Question 1

In this documentation(https://docs.ata.network/canarynet/node/run-full-node/), it shows the steps to run our Automata ContextFree network full node in Docker. But in our production, we hosted it using Kubernetes. You are required to make it run successfully in a Kubernetes cluster and provide us the Kubernetes manifests and some explanation document if there is any.

In brief this is a stateful application where it has data and each of the instances will have its own identity for the peer to peer communication. When it is up and running, it will listen on port 9933 for HTTP request, 9944 for Websocket request and 30333 for TCP peer to peer communication.

Requirements:

- Application up and running.
- Data persistence.
- Expose application for external excess.
- Assume this is a production environment, set a proper pod resource and explain why.

Question 2

Aspect of Software Delivery Performance*	Elite	High	Medium	Low
Deployment frequency For the primary application or service you work on, how often does your organization deploy code to production or release it to end users?	On-demand (multiple deploys per day)	Between once per day and once per week	Between once per week and once per month	Between once per month and once every six months
Lead time for changes For the primary application or service you work on, what is your lead time for changes (i.e., how long does it take to go from code committed to code successfully running in production)?	Less than one day	Between one day and one week	Between one week and one month	Between one month and six months
Time to restore service For the primary application or service you work on, how long does it generally take to restore service when a service incident or a defect that impacts users occurs (e.g., unplanned outage or service impairment)?	Less than one hour	Less than one day[a]	Less than one day[a]	Between one week and one month
Change failure rate For the primary application or service you work on, what percentage of changes to production or released to users result in degraded service (e.g., lead to service impairment or service outage) and subsequently require remediation (e.g., require a hotfix, rollback, fix forward, patch)?	0-15%[b,c]	0-15%[b,d]	0-15%[c,d]	46-60%

Diagram above is from https://github.com/GoogleCloudPlatform/fourkeys. **Deployment frequency**, **lead time for changes**, **time to restore service** and **change failure rate** are the four key metrics to measure how good a company's DevOps culture is. We believe the companies that fall under the Elite category will be more likely to succeed.

Let’s assume you are required to manage thousands of instances that you runned in question 1, what would you do to improve the four key metrics in this case. We understand this is a very huge topic and an open-ended question, we don’t expect a very detailed answer and a rough idea would be sufficient. This is a chance to impress us with your DevOps culture knowledge!

Question 3

Docker Image “**atactr/devops-assignment:1.0.0**” (https://hub.docker.com/r/atactr/devops-assignment/tags) is having some network issues. Please fix the network issue and share with us the process and root cause of the issue.

You can stimulate the issue by running the commands below and you will never get the response:

```
docker run -it --privileged atactr/devops-assignment:1.0.0
curl -v www.google.com
```