AHNAF SIDDIQI |

email: ahnafsidd@gmail.com
phone: +65 97342978

An engineer keen in cloud, network security, high traffic systems, and system design with 6+ years of experience. I love building secure products with high availability.

Skills

Experienced in: Python, C, Go, Docker, Git, Linux, Make, Nginx, PostgreSQL, MySQL InfluxDB, Bash, X509 Certs, TCP/UDP, TLS, Gitlab, CI/CD, Flask, SQLAlchemy, HTTP(S), SNMP, MQTT, AWS, Kafka, ES, Kibana, Kubernetes

Familiar with: JS, HTML, CSS, GDB, Puppet, Redis, Grafana, CPP, MongoDB, DTLS, Packer, Ansible, Ceph

Work Experience

Bytedance Pte. Ltd. ~ Security Site Reliability Engineer Nov'22 - Now

As Bytedance's Security SRE, I ensure the availability of security products. Additionally, I also manage their Kubernetes environment, provision storage, monitoring, certificate management, databases, continuous deployment using argocd, and standard sys admin duties.

- Managed the uptime and availability of Bytedance's Cloud Protection Platform: https://github.com/bytedance/Elkeid
- Initiate discussion and perform resource estimation planning for 2 products: Open Source and Internal
- Suggested redesign of the Cloud Protection Platform to sustain high load and high traffic burst.
- Introduced database migration to a 3rd Internal Security Toolkit.
- Performed torture/stress testing to provide a baseline QPS of the product
- Introduced several SLIs and proposed SLAs for the 3rd product, and introduced the concept of an error-budget.
- Implemented a wrapper around proxy-protocol to forward client IP addresses proxied using HaProxy.
- Provisioned Hashicorp/vault backed by Oracle KMS and a secondary vault to perform auto-unseal.
- Continued suggesting improvements/reduction of Dockerfiles

MicroSec Pte. Ltd. ~ {DevOps, Software,Operations} Engineer Nov'17 - Oct'22

I designed software system solutions from stakeholder requirements to application implementation, lifecycle and deployment, while managing technical customer operations. I also provisioned their DevOps pipeline.

Role - DevOps Engineer

- Led the deployment of 3 main products and designed the development workflow to increase dev interations.
- Deployed and managed a production delivery of 16K devices using Docker Swarm in AWS.
- Accelerated the development pipeline by mentoring the developers to practice good DevOps practices including writing Docker images and proper Unit Testing.
- Developed a local product deployment script using Bash for all developers to experience the full product deployment. The script is also used to demonstrate repeatable demos to internal stakeholders.
- Wrote lightweight Docker images using multi-stage build that uses alpine to significantly reduce image size.
- Developed companies Software Release Management strategies working within the Scrum methodology.
- Accelerating the Software Testing Lifecycle process by introducing standardized Test Protocols.
- Collaborated with Development, QA, Product Manager, and CEO to enhance product development pipeline and ensuring developers are following strict timelines.
- Manage and update self-hosted Gitlab instance to be always up-to-date.
- Configuring Backups for products and our self-hosted Gitlab instance in AWS.
- Introduced several CI integration checks to perform static analysis that detects vulnerabilites during build pipeline.
- Managed KVM based hypervisors for in-house infra for various OS.
- Deployed and maintained several microservices in Docker Swarm that included docker based secret management.

Role - Software Engineer

- Responsible for requirement gathering, analysis and translation into well-defined work description for developers to design and implement.

- Developed MicroPKI: a performant multithreaded socket server, that implements a proprietary TLS 1.3 for embedded devices in IoT that uses ECC Keys.
- Implemented MicroPKI Core in C compiled for embedded clients that uses a Python Wrapper for a Web Service.
- Maintained an Energy Monitoring product that uses Modbus to read localized data that is transferred near real-time via MQTT that is batched process and stored in InfluxDB.
- Led the design and implementation of RESTful microservices using python that supports in-house implementations of ACMEv2, EST, and SCEP following their respective RFCs: 8555, 7030, 8894.
- Introduced the automation of backend e2e testing with unit test at microservices level and integration test at a separate product level.
- Implement simulation testbeds that replicates a CANBUS protocol scenario using Docker.
- Collaborated with a team of 30+ individuals to build and deliver 3 different products.
- Implemented profiling mechanisms for different deployment stacks: ng.profile for Angular, cProfile for Flask Apps, and pycallgraph to visual python function calls.

Role - Operations Engineer

- Led Scrum Master duties for a team of 10+ individuals.
- Evangelize the Scrum philosophy with the development team to promote code reviews and collaboration.
- Increased team delivery yield by a factor of 1.5, rotating or setting expectations after various 1-1 meetings.
- Negotiated product deliverable timeline per sprint between different internal stakeholders.
- Deployed products on customer premises cloud premises and off-line systems.
- Consulted customer for support engineering roles for technical deployments.
- Mentored and supervised interns to full time employees following companies guidelines.

iTrust Research Center for CyberSecurity ~ Research Assistant Nov'16 - Oct'17

Implemented a concurrent Common Industrial Protocol (CIP), a realtime network protocol at Secure Water Treatment (SWaT) testbed in SUTD, that was used in simulation, mutliple research projects, and as proxies for developing attack scenarios for competitions.

- Packet Sniffing and Reconstruction of high volume CIP packets for both TCP and UDP.
- Designed CRUD HTTPS API to handle application requests using using TDD and SOLID principles of OOP.
- Followed a design guideline to implement a CaptureTheFlag question that was used in university competition.

Publication: A. Siddiqi, N. O. Tippenhauer, D. Mashima, and B. Chen, "On practical threat scenario testing in an electric power ics testbed," in Proceedings of the cyber-physical system security workshop (cpss), co-located with asiaccs, 2018.

Education

Singapore University of Technology and Design Class of 2016

Bachelor of Engineering with Honors majoring in Information Systems Technology and Design.
Specialization: Security and Communications, Artificial Intelligence.

Professional Certifications

Certified DevSecOps Professional (CDP) - May 2022

- Issuer: Practical DevSecOps
- Badge Link

Activities

Competitions - NUS XCTF 2016, APEX Business-IT Global Case Challenge 2016 Finalists, Multiple Hackathons

Interests - Photography, Running, CaptureTheFlag, Network Security, Physical Systems Security, Linux, Arch and Emacs.