

Curriculum Vitae for Charles Cooke

Personal Statement

Give me a constant series of problems and I'll happily work out the best ways to solve them, then prevent them from recurring. I enjoy teaching and mentoring people and I can work either as a team leader or a team member. My experience covers many aspects of Systems Administration, many of which I have specialised in at one time or another. I love to be challenged to learn new skills, or to relearn old ones.

Contact Information

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Key Skills

Technical

- Twelve years experience of **UNIX** and **UNIX-like** systems, including **Red Hat Enterprise Linux**, **Centos**, **FreeBSD**, **Debian**, **Solaris**, **AIX** and **Ubuntu**.
- Experience of working with and designing for **large-scale** (thousands of devices) and **global** estates.
- **Functional Testing**, **Unit Testing**, **Performance** and **Optimisation tuning**.
- Build, design and maintain **Open Source** Server Platforms, including **LAMP** systems and others.
- Administration of **NAS** and **SAN** systems (**EMC**, **NetApp**, etc)
- Database administration (**MySQL**, **Postgres**, some **Oracle**).
- Network and Systems architecture for **Open Source** server platforms and Hypervisors including **KVM**, **Xen**, **VMware ESX**.
- Fault-finding, deep analysis and problem solving across familiar, unfamiliar and Exotic systems.
- Systems programming in **Perl**, **Ruby**, **Python**, **Unix shell** (**Korn**, **Bash**, **Bourne**), **PHP**.
- Very extensive knowledge of Shell and other glue languages.
- Familiarity with **Java**, **C**, **COBOL** and other languages.

Collaborative

- **Training and mentoring** in **best practice**, good design and any elements of my skillset.
- **Last-line support** for problems ranging from day-to-day to business critical.
- Documentation of **procedures** or systems for knowledge-share throughout the department or communication to other groups.
- Experience of working with **Agile**, **Kepner-Tregoe**, **Extreme Programming** and other methodologies.
- **Information gathering** with familiar and unfamiliar groups.
- **Requirements gathering** and experience working with long-term projects to meet the needs of stakeholder groups.

Design and Construction

- Datacentre build-out and management of third-parties.
- Negotiation with hardware vendors and datacentres.
- Design of **High Availability**, **Fail-over** and **Clustering** systems utilising either off-the-shelf hardware (**Nortel Alteon**, **Cisco**, etc) or built-from-scratch components (**Linux IPVS** and other tools).

Security, DR and Maintenance

- **Systems Security** - security-conscious **systems and network design**, patching, penetration testing, recovery of compromised machines, prevention of exploits, blocking of viruses and spam.
- Design and implementation of testable **Disaster Recovery** solutions.
- Designing, building and maintaining systems and networks to meet specific needs (**Business Continuity**, **High Availability**, **Load Balancing** etc)
- Designing and applying policies for standardised structure in Systems resources (**DNS** policy, **Mail** policy, company-wide naming schemes etc).

General Systems Administration

- Building and automating custom packages in **.rpm** and **.deb** formats.
- Building repositories for **Red-Hat** or **Debian** systems (**Red Hat Satellite Server** or **Yum** for Red Hat, **apt repositories** for Debian) allowing for safer and better management of local software, easier upgrades and safer administration.
- Web/Java administration: **Apache** (with **mod_ssl**, **mod_perl**, **php**, hardware acceleration of SSL with **Ncipher**), **Tomcat**, **Jboss** and other tools.
- Mail administration: **SMTP** servers (**Exim**, **Postfix**, **Sendmail**), **POP3/IMAP** servers (**Cyrus** and several others), safe integration of Unix mail servers

with Exchange.

Experience

Betfair

Performance and Automation Engineer, December 2007 - Present

Betfair is the world's largest Internet betting exchange

One of a small cross-department group most often involved in understanding and resolving exceptional emergency situations, last-line support etc.

Delivery of infrastructure automation tools to improve throughput in all departments.

Development of Command and Control tools to manage large (thousands of devices) and global estates.

Evaluation and selection of third-party tools for automation and testing, dealing directly with suppliers and external companies.

Working within the Performance and Automation Services departments.

Automation of performance testing, system building, hypervisor (Xen and KVM) and site management.

Requirements gathering and refinement across the whole of the Engineering division.

Trutap

Lead Infrastructure Architect (contract) January 2007 - December 2007

Trutap was a mobile social-networking startup which launched in 2007 at the TechCrunch 40 event in the US.

