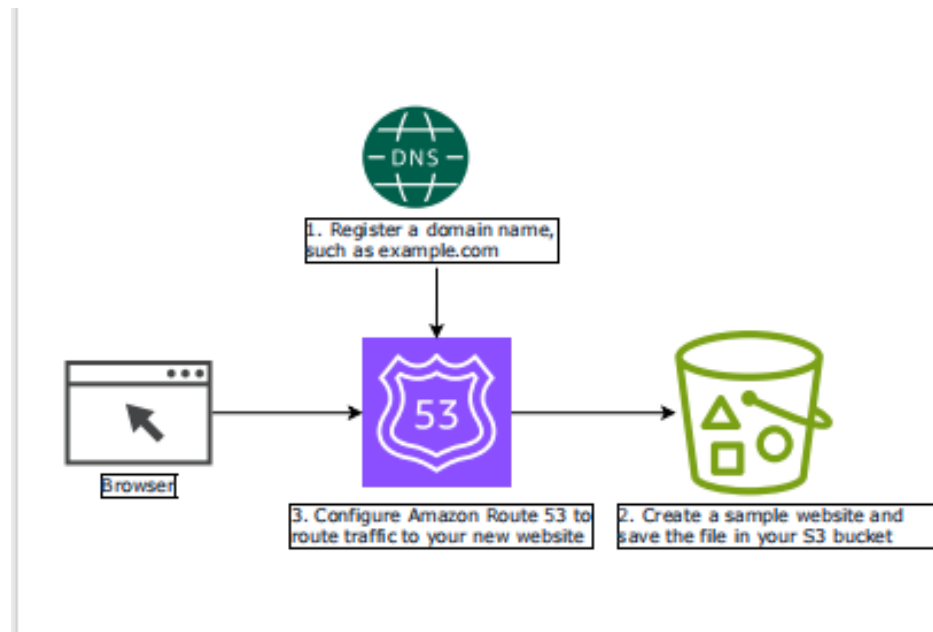
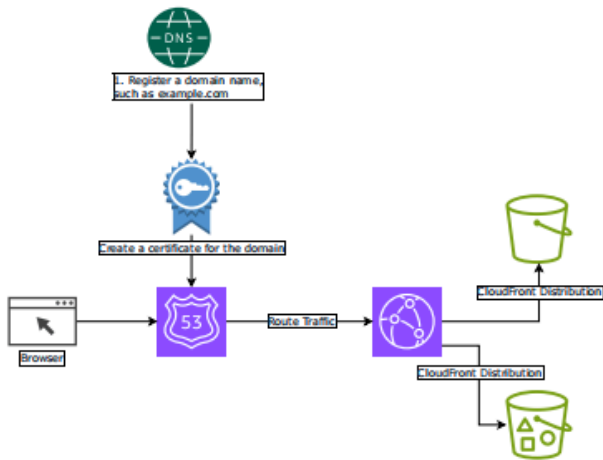









🌐 Use Your Domain for a Static Website in an Amazon S3 Bucket.



1. 🖋️ Register a Domain
2. 🪸 Create S3 Bucket for Root Domain
3. ⚙️ Configure Bucket for Hosting
4. 🔄 Set up Redirection (Optional)
5. 📁 Upload Website Content
6. 🛠️ Edit Block Public Access Settings
7. 📄 Attach Bucket Policy
8. ✍️ Test Domain Endpoint
9. 🚦 Route Traffic via Route 53
10. 🌐 Test Your Website

Using CloudFront to Serve a Static Website.



1.  Register your domain name
2.  Create a domain certificate
3.  Create S3 buckets for website and subdomain
4.  Upload your website to the S3 bucket
5.  Create CloudFront distributions
6.  Configure Route 53 to route traffic
7.  Verify secure website access

Traffic Routing Policies in Route 53

Route 53 provides multiple routing policies for directing traffic efficiently:

1. **Simple Routing**
 - Routes requests to a single resource.
 - Example: A website with a single web server.
2. **Weighted Routing**
 - Distributes traffic between multiple endpoints based on assigned weights.
 - Example: 70% traffic to one server and 30% to another.
3. **Latency-based Routing**
 - Routes users to the lowest-latency AWS region.
 - Example: Users in the US routed to us-east-1, while users in Europe are routed to eu-west-1.
4. **Geolocation Routing**
 - Routes users based on their geographic location.
 - Example: European users are directed to servers in the EU.
5. **Geoproximity Routing**
 - Similar to geolocation but allows you to shift traffic by expanding or reducing geographic bias.
6. **Failover Routing**
 - Redirects traffic to a healthy endpoint if the primary endpoint fails.
 - Example: Traffic shifts to a backup server during failure.
7. **Multi-value Answer Routing**
 - Returns multiple IP addresses for redundancy and load balancing.
 - Example: Load balancing between multiple web servers.

Health Checks & DNS Failover

Route 53 allows monitoring and automatic traffic rerouting based on endpoint health.

- **Types of Health Checks:**
 - **HTTP/HTTPS Health Checks:** Monitors web servers and applications.
 - **TCP Health Checks:** Ensures that TCP-based services are operational.
 - **CloudWatch Alarm-based Health Checks:** Uses AWS CloudWatch metrics to determine health.
- **DNS Failover:**
 - Automatically redirects traffic to a healthy endpoint if the primary endpoint fails.
 - Works in conjunction with failover routing policies.

Security and Compliance

- **DNSSEC (Domain Name System Security Extensions)**
 - Protects DNS records from tampering and spoofing.
 - Ensures authenticity and integrity of DNS responses.
- **IAM Integration**
 - Restricts access using AWS Identity and Access Management (IAM) policies.
- **DDoS Protection**
 - Works with AWS Shield to protect against DNS-based attacks.

Pricing Model

AWS Route 53 follows a pay-as-you-go pricing model with the following components:

- **Domain Registration Fees:** Varies based on the TLD (Top-Level Domain).
- **Hosted Zone Charges:** \$0.50 per hosted zone per month.
- **DNS Query Charges:** \$0.40 per million queries.
- **Health Check Charges:** \$0.50 per health check per month.

Use Cases

1. **Website Hosting:** Manage domain names and direct traffic to AWS-hosted websites.
2. **Multi-region Load Balancing:** Distribute traffic across multiple AWS regions for performance optimization.
3. **Disaster Recovery:** Implement failover mechanisms to ensure high availability.
4. **Global Content Delivery:** Integrate with CloudFront for global content distribution.
5. **E-commerce Platforms:** Use weighted routing to manage traffic across multiple servers.