keeping old DNS active temporarily.
- Wrong name server configuration can make the domain unreachable; mitigate with rollback documentation.

Interview Talking Points

- How DNS delegation works and why old and new zones should overlap during migration.
- Difference between record migration and registrar transfer.
- How TTL and validation commands help reduce migration risk.