PATRICK PAECHNATZ

PRINCIPAL SECURITY ARCHITECT



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patrick-paechnatz

paterik

PROFILE

Principal Security, Cloud & Infrastructure Architect with extensive experience designing and delivering secure, resilient and scalable platforms across enterprise, public-sector and highly regulated environments. Strong background in cloud architecture, Kubernetes, infrastructure automation, networking, DevSecOps and system hardening, combined with hands-on software engineering and technical leadership experience.

Experienced in leading architecture initiatives, assessing complex infrastructure landscapes, defining target architectures and translating technical and security requirements into practical, operable solutions.

Certifications include CISSP, CCSP, GCP Professional Cloud Architect, AWS Solutions Architect Professional and BSI Core Protection, complemented by extensive experience in security-cleared public sector and defence engagements. Clearance details are available on request.

More information, selected projects and current work can be found on homepage **https://relicfrog.rocks**

EDUCATION

ELECTRONIC ENGINEERING
HTW Dresden
2001 - 2004

COMPUTER SCIENCE
TU Dresden
2004 - 2007

SKILLS

PROFESSIONAL

Team Management

Problem Solving

Programming

Cyber-Security

Cloud Technologies

System Hardening

WORK EXPERIENCE

FOUNDER, RELICFROG Security Consulting | July 2024 - present
Founded and developed an IT security and consulting services business from the ground up with a focus on developing and delivering modern and impactful solutions to a diverse client base.

- Architected and implemented secure network infrastructures and hardened core/operations platforms to reduce cyber risk across federal, defence & public-sector environments, including highly regulated & security-sensitive projects.
- Highly Available Kubernetes & Cloud Platforms: Designed resilient, multi-zone orchestration platforms based on Talos, RKE2, K3s and upstream Kubernetes for private and public cloud environments, including data-centre, hybrid and air-gapped security domains.
- Conducted cloud architecture core reviews for Azure, AWS and GCP, optimizing for scalability, security, and cost efficiency.
- Performed code and architecture baseline reviews to improve stack maintainability and scalability in client projects.
- Supported IT transformation projects, including legacy-to-cloud migrations & infrastructure modernization.

CHIEF CLOUD ARCHITECT | FOUNDER | SHAREHOLDER | CO-MANAGING DIRECTOR MPOWR IT GmbH | Feb 2022 - present
Spearhead the development and delivery of value-added cloud architecture solutions for automotive customers, including service-mesh integration solutions, using multi-cluster K8s/K3s Ops MS/IoT technology.

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SKILLS

TECHNICAL

CI/CD/CCQ

DevOps/DevSecOps

VM Technologies

Provisioning Tools

Containers Technologies

Container Orchestration

Database Technologies

AWARDS

KFOR Operational Medal
KRK/BW - 2000

Medal for Deployment
KOSOVO - 1999

INTERESTS

Open Source

Literature

Aviation

Cooking

Chess

WORK EXPERIENCE CONTINUED

MPOWR IT GmbH | CONTINUED ...

- Orchestrate and lead impactful AWS/GCP and SecOps projects from planning to delivery, driving the seamless execution of DHW/DL architecture and other multi-cloud/on-premises Apache Kafka, Druid, and Hadoop.
- Establish automated security policies for containerized environments to strengthen compliance and operations.
- Maintain the ongoing functionality of both on-premises and cloud SecOps architecture by performing system hardening and overseeing intrusion detection systems and intrusion prevention systems (IDS/IPS).
- Chart the successful development and implementation of Ansible and Terraform-based Infrastructure-as-Code (IaC) strategies as well as Flux/ArgoCD-based K8s CI strategies.
- Produce high-quality, well-structured code in C++, Golang, Rust, Erlang; gain experience with Node.js and Python.

LEAD DEVOPS & INFRASTRUCTURE ARCHITECT
Elia Transmission Belgium SA/NV (50Hertz, Berlin) **|** 2024 - 2025
Established and led a high-performing DevOps team, introducing a comprehensive team manifesto to define technical standards, collaboration frameworks, and shared goals.

- Developed & implemented foundational processes for efficient teamwork, including guidelines, CI/CD best practices, and sec-focused workflows.
- Designed and managed GCP-to-data center mixed-cloud environments with multi-zone/multi-region architectures for increased resilience and scalability.
- Draft and prepare detailed technical documentation and reports for recordkeeping and compliance.
- Spearheaded SecOps initiatives to ensure compliance and operational security in hybrid cloud infrastructures.
- Provided ongoing training, mentorship, and guidance to team members, fostering professional growth and enhancing project outcomes.
- Drive continuous improvement by identifying development inefficiencies and implementing streamlined solutions.

