

Barrie Bremner

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A Lead Site Reliability Engineer with over 15 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

Operations Technical Lead

GOV.UK Pay, Government Digital Service (GDS)

September 2015 – present
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.

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 and 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: Docker. FreeBSD jails.
- Virtualisation/Cloud: Amazon AWS. 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.
- 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: haproxy, OpenSSH, OpenLDAP, ISC BIND and DHCPd, NTPd, 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.
- Databases, NoSQL: PostgreSQL, MySQL, ANSI SQL. Redis.
- Message queueing systems: beanstalkd, RabbitMQ, resque.
- Source control: git, Subversion, CVS.

Education

Heriot-Watt University

1997—1999

Edinburgh, Midlothian

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

Cricklade College

1996—1997

Andover, Hampshire

Achieved A-levels in Mathematics, Physics and Chemistry, all grade D.

The Clere School

1993—1994

Burghclere, Berkshire

Awarded 9 GCSEs including Science (double award) at grade BB, English and Mathematics at grade C.