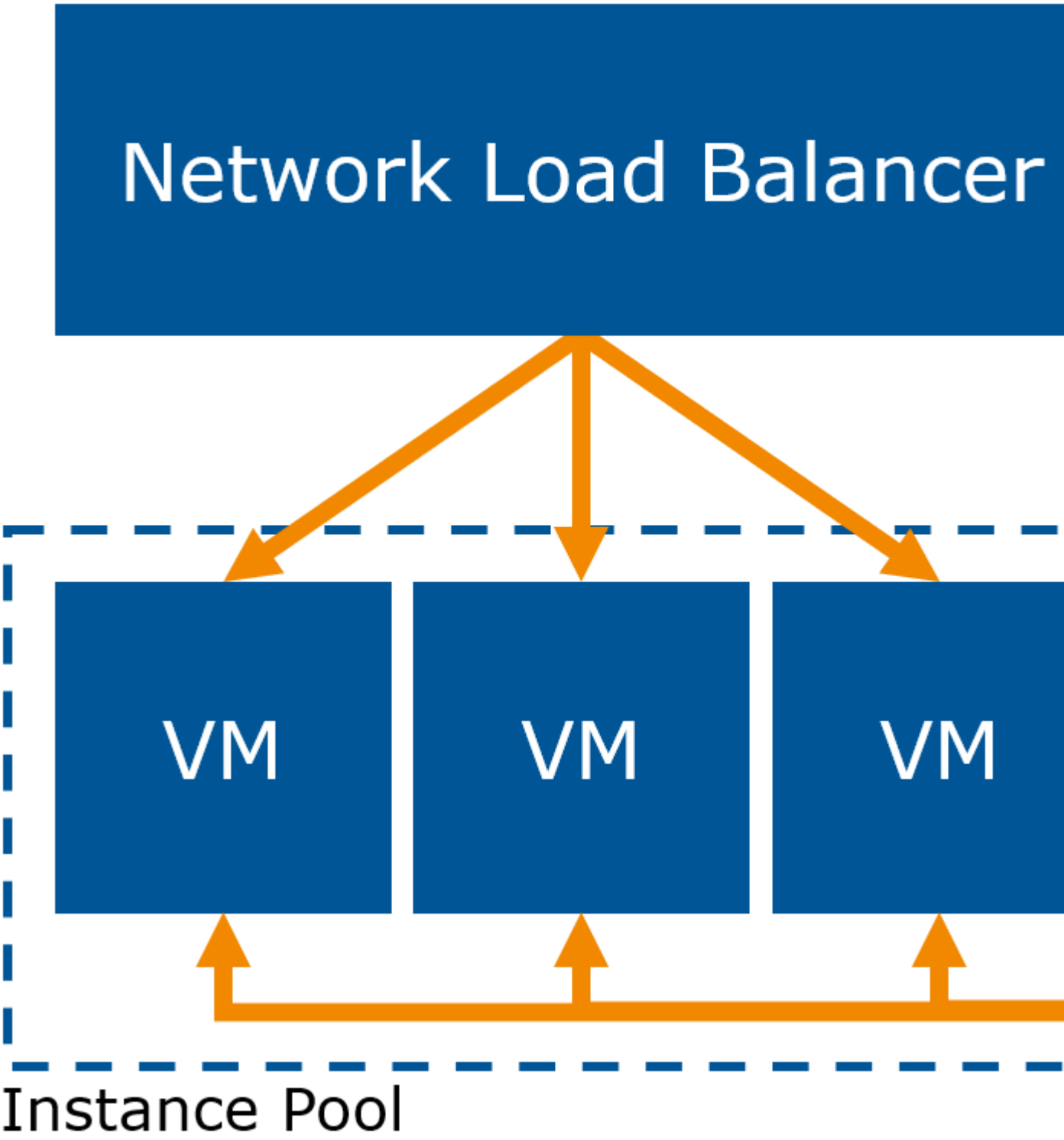
Project work

You are the cloud architect for a small work-for-hire company. A client wants to hire you but they are sceptical about your ab
management should automatically launch new cloud servers when the load is high and remove servers when demand is lo



> **Warning**
>
> Do not continuously run your setup on Exoscale or you will run out of budget! Budget limitations are part of building cloud system

After taking a look at the capabilities of the cloud provider and discussing the constraints with your colleagues you decide th

- You are going to use Terraform to automate the setup and tear down of the cloud infrastructure. This is necessary beca
- You will use instance pools to manage the variable number of cloud servers and Network Load Balancers to balance th
- You will set up a dedicated monitoring and management instance which will run Prometheus to automatically monitor a to consume.
- On the instance pool you will deploy the Prometheus node exporter to monitor CPU usage.
- You will install Grafana to provide a monitoring dashboard and the ability to send webhooks.
- You will configure an alert webhook in Grafana that sends a webhook to an application written by you. If the average CP
- You will write an application that receives this webhook and every 60 seconds scales the instance pool up or down if a w

As you also have to demonstrate to the client that you can work in an agile methodology you agree in 4 week sprints with a

As a dummy service to generate load you will use http-load-generator.

The manual way to implement this architecture is described on the Exoscale blog. We recommend reading and doing the st

Optionally, you can make use of the following (**incurs a 5% point-penalty each**):

- prometheus-sd-exoscale-instance-pools to feed instance pool data into Prometheus
- exoscale-grafana-autoscaler to drive the autoscaling behavior.

Handing in your project work

In order to hand in your project work you must upload your code to a Git repository, for example on GitHub. Submit the link

Your Terraform code **must** be able to install the complete infrastructure into an empty Exoscale account. It **must** ask for the

If you opt to only implement the manual method (without Terraform) please enter `manual` in instead of the text field and we

> **Warning**
>
> Keep in mind that only submitting a manual solution will give you minimal points. We strongly recommend you ask for help if you

> **Note**
>
> The automated version has to run without manual intervention beyond inserting variables. Additionally, the solutions will be spot-

Acceptance criteria

The system will be tested with Apache Benchmark using the following command line:

```
ab -c 2 -n 1000 http://your-nlb-ip/load
```

Your system must be able to launch enough instances within 10 minutes to get the average load back under 80%. When AE

Getting help

Please see the getting help page.