SENIOR CLOUD ARCHITECT, DoiT-INTL
DoiT International (Aviv-Yafo, Israel) **|** June 2020 – Feb 2022
Established rapport and trust-based relationships with clients in various industries while providing consulting services for SEC/HA solution development with GCP/ AWS infrastructure, including Israel Post, Israel Ministry of Finance, Sentinel One, SiSens and Check Point Security.

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SPEAKER

ACTIVITY

GCP Community Belgium

CNCF Community Netherlands

RETRO Computer Dresden

ORGANISATION

AWS Community DACH

DevDays Germany (Saxony)

OPENSOURCE

CONTRIBUTION

Nexus AI

Gatewarden Shield

K8s Cert-Manager (helm)

APACHE Druid (CORE)

SELECTED REPOS

NEXUS.org

GWShield.org

RelicFrog.org

PROJECTS

CURRENT

nexus.gatewarden.eu

hub.gwshield.io

kontrold / keyrold

WORK EXPERIENCE CONTINUED

DoiT International | CONTINUED ...

- Employed technical project management expertise to champion the delivery of key initiatives, such as migrating data center infrastructure to hybrid Kubernetes (Rancher) and Google Kubernetes Engine (GKE) environments, utilizing service mesh architectures to enable seamless and secure communication between services, streamlining lightweight functions and reducing complexity/operational overhead by implementing serverless solutions, and designing flexible architecture to integrate legacy systems and cloud-native services while ensuring scalability and optimal production workload performance.
- Demonstrated expertise delivering value-added results within complex legacy architecture environments.

CLOUD SOLUTION ARCHITECT
AllCloud Ltd (Aviv-Yafo, Israel) | Feb 2019 - June 2020
Consulted with industry-leading customers, such as Metro and Audi, to provide AWS cloud consulting services, including advising stakeholders on best practices for data center migration, IaC transition, and industry analysis

- Performed comprehensive reviews of AWS architecture to verify quality and identify areas for improvement.
- Conveyed the value of proposed solutions to stakeholders by developing proof of concepts (POCs) using Golang, C#, Erlang, and C++, directly contributing to achieving buy-in.

IT ARCHITECT/SENIOR DEVOPS ENGINEER
T-Systems MMS (Dresden, Deutschland) | June 2017 – June 2019
Played an integral role in the development of HA business application software and HP API endpoint services for DHL, Aldi, and BMW by overseeing the development of robust DevOps and DevQOps pipelines.

- Served as a key resource for the development of the proprietary MMS QA and testing platform by providing insights regarding software architecture and software development, ensuring optimal platform functionality.
- Automated business applications and processes by migrating critical functionalities to AWS and Azure cloud environments, utilizing cloud-native services for process redesign and modernization, and introducing IaC and serverless architecture, significantly enhancing scalability, efficiency, and adaptability and reducing operational overhead.
- Utilized knowledge of swarm orchestration framework to maintain containerized application stacks via Rancher/RKE, Openshift + K8s native.

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AFFILIATIONS

MEMBER

Member, International Information System Security Certification Consortium

VOLUNTEERISM

PHP USERGROUP DRESDEN e.V.

Founder & Board Member, 2015/20,
Coordinated & facilitated publ. lectures
Co-organized three major developer conferences.

RETRO Computer Dresden e.V.

Represent. Board Member 2025/26
Federation & Sponsoring Management

MILITARY SERVICE
Crisis Reaction Forces 5./132
Zeithain, 1997/1998 | KFOR OPS

WORK EXPERIENCE CONTINUED

DEPARTMENT LEAD
Move Elevator GmbH (Dresden, Germany) **|** Dec 2016 - June 2017
Provided dynamic, high-quality leadership to 12 staff and two trainees while serving as the Department Lead for system development and engineering operations; fostered a cohesive and collaborative work environment.

- Strengthened team and stakeholder knowledge of system engineering technologies, such as Docker, K8s, Rancher, and Ansible, by planning and leading engaging internal and external workshops.
- Devised and executed deployment strategies using Jenkins and SecureCI pipelines, leading to improved efficiency
- Conducted both static code analysis (SCA) with SonarQube and dynamic code analysis (DCA) using Dynatrace to generate CCQ analytics to mitigate risks and strengthen code integrity.

