



EKS to the next level

Reflection

**Bachelor's degree in Electronica-ICT
field Cloud & Cybersecurity**

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INTRODUCTION

In this document, I will describe what project I carried out and the skills I developed throughout the course of my internship. I will also reflect on the challenges I face and how I overcame them, as well as the ways in which this internship has prepared me for my future career.

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1 SUBSTANTIVE REFLECTIONS

My assignment at ACA Group has been very challenging, but at the same time, I have learned a lot in these 13 weeks.

1.1 Assignment

My internship company starts with a fairly basic Elastic Kubernetes Service environment for each of its clients, on which they continue to build. It was my job to improve the security of this environment by implementing the EKS best practices and additional components. Before I could start with the implementation, I had to do a ton of research to fully understand the principles and use cases of the different tools and best practices.

I had to implement the following components while adhering to EKS best practices:

- Encryption of secrets stored inside etcd
- Find a replacement for pod security policies
- A way to enforce policy
- Additional RBAC hardening
- Scanning for CVEs inside container images
- Detection of unwanted or dangerous processes at the container level

1.2 Next steps

I succeeded in a basic implementation of the tools that could achieve the elements listed above. Some of these are so extensive that only a basic implementation was possible within the timeframe of my internship. I have written a detailed document for each tool about how it works and how it can be customized further. When the team later wants to adopt these inside their client environments, they only have to read the documentation I have provided to gain knowledge on how to achieve this. However, they will need to adjust some settings so the tool meets the requirements of the specific environment in which they want to implement it.

2 PERSONAL REFLECTION

In this chapter, I look back at my own performance during my internship at ACA Group. This on the basis of a few points, including my own opinion and which competences I already master and which still need some work.

2.1 My own opinion

In general, I am satisfied with my own performance during my internship at ACA Group. In these 13 weeks, I have tried to familiarize myself with the company as much as possible. I did this by taking initiative and showing interest in what was happening within the team. During my internship, I got to know the team quite well and also learned a lot about the company itself.

2.2 Points of improvement

I need to ask for help sooner when I get stuck on something. When this happens, I often don't know when to stop and ask someone for help because I want to find the problem myself and don't want to bother the rest of the team. In the future, I will try to draw up a good and feasible schedule, because I think this can help me.

Another problem that I have is that I sometimes have a hard time sticking to my schedule, partly because of the previous point but also because I often forget I even made a schedule. So I think I need to put my schedule in a more visible place so I get reminded of it.

2.3 Strengths

I am very independent and know what is expected of me. Therefore, I don't need to ask a lot of questions about the assignment or what I am supposed to do. This came in very handy since quite a few days were spent working from home.

It also helps that I am curious and like to learn new things. This was useful during my research phase because I came into contact with many new tools and techniques.

2.4 Experience

I learned a lot of new things during my internship, both soft skills and hard skills. Here are a few things I will take with me in my future career:

- Dare to make mistakes. Because you learn the most from the mistakes that you make.
- Try to think more problem-oriented
- A good and feasible schedule is very important

3 CONCLUSION

The internship was very educational and interesting. It gives me the feeling that, after my studies, I am ready to start working. The internship also confirmed once again that I chose the right field of study and that I want to continue my career as a Cloud Engineer.