Kaleb Smart

Software Engineer

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Education

University of Alabama in Huntsville *Huntsville, AL*

Bachelor of Science in Computer Science, GPA: 3.7/4.0 *May 2016*

Skills

Languages Python, Groovy, JavaScript, C++

Frameworks Pytest, Behave, Jenkins, Angular, Flask, Docker, Packer, Laravel, Ansible, OpenStack, Artifactory, Jinja

SAFe Certifications Practitioner, DevOps Practitioner, Scrum Master, Advanced Scrum Master

Experience

ADTRAN *Huntsville, AL*

DVT Engineer *June 2016 - May 2020*

- Architected and developed software for developers to work on customer-oriented deployments
- Served on DevOps governance team to architect a company-wide vision of Continuous Integration/Continuous Deployment pipeline
- Operated as Scrum Master for a system team to drive the development of architectural runway and Developer Experience tooling
- Led continuous improvement efforts within team via Retrospectives and Inspect and Adapt sessions
- Coordinated with other Scrum Masters to ensure cross-team dependencies and milestones were met and on track
- Designed and managed lab networks for our products
- Organized community for collective ownership and troubleshooting of CI pipeline failures
- Interfaced with developers in Canada, Germany, and India to coordinate new product development efforts

ADTRAN *Huntsville, AL*

Co-op Engineer *June 2014 - December 2015*

- Developed test aggregation and hardware resource management software for Continuous Integration pipeline in the enterprise network element product line
- Provided Linux security best practices and bug-fixes for cloud-based WiFi solution

Projects

SDX Aggregation Switches

April 2020 - May 2020

- Architected pipeline modifications to test common feature sets on virtualized aggregation switch from on a common software image
- Designed fan out procedure for product-specific acceptance tests on feature sets

Total Access 5000

December 2019 - May 2020

- Architected layout and methodologies of testing framework for TA-5000 GPON OLT line cards
- Developed automated provisioning of test assets through Ansible
- Redesigned lab network for products under test to ensure isolation and network reliability
- Designed infrastructure to ensure products were in a known good state prior to beginning tests

Release Notes and Security Documentation

November 2019 - December 2019

- Designed generic templating software for automatically generating release notes and product security documentation for any product
- Developed methodology for querying internal ticketing system to populate release notes with new, longstanding, and fixed software issues
- Processed internal security scans and tests to populate product security document with known security vulnerabilities

SDX-6210

March 2017 - December 2019

- Integrated product into existing Continuous Integration pipeline and developed system level verification pipeline
- Developed a CI pipeline information radiator to visualize the current state of software being built and consumed
- Developed an automatically updating value stream map to visualize how long and likely a change in code will end up in a releasable build
- Designed automated ticket creation and triage process for CI pipeline failures
- Containerized virtualized component of the DPoE solution
- Created automated virtual machine building for a cloud-based portion of SDN product
- Developed deterministic automated build procedure and integration for acquired and newly developed software
- Constructed test framework for CI pipelines to validate deployments of the SDX-6210 Remote EPON OLT and the virtualized DPoE controller
- Architected layout and methodologies of testing framework for the SDX-6210
- Designed high level API library for internal traffic generator hardware to be used in CI testing
- Developed automated provisioning of test assets through Ansible
- Created test asset diagnostics tooling to quickly identify the cause of test failures
- Designed service to provision ONU management software on the SDX-6210 hardware upon contact from virtualized DPoE controller
- Created self-checking startup procedure for basic FPGA and Broadcom SOC traffic forwarding
- Designed replicatable hardware configurations based around customer deployments of our products
- Created automatically deployed and populated DNS docker containers triggered off any changes of test network
- Deployed a network of ONOS controlled whitebox switches to test integration of the DPoE solution
- Deployed Nagios monitoring software to collect health metrics on test infrastructure

MOSAIC OS

June 2016 - February 2017

- Developed CI pipeline to allow for feature tests to be consumed via a product's capabilities
- Designed generic high level libraries to write product-agnostic feature level tests
- Created software to selectively reserve test equipment that is required for a particular scenario

Skynet and Hydra

June 2016 - March 2017

- Developed Angular frontend for hardware inventory and reservation services
- Developed Laravel backend for hardware inventory and reservation services
- Designed high level groovy and python APIs for interacting with these services
- Integrated these services in Continuous Integration pipelines

Hackathons

- Reduced build time of SDX-6210 software by 70% by consuming infrequently changing code as binary packages
- Containerized applications and services running on SDX-6210 hardware
- Created proof of concept for using Alpine packages to maintain dependencies and build infrastructure for internal packages
- Automated the population of CVEs and known software issues published in release notes and product security document
- Deployed a Github code review tool to keep track of requested changes
- Worked on proof of concept Github bot to automatically create pull requests to integrate package dependencies