Trynity Mirell

Site Reliability Engineer

▬ Experience

2021-2022   **Production Engineer**, *Meta*, Dublin, IE.

Worked on Firmware Analysis and Platform Root of Trust infrastructure, to help secure Meta's infrastructure against supply-chain attacks and UEFI attacks

Wrote and maintained code capable of reproducing PCR0 measurements for various architectures (Intel, AMD)

Worked cross-functionally with teams spanning from Server Attestation, Hardware Security, to Datacenter Engineering, New Product Initiative, as well as PE Kernel, OpenBMC, and other teams to help ensure a consistent, measured, verifiable boot process from UEFI firmware up to the kernel.

Maintained Go Build Tooling, Package Management, and internal libraries at Meta

Worked extremely broadly cross-functionally across multiple divisions and organizations, to prioritize needed build tooling and libraries needed across Meta for Go.

Worked on analysis and use cases for either using CGo for linking pre-existing C++ libraries for Go, or writing wrappers in pure Go

2020-2021   **Software Engineer in Infrastructure**, *Plaid*, Amsterdam, NL.

Maintained Kubernetes Cluster Fleet across multiple environments

Implemented Long-Term Metric Retention and Aggregation across Kubernetes Fleet with Thanos and Prometheus

Implemented initial service mesh across Kubernetes fleet via istio

Developed on Kubernetes Self-Service for ease-of-use in migrating ECS applications to Kubernetes

Developed cluster provisioning and teardown tools for our Kubernetes Fleet

2019-2020   **Senior Site Reliability Engineer**, *Elastic*, Amsterdam, NL.

Maintained Elastic's Site Search Infrastructure

Developed processes for project planning, RFOs, sprint estimations

Implemented KernelCare for entire infrastructure, with staging/production staggered deployments

Worked with internal/external audit teams for PCI/GDPR/SOX Compliance

2018-2019   **Site Reliability Engineer**, *Booking.com*, Amsterdam, NL.

Maintained multiple Kubernetes Clusters with Federation

Maintained large NoSQL **(Cassandra, HBase)** installations

Developed tooling around SLO/SLI Monitoring

Developed tooling around Event-Based Metric Aggregations

Maintained Puppet/GitLab Infrastructure

2015-2018   **Senior Systems Engineer**, *Apple*, Cupertino, CA, US.

Maintained a global server infrastructure with over 30 datacenters and 60,000 nodes **(Puppet)**

Maintained multiple Hadoop clusters, running Spark/YARN/Hive/Impala/HBase

Maintained a distributed, proprietary key/value database spanning over 5,000 nodes

Maintained an alerting system spanning over 100,000 checks **(Nagios/Naemon)**

Developed service discovery infrastructure to enable DNS round-robin load balancing **(Consul)**

Developed a build system to enable building Debian packages for different Ubuntu releases **(Docker)**

2014-2015 **DevOps Contractor**, *Splice*, St. Louis, MO, US.
  Maintained Initial Ops Configuration (OpsWorks, Chef)
  Migrated to new Infrastructure Setup (Terraform, Docker, Packer)
  Developed Docker Images for isolated environments (Docker)
  Developed AMIs for quicker server initialization (Packer)
  Managed Continuous Integration, developed automated deployment system (Jenkins)
  Managed DNS Infrastructure (CloudFlare)
  Managed Metric Collection Services (Librato, collectd)
  Managed Logging Services, automated new instance setup with automated logging (Logentries)
  Managed Server Infrastructure (Go, nginx, memcached, ElasticSearch, Redis, MySQL)
  Managed various AWS Services (EC2, RDS, SQS, DynamoDB, S3, Route53, ElasticCache, VPC, IAM, OpsWorks, CloudWatch)

2013-2014 **DevOps Contractor**, *Utilitarienne*, St. Louis, MO, US.
  Managed Server Infrastructure for Clients Across Various Environments (Shared Hosting, VSP, AWS, Colocation)
  Developed methods for deploying a client-ready web stack to AWS (Packer, Capistrano)
  Worked with clients to setup their internal code development infrastructure and tools (git, Beanstalk, AWS CodeDeploy)

2012 **Client Services Engineer**, *Basho*, Austin, TX, US.
  Supported **Riak**, a distributed fault-tolerant NoSQL database written in Erlang
  Diagnosed customer issues, provided real-time support during on-call hours
  Maintained debugging tools and diagnostics **Ruby/Erlang**

2010 - 2011 **Software Engineer Consultant**, *Cisco via Aerotek*, Austin, TX, US.
  Worked with the Intrusion Prevention System (IPS) Signature Development Team to develop a test framework to ensure network attack signature validity
  Developed libraries to control the Cisco IPS and network attack test tools (BreakingPoint, MetaSploit, Mu Dynamics)
  Developed Ruby on Rails front end for test framework, with Resque as the background job processor
  Integrated existing Java libraries into JRuby, adding scripting extensions to existing GUI code
  Developed a virtualization solution for the Cisco IPS, using QEMU and Virtual Distributed Ethernet (VDE), allowing simulation of a switched network environment

2009 - 2010 **Application Protocol Engineer**, *BreakingPoint*, Austin, TX, US.
  Implemented protocol simulators for BreakingPoint's Storm/Firestorm network traffic simulation and monitoring device
  Reverse engineered protocols based on existing client/server implementations
  Wrote new Ruby API to communicate with the product via XML
  Debugged and performance tested a new TCP/UDP, IP, and Ethernet stack written in Ruby

2009 **Software Engineer Consultant**, *Cisco via Impact Linux*, Austin, TX and Irvine, CA, US.
  Developed new cross-compiling Linux build system for Linksys-branded products on MIPS, ARM, and PPC440 architectures
  Developed disk and user management backend software to interface with UI
  Developed XML SOAP RPC applications allowing Linksys MediaHub to communicate with other devices for Digital Living Network Alliance Universal Plug and Play (DLNA/UPnP)
  Interacted with open source software projects to push patches upstream

2008 - 2009 **Software Engineer**, *Affiliated Computer Services*, Austin, TX, US.
  Administered servers and applications (J2EE) for real-time processing of electronic payment cards
  Administered Apache/Tomcat services, set up dynamic load-balancing and failover
  Wrote new code in Perl and Bash, debugged Java EE transaction processing applications
  Debugged network issues using protocol analyzers (Wireshark, tcpdump, netcat, socat)

Education

2007 **Bachelor's of Arts, Linguistics**, *University of Texas at Austin*.