Template: Troubleshooting DNS Configuration in Route 53 for AWS Services

Overview

This template outlines a generic troubleshooting process for configuring a domain in AWS Route 53 to work with an AWS service (e.g., WorkMail, Lightsail) after a transfer or setup, based on the resolution of a specific case.

How the Issue Might Be Presented

- User reports a domain works with one AWS service but not another (e.g., Lightsail but not WorkMail).
- Requests help with nameservers, DNS records, or error messages (e.g., conflicts, CNAME errors).

What Could Go Wrong

1. **Nameserver Mismatch**:
    - Registered domain and hosted zone nameservers differ.
2. **Conflicting Records**:
    - Existing records conflict with service requirements (e.g., wrong region).
3. **CNAME at Apex**:
    - Attempt to add a CNAME at the domain root triggers an error.
4. **Misplaced Records**:
    - Records (e.g., TXT) are at the wrong subdomain or apex.
5. **Missing/Incorrect Records**:
    - Required records (e.g., MX, TXT, CNAME) are absent or outdated.

How to Resolve

1. **Align Nameservers**:
    - Compare registered domain and hosted zone nameservers in Route 53.
    - Update registered domain to match hosted zone's NS records.
2. **Resolve Conflicts**:
    - Identify existing vs. expected records via service console (e.g., WorkMail).
    - Update records to match service requirements (e.g., correct region).
3. **Handle CNAME Apex Errors**:
    - Check for and remove any apex CNAME; use A/ALIAS records instead.
    - Add CNAMEs only at subdomains (e.g., autodiscover).
4. **Correct Record Placement**:
    - Move misplaced records (e.g., TXT from apex to _amazonses subdomain).
5. **Add/Update Records**:
    - Manually add missing records (e.g., MX, TXT, CNAME) per service specs.

    - Use quotes for TXT values as provided.
6. **Verify and Test**:
    - Use service console to verify domain (e.g., WorkMail's "Verify").
    - Test with nslookup (e.g., -type=MX, -type=CNAME).

Estimated Time and Tasks

- **Time**: 1-3 hours active troubleshooting + 1-72 hours propagation.
- **Tasks**: 5-10, depending on complexity (e.g., nameserver update, record edits, verification).

Outcome

- Domain is fully configured in Route 53 for the target AWS service, with all DNS records correctly set and verified.

Tips

- Document existing records before changes.
- Confirm service region (e.g., us-east-1) to avoid mismatches.
- Use automation (e.g., "Update all in Route 53") when possible, but fall back to manual edits if errors occur.