



# James Stevens

Lead Developer  
Senior Systems Engineer

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🌐 CV: [cv.jracs.net](https://cv.jracs.net/) (https://cv.jracs.net/)

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## DOWNLOAD

- PDF Plain (/cv\_plain.pdf)

## EDUCATION

**BSc in Computer Science**

University College Cardiff (Russell Group (<http://russellgroup.ac.uk/>))

## LANGUAGES

English (Native)

French (Competent Tourist)

German (Needs Refreshing)

## INTERESTS

Skiing

Hiking

Classic Car Restoration

Cooking

Psychology

## CAREER PROFILE

25+ years experience on Linux/Unix server & container systems, inc Alpine, RHEL / CentOS, Slackware etc, especially high-speed / high-availability database & server applications rising to spend the ten years as CTO & Complex Systems Architect for the dot-IO domain registry.

Designing and developing complex wide-area network server systems incorporating public & private clouds, fixed and dial-up VPNs, multiple v4 & v6 Anycast networks, with GSLB load balancing and failover, on a hardened Linux operating system.

Extensive full-stack development experience "C", Python, shells script & Javascript. Developing secure full-stack webapps, XML & Rest api services from the ground up. Designing & implementing secure Linux based operating systems, from the kernel up. Extensive experience in the use of a wide range of open source packages, including building from source.

Contributed & credited in a range of open source packages, including various utilities as well as the Linux Kernel and Kernel Support (Kernel Bugzilla).

Write high quality documentation, blog posts and general reporting. Give clear & well structured online and public presentations supported by network & service architecture diagrams, suitable for both a technical audience and those less familiar with the subject matter.

A wide ranging understanding of IT and its uses with a talent for being able to explain complex concepts & architectures to C-suite / non-IT executives, so they can understand the decisions that need to be made.

## EXAMPLE CODE / OPEN SOURCE PROJECTS ([HTTPS://GITHUB.COM/JAMES-STEVENS](https://github.com/james-stevens))

- Javascript Rest/API WebApp - PowerDNS Web Admin UI (<https://github.com/james-stevens/powerdns-webui/>)
- DNS over HTTPS (DoH), Python Flask Example, inc as a container (<https://github.com/james-stevens/dnsflsk/>)
- Python/Flask EPP to REST/API gateway micro-service as a container (<https://github.com/james-stevens/epp-restapi/>)
- General purpose MySQL data access REST/API as a container (<https://github.com/james-stevens/auto-skew-elle/>)
- Utility for automatically maintaining a `bind` "catalog zone" in PowerDNS using its REST/API (<https://github.com/james-stevens/powerdns-catalog/>)

## EXPERIENCE

### Senior DNS Systems Engineer

Jul 2023 - Present

Nominet Ltd - Full time

**Nominet** (<https://www.nominet.uk/>) is the ccTLD registry & DNS operator for dot-UK and various gTLDs including all TLDs owned by Microsoft & Amazon, as well as brand TLDs, like **dot-Bentley** (<https://icannwiki.org/.bentley>).

Research, plan & implement a high volume wide area "protectvie DNS" system, including a full data collection service. Including writing a full QA/validation suit to run a post-install validation. Collecting from multiple global sites, using multi-layered `vector` data-piplining, stored in AWS/S3, to provide data for cybersecurity research. Instrument & measure every layer of the process using a Prometheus Federation & Grafana. Provide Ops with appropriate dashboards. All installation & configuration automated with ansible.

**Key Skills:** RHEL Linux (baremetal & AWS), prometheus (inc Federation), grafana, vector, ansible, shell script, python, presentation, documentation

### Senior Linux Systems Architect

Nov 2019 - Jul 2023

Names.Of.London Ltd - Full time

Earley contributor to an experimantal community blockchain domain name project called **Handshake** (<https://handshake.org/>). Handshake uses blockchain to create a public access alternative ROOT zone where anybody can own a Top-Level-Domain and they can be publicly auctioned and traded through the blockchain. I contributed to the coding of the project and ran a registry and registrar system for up to 1,600 TLDs for any Handshake TLD owners who wanted to sell Second-Level-Domains (SLDs).

