

# David Caldwell

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Top Flat, 5 The Crescent, Sandgate, Folkestone, Kent CT20 3EE

• Reliable • Resourceful • Resilient •

## Linux and open source skills

- Linux O/S including Debian and Ubuntu
- BASH scripting
- Python
- C
- Lua
- Pebble watchface
- FreeRADIUS
- LAMP stack
- HTML + CSS + JavaScript
- Software RAID
- SMTP
- rsync
- rsnapshot

## Virtualisation and cloud skills

- Xen experience
- VMWare ESX administration
- Google cloud services

## Networking skills

- TCP/IP, VLANs, DHCP, MX and DNS
- HP switches
- Palo Alto firewalls
- Xirrus wireless

## Telephony skills

- Mitel SX2000
- Mitel 3300 VoIP
- SMDR
- Asterisk

## Backup skills

- Netbackup
- Backup Exec
- rsync
- rsnapshot

## Personal skills

- Superb customer-facing skills
- Liaises well with staff members at all levels
- Strong team player
- Creative
- Resourceful
- Problem solver

## **eduroam at Canterbury College — a case study**

The eduroam project was put on my desk at Canterbury College because frankly, no one knew how to implement it. At the time, neither did I, but I like a challenge.

eduroam is a multi-faceted beast that, put simply, allows members of one educational institution ("home" institution) to log on at another institution's site ("visited" institution) remotely using their regular credentials. eduroam is usually presented to the user over wireless infrastructure but wired infrastructure can also be used. Either way, the network equipment (the edge switches or wireless access points) must adhere to the 802.1x standard. This standard stops a client connecting to the network until an authorisation token has been received provided by a RADIUS server. It required alterations and development along a technical chain reaching from the firewall to switches, wifi and servers.

At eduroam's heart lie RADIUS servers. In fact, the main thrust of eduroam is really a shed-load of standards describing how all participating institutions should present eduroam and how the RADIUS servers and network infrastructure should handle eduroam traffic. Alongside this, parts of the standard deal with what types of traffic must be permitted across the institution's perimeter firewall and what kind of strictures may be in place concerning web browsing.

I built a Linux test server which hosted three Linux virtual servers and installed FreeRADIUS on two of them. The third was a MySQL server (part of the eduroam standard governs the collection and storage of metadata for a ninety day period). I ran tests using a limited userbase and kept track of stats and server health. I made performance and security tweaks during this time and finalised the archiving and backup regime. I also created many MySQL queries for delving into stats and used a separate web server to host graphs and charts showing this data on demand.

After the test period, the network manager and I were satisfied and I planned a rollout across the college. I rolled out the production servers on a Xen hypervisor using the same setup, software versions and configuration files as the test environment. I have to reconfigure our wifi access points as well. I created promotional material (posters, banners, blog posts, web page and web banner) to support and publicise the service. I also created and frequently updated an internal departmental wiki page dedicated to learning about and troubleshooting troubleshooting eduroam. I offered Helpdesk training for eduroam troubleshooting and later, I trained my apprentice to support the system.

The project was — and still is — a huge success and as such I took part in a JANET conference discussing its implementation. Canterbury College eduroam services over 10,000 students. 800

## Employment

15/10/2014 — present

*Studied for PGCE and working as a teacher*

*@ Kent secondary schools & Canterbury Christ Church Uni.*

*Some topics taught include:*

- Python, Scratch and Kodu
- Binary, ASCII and hex
- HTML, CSS and JavaScript
- Photoshop
- Microsoft Office suite
- Algorithms
- Font design
- Introduced my year 9s to the concept of a simulated universe

20/07/2007 — 15/10/2014

*Senior Network Engineer*

*@ Canterbury College, Canterbury, New Dover Road, Kent CT1 3AJ*

- Data centre relocation and upgrade team
- Implementation, administration and training of Palo Alto firewalls
- Implemented backup system
- Implemented FreeRADIUS and WiFi as compliant with eduroam standard
- Rolled out college-wide Xirrus wifi
- Deployed Linux snapshot servers
- Built Linux file servers
- Mitel 3300 VoIP upgrade project
- Outreach centres evaluation, setup and support
- Wrote and delivered IT staff induction training

01/12/2004 — 20/07/2007

*Network/Field Engineer*

*@ Access IT Ltd, Brenley Farm, Brenley Lane, Faversham ME13 9LY*

- Installation of networks including switches, ADSL routers, firewalls, servers and workstations
- Asterisk VoIP
- Citrix and Terminal Server implementation
- Mail server installation, upgrade and troubleshooting
- Wrote training manuals for technicians and sales people
- Installation and maintenance of Sophos and Avast! antivirus

01/03/1999 — 01/12/2004

*Helpdesk Engineer*

*@ John Parker & Son Ltd, Vauxhall Industrial Road, Canterbury, CT1 1HD*

- Exchange Server support, installation, upgrade and rebuild
- Researched legal issues regarding Data Protection and advised the Data Officer accordingly
- Implemented PC auditing and inventory software
- Wrote training manuals for engineers and trained shop floor and Helpdesk staff
- Researched and evaluated performance and quality of site-wide DECT phone system

09/09/1998 — 01/03/1999

*Temp/PA to Freight Manager/IT Consultant*

*@ Eurotunnel, Newington*

- Rewrote the commercial passenger coach pricing spreadsheet
- Wrote spreadsheets to calculate freight staffing levels
- Meeting minutes
- Scheduling appointments

17/06/1997 — 31/05/1998

*Hardware/Software Engineer*

*@ DED Limited, Mill Road, Lydd*

- Travelled to customer sites to fix equipment
- Wrote test and demonstration programs
- Advised customers on technical issues for both hardware and software
- Advised about hardware on a military project
- Assisted with the design and testing of new products

1990 — 1995

*Barman @ The East Hastings Sea Angling Association and The Anchor*

*David Caldwell, 07855 811851, [david@wickedmonkey.co.uk](mailto:david@wickedmonkey.co.uk)*

## Education

1983 — 1988 The Grove, Hastings

1988 — 1990 Bexhill 6th Form College, Bexhill

1995 — 1997 South Kent College, Dover

2008 — 2013 Open University

2014 — 2015 Canterbury Christ Church Uni

## Qualifications

PGCE 11-18 Computer Science

2:1 Degree in Humanities majoring in Creative Writing and Music

Kerio Mailserver certified technician

Level 2 Mitel system administrator

BTEC ND Computing/Electronics

A-Level Computer Science

GCSE Maths, Art, Biology, Physics, English,

Computer Science