SENIOR DEVELOPER
Move Elevator GmbH (Dresden, Germany) **|** Jan 2014 - Dec 2016
Complied with strict programming quality standards and client requirements while developing high-performing business applications for Coca-Cola AG, including a core container orchestration system fork based on Rancher 1.4.n

- Established and facilitated the adoption of new processes and procedures to improve development outcomes, including designing CI/CD processes with Groovy and native pipelining as well as system provisioning processes with Puppet, Ansible, and Vagrant/Docker.
- Programming services for various core customers of the agency in the context of backend development, taking into account various database technologies such as PostgreSQL, MongoDb and CouchDb

PREVIOUS WORK EXPERIENCE

Minax GmbH, Germany, May 2011 to Oct 2013 **|** BE/FE-Developer
Spiesser GmbH, Germany, Nov 2010 to May 2011 **|** BE/FE-Developer
Swatch AG, Leipzig, Feb 2009 to Sept 2010 **| C++/C#** SYS-Developer
SX-Operations GmbH, Halle/Saale, July 2007 to Dec 2008 **|** SysOps
ADCON GmbH, Berlin, Germany, Oct 2004 to Feb 2006 | **C++** Developer

COURSES & CERTIFICATIONS

Certified BSI Core-Protection P-Level (BSI-GSB), Jan 2025
Certified Cloud Security Professional (CCSP), Jan 2025
Certified Information Systems Security Professional (CISSP), May 2024

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LANGUAGES

ENGLISH
BE/CC-2, BCE 1.2, FLUENT

GERMAN
NATIVE

CERTIFICATIONS CONTINUED

GCP Certified Solution Architect Professional (GCPSAP), Sept 2020
AWS Certified Solution Architect Professional (SAP), Dec 2019
AWS Certified Solution Architect Associate (SAA), Nov 2019
iOS Developer Nanodegree (IOSD), Dec 2018
ISTQB Certified Tester FL (ISTQB-CT), May 2018
Docker Certified Associate (DCA), Apr 2018

SELECTED PROJECTS

Principal Network/Virtualization Architect, STACKIT/SDC | Schwarz-IT, Jan 2025 – now
Technology Stack: BGP/EVPN, VRF, Kubernetes/KCP, Containerlab, Docker/BuildKit, Kind/Tilt, Linux Networking, GitOps/IaC

- Network Fabric & BGP Architecture: Designed and drove the core implementation of a new BGP-based network architecture for STACKIT infrastructure, focusing on scalable multi-AZ fabrics, deterministic routing, tenant isolation through VRFs, and controlled access to shared infrastructure services.
- Multi-Tenant Network & Virtualization Design: Developed and validated network segmentation and virtualization concepts for highly distributed cloud environments, including VRF-based tenant separation, controlled route leaking, inter-AZ connectivity, and reproducible multi-node reference topologies for architecture and failure-domain validation.
- Cloud Platform Engineering & Architecture Validation: Supported the engineering of Kubernetes/KCP-based infrastructure and local platform environments, building reproducible Kind/Tilt development setups and resolving complex networking, container-runtime and BuildKit integration issues across heterogeneous virtualization environments.

Principal Security Architect, Daimler Truck | ESTINO/MPOWR-IT, Sept 2022 – May 2024
Technology Stack: *Terraform/Ansible, Apache Kafka/Druid, K8s/KNative Golang/Python, Logz.io/Datadog*

- Multi-DC Kubernetes & Service Mesh: Developed and maintained a multi-DC Kubernetes cluster for the Daimler Truck Test Vehicle Division, implementing robust security protocols (RBAC, mTLS) and baseline CRDs to process MQTT data streams at scale.
- Infrastructure as Code & Data Pipelines: Oversaw IaC GitOps provisioning for both staging and production DCs; provisioned Apache Kafka clusters for ingesting ED MQTT signals, Apache Druid for batch/stream processing, and Ceph storage pools for mission-critical applications in high-availability mode. Deployed advanced monitoring/alerting solutions (Logz.io/Datadog) to ensure system reliability.
- ArgoCD & Cilium Segmentation: Orchestrated ArgoCD-driven payload delivery of backend services across multiple customers and leveraged Cilium for logical network segmentation and enhanced container security.

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SELECTED PROJECTS CONTINUED...

Lead Security Architect, TRICERA Energy | Tricera GmbH, July 2022 – Oct 2024
Technology Stack: *Ansible/Mitogen, Python/Golang, ArgoCD/Flux, DC/IoT-Hardening, MQTT/ProtoBuf/mTLS, InfluxDB, Apache Kafka + NodeRed.*

- Multi-Account AWS & High-Availability Network: Pioneered the design, deployment, and ongoing support of a multi-account AWS environment (including SaaS stack migration) with hardened security (IAM best practices, network isolation). Additionally, architected a dual-failover network (firewalls, switches, adapters), complemented by a hardened K3s cluster and bastion host.

- Secure IoT Data Interface: Developed a robust MQTT interface using ProtoBuf and mTLS for encrypted energy module data exchange, ensuring compliance with enterprise IoT hardening guidelines and safeguarding critical sensor data.

