ASSIGNMENT FOR THE TECHNICAL INTERVIEW CLOUD ARCHITECT

READ ME BEFORE STARTING

You have received this assessment as part of the interview process at Nordcloud. In sending this to candidates we are testing a few skills including the following:

- Architecture design
- Ability to present solutions
- Engineering skills
- Documentation
- Security

A few notes: Please try to deliver the best solution you can, given the time that you have available. Concentrate on the components that you think matter most. *If there are any parts of this assessment that are not clear, please do not hesitate to reach out to us for clarification.*

Study the assignment, create your own implementation and prepare to demo/explain it in the interview. The goal is not to develop an exhaustive and perfect solution with all the bells and whistles, but to reflect your experience and approach to this assignment. However, it does need to fulfill the acceptance criteria. Please also keep the "Business Case" in mind while designing your solution.

Good luck!
Recruitment & Tech Interviewers

Deliverables

- The solution must be delivered using a private git repository on GitHub or GitLab. Make sure to add the user 'nc-tech-review' as a collaborator to the repository.
- All the code related to your implementation, in a form that is deployable by the interviewer.
- Comprehensive and understandable documentation of your solution.
- Presentation of your solution during the following technical interview.

Acceptance Criteria for the Implementation

- The application should be able to scale depending on the load.
- There should be no obvious security flaws.
- The application must return consistent results across sessions.
- The implementation should be built in a resilient manner.
- Observability must be taken into account when implementing the solution.
- The deployment of the application and environment should be automated.

Business Case

The customer Drone Shuttles Ltd. is currently running their website on an outdated platform hosted in their own datacenter. They are about to launch a new product that will revolutionize the market and want to increase their social media presence with a blogging platform. During their ongoing modernization process, they decided they want to use the Ghost Blog platform for their marketing efforts.

They do not know what kind of traffic to expect so the solution should be able to adapt to traffic spikes. It is expected that during the new product launch or marketing campaigns there could be increases of up to 4 times the typical load. It is crucial that the platform remains online even in case of a significant geographical failure. The customer is also interested in disaster recovery capabilities in case of a region failure.

As Ghost will be a crucial part of the marketing efforts, the customer plans to have 5 DevOps teams working on the project. The teams want to be able to release new versions of the application multiple times per day, without requiring any downtime. The customer wants to have multiple separated environments to support their development efforts.
As they are also tasked with maintaining the environment they need tools to support their operations and help them with visualising and debugging the state of the environment..
The website will be exposed to the internet, thus the security team also needs to have visibility into the platform and its operations. *The customer has also asked for the ability to delete all posts at once using a serverless function.*

You are tasked to deliver a Proof of Concept for their new website. Your role is to design and implement a solution architecture that covers the previously mentioned requirements, using the major public cloud platform (AWS, GCP, Azure) that you're interviewing for. The solution should be optimised for costs and easy to maintain/develop in the future.

Please implement your solution using the public cloud platform that is mentioned in the position that you applied for. E.g. if you applied for an AWS-role, your solution should also be on AWS.

Provided Resources

The Ghost platform and related documentation is available on ghost.org/docs. There are multiple ways to install Ghost and they all have the same functionality.

Environment

You are expected to use your own environment/account in the relevant cloud provider. Nordcloud can't provide you one. All major cloud providers do offer some form of a free-tier. As such it should be possible to complete the assignment without incurring any serious costs.