

Andrew M. Gaffney
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SKILLS

Operating Systems: Linux (Slackware, Gentoo, Ubuntu/Debian, RHEL/CentOS/Scientific, CoreOS), FreeBSD

Programming Languages: Python, Go, Perl, C, C++, Java, PHP, Shell/Bash, Ruby, Lua

Cloud services: AWS, Rackspace, Digital Ocean

Virtualization, Emulation, and Containerization: Xen, KVM/qemu, VMware ESXi, VirtualBox, Wine, Openstack (Havana, Icehouse, Ocata), Docker, Kubernetes

EXPERIENCE

Senior DevOps Engineer, Applause App Quality, Inc., *October 2018 to present*

- Wrote Python tool for creating/configuring GitHub repositories based on pre-defined profiles
- Created Kubernetes operator using Ansible Operator SDK for managing Datadog monitors and Runscope checks
- Created internal Kubernetes dashboard with SSO auth and proxying to internal webapps configured automatically based on annotations
- Led migration from Linkerd 1.x to 2.x on Kubernetes
- Led migration of internal services from DC/OS to Kubernetes with minimal developer changes required
- Wrote utility in Go for running process and decrypting environment variables using AWS KMS envelope encryption
- Wrote S3 asset and metadata API service in Go
- Wrote opensource Metronome API compatibility layer for Kubernetes in Go
- Migrated large hand-built Jenkins setup to Kubernetes with fully automated configuration-as-code setup
- Migrated complex Groovy CI pipeline logic to Python tool to make CI and local developer processes consistent
- Implemented Kong ingress controller and migrated large deployment from older kongfig and PostgreSQL-based setup
- Created automated EKS node replacement process designed for minimal disruption/downtime
- Wrote opensource tool to automate creation of Kubernetes/Marathon/Kong/Metronome deploy configs using a simpler YAML-based DSL
- Created a secrets management framework utilizing DC/OS to move encrypted values from individual service repos to a central location
- Enhanced existing Jenkins pipelines to add support for custom tooling and validation of Terraform configs and per-environment encrypted values
- Infrastructure automation using Terraform, Ansible, and Chef

Contract DevOps Engineer, Cloudstruct, LLC, *April 2018 to present*

- Created system for self-bootstrapping and self-healing Docker Swarm clusters on AWS
- Extensive use of Ansible for automating EC2 deployments, AMI and VMware image building, and management tasks
- Migration of .Net code written in C# from Windows to a Linux/Docker-based deployment
- Provided general DevOps services to a variety of clients

Senior Infrastructure Architect, Cisco, Inc. (formerly Perspica, Inc.), *July 2017 to March 2019*

- Integrating Perspica's product into the AppDynamics stack
- Automated customized deployment of Kubernetes on AWS using Ansible, kops, and Chef
- Created self-bootstrapping "management" AMI for creating new isolated environments with config management, monitoring, and metrics
- Revamped existing image build automation using Packer to properly support AMI and OVF targets
- Designed and implemented automation using Ansible to create "on-premise" application cluster in AWS that uses centralized management and monitoring
- Automated deployment of Kubernetes on AWS using Ansible and Puppet
- Revamped existing Puppet master, Sensu, Graphite, and other infrastructure services

Contract DevOps Engineer, BitPusher, LLC, *February 2017 to August 2017*

- Designed and implemented customized Openstack Ocata deployment using openstack-ansible project and custom playbooks for host network configuration and post-build Openstack configuration
- Designed and implemented single git repo Terraform setup to manage multiple AWS accounts, multiple environments/stacks, and multiple pieces of stacks, utilizing S3/DynamoDB remote Terraform state

Senior Operations Architect, Turn, Inc., *August 2014 to December 2017*

- Designed and implemented multi-datacenter Consul cluster with 3500+ nodes
- Created auto-remediation system with Slack integration using Stackstorm
- Designed and implemented Docker-based replacement for BSD jail-based SFTP system, using Jenkins/Ansible for deployment
- Deployed Ansible across management nodes with custom dynamic inventory script that queries Foreman
- Created review/deploy pipeline for DNS changes using Jenkins and Ansible

- Designed and built Openstack clusters using Ceph storage backend
- Created HA private Docker registry system with access control
- Created automated build system for Docker images using Jenkins
- Designed and built HA Mesos/Marathon cluster with Consul and automatic HAProxy configuration
- Migrated from Nagios to Icinga and scaled from single instances to master/slave architecture
- Revamped internal DNS infrastructure, including git workflows and change review
- Implemented Stackstorm with custom hybrid auth and monitoring auto-remediation
- Rebuilt existing infrastructure with automated deployment, backups, and proper monitoring/metrics

