SRE CHALLENGE

Infrastructure as Code (IAC): I would use AWS CloudFormation to define and provision the required AWS resources as code. This ensures that the entire infrastructure is version-controlled and reproducible.

Web Server Configuration:

EC2 Instance: I'll create an EC2 instance as the web server, using an Amazon Machine Image (AMI) based on a popular Linux distribution.

Configuration Management: I'll use Ansible as my configuration management tool to automate the installation and configuration of the web server software (e.g., Nginx or Apache).

Web Page: I'll create a simple HTML file (index.html) with the provided content and deploy it to the web server's document root.

Security and HTTPS:

Security Group: I'll create a security group that only allows incoming traffic on port 443 (HTTPS) from specific IP ranges or sources, ensuring that only authorized users can access the application.

SSL Certificate: I'll generate a self-signed SSL certificate or use AWS ACM (Amazon Certificate Manager) to obtain a free SSL certificate. This certificate will be used to enable HTTPS.

Web Server Configuration: I'll configure the web server to listen on port 443 and enable SSL using the obtained certificate. I'll also configure a redirect from HTTP (port 80) to HTTPS (port 443).

Automated Testing:

Integration Tests: I'll develop automated integration tests using a testing framework like Selenium or Puppeteer to validate the correctness of the server configuration and ensure that the web application serves the expected content.

CI/CD Pipeline: I'll set up a CI/CD pipeline (e.g., AWS CodePipeline) to automatically trigger these tests whenever changes are made to the infrastructure code.

Monitoring and Scaling:

Monitoring: I'll configure Amazon CloudWatch to monitor the EC2 instance's performance, including CPU utilization, network traffic, and disk space. I'll also set up custom alarms to notify administrators of any issues.

Scaling: To handle increased traffic, I'll use Auto Scaling to automatically add or remove EC2 instances based on traffic patterns. Elastic Load Balancing can distribute traffic across multiple instances for high availability.

Demo and Git Repository:

I'll provide a Git repository named <KIRAN KUMAR>\_Challenge on GitHub, containing all the code and configuration files for this project.

I'll demonstrate the running instance of the web application with HTTPS enabled, and I'll walk through the code and infrastructure setup.