

# David Cohen

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I'm passionate about Software Engineering, with a history in System Administration and an obsession for automation and repeatability. I'm currently working remotely for Sucuri, creating internal tools for security analysts and doing PHP code review and basic malware analysis. I also still occasionally freelance on various Python and Ruby projects.

## **Recent Work (last 2 months):**

### WeatherCams:

Building infrastructure for automated picture/weather-data collection for an Austrian media company. Also built a web application to store and display collected pictures/data to users and an administration back-end to manage the sensors. I did all technical work on this project until we hit production.

### **Technologies Used:**

- Python/Flask for the Web Application (chosen because of easy Google AppEngine integration, although we did not end up using GAE)
- SQLite for metadata storage in v.1
- Configuration management with Ansible
- CubieBoard: an ARMv7 board, running Linux, using python and bash for camera automation
- OpenVPN for “low-level” sensor management, HTTP for communication between server + weather stations
- Leaflet.js for maps

## Automating Fault-Tolerant Web Hosting:

Building an automation-heavy and fault-tolerant web hosting setup that automatically handles the most common issues that would otherwise require human intervention (server down, migrating sites for load balancing, customer alerting, etc.).

### Technologies Used:

- Python/Pyramid for the web back-end.
- FreeBSD (because of CARP, hastd, ZFS, and long-term stability), nginx, MySQL/MariaDB cluster
- Vagrant for test environment setup + ansible integration
- Experimenting with HHVM for JIT-compilation of PHP (massive speed/efficiency gains)
- Configuration management with Ansible (wrote a module that opens up and modifies some Ansible classes to let us drive Ansible playlists programmatically).

**Linux Administration Video Series:** last year, I started a series of tutorials and educational videos covering Linux (and some BSD Unix), system administration, and programming. The YouTube channel is currently at ~150,000 views, with 5,000+ subscribers. Nothing huge yet, but it's great fun to turn one of my passions (Linux and Unix) into something that others can benefit from.

### Skills:

- **Programming Languages/Tools:** Python, Ruby, Clojure/Scheme/Lisp, Javascript, PHP, bash, Git, some mercurial
- **Web:** Python/Flask/Pyramid, Ruby/Rails/Sinatra, Javascript/Node/Express, some PHP, nginx, Apache, HTML, CSS3, HTTP, RESTful API Design.
- **DevOps:** *I've worked on both sides of this (Dev and Ops), so I'm comfortable bridging the gap.* Docker (LXC), Vagrant, Ansible, Puppet. I really love Ansible.
- **Operating systems:** Linux, FreeBSD, Windows, Mac OS 7/8/9/X, interest in Solaris.
- **3<sup>rd</sup> – Party Platforms:** Amazon and Google cloud infrastructure offerings, mandrill for e-mail, twilio and nexmo for SMS messaging.
- **Other Tools:** Active Directory and various Windows services, OpenVPN, Wireshark.

**Education:** Framingham High School, Framingham MA (2005)

**Current Interests:** **Golang**, building an interpreter, Rust, ZFS, Martial Arts, Motorcycles, travel, languages, learning Assembly and reverse engineering.

## **Work History:**

### **IT Consultant (self-employed)**

January 2014 – current

Austria/Ireland

- Several Web Development projects (Python, Flask, Pyramid).
- Tool Development for Security Analysts (chrome and firefox plugins, PHP tools).
- PHP malware analysis
- Google AppEngine.
- Wordpress Administration and custom plugin development.
- Set up, customized, and administrated PHP-based web-commerce platforms for several companies (Wordpress/WooCommerce/Joomla).

### **System Engineer**

May 2013 – December 2013

Ubimet, Vienna

- Worked as head of User Infrastructure team for an IT-focused Weather Forecasting company (a Red Bull subsidiary).
- Introduced Puppet into the company, which is now being used to manage client machines, development containers, and live servers, i.e. everything.
- Server administration for VPNs, NFS, LDAP, Internal Web Services, Development Containers (LXC/OpenVZ).
- Administered ~120 client machines in two locations running Ubuntu Linux (55%), Mac OS X (40%), Windows 7 (5%).
- Helped provide IT services, troubleshooting, and emotional support for users.

### **IT Consultant**

October 2012 – March 2013

Vienna

- **Kapsch** (Electronic Tolling Systems, System Engineering Division): worked as assistant to the System Architect. Helped during the design phase of two Tier-4 datacenters, selected datacenter equipment (racks, blade enclosures, cooling equipment, backup power), helped with low-level design evaluation.
- **Zoomsquare** (real-estate internet startup): frontend web development (HTML/CSS/Javascript/jQuery/Angular.js/Meteor.js), some work on Django, Node.js and Express.

## **System/Network Administrator**

September 2011 – March 2012

RIC International, Cambridge, MA

- Installation, administration, and troubleshooting of Web Services, DNS, SAN, Servers (10 physical, 35+ virtual), Databases (PostgreSQL and Filemaker), Virtualization, Backup.
- **Large Projects:** 20TB SAN Implementation, Complete Server Virtualization (Bare-metal Hypervisor + SAN), Migration from Windows XP to Windows 7.
- Expanded and ran corporate IT for 30-person company plus a 5-person office in China, provided technical advice and support to marketing, sales, and operations staff.
- Reorganized IT Infrastructure, simplifying the architecture, reducing costs, and increasing reliability.
- Designed and built creative, low-cost solutions (often using open-source software) to avoid expensive third-party services/equipment, vendor lock-in, etc.

## **Junior System Administrator**

March 2010 – September 2011

RIC International, Cambridge, MA

- Started as an IT intern, was hired full-time within 2 months.
- Managed LAN/WAN, VPN (OpenVPN/Sonicwall VPN), firewall (Sonicwall NSA), fileservice (NFS, SMB), print service, backups (rsync, Acronis, OS Snapshotting), application servers (Ubuntu/Debian Linux, Windows 2003/2008) and web services (Apache and IIS webservers).
- Created simple web applications for Management, web developers, and Project Management staff.
- Conducted User Training

**References available on request.**