Senior Cloud Architect, Remarkable AS Cloud Platform | DoiT International Ltd., Jan 2021 – June 2021
Technology Stack: *Terraform/HCL, Terratest/Go, GCP-GKE + Anthos Service Mesh (ASM), GCP CloudSQL, GCS, GCP ALB/NLB and GCE*

- Multi-Region Architecture: Planned and deployed a multi-region GCP environment leveraging Anthos and GKE to orchestrate microservices globally and ensure minimal downtime. Automated infrastructure provisioning and updates using Terraform and Terratest, incorporating pipeline checks for code quality and compliance.

- Networking & Load Balancing: Implemented global ALB/NLB solutions with integrated Ingress controllers, optimizing traffic distribution and resiliency across multiple regions.

- Security & IAM: Established stringent security measures, including fine-grained IAM roles, service account policies, and VPC Service Controls for protected data access.

- CloudSQL & GCS: Managed relational databases through CloudSQL with SSL encryption; configured GCS buckets with lifecycle rules and versioning to optimize costs and ensure data availability.

Cloud Architect, Valtech/Audi | AllCloud, Sept 2019 – Mar 2020
Technology Stack: *Terraform/HCL, Terratest/Go, AWS-Lambda/Python, AWS-EKS/Kubernetes, Jenkins/Groovy*

- Microservices & B/G Deployments: Implemented Blue/Green deployment strategies for an API-based microservice cluster on AWS-EKS, enabling near-zero downtime releases. Collaborated closely with the client's DevOps team to stand up two highly available CI/CD pipelines (GitLab & Flux-CD).

- Infrastructure as Code & Testing: Built the foundational AWS infrastructure from scratch using Terraform (HCL) and integrated Terratest/Go for automated environment validation. Leveraged Jenkins/Groovy pipelines to streamline deployments and maintain code quality.

- Operational Excellence: Established robust monitoring and alerting (CloudWatch, Prometheus) to optimize resource utilization and swiftly address incidents, ensuring adherence to performance goals and compliance requirements.

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SELECTED PROJECTS CONTINUED...

Cloud Solution Architect, Carnect/VW | AllCloud, Jan 2020 – Feb 2020
Technology Stack: *Terraform/HCL, Terratest/Go, AWS-RDS/PostgreSQL, AWS-CloudFront/WAF, AWS-DynamoDB, Prometheus/Grafana AWS-EKS/Istio*

- Multi-Account AWS Architecture: Transformed the existing single-account AWS resource stack into a secure multi-account setup, implementing SAML/SSO authentication for streamlined user access.
- Security & Governance: Established best-practice security infrastructure (WAF, CloudFront) and introduced processes to maintain compliance and data protection across accounts and workloads.
- IoT Infrastructure Redesign: Led two customer-facing workshops to guide the redesign of IoT BE components in AWS, leveraging Terraform, Terratest, and EKS/Istio to ensure high availability and scalability.

Cloud Architect, Beontra | AllCloud, Aug 2019 – Dec 2019
Technology Stack: *Terraform/HCL, AWS-SageMaker/Python, AWS-Lambda/Python, AWS-StepFunctions, AWS-SQS/AWS-RedShift*

- Machine Learning & Data Pipeline: Designed and deployed a novel ML prediction logic using SageMaker and Python, setting up a Redshift-based data lake and orchestrating ETL workflows through StepFunctions.
- Infrastructure & Automation: Implemented serverless AWS-Lambda functions for data ingestion & transformation, integrating SQS to ensure scalable, event-driven processing.
- Client Collaboration: Led requirement-gathering workshops and developed the initial SageMaker model prototype; oversaw the AWS infrastructure setup and launch while providing ongoing support to the in-house DevOps team.

IT Architect & DevOps Engineer, DHL/German Parcel Service | T-Systems, Sept 2018 – June 2019
Technology Stack: *Rancher/CoreOS, Rancher/Kubernetes, Jenkins/X, Jenkins/BO, Python + Golang*

- High-Availability Architecture: Devised and developed a load-stable, distributed services platform, guiding team members in designing an expanded, API-driven IT service package. Migrated critical Docker applications to a new Rancher orchestration system and transitioned core functionality into an OpenShift-based platform.
- DevOps Support & Optimization: Provided continuous support for the service stack, including active performance profiling, load testing, and environment monitoring to ensure operational excellence and stability.
- Custom CI/CD Pipeline: Built a modular CI/CD pipeline platform using Jenkins Blue Ocean, delivering reusable pipeline components as standalone plugins. Automated module distribution and versioning, resulting in enhanced collaboration, consistency, and scalability for development teams.

SELECTED CUSTOMERS









