📝 VisaNation.org – Detailed Technical Issue Report

Prepared for AWS Expert Review

📌 Issue Summary (In Plain English):

Our website, **VisaNation.org**, was recently transferred from **GoDaddy hosting to Amazon AWS**. Before this move, the website was running normally, with no downtime or connectivity issues.

Since migrating to AWS, the site has been persistently experiencing a **502 Bad Gateway error**, preventing any public access to the website. Currently, when attempting to load the site at `visanation.org` or directly via its AWS-assigned public IP (`3.21.168.13`), the browser either returns a:

- **502 Bad Gateway error**, or
- A **"connection timeout"**.

This issue has delayed the planned launch of our global visa directory platform, causing significant operational disruption.

🖥️ Current AWS Setup:

- **Domain Registrar**: Originally GoDaddy, transferred to AWS Route 53.
- **Hosting Environment**: AWS (US-East-2 / Ohio Region)
- **Instance Type**: EC2 Instance running standard Linux (Ubuntu/Amazon Linux).
- **Load Balancer**: AWS Application Load Balancer (ALB).
- **DNS**: AWS Route 53 A/ALIAS records pointing to ALB.
- **SSL**: Managed through AWS Certificate Manager, bound to ALB.
- **Security Groups**: Ports **80 (HTTP)** and **443 (HTTPS)** fully open and configured.

⚠️ Detailed Symptoms:

- AWS ALB **health checks** initially show EC2 target as "**healthy**", yet real requests always return **502 errors**.
- Directly accessing the public EC2 IP (`3.21.168.13`) results in timeout or connection failure.

- DNS routing (Route 53) verified working correctly (public DNS checks successful).

🚧 Actions Taken by Internal Ops Team:

The following troubleshooting steps were already performed but have not resolved the problem:

1. **EC2 Instance Verification:**
   - Confirmed EC2 is running and healthy.
   - Confirmed Security Groups allow inbound traffic (ports 80, 443).
2. **Web Server (NGINX) Setup:**
   - Installed and configured NGINX on EC2.
   - Deployed basic static HTML ("Coming Soon") at the root directory (`/var/www/html/index.html`).
   - Verified NGINX internally responds with HTTP 200 OK (via internal SSH curl).
3. **ALB Configuration:**
   - Confirmed listeners set correctly (HTTP: 80, HTTPS: 443).
   - Realigned listener to forward requests correctly to EC2 NGINX server port.
   - Verified health check passing at target group level.
4. **DNS (Route 53) Verification:**
   - Verified DNS records correctly resolving to ALB.
   - Confirmed no issues in Route 53 DNS setup.
5. **SSL Configuration:**
   - SSL Certificate correctly issued and bound to ALB.
6. **Firewall & Network Checks:**
   - Checked AWS Security Groups (fully open to necessary ports).
   - Checked server firewall (UFW) is inactive/not blocking.
   - Verified no network ACL or subnet misconfigurations.

Despite these measures, the **502 error persists publicly**, and the direct IP connection still times out.

❗ Current Persistent Issues:

- **502 Bad Gateway** error continues at ALB/DNS level (`visanation.org`).
- Direct IP (`3.21.168.13`) remains unreachable from public internet.
- Internal curl tests via SSH confirm NGINX serves content correctly locally, but external/public requests fail.

⚑ Suspected Root Cause:

Based on internal diagnostics, the likely issue resides in one (or combination) of the following:

- Misconfiguration of ALB listener forwarding rules (HTTP/HTTPS).
- Hidden networking or port-forwarding issue inside AWS VPC/subnets.
- Possible lingering DNS or routing conflicts due to domain transfer from GoDaddy to AWS Route 53.

🛠 Request for AWS Expert Support:

We need immediate AWS expert assistance to precisely pinpoint and resolve this critical issue. Specifically, we require help in:

1. Identifying the exact network or application-layer blockage causing the 502 error.
2. Confirming proper ALB → EC2 instance routing and configuration.
3. Restoring immediate public visibility of the static splash page at `visanation.org`.