

SRE -- Technical Assessment

Outpath SRE Challenge

Hi! You're probably here because you're interested in SRE position within Vaipra Tech Solutions Private Limited. We made this challenge to see how comfortable you are with day-to-day SRE tasks.

Please read this guide carefully before starting the challenge.

Make sure that you use all the required components, and fine tune your project as if it was production ready.

A) Web Application

Choose a simple open-source web app written in your favorite language (or write a new one). Then make the necessary modifications so that the web app should:

- Use any database engine but **be sure to add connection pooling**, so that having a lot of app instances won't crash the database.
- Having a basic API works just fine, and it won't affect the score.

The application should have a health check route to monitor the application located at `"/healthz"`.

B) Dockerizing the Application

Dockerize your web application by writing a Dockerfile to create a Docker image of your application and docker-compose.yml to help other developers start a local-running-copy of your app. Please note the following:

- Try to optimize the Dockerfile by removing all unnecessary cache/files to reduce the image size.
- Removing unnecessary binaries/permissions to improve container security is a huge plus.

Please add all components that are required to run the app (i.e database) in "docker-compose.yml". You should be able to run your application simply by executing "docker-compose up".

C) Kubernetes Deployment

Write a helm chart that includes all the necessary YAML files to deploy a production-ready instance of your web application to a running Kubernetes cluster. Please note that your Kubernetes specs should allow your application to :

- Recover from broken states by automatically restarting pods.
- Route the traffic to the healthy pods only.
- Automatically scale based on CPU usage.
- Use configmaps to read the required environment variables.
- Have declarative resources limits (CPU, RAM).
- Make sure the database is up and running before the application.

You should :

- Use helm.
- Use Nginx Ingress.
- Provide us with bash script or a makefile which we can be ran in our test cluster to deploy the chart with all dependencies.

E) Challenge Delivery

- After finishing the challenge please send a compressed challenge folder with .git folder, as the git commit messages will be reviewed.
- Please try to avoid one commit as it's harder to track the changes and understand how the development progressed.
- Please Note that the due date to submit the challenge is 4 days.