RAVI KOOTHATI

+1 437 428 3399 • ravikumark815@gmail.com • linkedin.com/in/ravikumark815 • github.com/ravikumark815

SUMMARY:

- **Software Developer** with a Masters in Software Systems and an extensive experience of **9+ years** in developing System Platform Software, Network Datapath, Applications and Tools.
- Proficient in **Layers 2,3,4&7 networking, Network Security, Virtualization, Cloud Computing, Linux Internals, Containerization, Software Architecture**, with a keen grasp of latest technologies.
- Hands-on experience in design, configuration, development, and troubleshooting of diverse public and private cloud platforms and networking products including firewalls, routers, and switches.
- Adept at **debugging and optimizing system performance**, including resolving **kernel/user space issues**, **concurrency problems**, and **memory leaks**.
- **Collaborative team player** experienced in fostering relationships across cross-functional teams, contributing effectively to collective objectives, mentoring, and driving process improvements.

SKILLS & TECHNOLOGIES

- **Programming:** C, C++, Python3, Bash, Terraform
- **Networking:** TCP/IP, Network Security, Routing, Switching, VPN (IPsec/SSL/TLS), NAT, VLAN, SR-IOV, SD-WAN, HA.
- **Cloud Platforms:** AWS, Azure, GCP, Oracle Cloud (OCI), Alibaba Cloud
- **Virtualization & Containerization:** KVM, VMware, Intel DPDK, Docker, Kubernetes
- **Web Development:** HTML, CSS, Javascript, XML, JSON, REST.
- **Version Control and Management:** Git, Perforce, Jira, Confluence, Target Process, Agile, Kanban
- **Tools:** Visual Studio, Linux, Cisco TRex, MS Office, Windows

EMPLOYMENT

SOFTWARE ENGINEER	IBM SOFTWARE LABS	APR 2024 – TILL DATE

Networking and NAT Configuration:
- Implemented D-Bus and CAP_NET_ADMIN configurations to address NAT issues and ensure seamless network address translation in enterprise-grade NMS environments.
- Resolved IPv6 SNMP agent communication issues by reconfiguring snmpd for dual-stack agent address support.

Kernel and System Management:
- Automated the removal of unknown or obsolete Linux kernels through efficient shell scripting.
- Enhanced Supervisord functionality for seamless operations in multi-peer environments post-HSA removal.

Security and Modernization:
- Patched critical Golang dependencies (jose2go, x/net) to address CVEs, bolstering application security.
- Migrated container images to verified publishers or secure home-grown alternatives, ensuring compliance with enterprise standards.
- Facilitated the inclusion of essential utilities like mlocate in NMS host environments for enhanced system management.

Customer Escalation Management: Collaborated with cross-functional teams to address high-priority escalations for enterprise clients, including VMware plugins and Verizon's SDP export issues.

SOFTWARE ENGINEER	CISCO INC.	AUG 2020 – MARCH 2024

Firewall and Virtual Networking Development:
- Developed features for **Cisco ASAc** (containerized firewalls) and integrated with SFCN using C, Docker, and Kubernetes.
- Enabled **SR-IOV support** for virtual NICs on Cisco ASAv/FTDv deployments across Oracle Cloud and private cloud platforms.

Performance and Debugging Enhancements:
- Resolved performance bottlenecks, including NIC underruns, memory leaks, CPS/PPS optimizations, and core dump issues in public/private cloud deployments.
- Integrated datapath logs into debug commands for enhanced traceability and incorporated them into TAC reports generated via CLI.

Scalability and Cloud Integrations:
- Designed and implemented horizontal autoscaling support for ASAv in Alibaba Cloud using Terraform and Python3.
- Migrated Azure virtual firewall deployments from Python2.7 to Python3.9, addressing critical dependency issues.
  Kernel and Driver Upgrades:
- Upgraded Wind River Linux to LTS 22, DPDK to v21, and FXOS for Cisco ASAv/FTDv, resolving compatibility and performance issues.
  Leadership and Collaboration:
- Mentored new team members and onboarded them with best practices and technical guidance. Actively participated in code reviews, functional spec reviews, and process enhancements.

SOFTWARE DEVELOPMENT ENGINEER	RED PIRANHA	MAY 2020 – AUG 2020

- Developed features for Crystal Eye, a Linux based network operating system running on firewalls including **SSLVPN Module enhancements like LDAP Integration, Static IP configurations, SSL Perceive and Bump**.
- Designed system specifications for SSLVPN features and ensured seamless integration into the existing system.
- Collaborated on code reviews, test case development, documentation, and process enhancements.

SOFTWARE DEVELOPMENT ENGINEER	SONICWALL INC.	JUN 2015 – APR 2020

- Designed and implemented solutions to integrate **SonicWall Switches** with Firewalls, enabling granular control and end-user monitoring through a unified management interface.
- Resolved complex issues related to **wire mode interfaces**, **log monitoring**, **syslog analysis**, **FTP logging**, and **TSR exports** in SonicOS.
- Developed **CLI and API interfaces** for key features, including **Flow Reporting**, **ARP Storm Limit**, **AWS Integration**, and **SonicWall Switch Integration**.
- Built web-based tools like the **TSR Analysis Tool** and **EXP Viewer** using Python 3.7 and regular expressions to parse logs and display user-friendly outputs.
- Worked on a **web-based migration tool** to help customers seamlessly migrate configurations from other vendors (Cisco, Fortinet, Palo Alto, etc.) to SonicWall devices, minimizing transition friction.
- Diagnosed and resolved customer issues by replicating complex environments using tools like **vSphere**, **LAN bridges**, **SSL applications**, **content filtering**, **load balancing**, **VLAN**, **802.1x**, **VPN**, and routing protocols.

EDUCATION

- Master of Technology, Software Systems-Security. Birla Institute of Technology and Science 2021-2023 | GPA 3.6
- Bachelor of Engineering, Computer Science & Engineering. Visvesvaraya Technological University 2011-2015 | GPA 3.0

CERTIFICATIONS & COURSES:

- IBM SevOne NPM Overview (April 2024)
- Oracle Certified Cloud Infrastructure Foundations Associate (Feb 2022)
- Crystal Eye Certified Engineer (CECE)
- SonicWall Network Security Administrator (SNSA)
- Certified SonicWall Security Administrator (CSSA)
- Cisco Certified Networking Associate (CCNA - Cisco Internal Course)

ACHIEVEMENTS:

- As part of Hackathon 2023, 1000eyes process was integrated to into containerd daemon running Cisco FTDv to improve network monitoring for customers.
- Cisco Connected Recognition Award for extensive work on VirtIO issues (Feb 2022) for resolving intricate VirtIO issues in ASAv/FTDv deployments in OCI, contributing significantly to product enhancement.
- Cisco Connected Recognition Award for SR-IOV Support (March 2021) for pioneering SR-IOV Support, optimizing performance in ASAv/FTDv deployments in Oracle Cloud Infrastructure.
- Recognized as a SonicWall Technical Master (April 2020) for comprehensive contributions to firewall development, bug resolution, and rapid customer environment deployments.
- SonicWall Outstanding Contributor for Q4 FY 2019
- SonicWall Key Contributor for FY 2018