Nanda Katikaneni

(603) 921 6441 | nkatikaneni@gmail.com | www.linkedin.com/in/nanda-katikaneni/ | https://github.com/nanda-katikaneni

Career Overview – Highlights

Seasoned cybersecurity architect and technical team leader with 20+ years of experience designing and evaluating secure, scalable solutions for cloud, datacenter, and enterprise networks. Proven track record in architecting and testing solutions for Zero Trust, SaaS security, endpoint detection, and secure cloud access—backed by deep expertise in security frameworks (MITRE ATT&CK, NIST, FedRAMP). Adept at leading cross-functional teams, mentoring technical professionals, and influencing cybersecurity modernization at the federal level. Published 20+ technical papers and led development of open-source tools (e.g., ScubaGear) adopted by over 100 U.S. government agencies. Expertise in data analysis and software optimization.

Skills

- **Core Competencies:** Network and Cloud Security Architectures; Vendor Assessments; Technical and Organizational Mgmt.
- **Security and Threat Intelligence:** Firewalls, WAF, DDoS, ICAM, Zero Trust, CASB, SIEM, FedRAMP, NIST, MITRE ATT&CK
- **Cloud and Networking:** TCP/IP, SDN, BGP, OSPF, MPLS, Load Balancing; AWS; Azure, SaaS security,
- **Programming and Automation:** Python, PowerShell, C, Bash; PenTesting, Performance and Solution Testing

Professional Experience – Key Accomplishments

MITRE Corporation, Bedford, MA — 2018 – Present

Principal Cybersecurity Architect

- Researched and developed secure configuration baselines for Microsoft 365 applications to enhance SaaS security posture. Co-developed an automated compliance validation tool, *ScubaGear*, is downloaded over 100,000 times and being leveraged by over 100 federal agencies. Served as technical content owner and mentored new engineers on DevOps and secure access best practices. Maintained DevOps infrastructure and collaborated with Microsoft, Sandia and CISA.
- Led 8-member SME team under the CDM CB project to evaluate ICAM tools (Okta, SailPoint, Azure AD) for compliance with FISMA and Zero Trust metrics. Identified critical gaps in the CDM data model and improved alignment with federal reporting standards. Researched emerging ICAM threat landscape to provide implementation measures to mitigate them.
- Defined technical requirements and led EDR solution architecture for DHS, leveraging MITRE ATT&CK, NIST RMF, and govCAR frameworks. Assessed 4+ major EDR tools (CrowdStrike, Microsoft Defender, FireEye, Palo Alto) and delivered threat hunting models tailored to agency use cases.
- Designed Zero Trust-based enterprise security architectures for HHS, evaluating legacy infrastructure and delivering strategic roadmaps and use cases to modernize cloud and network security posture across 12 operating divisions of HHS.
- Designed and executed lab-based evaluation of Cloud Based Internet Isolation CBII solutions for DISA, conducting performance and security assessments on 4 vendor offerings to support final product selection and their interoperability with current JRSS architecture.
- Collaborated with 4 vendors and standards bodies to analyze Zero Trust access control models and trust scoring algorithms. Contributed to testing of ZScaler, Akamai, Google BeyondCorp, and Waverly Labs solutions, resulting in a widely circulated whitepaper on ZTA implementation.
- Led intern recruitment and mentorship for Security Architecture Department, onboarding 10+ Cyber New Professionals and supporting long-term project contributions for SCuBA and CDM initiatives.

F5 Networks, Lowell, MA — 2008 – 2018

Senior Principal Engineer and Technical Team Lead

- Built and led a 20+ member team responsible for performance and scalability testing of BIG-IP ADC and Security products. Designed test methodologies, tools (Perl/C), and labs to evaluate new security features and ensure product readiness.
- Designed and validated WAF, DDoS, and NGFW security solutions using custom and industry-standard testing tools. Conducted competitive analysis and resolved critical customer performance issues, contributing to improved client satisfaction and product positioning.

