

Thomas Noonan II

DevOps Engineer

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Summary

DevOps / Software Engineer experienced at integrating disparate applications, developing custom software to meet internal needs, running applications at scale using Docker and configuration management, implementing common backend services supporting production applications, configuring servers and networks, and working with the business to reduce overhead via automation.

Experience Highlights

- Management of large scale deployments in Terraform
- AWS and GCP cloud experience
- Programming and scripting in many languages including Ruby, Python, Bash, and C
- Custom DSLs in Ruby
- Custom APIs in Ruby and Python
- Software testing using RSpec, Python Unittest, and Test Kitchen
- Version control using Git
- Automated builds using Gitlab, Bamboo, Buildkite, and AWS Codebuild
- Automated deployments using Chef, Docker, and Terraform
- Auditable and controllable user self-service models using Git
- Application deployments using Hashicorp Nomad, AWS ECS, and Docker on Linux
- Monitoring using Sensu, Prometheus, Nagios, Riemann, and Grafana
- Centralized logging using Elasticsearch, Sumologic, and AWS CloudWatch
- Configuration management using Terraform, Chef, Puppet, Ansible, and AWS CloudFormation
- Consul, Vault, and AWS ParameterStore configuration and password storage
- Linux system administration and troubleshooting
- Network administration and troubleshooting
- Postgresql and MySQL database experience
- Service provider experience
- Agile development environment experience

Abridged Employment, Education, and Experience History

- **F5 Networks, 2020 to Present:** DevOps Engineer supporting the Silverline Web Application Firewall Product.
 - Designed, implemented, and deployed a sFlow based network intrusion detection system for use within FedRamp deployments.
 - Developed and open sourced a IP layer 3 container mesh network solution for operating non-dynamic server solutions in dynamic environments.
 - Architected and implemented the tagging standard, data gathering, data storage, and data processing components of a tag-based Cost of Goods reporting system.
 - Maintained a large scale AWS deployment composed of hundreds of thousands of Terraform resources across 8 geographic regions.
 - Maintained a suite of DevOps tools for use internally by DevOps engineers.
 - Developed a version control system for containerized tooling running on engineer's workstations.
 - Architected and developed an internal information service used to classify and group assets both in AWS and LibVirt environments.
 - Deployed applications using Docker containers on Nomad clusters.
 - Developed and maintained a library of internal Terraform modules for use across multiple projects.
 - Implemented AWS EIP pooling solutions and use of F5 owned IPs within AWS.
 - Leveraged Prometheus for application monitoring.
 - Developed internal tools to assist with operational issues interacting with etcd, PowerDNS, and authenticating proxies.
 - Implemented a deployment pattern to run ValKey (Redis) in a high-availability configuration in a containerized environment without persistent storage.

- **Root Insurance, 2018 to 2020:**

- **Security Engineer with the Root Security Team:**

- * Architected and implemented Okta as a central identity provider in a non-AD environment.
- * Migrated over 500 users from Google as an identity provider to Okta as an identity provider.
- * Enabled SAML single sign-on for dozens of SaaS applications in use by the business.
- * Enabled HR as a leader via custom connectors between Root’s payroll platform and Okta allowing HR data to directly update IT profiles.
- * Rearchitected the IT onboarding flow to allow for streamlined user onboarding in a growth-heavy company reducing the onboarding workflow of the IT and HR teams.
- * Implemented centralized user provisioning and deprovisioning to reduce IT user management overhead and business risk.
- * Implemented role based access control and user provisioning via automated group management to allow for employees to have correct application assignments automatically.
- * Architected custom tooling and connectors as needed to bridge gaps between incompatible SaaS applications in use by the business as microservices hosted in AWS.
- * Collaborated with multiple business units to identify applications capable of supporting single-sign-on and assisted with implementation.
- * Rolled out mandatory multi-factor authentication to the business.
- * Participated in policy writing and risk analysis of the business.
- * Deployed AWS infrastructure using CloudFormation and Terraform.

- **Senior Infrastructure Engineer supporting the Root Mobile App:**

- * Collaborated with other members of the site reliability team on deployment infrastructure for supporting Root’s main Ruby application.
- * Containerized off-the-shelf software solutions into configurations deployable in AWS ECS as both sidecar and standalone microservices with configuration test suites.
- * Worked with management on security and disaster recovery plans for the business.
- * Architected and implemented the network for Root’s headquarters in a greenfield office build, including infrastructure-as-code and automated configuration deployments for both switches and on-premise infrastructure servers.
- * Managed the low voltage wiring installation and security system installation at Root’s headquarters.

