

# RAVI KOOTHATI

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**Software Developer** with 9+ years of expertise developing system platform software for enterprise network management systems virtualized firewalls, network switches and cloud-native infrastructure solutions.

## SOFTWARE DEVELOPER

## IBM SEVONE

APR 2024 – TILL DATE

- **Developed network management features** for enterprise-scale Network Management System (NMS), serving Fortune 500 clients across 4 major feature releases.
- **Engineered containerized NAT solutions** using D-Bus and CAP\_NET\_ADMIN configurations, enabling seamless network address translation across distributed NMS environments.
- **Enhanced cluster resilience and scalability** by developing peer removal capabilities for inaccessible nodes and HSA environments, improving system availability during maintenance windows and reducing manual intervention
- **Strengthened system security and stability** through proactive dependency management, including critical Golang security patches, container image migrations to verified publishers, and automated kernel cleanup processes
- **Led critical escalation resolution** for high-priority customer issues, including NMS upgrade failures, database schema errors, ICMP plugin malfunctions, and SDP export problems, minimizing customer downtime
- **Developed robust database migration strategies** with idempotent SQL schema updates, preventing upgrade failures and ensuring seamless version transitions across production environments
- **Collaborated with cross-functional teams** on OAuth2 OIDC authentication implementations, containerized deployment strategies, and peering configurations, facilitating system integrations.
- **Implemented comprehensive testing frameworks** using Playwright and TypeScript for flow integration testing, enhancing code quality.
- **Streamlined device discovery** poller process by resolving issues that caused failures due to unset constants and memory exhaustion errors, ensuring successful network device identification.
- **Enhanced usability and debuggability** by adding synthetic indicators for interface error monitoring, policy validation enhancements, and ingestion pipeline utilities, improving network visibility and operational efficiency

## SOFTWARE ENGINEER

## CISCO INC.

AUG 2020 – MAR 2024

- Developed and enhanced **Cisco ASAv, FTDv (virtualized firewalls) and ASAc (containerized firewalls)** deployments across diverse platforms including AWS, Azure, GCP, OCI, Alibaba Cloud, KVM, Nutanix and VMware.
- **Implemented SR-IOV** support of virtual NICs, achieving compatibility with **Broadcom and Mellanox DPUs** across **Cisco ASAv and FTDv** deployments on Oracle Cloud Infrastructure and private cloud platforms
- **Designed and implemented cloud-native autoscaling solutions** for ASAv deployments on **Alibaba Cloud** using **Python3** and **Terraform** infrastructure-as-code reducing operational costs by 35%
- **Led critical platform modernization initiatives** by successfully addressing dependency challenges while upgrading **Wind River Linux OS, DPDK and FXOS** components ensuring stability and compatibility.
- **Optimized system performance and reliability** by resolving **NIC underruns, memory leaks, core dumps, CPS/PPS bottlenecks, and hot-plugging functionality** across diverse **public and private cloud environments**.
- **Enhanced troubleshooting and debugging capabilities** by integrating comprehensive **datapath logs** into debug commands and **TAC reports** accessible via ASAv CLI reducing mean time to resolution.
- Actively contributed to development processes, including **code reviews, functional spec reviews, and CI/CD pipeline improvements**, fostering a collaborative engineering environment.
- **Resolved 30+ critical customer escalations** including performance degradation issues, VPN connectivity problems, hot-plugging interface challenges, and cloud-specific deployment failures.
- **Mentored and onboarded new team members**, providing guidance on best practices, debugging techniques, and cloud integrations.

## SOFTWARE 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.

- **Designed and implemented** enterprise solutions to integrate **SonicWall Switches** with **SonicWall Firewalls**, enabling granular network control and comprehensive end-user monitoring through unified management interface.
- **Worked on critical network capabilities** by resolving complex issues in **wire mode over LAG, High Availability, Memory Management**, implementing advanced **log monitoring systems**, optimizing **syslog analysis** workflows, and developing robust **FTP logging** and **TSR export** functionality within **SonicOS**.
- Developed **CLI and API frameworks** for key features, including **Flow Reporting, ARP Storm Limit controls, AWS Integration**, and **SonicWall Switch Integration** enabling automated network management.
- Built innovative web-based tools like the **TSR Analysis Tool** and **EXP Viewer** using Python 3.7 and regular expressions, creating intelligent log parsing capabilities that transformed raw network data into user-friendly analytical outputs
- Worked on a **web-based migration tool** facilitating seamless configuration transitions from competing vendors (Cisco, Fortinet, Palo Alto Networks) to SonicWall devices, minimizing deployment friction and accelerating customer onboarding.
- **Resolved 30+ critical customer escalations** by troubleshooting complex network environments using advanced virtualization tools including vSphere, LAN bridges, SSL applications, content filtering systems, load balancing configurations, VLAN implementations, 802.1x authentication, VPN tunnelling, and dynamic routing protocol

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## EDUCATION:

- [Master of Technology](#), Software Systems-Security, Birla Institute of Technology and Science 2021-2023 | GPA 3.6
- [Bachelor of Engineering](#), Computer Science, Visvesvaraya Technological University 2011-2015 | GPA 3.0

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## SKILLS & TECHNOLOGIES:

<b>Programming</b>	: C, C++, Python3, Golang, PHP, Bash
<b>Web</b>	: HTML, CSS, Javascript, XML, JSON, REST.
<b>Cloud Platforms</b>	: AWS, Azure, GCP, Oracle Cloud (OCI), Alibaba Cloud
<b>Virtualization</b>	: KVM, VMware, Intel DPDK, Docker, Kubernetes
<b>Networking</b>	: TCP/IP, Network Security, Routing, Switching, VPN (IPsec/SSL/TLS), NAT, VLAN, HA
<b>Tools</b>	: Git, Perforce, Cisco TReX, Linux, Windows, Jira, Confluence, Target Process, Agile

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## CERTIFICATIONS & COURSES:

- [IBM SevOne NPM](#) (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)

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## 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](#)