Delivery of a self-contained datacentre presence on time and within budget, with a documented scaling plan up to one million concurrent user sessions.

Delivery of a Disaster Recovery plan tested to provide a fully working replicated copy of the main datacentre within 12 hours of acquisition of replacement hardware (4 hours if a backup SAN survives).

All negotiation with hardware suppliers and datacentres.

Evaluating, sourcing and building the datacentre presence from scratch.

All hardware and software evaluation, sourcing and configuration.

Configuration of a new VMware ESX environment using rapid deployment and implicit disaster recovery.

Design and coding for a company-wide multi-site configuration and service framework.

Performance tuning and database optimisation for the system once the code was written.

The Search Works

Lead Infrastructure Architect (contract), August 2006 - December 2006

TSW (now part of TradeDoubler) were the leading search engine ad-placement provider, dealing with Google, MSN, Yahoo and others.

Delivery of a brand-new datacentre in Tokyo running a re-engineered TSW platform (twice the capacity of the existing system on one quarter the hardware).

Redesign and rearchitect the TSW platform for deployment in Japan as a fully available load balanced system.

Develop a new packaging, installation and release methodology.

Liase with Development and Operations to manage testing and deployment.

Build, test and deploy the new server platform in Tokyo.

Inspired Broadcast Networks

Senior Systems Administrator, 2004 - 2006

IBN is a leading provider of out-of-home pay-to-play entertainment including the Itbox pub gaming system.

Designing and implementing the Red Hat Satellite Server structure and policy for all Linux-based systems within the company. Creation of standardised tools used throughout the company to package software for server installation. Training of the Systems and Networks team to use the Satellite Server and packaging tools.

Engineering the move of the Music (20 Terabytes of MP3 music) from home-grown storage servers to a managed NAS.

Creation of new policies for packaging, DNS, etc. Liaison with the rest of the business to implement policies at all levels.

Implementation of Alteon Load balancers in the department and training coworkers to use them.

General Systems Administration tasks - automation of common jobs, checking servers, securing systems, patching, troubleshooting etc.

On-call support and out-of-hours administration.

Training in all of the above.

London Marketing

Head of Infrastructure, 2003 - 2004

London Marketing provides the London Town web portal for booking hotels, theatre tickets, finding what's on and so on around London.

Design, implementation and management of a high volume clustered web site with very high customer visibility (Accessible free through BT internet phones throughout London).

Systems Administration - ultimate authority over the hosting platform, networking infrastructure, development systems and office servers.

Disaster recovery planning and testing.

Security management for the company as a whole (Policies, Firewalls, etc).

Spam and virus protection for a company that has been posting several dozen valid email addresses on its very high traffic website for several years

Training staff in Unix systems tasks, best practices and methods.

On call support of all systems.

I'm reliably informed that, as of mid 2008, they were still running on the almost-unmodified systems I built.

Global Communications

Systems Administrator, 2001 - 2003

Global Communications runs NetBanx, an online merchant system (credit/debit card payment for websites).

Systems administration, including maintenance, design and implementation of new servers (http, smtp, pop3, imap, irc, real and proprietary), troubleshooting, security work and occasional resurrection. Implementation of monitoring and reporting systems for high availability systems storing several million credit card numbers. This is the core fail-over, redundancy and monitoring suite for NetBanx.

Implementation of mail servers using Exim, Cyrus and Sophos for SMTP, IMAP/POP3 and virus scanning respectively.

Web servers using Apache and Apache Stronghold (with hardware SSL acceleration).

Benchmarking and stress testing of servers.

Highway One

Systems Administrator, 1999 - 2000

Systems Admin, postmaster, RIPE Administrator

Training of second-line support personnel in DNS, SMTP, NNTP and other important protocols.

Third-line support for customer issues.

Background and Interests

I have always been interested in computers from the BBC A up, and to this end I studied Software Engineering and Computer Science at university. Eventually, lack of funds convinced me to seek employment but while at university I used the resources to learn as much as I could about Unix and the Internet. I developed an interest in and understanding of the underlying protocols that make the Internet function, and became interested in systems administration.

I enjoy programming, and have in the past used Basic, COBOL, C, C++, Java, Perl and Haskell. I like to play with shell scripts - some (very) old stuff can be found here.

Outside of computers I play Go (online and at a local club), I find cooking very relaxing and am an avid reader of many subjects from fantasy to archaeology. I also collect antique coffee cups, as it gives me something pleasant to look at on very late nights in front of the computer.

References

Available on request.