- **ShoreTel (formerly Corvisa), 2015 to 2017:** DevOps Engineer supporting the Corvisa Summit Telephony Platform.

- Supported development teams running containerized applications in a Mesos / Marathon environment.
- Performed Site Reliability Engineer duties to maintain stable backend platforms for use by production services.
- Designed and implemented redundant, message based monitoring using Sensu and ported existing Nagios checks to Sensu.
- Developed and implemented a custom, git repository based monitoring configuration system using a custom Ruby DSL to allow users to easily define microservice monitoring checks.
- Designed and implemented performance monitoring using Riemann, InfluxDB, and Grafana which allowed git-based configuration by users including docker-compose based local test environments and automatic testing of changes gating bad changes from reaching production.
- Managed Chef infrastructure supporting approximately 1200 nodes.
- Architected and developed a custom virtual machine deployment tool which allowed VM deployments to be defined via a simple DSL to allow automated, idempotent VM deployments.
- Upgraded, improved, and maintained centralized logging using Logstash, Elasticsearch, and Kibana.
- Implemented and maintained multiple open source tools and frameworks as containerized applications, such as Redis, Kafka, RabbitMQ, Portus, Docker Registries, Consul, Vault, Sensu, Uchiwa, Riemann, InfluxDB, Grafana, Elasticsearch, Logstash, HAProxy, and Nginx.
- Developed numerous tools in Bash, Python, and Ruby to improve self service to users, integrate diverse tools into cohesive frameworks, and resolve operational difficulties encountered at scale.

- **Tek Systems, contracted to Comcast, 2014 to 2015:** Senior Linux Engineer in the Technology and Product division of Comcast.
 - Administered, maintained, supported, and improved the Video On Demand transcode and distribution services of Comcast Wholesale.
 - Maintained Linux servers running in house developed applications utilizing Tomcat and Oracle.
 - Developed applications in Python and Ruby to solve operational issues faced by the Ops team.
 - Utilized Flask-Restful to implement REST APIs within Python to interconnect applications and provide middle tier services interfacing with MySQL, PostgreSQL, and Oracle databases.
 - Implemented Docker and Puppet based workflows for application deployment allowing for application environment synchronization, simple deployments, and easy application rollback.
 - Standardized server configurations using Puppet.
 - Utilized Agile development practices for both development and operational tasks.
- **RackSpace Hosting, 2012 to 2014:**
 - **DevOps Engineer in the SMB Unit of RackSpace Hosting:** Configured and administered customer environments via Chef configuration management tools.
 - * Developed Chef cookbooks to provide general and extensible application management cookbooks to highly tailored cookbooks to configure a customer's application.
 - * Utilized continuous integration tools and automated test suites to maintain cookbook code quality.
 - * Collaborated with other engineers and customers on shared code bases using git and GitHub for version control.
 - * Worked with other engineers and management to set code quality standards, best practices, and team procedures.
 - * Provided system administration support to customers with immediate response times to site and server issues.
 - **Enterprise System Administrator in the Enterprise Unit of RackSpace Hosting:** Administered, triaged, and repaired high profile web and database servers hosted at RackSpace.
 - * Configured all operating system aspects of customer servers, including disks, kernel tuning, package management and patching, firewalls, and software configuration.
 - * Troubleshot servers both in real time and after the fact to determine causes of site outages and performance issues.
 - * Used Python and Bash scripts to characterize server behavior to advise on performance issues.
 - * Advised customers on high availability configurations such as Red Hat Cluster Services, Multi-primary MySQL, load balancing, and horizontal scaling using both dedicated gear and public cloud.
 - * Offered front line support to customers with immediate response times to site and server issues.
- **Randstad Staffing (formerly Spherion Staffing), contracted to Hewlett-Packard 2009 to 2012:** Enterprise Server Technician and System Administrator for HP's Enterprise Server Lab.
 - Administered, configured, assembled, triaged, and repaired HP's line of flagship servers.
 - Supported HP's engineering and firmware teams by maintaining server prototypes, lab infrastructure, and test scripts.
 - Performed hardware level troubleshooting and repair of server prototypes.
 - Administered approximately 50-100 infrastructure servers on both real hardware and virtualized platforms ranging from low visibility test servers to production servers visible to multiple business units within HP.
 - Assisted with network support including general maintenance, outage triage, and firewall configuration.
 - Configured and troubleshot Fibre Channel and FCoE SANs.
 - Assisted with data center operations and management.
 - Designed and developed a custom IP VPN solution in C to allow cross-site automated design verification and tests of embedded management processors.
- **Iowa State University, 2003-2006:** Worked towards a Bachelors Degree in Computer Engineering. Studied computer programming, electronics, and embedded programming.