Principal Systems Engineer, Box, *March 2011 to August 2014*

- Primary responsibility is fixing the things I considered "broken" in our environment (supervisor's words)
- Rearchitected various services for automated deployment and HA
- Played a major role in taking an "organic" environment to a highly scalable enterprise environment
- Rebuilt existing nagios system to integrate tightly with Puppet for automatic monitoring configuration
- Collaborated closely with engineers to track down various issues causing segfaults and performance degradations in our environment
- Redesigned DNS system to use a series of master and slaves with distribution via git
- Scaled a single-master Puppet system to 20 masters across multiple environments using nginx/unicorn
- Instituted change management process using git and Puppet, added validation and automated problem reporting
- Scaled OpenLDAP across multiple datacenters with two-way replication (limited) using syncrepl
- Led a large-scale migration from CentOS 5.x to Scientific Linux 6.2
- Created patch/package management procedures and distributed yum repositories across DCs with change reporting
- Architected and implemented automated server provisioning using kickstart/cobbler and Puppet
- Extended Puppet for non-standard functions using custom facts, parser functions, and providers
- Rearchitected internal git system to be distributed and fully redundant using gitosis
- Designed and implemented a "bastion" server (SSH and squid) to tightly control access to production environment based on LDAP role group membership
- Created system to allow external servers (in EC2 and small remote POPs) to be managed securely by internal infrastructure (Puppet, Splunk, OpenTSDB, nagios, etc.)

Senior System Administrator, Announce Media, *August 2009 to March 2011*

- Primary responsibility was general system administration with a focus on MySQL Database administration
- Implemented Puppet to manage all of our existing servers and automate the build/configuration of new servers. All server types were fully defined in Puppet, so that a newly built server could be up and ready for production within 30 minutes of OS installation
- Implemented LDAP authentication against an existing Active Directory setup
- Implemented an automatic sync between AD and OpenLDAP and transitioned to OpenLDAP for auth
- Manage MySQL replication topology, backup, and administration
- Created an automatic LDAP to MySQL password synchronization process
- Implemented Nagios and integrated with Puppet for automatic monitoring of servers known to Puppet
- Built and maintained multiple Hadoop clusters configured for MapReduce and HBase
- Scaled existing Zabbix setup using MySQL multi-master replication and multiple Zabbix nodes
- Tracked down and fixed bugs discovered in production code

Senior Linux System Administrator, Broadstripe, *December 2008 to August 2009*

- Implemented Puppet for configuration management
- Implemented AD authentication on Linux for centralized authentication and access control
- Created DNS cluster for ISP customers and hosting of company-owned domains
- Eliminated wasteful server usage by consolidating functionality and using virtualization
- Setup Nagios and Cacti in order to monitor servers and services
- Used Perl, Python, and shell scripting to automate various system administration tasks
- Maintained an existing Active Directory setup, including performing multiple failed server recoveries and massive cleanup of existing infrastructure
- Designed, implemented, tested, and debugged customer-facing websites with transactional abilities and scripts to process data

Senior System and Network Administrator, Creative Communications, *February 2005 to October 2008*

- Designed, implemented, tested, and debugged web-based applications for product ordering/payment, internal inventory management (purchase orders, invoicing, etc.), and internal accounting
- Led migration from hardware terminals to Linux thin clients utilizing a custom telnet-to-LAT gateway to interact with existing MicroVAX systems
- Responsible for Linux server administration including hardware setup, OS installation, server setup/configuration, firewall/router/gateway design/implementation, software upgrades, security updates, and user management

Senior Systems Administrator, Skyline Aeronautics, LLC, *October 2001 to August 2005*

- Responsible for server administration including hardware setup, OS installation, server setup/configuration, firewall/network design/implementation including DHCP and DNS (bind and dnsmasq), software upgrades, and security updates
- Implemented an e-mail system consisting of SMTP (qmail), POP3, IMAP, and web-based mail for employees

- Designed, built, and maintained a web portal for customers to schedule aircraft and instructors for flight training
- Designed and implemented a Windows NT style domain utilizing Samba 3.0 to take advantage of centralized network logons, roaming profiles, and policies for the publicly accessible computers

OPEN SOURCE

Ansible

- Code contributor ("actionable" stdout callback plugin, loop item labels, "piped" SSH transfer method, "openwrt_init" module, various docs fixes, etc.)
- Active community member (answering questions in the #ansible IRC channel on Libera)

Gentoo Linux

Release Engineering Lead (March 2008 to 2012)

- Coordinated the building of Gentoo release media, including stage tarballs, minimal CDs, and Live CD/DVDs
- Implemented the autobuild system (a fresh set of install media for multiple architectures is automatically built, signed, and uploaded to the mirrors on a weekly basis)

Developer (November 2004 to March 2008)

- Developed the Gentoo Linux Installer
- Created numerous enhancements and bug fixes for Gentoo's catalyst and genkernel tools
- Developed the Quickstart utility for doing automated Gentoo installations on multiple architectures (x86, x86_64, hppa, and sparc)