Josh Bowen

Senior Platform Engineer & DevSecOps Specialist
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PERSONAL SUMMARY

A high calibre Platform Engineer who can make an immediate positive impact on any project joined. With a proven track record of developing **containerized platforms** on large scale UK government projects within secure environments on private and public clouds.

A **DevSecOps** specialist that empowers teams to deliver end-to-end deployments at pace incorporating & leveraging effective security practices.

A red team enthusiast and member of the Hack-the-Box community, identifying risks and offering effective solutions that integrate into the **GitOps** methodology of everything as code.

A **clear communicator**, who thrives on tackling challenges and taking ownership of new projects or tasks.

CAREER SUMMARY

DATA-EDGE ANALYTICS | LONDON

An agile high-end development start-up working on projects in AWS.

Senior Platform Engineer - Contract   *Sep '21 – Present*

- ❖ Working on and ownership of a UK government project in AWS
- ❖ Made heavy use of the AWS Security Environment Accelerator, with Terraform pipelines to integrate post deployment resources such as MAD, SSO, Workspaces, EKS, PKI & S3 for data processing
- ❖ Built a Python containerised service to anonymously transfer files to S3 over the Tor networkf

CAPGEMINI | LONDON

A global leader in consulting, technology services and digital transformation. A multicultural company of over 250,000 team members in more than 40 countries.

Senior Platform Engineer   *Sep '20 – Sep '21*

- ❖ Working on and ownership of a UK government project in AWS
- ❖ Leveraging Terraform and AWS CodePipelines to provision infrastructure across accounts within an AWS Organization
- ❖ Manage users and applications with AWS SSO and PKI services with AWS ACM to generate, issue, and manage public and private SSL/TLS certificates for VPN endpoints
- ❖ Integrate frontend applications with Cognito and enterprise identity providers with SAML or OpenID Connect
- ❖ Advanced Terraform knowledge writing modules that include dynamic for loops, templatefiles and testing with Terratest that covered both infrastructure and deployments using Kubernetes and Helm providers
- ❖ Terraform modules that made use of infracost.io to give new pull requests a cost estimate and use Git precommits to check syntax and update docs
- ❖ Deploy EKS clusters with AZ bound managed node groups for applications with storage requirements. Using Kubernetes Spread Topology Constraints to distribute containers across AZs to guarantee HA
- ❖ Added support for both spot instances combined with Kubernetes affinity rules to improve cost efficiency
- ❖ Real time transformation of logs by streaming them through AWS Kinesis Data Firehose and processing them with lambda functions
- ❖ Prove GitOps methodology with a PoC, then implement GitOps pipelines using FluxCD & Helm

Key Skills

CORE EXPERTISE

❖ DevOps	❖ Kubernetes & Container Security
❖ DevSecOps specialist	
❖ Micro-services	❖ Supply Chain Security
❖ Scaling Cloud-native Architecture	
	❖ Hack the Box
❖ Self-healing Architecture	❖ CTFs
	❖ Red Team
❖ Shift-left pipelines	❖ Vault
❖ Git	❖ Terraform
❖ Github (Packages/Actions)	❖ Terratest
	❖ AWS
❖ Rapidly adapt to changes	❖ BASH
	❖ Go
❖ Large scale production	❖ VSCode
	❖ RabbitMQ/SQS
❖ CI/CD	❖ Kafka/ELK

CERTIFICATIONS

The Linux Foundation   2021+

- ❖ CKA: Certified Kubernetes Administrator
- ❖ CKS: Certified Kubernetes Security Specialist

HashiCorp   2020+

- ❖ HashiCorp Certified: Terraform Associate
- ❖ HashiCorp Certified: Vault Associate

CONTAINER STACK

❖ Kubernetes	❖ Docker/Compose
❖ Service Mesh (Istio)	❖ CRI-O/Containerd
❖ EKS	❖ gVisor
❖ Kubespray	❖ Kustomize
❖ Helm	❖ Kind

BUILD STACK

❖ Ansible	❖ Packer
❖ Nexus/Artifactory	❖ Docker
❖ Jenkins (Groovy)	❖ Kind
❖ Tekton	❖ AWS CodePipeline
❖ GitHub Actions	❖ Vagrant

DEV STACK

❖ Golang	❖ Java*
❖ Python	❖ AWS Lambda (S3/SNS/SQS)
❖ BASH	

DEPLOY STACK

❖ Ansible	❖ Terragrunt
❖ Helm	❖ Terraform
❖ Kustomize	❖ GitOps (FluxCD/ArgoCD)
❖ AWS CodeDeploy	
❖ AWS CloudFront	❖ Flagger - Canary, A/B Deployments