Responsible for installing & running domain name registry & registrar systems on bare metal using Alpine Linux VMs, MySQL & docker containers

- Install and run a number of domain registry systems, running in docker containers on Alpine Linux VMs
- Install & configure prometheus / graphana for each system
- Javascript single-page application for **management of PowerDNS** (<https://github.com/james-stevens/powerdns-webui>) using its Rest/API
- Various Python / Flask containers, e.g A DoH that can resolve ICANN, Handhsake & ETH domain names (<https://doh.web3dns.net/>).
- Architect conversion of VM Server based Domain Name Registry system into microservices system using Docker containers & migrate customers
- Design & develop various Docker containers for the Handshake blockchain/NFT project
- Wrote an open source EEP compliant registrar system (**PyRar** (<https://github.com/james-stevens/pyrar>)).
- Wrote a docker container to convert **EPP to a load-balanced REST/API** (<https://github.com/james-stevens/epp-restapi>)

**Key Skills:** Python / Flask, Docker/containers, nginx (proxy & web server), postfix, squid, shell script, C, Alpine Linux, PowerDNS, ISC "bind", Some NN (language models) & OpenAI API

## Senior Linux Systems Engineer

Jul 2018 - Nov 2019

Large multinational B2B SaaS/PaaS Provider **ServiceNow** (<http://www.servicenow.com/>), London (UK)

With a global private cloud of 1000s of servers, ServiceNow provides a PaaS for enterprise level ITIL compliant IT management used largely in the corporate and government markets.

The Systems Engineering Team architect, maintain and run all the infrastructure services that support the ServiceNow application - e.g. email, DNS, authentication and server / VM infrastructure

### Role – **Engineering Automation Developer / Subject Matter Expert for DNS**

Architect a complete refactor of the internal DNS, using python & rest/APIs to automate common tasks, and add malware filtering. Present proposals for approval to upper management and fully implement without any service interruption.

Using Python and Rest/APIs, automate the teams ITIL change management submission and implement a full server / service validation / QA package, integrated with the ITIL system.

Help build an IL4 (high security) data centre for use by US government agencies, ensuring FIPS-140 compliance for DNS services.

**Tech Skills:** Linux (Centos / RHEL), networking, puppet, agile, ITIL, python, rest api, github / Gerrit, DNS, DNSSEC, PowerDNS, "bind", vcenter / vmware, LDAP.

**Soft Skills:** Documenting & presenting proposals, documentation for 24/7 teams, co-ordinating projects across multiple teams & time-zones, technical presentations (live & on-line)

## CTO, Lead Architect / Developer, Project Manager

Oct 2006 - Jan 2018

AC/SH/IO/TM (<http://www.nic.tm/>) ccTLD Domain Registry & **CommunityDNS** (<http://www.cdns.net/>), London UK

Dot-IO Domain registry was responsible for running and maintaining all domain names ending dot-IO, as well as those ending dot-AC, dot-SH and dot-TM. This involved me writing & running a full-stack registration / membership & renewal application, with an EPP XML API, and all the necessary DNS infrastructure to ensure the domain names work 24/7/365

Originally part of dot-IO, "CommunityDNS" was spun off as a separate brand under the same business to sell DNS anycast services externally. At the peak we had over 50 ccTLDs on the platform. I was CTO of both business divisions.

### **Lead Architect / Lead Developer / Project Manager - Domain Name Registry**

Design, write, implement and run (24/7) a full-stack domain name registry system & separate DNS publishing service. Includes designing the hardened operating system platform, server infrastructure and all necessary backup & failover strategies at multiple data centres - London (x4), New York (x2) and Chicago (x2) linked by VPN.

