



IOANNIS GKOURTZOUNIS

PERSONAL DATA

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CERTIFICATIONS

2020 - 2021 CERTIFIED KUBERNETES SECURITY SPECIALIST (CKS) »
CERTIFIED KUBERNETES ADMINISTRATOR (CKA) »
CERTIFIED KUBERNETES APPLICATION DEVELOPER (CKAD) »
AWS CERTIFIED CLOUD PRACTITIONER (CLF-C01) »
CERTIFIED JENKINS ENGINEER (CJE) »

WORK EXPERIENCE

2023 - TODAY | Senior DevOps Engineer at ARHS DEVELOPMENTS HELLAS
Setup, manage Highly Available Kubernetes clusters, and prepare for disaster recovery. Incorporate container image signing and vulnerability scanning in the SDLC. Develop CI/CD pipelines that build containers, use GitOps to automatically deploy the new versions of applications. Implement observability with monitoring, alerting for metrics and application logs. Execute CIS benchmarks on Linux hosts and perform risk mitigation.

2020 - 2022 | DevOps Engineer at ONELITY
Install Kubernetes on bare metal with Nginx Ingress Controller and a network Load Balancer implementation for on-premises clusters. Apply multi-container POD design patterns and follow best practices. Create an NFS Server for implementing persistence. Apply the GitOps principles for automated Continuous Delivery with Argo CD. Create pipelines that perform autoscaling on services based on specific metrics.

2018 - 2019 | Quality Assurance Automation Engineer at ONELITY
Analysis, planning, creation and execution of manual and automated tests. Creation, development and maintenance of a test automation framework. Defect management and error analysis to support the development. Configure Jenkins jobs for dynamically creating customized environments in containers, and executing the test scenarios.

EDUCATION

2016 - 2018 UNDERGRADUATE BSC (HONS) DEGREE IN COMPUTING (HIGH FIRST)
University of Northampton, Northampton, UK
Graduated with High First-Class Honours A+ > [See Award](#) > [See Grades](#)
Published paper at EUMAS 2018 Conference on Multi-Agent Systems > [Publication](#)

DEVOPS PROJECTS

2023 | SENIOR DEVOPS ENGINEER | NEXI GROUP (24 months)

Build a **Multi-cloud** infrastructure of **Highly Available** Kubernetes clusters. A Management cluster handles the application deployments and provides monitoring and alerting of other Kubernetes clusters, that act as **isolated environments**.

Tasks:

- Create **automation scripts** to setup Kubernetes clusters for bare metal
- Explore **HA topologies** using an external or a stacked etcd cluster
- Setup HA Control Plane nodes with **HAProxy** and **keepalived**
- Explore **Multi-cloud** architectures for on-premises Kubernetes clusters
- Build **Active-Active** Multi-cloud clusters and configure **HA Load Balancers**
- Create a step by step plan for **disaster recovery** of the clusters
- Create automation scripts that configure **GitOps with Argo CD**
- Use NFS shares for Pod storage with **dynamic NFS Provisioner**
- Use **HashiCorp Vault** for secure secrets management in the clusters
- Deploy **Harbor Registry** and sign container images with **Cosign**
- Perform automated vulnerability scans with **Trivy** on container images
- Setup **Jenkins** with **dynamic Agents** for cluster optimized CI/CD pipelines
- Create pipelines that **build** applications and container images
- Create pipelines that **deploy** applications and **promote** them to Staging
- Get cluster metrics with **Prometheus** and display them in **Grafana** dashboards
- Collect logs from all workloads with **Promtail** and use **Loki** for log aggregation
- Install and configure **Falco** for security monitoring of containers **at runtime**
- Use **Wazuh** to get CIS benchmark results on hosts with **Ubuntu** and **RHEL OS**
- Deploy web servers in **AWS** public and private subnets with **Terraform**
- Define **AWS resources** to create a production-ready **EKS cluster**
- Use Terraform to build the **EKS cluster** with Internet and NAT Gateway
- Deploy Horizontal Pod Autoscaler and the **Cluster Autoscaler**
- Deploy an **Nginx Ingress Controller** with AWS Network Load Balancer

2021 | SYSTEM DEVOPS ENGINEER | EBF GMBH (20 months)

Implement CI/CD pipelines that build, test and **deploy microservices** into various **Docker Swarm** and **Kubernetes clusters**. Create customized container images that follow the best **security practices** from container creation to deployment. Manage the release process and implement scripts with Bash to automate manual activities, in order to increase the speed and reliability of the **release cycles**.

Tasks:

- Apply the least privilege practice to all phases of the release chain
- Implement **docker image signing** and allow only signed images to be used
- Implement container **runtime security scanning** and alerting
- Configure a **network Load Balancer** implementation
- Install and configure Argo CD to apply **GitOps principles**
- Create certificates to keep encrypted Secrets in the GitOps repository
- Create an **NFS server** for pulling/pushing images to the internal cloud registry
- Add **dynamic NFS provisioning** to the Kubernetes cluster
- Deploy applications with **Helm Charts** by creating Argo CD applications
- Automatically create and manage **TLS certificates** for all exposed services
- Implement **autoscaling Jenkins pipelines** based on RabbitMQ workers metrics
- Deploy Prometheus and Grafana, expose application metrics for **monitoring**
- Analyze application metrics and setup **Horizontal POD Autoscalers**

