

Barrie Bremner

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A Lead Site Reliability Engineer with over 18 years experience working in agile, multi-disciplinary teams, building and operating Software-as-a-Service (SaaS) products in compliance- and security-sensitive environments.

I enjoy building and working in effective teams who strive to learn from each other and create useful, robust, automated systems together.

My experience as a Site Reliability Engineer has been aided by previous roles in application development and penetration testing.

Work Experience

Operability Consultant (Contract)

NTT Security

February 2020 – present
Remote/Reading, Berkshire

Working to develop a highly automated infrastructure to address shortcomings in the current system regarding operability, resilience, deployment speed and cost management.

Analysed the existing infrastructure & processes, and provided numerous recommendations and near-term improvements, whilst more significant long-term changes can be developed.

Working with multiple teams across several timezones to diagnose issues whilst training them in modern infrastructure development best practices and tooling.

Building new systems using Terraform on AWS, utilising multiple AWS services, including EKS (Kubernetes) - replacing hand-built clusters - common services such as EC2, RDS, ElastiCache and security/audit-focused services such as GuardDuty.

Site Reliability Engineer (Contract)

Wikitrubune Social (WT.Social)

November 2019 – February 2020
Remote

Short-term engagement to help a new social network scale their infrastructure during a period of rapid growth and provision more robust & scalable infrastructure.

Highlighted & fixed issues with existing manually provisioned infrastructure. Made changes to application code to aid build, testing and deployment.

Singlehandedly automated provisioning of an AWS Organization with isolated environments with EC2, ECS, RDS, Redis ElastiCache and S3 using Terraform. Created a CI/CD pipeline using GitLab CI/CD to build a dockerised application that could be deployed into Amazon ECS clusters with autoscaling at the ECS and EC2 auto-scaling group level.

Identified and documented recommendations regarding working practices, testing, monitoring, security, robustness and cost management.

Lead Consultant (Contract) at Nationwide Building Society
Contino

August 2019 – November 2019
Swindon, Berkshire

Operability Engineer working as part of a blended consultant and client team at the world's largest building society to build a landing zone to underpin platforms for Open Banking and business banking services.

This engagement involved training the client team and working together to build a multi-account AWS landing zone and core infrastructure services such as CI/CD; network traffic ingress, egress and filtering; logging and monitoring.

Used Terraform for infrastructure on AWS; Ansible & bash for tooling; buildkite for CI.

Operability Engineer (Contract) at Thames Water
Equal Experts

February 2019 – July 2019
Reading, Berkshire

Operability Engineer embedded in an application team delivering a new environmental management system for sewage treatment plants, to improve monitoring and compliance needs.

System consisted of an Android application with .Net micro-services on Kubernetes in Microsoft Azure.

Evolved an aks-engine based Kubernetes platform hosting several tenants' applications. Simplified the deployment process for application teams, increased resiliency and improving monitoring. Created build and release pipelines for application team.

Used Terraform & aks-engine for infrastructure; Azure DevOps/VSTS for CI/CD; Ruby & bash for tooling.

Operability Engineer (Contract) at Kingfisher plc
Equal Experts

December 2017 – February 2019
City of London, London

Operability Engineer building and supporting a kops based Kubernetes platform on AWS with supporting EC2 and RDS services which serves all traffic for the new B&Q website and mobile phone applications.

The platform also provides multiple feature teams development and test environments, with the ability to onboard new services in hours. Use of the platform is being rolled out to additional Kingfisher businesses.

Used kops, Hashicorp Terraform & Packer with Ansible for infrastructure provisioning; automated Jenkins for CI/CD; Prometheus for monitoring & EFK stack for logging; supporting tooling in bash, Ruby & Python.

Director
Interesting Angle Ltd

October 2017 – present

Offering operability engineering & development consultancy services.

Operations Technical Lead

GOV.UK Pay, Government Digital Service (GDS)

September 2015 – December 2017

Aldgate, London

Technical lead for the operations team building and running [GOV.UK Pay](#) — a PCI compliant payments platform for both central and local government services, which has now processed over £400 million.

Responsible for the operations team within a user needs lead, agile, multi-disciplinary team building and operating a new payments platform which has been certified as a PCI level 1 service provider.

Built the initial version of infrastructure for the GOV.UK Pay platform to meet PCI and internal requirements. Used Amazon Web Services (AWS) EC2 and supporting AWS services with Hashicorp Terraform to automate provisioning.

Introduced Chef with Hashicorp Packer to manage AWS AMI generation. Wrote supporting tooling in Ruby.

Drove efforts to have all technical members of the team to be comfortable and able to support the platform in- and out-of-hours and to have non-technical members assist in escalation & incident management roles.

Heavily involved in evolving the infrastructure with my team to improve scaling and reduce management overhead and cost. Some of my notable improvements included updating our infrastructure deployment to use blue/green deploys across AWS auto-scaling groups (ASGs) and improving the robustness of our Hashicorp Vault deployment, adding high availability.

Assisted developers in understanding best practices when building and deploying applications. Supported a mix of Dropwizard/Java-based backend and Node.JS frontend micro-services running inside of Docker containers.

Technical assessor for other government services being assessed against GDS' [Digital Service Standard](#). This involved being part of a panel critiquing and providing constructive feedback to other teams as their service increased in maturity.

Line manager for people in several other teams within GDS.

Carried out reviews of tenders for contractors, CV sifts, phone screens and participated in interview panels, recruiting developers and operations engineers for teams across GDS.

Senior Web Operations Engineer

GOV.UK Verify, Government Digital Service

May 2014 – September 2015

Holborn, London

Part of the operations team within the multi-disciplinary government programme developing and operating the [GOV.UK Verify](#) online identity assurance service.