**Backend:** MySQL, "C", python, shell script

**Frontend:** XML API written in "C" and three full-stack WebUIs for end-users, resellers and customer services (internal) - "C", Javascript, python, HTML, CSS

**Skills:** Linux, KVM, networking & VPN, MySQL, Open Source, "C", shell script, python, HTML, CSS

### **Lead Architect / Lead Developer / Project Manager – DNS Anycast Service**

Design, write, implement and run (24/7) an attack resistant (esp D/DoS) DNS publishing & reporting service using a hardened Linux O/S and hardened **authoritative DNS Server**

(<https://github.com/james-stevens/giant-dns>) I wrote.

**Skills:** Linux, DNS, "C", VPN, IPv4 / IPv6,

## **Operating System Architect**

1996 - 2006

Independent Linux Consultancy, London

Designing secure, hardened, ultra-reliable custom Linux based operating systems for embedded applications, e.g routers, network storage, firewalls, web proxy cache & filter, content distribution for education.

Sold and licensed Operating System designs and code to external vendors including **3-Com** (<http://www.3com.com/>) and **ApplianSys** (<https://www.appliansys.com/>)

## **Freelance Contractor**

1992 - 1996

Various, London

Mostly working with Sybase on Unix based system, especially Solaris, specialising in front-office trading systems for merchant banks. Clients included BNP Paribas (French Bank), Goldman Sachs, Sun Microsystems as well as various software vendors.

## **Systems Developer - Database Vendor**

1990 - 1992

**InterSystems Corp** (<https://www.intersystems.com/>), UK / Boston

Covering in the EMEA territory from the office in the UK, but with frequent time spent working on technical issues at the head office in Cambridge MA. Providing technical backup for the front-line customer support staff.

This includes analysing technical issues, fixing bugs and porting the product to new platforms. Accompanying sales and/or support staff on customer visits throughout the EMEA territory.

## **Systems Developer - Accounting & Time-Costing Systems**

1988 - 1990

Radius-CBSL, Cardiff

Providing technical support and technical development services to teams of developers and customer support staff for SCO/Unix based Ingress accounting and time-costing system for SMEs.

## ■ PROJECTS

### **PowerDNS Management (<https://github.com/james-stevens/powerdns-webui>) -**

Architect, Project Lead & Lead Developer, 100% Javascript webapp talking to PowerDNS RestAPI for complete data management, inc DNSSEC.

**TM Domain Registry (<http://www.nic.tm/>) -** Architect, Project Lead & Lead Developer, Full-Stack Development. MySQL, C, python & shell-script backend to HTML/CSS/JavaScript frontend & XML/API

**CommunityDNS (<http://www.cdns.net/>) -** Architect, Project Lead & Lead Developer, IPv4 & IPv6 Anycast DNS publishing & reporting system

**Technical Blog (<http://names.of.london/press/>) -** A technical blog relating to the New Top Level Domains and Domain Name industry, but also including security issues and product specific information.

**SlimLinux (<http://www.SlimLinux.net/>) -** Cut down hardened Linux distribution, demo'ed as a DNS server - full operating system and application package is about 36Mb

**ApplianSys (<http://www.appliansys.com>) -** Hardware vendor selling network appliance solutions based on my operating system design

## ✈ SKILLS & PROFICIENCY

**Linux, Operating System design & security, scripting**

**SQL Databases  
(MySQL, Sybase)**

**Back-end Web, Apps & Security**

**"C" Developer**

**"Python" Developer**

**Domain Names, DNS, DNSSEC, PowerDNS & Bind**

**Firewalls, WANs, IPv4, IPv6, BGP, Load Balancing, Anycast**

**Javascript, JSON, AJAX**

**HTML, CSS, UX/UI**

**Social Media Marketing esp Twitter, SEO**

**Template (<http://themes.3rdwavemedia.com/website-templates/orbit-free-resume-cv-template-for-developers>) designed with ❤ by Xiaoying Riley (<http://themes.3rdwavemedia.com>)**