2020	<p>CLOUD INFRASTRUCTURE WITH KUBERNETES ONELITY (12 months)</p> <p>Build a Kubernetes cloud with a web application and a Jenkins instance for CI/CD. Create container images of test environments and show the benefits of a Kubernetes cloud: version control of the whole infrastructure, zero downtime with rolling updates, self-healing in case of failures, easy scaling of applications.</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Create custom containers and a multi-container application with Docker • Install Kubernetes on Linux servers (1 master node, 3 worker nodes) • Design the application architecture, configure the Deployments and Services • Apply rolling updates and perform scale-up and scale-down activities
2019	<p>CI/CD INFRASTRUCTURE WITH JENKINS COMQUENT GMBH (4 months)</p> <p>Use container technology to create a customized Jenkins instance and the test environments. Containerize an existing website and execute the Build and Test jobs in Jenkins. Managing the “infrastructure as a code”, allows us to perform testing and deployment activities in containers that are lightweight and secure.</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Install and configure a Jenkins server, integrate it with Git, Maven and Docker • Create dynamic test environments with Docker in the CI/CD pipelines • Show a faster and more efficient management of these environments

QA PROJECTS

2019	<p>SENIOR TEST AUTOMATION ENGINEER E.ON ENERGIE GMBH (8 months)</p> <p>Analyze the existing Test Automation code and evaluate the framework based on maintainability and extensibility. Design, implement and present to other teams an improved Test Automation framework based on Selenium, Cucumber and BDD. Integrate the test code with Jenkins and apply isolated and dynamic test execution with Docker and Selenium Grid. Train testers from different teams.</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Creation, development and maintenance of automated tests • Maintenance of automated regression test suite and execution of test cycles • Configure the Jenkins jobs to build the test code, execute the automated tests • Use Selenium Grid nodes for parallel test execution of test suites • Analyze the test results and advise the team on deployment risk
2018	<p>DEVELOPMENT OF A TEST AUTOMATION FRAMEWORK COMQUENT GMBH (8 months)</p> <p>Design and implementation of a Test Automation infrastructure for a Magento e-shop using Selenium, Cucumber and BDD. Following a multi-layer project structure that is maintainable and extensible for our use case, a BDD framework was developed for automated E2E test case execution and reporting. Customized the project with Tags, in order to run specific tests for different scenarios.</p> <p>Tasks:</p> <ul style="list-style-type: none"> • Creation of a test framework with Selenium WebDriver and Cucumber BDD • Apply the Page Object Model structure for better maintainability • Creation of multiple test scenarios with Scenario Outlines and data tables • Design and implementation of Feature Files and Step Definition Classes

2018 | OPTIMIZATION OF DEVELOPMENT PROCESSES | SEMITRON GR (4 months)

Document and analyze the existing processes for different types of projects in the R&D department of Semitron. Optimize the **activities workflows** through a series of meetings and **apply optimizations** on a pilot project to get better feedback. Document the required project configurations in Confluence and implement them, as **customized Jira projects** with the use of plugins and Groovy.

Tasks:

- Analyze and evaluate existing **development and QA processes**
- Create **custom project templates** in Jira that generate specific issue types with preconfigured statuses and dynamic workflows with transition rules

DEV PROJECTS

APR 2018 | Car Sharing Software Platform for Electric Vehicles

<https://github.com/ioannisgk/evsharing-platform3-release> > [See Demo](#)

Based on use cases of administrators, customers of one-way car sharing schemes and charging station data from the city of Bristol, the software includes: (i) a web platform for administrators, where the system can manage user requests and accept or deny them, ensuring that the highest number of users will be served, (ii) a mobile application for Android devices that lets users login, select stations and request vehicles for trips.

APR 2018 | NLP Travel Assistant Chatbot

<https://github.com/ioannisgk/nlp-webproject> > [See Report](#)

Artificial Intelligence techniques such as Neural Networks and Genetic Algorithms were used to design and implement a Natural Language Processing travel assistant chatbot web application. The system recognizes user input based on its semantic content, assigns it to specific categories and asks for missing information when needed.

JAN 2018 | Microdata WebParser

<https://github.com/ioannisgk/microdata-webparser> > [See Report](#)

A solution developed with Java Spring MVC framework for a medical use case, where the user can extract information from semantically enriched web pages in form of Microdata, related to specific medical conditions. Microdata WebParser can also convert Microdata to other popular formats, like RDFa and JSON-LD.

ABOUT

Ioannis Gkourtzounis has a High First Degree in Computing (BSc) and holds two ISTQB® certifications, he is a Certified Jenkins Engineer (CJE), a Certified Kubernetes Application Developer (CKAD), a Kubernetes Administrator (CKA), and a Kubernetes Security Specialist (CKS).

After the DevOps World in Lisbon (2019), Ioannis focused exclusively in Continuous Integration, Continuous Delivery, Cloud Native technologies and especially Kubernetes. During the last years, he was a key member in various CI/CD and Kubernetes related projects.

Security played an important role on all his projects, some related activities are:

- implementation of container image signing in Build and Delivery pipelines
- automated process of container security scanning in SDLC
- implementation of container security monitoring at runtime
- integration and management of encrypted secrets in Kubernetes
- observability with monitoring and alerting for metrics and application logs
- execution of CIS benchmarks on Linux hosts and risk mitigation
- scanning and examination of installed packages vulnerabilities on host OS level