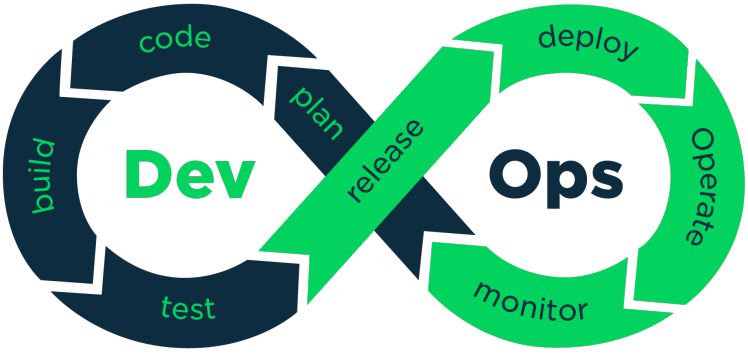
B5 - Advanced DevOps

B-DOP-500

Whanos - Bootstrap

Say hello to the almighty whale



Whanos - Bootstrap

Well well well… here we are! The last DevOps bootstrap of the track! Do not be sad please :(

As you might have seen, the Whanos project is pretty complex, so what and how could we start taking on this project? Well, let us see together!

If you have not read the project's subject, please do it first.

This bootstrap is less strict in terms of what to produce, as the project itself will leave you quite a deal of freedom.

Step 1 - Thinking about infrastructure

During the DevOps track, you have seen 4 different technologies: Docker, Jenkins, Ansible, and Kubernetes. And you will now have to use them together.

You might have guessed that these different technologies will need to be correctly organized in order to work together. And you would be right! This is where important architecture decisions must be made.

For each technology, there are several points about which attention must be given before starting the project.

Version used

Which version of the technology will you use?
If there exists a Long-Term Support (a.k.a. *LTS*) version and a more frequently updated version, why choosing one instead of the other?
If not choosing a LTS or more frequently updated version, what are the strong points supporting your choice?

Hosting

Where will the different parts of the project be hosted?
Will you use your own hosting solution? Or will they be hosted on the cloud? (Or maybe a mixture of the two?)
If hosting on the cloud, which cloud provider or providers will you choose? And why?
Will the different parts be hosted on the same machine? If not, where will each part be hosted?

It is obvious that the infrastructure you are going to set up cannot include your own computer as a part of it.
There must be a single source of truth accessible by everyone in your group, and by the evaluator.

Ease of use

Thinking about the previous points is important. Ensuring that the infrastructure is easy to use and operate is equally important. Think about what one would need to perform on the infrastructure, as well as how one would need to proceed to do such actions.

Security

How are your infrastructure and different technologies going to be securely configured?
How will you ensure that only authorized access is possible? How will you manage secrets?

Step 2 - Documenting the infrastructure

Memory fails, and the human one more frequently than computers', so it is important to have an exhaustive documentation about how your infrastructure is, well… structured.

In the repository of the **project**, create a `docs` directory which will contain the results of your thoughts on the infrastructure.
They can be documented in the form of one or several Markdown files, images, or whatever you see fit.

Be sure to include, the what, why, and how of the different decisions.

Step 3 - Setting up the infrastructure

Now that you have a clear and documented idea of what your infrastructure will look like, it is time for you to set it up!

Install the different technologies where needed, and ensure they are working properly (e.g.: try to run the `hello-world` image for Docker).

It is also the time where you have to start thinking, if you have not started before, about the ability to easily deploy, but especially **redeploy** your infrastructure.
With Jenkins, for example, you can use the plug-ins you know and love: Configuration as Code and Job DSL.

Once you have an idea of which operations to perform, write an Ansible playbook to ensure that your infrastructure can be easily redeployed and updated.

That's all folks!

And that is the end of this final bootstrap.
I hope that you are not too sad. :(

You should now have an infrastructure ready to be operated in order to set up the almighty Whanos infrastructure.

So here it is, it is now time for you to start the final project of your DevOps track! Please have fun while doing it, you will learn valuable knowledge, and you will have a very useful infrastructure at the end.

Succes, en tot ziens!