

# Clint Armstrong

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<http://clinta.github.io/resume/>

IT Systems and Operations engineer with expertise in building and maintaining business critical infrastructure in a variety of environments. Utilizing open source software I build reliable systems and networks that empower businesses to be more agile and do more with less. Programming experience building solutions in Go, Python and Rust.

## Work Experience

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11/2020 - 08/2023

### **Director of Decentralized Storage** W3BCLOUD, Las Vegas, NV (Remote)

Head engineer responsible for storage and networking

- Automated deployment and operations using Ansible and custom management software written in Go
- Coordinated multiple datacenter deployment projects, from datacenter contract negotiations through to final turn-up
- Designed, deployed and sole operations engineer for a 20PiB storage cluster participating in the Filecoin network
  - Multiple storage backends and protocols including Ceph, ZFS and NFS
  - Filecoin operations included cluster of over 100 high performance GPUs running cryptographic operations.
  - Low level CPU scheduling optimizations for CPU bound cryptographic operations
  - Multiple contributions to the filecoin project to optimize our deployment
- Designed and operated large network of GPUs for blockchain validation
  - Implemented network booting for over 20,000 machines across 2 datacenters
  - Built a cost efficient network utilizing commodity linux servers as routers, and budget layer 2 switches
  - Built tooling to automate naming and locating machines using LLDP
  - Provided secure network segmentation and VPN access for engineers using open source tools

01/2015 - 10/2020

### **DevOps Engineer** Trillium Staffing, Kalamazoo, MI

Head engineer responsible for networking, servers and cloud services.

- Facilitated a corporate big-data initiative building an open source, hyperconverged cluster on top of [Nomad](#), [Docker](#), and [Ceph](#), and wrote several plugins and contributions to these projects to integrate them.
- Replaced a Cisco hub-and-spoke branch VPN solution with a full mesh DMVPN between over 100 branch offices using Linux on commodity hardware.
- Achieved datacenter IP redundancy using Linux to peer with multiple ISPs and announce provider independent IP space via BGP.
- Introduced and standardized configuration management on a wide deployment of Linux servers improving security and maintainability.

12/2011 - 01/2015

### **Professional Services Engineer** Secant Technologies, Kalamazoo, MI

On-Site and Remote consulting, support and engineering.

- Frequently engaged to perform infrastructure upgrades of SANs, datacenter switches and vSphere clusters.
- Performed migration projects for business services including email, databases and identity.

01/2011 - 12/2011

### **Microsoft Systems Administrator** Liberty University, Lynchburg, VA

Responsible for design and maintenance of Active Directory, Exchange, and all other critical Microsoft services.

- Migrated a 350,000 user environment from Exchange 2007 to a hybrid Office 365 and Exchange 2010 deployment.

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## Work Experience (continued)

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2008 - 2011

**Desktop Configuration Administrator** Liberty University, Lynchburg, VA

Managed the centralized configuration of over 5000 workstations across campus.

- Implemented and managed Microsoft System Center Configuration Manager 2007 for management of over 5000 workstations.
- Implemented Microsoft Windows Deployment Services with a custom front-end to provide advanced automated imaging workflows for Support Technicians.

2008

**Desk-Side Support Technician** Liberty University, Lynchburg, VA

On-Site support technician

2005 - 2007

**IT Technician** Comstock Public Schools, Kalamazoo, MI

Remote and on-site support technician

## Open Source

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See my complete portfolio of open source work at <https://github.com/clinta/>.

### [filecoin lotus](#)

The official filecoin implementation. Contributed improvements to worker scheduling.

### [filecoin rust proofs](#)

Storage proofs for the filecoin network. Contributed improvements to CPU core scheduling to make proving compatible with systemd resource limits.

### [vxrouter](#)

A docker network and IPAM plugin that connects containers to VXLANs using MacVLAN devices. Designed to be used with a routing protocol like BGP to coordinate IPAM across a cluster of hosts.

### [go-multiping](#)

An ICMP library designed to ping multiple hosts efficiently in go. Improves on existing libraries by pinging multiple hosts while using a single raw-socket in the kernel.

### [updog](#)

A simple monitoring system that uses HTTP or TCP checks and logs data to [Bosun](#).

### [iputil](#)

A go library for common operations on IP addresses.

### [go-zfs](#)

A go library for manipulating ZFS filesystems.

### [salt-pwgen](#)

A salt module for generating random passwords and storing them in [pass](#).

### [salt](#)

Wrote the [x509 module](#) and contributed several bug fixes.

### [containernetworking/plugins \(CNI Networking\)](#)

Added functionality for managing mac addresses of connected containers