Built out infrastructure to support GOV.UK Verify's public beta in a security-sensitive environment. Improved the deployment process and tooling for Verify's applications.

Supported Dropwizard/Java applications running in a VMware vCloud environment.

Development and Operations Engineer

MyDrive Solutions Ltd

April 2012 – May 2014

Reading, Berkshire

Site Reliability Engineering and Development role within a start-up team, providing telematics-based driver profiling for motor insurance companies.

Developed and supported key pieces of the company's AWS cloud infrastructure. Built and managed a deployment of Ubuntu Linux instances systems with Chef. Wrote recipes, tools, scripts, and monitoring checks.

Deployed applications, configured services, debugged issues, performed OS updates and platform upgrades. Deployed and maintained infrastructure to collect as much data as possible and feed back on site and application performance.

Extensively debugged and developed Ruby applications, including an API in Rails and a custom Resque-based telematics data processing engine. Used Ruby, Rails and Sinatra; PostgreSQL with PostGIS, Redis, Cassandra and MongoDB.

Developer

Integralis Ltd (now NTT Com Security)

January 2011 – April 2012

Reading, Berkshire

Architected, implemented and deployed a system to receive, process & archive network security device rulesets and offer data to other distributed systems via REST APIs. Used OO Perl, Dancer micro web framework, Beanstalk message queue, Oracle.

Introduced Puppet configuration management, standardised server builds using Cobbler and Redhat kickstart. Reduced server provisioning times down to minutes from days. Drove efforts to introduce controlled development and test environments.

Worked with Group IT to provide additional Unix systems administration resource, provisioning systems and deploying code when required.

Internet Services Developer

Netcraft Ltd

July 2007 – January 2011

Bath, Bath & NE Somerset

Introduced an automated standardised, repeatable server provisioning system using cobbler and configuration management using Puppet. This allowed for the uptake of developer and test environments, which I had championed.

Additionally, this provided the foundation for the company's subsequent use of AWS EC2; eased hardware and OS upgrades and simplified maintenance.

Rebuilt the company's internal network infrastructure, moving from consumer-level switches to commercial-grade switches, increasing redundancy, performance and standardising configuration as the company's server footprint increased.

Performed penetration testing, using a combination of manual and automated tests; provided recommendations to clients to improve infrastructure and application security. Triaged PCI ASV false positives from customers.

Mentored junior technical staff and carried out peer reviews with more experienced engineers.

Carried out software development tasks, primarily using Perl, MySQL, shell.

Software Development Engineer

SurfControl On-Demand Services Ltd (now Forcepoint)

April 2005 – July 2007

Reading, Berkshire

Worked as a technical feature lead developing and maintaining the company's MailControl managed email security service, working on the LAMP stack using Perl.

Designed and implemented software to allow the automated enrolment of new customers, including functionality to manage customer assignment to MailControl

clusters. This work has significantly reduced the workload of Customer Services and Operations.

Implemented changes to the licensing and accounting subsystem of the company's portal, including facilities to automatically control customers' enabled services, removing the need for Customer Services to manage the process.

Defined the process to build system and integration test environments, allowing developers to build consistent environments representative of production.

Interviewed and mentoring new technical staff.

Senior Customer Matching Analyst
Centrica PLC

February 2002 – April 2005
Staines, Middlesex

Developer role, working on the company's multi-terabyte data-warehouse, maintaining ETL code and specialising in data cleansing and customer matching applications using Perl, Trillium, SAS and Oracle.

Enhanced a mission critical data matching application to consistently execute in minutes rather than days, adding system capacity and reducing hardware costs by a quarter of a million pounds.

Re-architected and refactored a batch process to cleanse Centrica's multi-billion row customer database and merge updated Post Office address information. My new system corrected all known issues with the previous system and could be run unattended within a weekend, whereas the previous system took up to a fortnight and required considerable manual intervention.

Managed weekly releases to the production environment. Introduced the CVS source control system to manage the department's code repository.

Technologies

Systems administration:

- Containerisation: Kubernetes, Docker. FreeBSD jails.
- Virtualisation/Cloud: Extensive exposure to Amazon AWS. Some Microsoft Azure. Experience with VMware ESX, KVM & Xen.
- Infrastructure tooling: Hashicorp Terraform, Vault, Packer and Vagrant.
- Configuration management: extensive experience with both Puppet & Chef; Ansible.
- Monitoring: Prometheus, Graphite, telegraf, statsd, collectd, Sensu, Nagios & more.
- Logging: Elasticsearch, Kibana, fluentd, logstash and SumoLogic.
- Extensive Nginx and Apache configuration.
- PostgreSQL, MySQL, Redis, MongoDB and Cassandra setup & administration.
- Networking: Cisco IOS & HP ProCurve configuration. OpenBSD pf & Linux iptables.
- Provisioning/packaging: Redhat kickstart, cobbler and RPM. Debian apt; aptly.
- Email: postfix, dovecot, sendmail and qmail configuration. Knowledge of SMTP etc.
- Others: Jenkins, haproxy, OpenSSH, OpenLDAP, ISC BIND & DHCPd, many more.

Development:

- Ruby: plus Rails, Rack stack, Sinatra and supporting tools such as Capistrano.
- Perl: extensive experience.
- Other programming: Unix shell. Working knowledge of Python. Basic C and Go.
- Web technologies: REST, AJAX, HTML/XML, some CSS.
- Datastores: PostgreSQL, MySQL. Redis.
- Message queueing systems: beanstalkd, RabbitMQ, resque.

Education

Heriot-Watt University
Edinburgh, Midlothian

1997–1999

Studied for two years towards a BEng (Hons) Electrical and Electronic Engineering.