- Deploy Istio Service Mesh for traffic management, strict mutual TLS and observability metrics
- Configure Flagger for A/B canary deployments with custom metrics for bespoke data sets
- Implement HA Prometheus monitoring and alerting, paired with a personal Grafana dashboard that hooks into Istio metrics for developer feedback
- Setup AWS Config with Python Proto3 library to monitor AWS resources across the AWS Organization that fed into security teams
- Educate developers to nurture a cloud-native & cloud cost efficiency mindset to improve team outputs
- Recruited and shaped high performing team members
- Run daily stand ups and team retros

Platform Engineer   *Sep '19 – Aug '20*
- Working on a secure UK government project hosted on a private cloud requiring 24x7 & 99.999% SLA
- Built production ready Kubernetes stacks in air-gapped environments
- Implemented Jenkins entirely from code, from the helm chart to configuration, secrets and jobs.
- Integrated F5 & MetalLB with K8s Ingress
- Implement open-source projects like Thanos, Longhorn, cert- manager, MetalLB & Istio
- Implemented GlusterFS/Heketi, Ceph, Longhorn PoC's to provide persisted state in on-premise K8s clusters
- Contributed towards open-source tooling to incorporate into the project to enhance secret sharing, e.g. GPG, blackbox
- Containerised traditional based services deploying to Kubernetes

VERINT | WEYBRIDGE
A Nasdaq listed global leader in big data analytics, transcribing VoIP and text to discover trends and secure against fraud with speech analytics.

DevOps Engineer   *Jul '16 – Aug '19*
- **Cloud:** Implemented an on-prem OpenStack platform to recycle EoL HP ProLiant servers. Using kolla-ansible to bootstrap storage, network and compute components. Generated a Ceph distributed filesystem with ceph-ansible library for the storage component
- **Linux SysAdmin:** Maintaining operations of a local data centre and the resilience and uptime of a globally distributed CI/CD stack. Managing DHCP, DNS, OpenLDAP, SAMBA and Mail servers as well as a NetApp SAN. Using routine upgrade windows to keep our entire stack up to date
- **CI/CD:** In house git hosting solution using gitolite with mirroring between global data centres with regular off-site backups. Multiple Jenkins instances running declarative pipelines, SonarQube and Artifactory deployments, all containerised, backed up and resilient with active/passive clusters
- **Infrastructure:** Monitored a vSphere VM farm hosted on vSphere using SNMP monitoring of hardware and client VMs paired with Python scripted monitoring to send text messages on critical issues such as a server outage or degraded RAID arrays. Scripted vSphere automation via the PowerShell PowerCLI interface and Python pyVmomi SDK paired with Ansible playbooks and roles for provisioning both Windows and Linux VMs

OPEN-SOURCE PROJECTS
- Developing a Go CLI to bootstrap IaC pipelines in the cloud
- Created Vagrant resources for spinning up local development VMs on VirtualBox including red team VMs
- Created and hosting Docker Images for application and debugging purposes on Kubernetes
- Created a Kubernetes-in-Docker setup with sample Go application for demonstrating Istio Service Mesh, Prometheus and Flagger Canary Deployments
- A Go application for bootstrapping HashiCorp's Vault PostgreSQL backend

OBSERVABILITY STACK
- Istio
- Jaeger
- Kiali
- Prometheus/Thanos
- AlertManger
- Sysdig
- ELK
- Grafana
- AWS CloudWatch
- Sysdig

SECURITY SKILLSET
- Hack the Box member
- PKI (Vault, openssl)
- Nmap/netcat tcpdump/wireshark sqlmap/hydra dirbuster/smbmap arpspoof/MITM
- Aircrack suite
- Metasploit
- Burp suite
- GPG/Blackbox
- SSO - OAuth/OpenID Connect/JWT/SAML2
- Anchor/Trivy
- K8s Admission Control (OPA/ Kritis)
- Container Supply Chain (Build/Scan/ Deploy)
- Container Runtime (Seccomp/gVisor)
- Immutable containers (SecurityContext)

LINUX SKILLSET
- Kali/Parrot OS
- Ubuntu
- SELinux
- Alpine
- CentOS
- RHEL

CLOUD STACKS
- AWS (CloudFront)
- vDirector/vSphere
- OpenStack
- Ceph
- Terraform

BOOKS
- Container Security – Liz Rice
- Advanced Penetration Testing – Wil Allsopp
- Site Reliability Engineering – Betsy Beyer
- Pro Git – Scott Chacon
- How Linux Works: What Every Superuser Should Know – Brian Ward

EDUCATION & AWARDS
Awards
- University of Surrey Top Achievers Recognised and Supported (STARS)

University of Surrey
- BSc in Computing and Information Technology **Grade: First Class**

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stuxcd.io

github/stuxcd