- Diagnosed root causes of performance bottlenecks across BIG-IP modules, resulting in measurable throughput and latency optimizations in successive releases.
- Supported BIG-IP implementations across hardware, virtual (VMWare/KVM), and cloud platforms (AWS/Azure). Enhanced system resilience through deep debugging, vulnerability testing, and optimization of Linux-based services.
- Collaborated with Product, Program Management, and Solution Architects to analyze system metrics. Authored sizing guides and technical whitepapers that enhanced field deployment and sales enablement.
- Conducted high-fidelity simulation and testing of BIG-IP security modules (DDoS, NGFW, ASM, APM), identifying vulnerabilities and optimizing system response to real-world threat traffic.
- Defined organizational policies for performance and solution testing. Directed 3 module leads and delivered engineering quality metrics for every release, improving release reliability and stakeholder transparency.
- Recruited and mentored high-performing engineers. Spearheaded adoption of Agile and CI/CD practices using Jira, Confluence, and Bugzilla, reducing cycle time and improving cross-team collaboration.

Key Accomplishments:

- Spearheaded design of industry-first DDoS simulation lab and benchmarking tools. Led submission of performance test methodology for IETF standardization, influencing industry best practices.
- Defined charter for new solution engineering group and led hiring/training of initial team, accelerating time-to-productivity for new hires.
- Evaluated and implemented test harnesses (Ixia, Spirent, etc.), cutting test cycle times by 50% across product lines.
- Delivered tailored benchmarking and solution design that contributed to winning high-profile contracts, including DoD DISA, Microsoft, Telstra, Verizon, and JPMC.
- Awarded with 5 Star recognition (2016). F5 5-Star is the highest award for technical staff. Multiple high five nominations (2011, 14, 16) – high five is a peer nominated award for going above and beyond.

CONCORD COMMUNICATIONS / CA, Framingham, MA 2006 – 2008

Principal Engineer – Technical Team Lead

- Led data validation and feature testing for SNMP-based eHealth and Spectrum network monitoring tools. Collaborated with teams integrating Oracle DB and Cognos Reporting for alert and performance analysis.
- Designed and built custom simulation tools to test eHealth/Spectrum in complex multi-vendor environments. Led 6-person engineering team and automated testing workflows, accelerating release cycles and achieving 90%+ KPI compliance.
- Defined test automation infrastructure and developed analysis tools in Perl and Tcl. Provided both project and technical leadership to streamline testing and reporting processes.

Key Accomplishments:

- Designed and tested high-security network monitoring solution for DISA RFP, meeting aggressive timelines and securing a $1M+ contract following a successful competitive demo.
- Represented CA at UNH Interoperability Labs during 10G Ethernet Technical Event, validating Spectrum's performance as the primary monitoring tool in a multi-vendor ecosystem.

CIENA CORPORATION, Acton, MA 2003 – 2006

Lead Engineer

- Revamped and centralized performance testing and optimization for multi-service switching/routing platforms, improving consistency and reducing testing time across product teams by 75%.
- Built a performance benchmarking team from the ground up, growing from a solo contributor to leading efforts on ATM/FR, OSPF, BGP, and MPLS performance optimization strategies.
- Implemented full automation of system tests, cutting release cycle duration by 50% and increasing regression reliability for routing platform releases.

LUCENT TECHNOLOGIES (formerly Ascend / Cascade Communications), Westford, MA 1999 – 2003

Senior Software Engineer – Technical Team Lead

- Served as technical lead and individual contributor in performance engineering, data analytics, and SQA groups, driving initiatives to improve router/switch system efficiency and reliability.
- Designed scalable network topologies to stress-test system features, identifying performance thresholds and validating architecture under production-like conditions. Helped improve release cycle time by 50%.
- Built custom diagnostic tools to detect performance bottlenecks in routing/switching products. Enabled architecture teams to make informed scaling and optimization decisions. Helped improve OSPF performance by over 60%.
- Defined and executed performance and interoperability testing strategy for edge routing systems, ensuring quality and scalability for carrier-grade deployments.

Key Accomplishments:

- Participated in high-impact root cause analysis following a major U.S. service provider network crash. Contributed to a critical OSPF software overhaul and network design guideline updates that prevented recurrence across client systems.
- Led performance testing and analysis for IP forwarding over ATM switch. Identified key bottlenecks and contributed to IP engine architecture updates, resulting in a successful Jade M1E release acclaimed division-wide.

PRIOR EXPERIENCE INCLUDES

Software, Research, and Teaching roles at: TELECOMMUNICATIONS RESEARCH LABS AND UNIVERSITY OF SASKATCHEWAN, Saskatoon, Canada; and OSMANIA UNIVERSITY, Hyderabad, India.

- Evaluated ATM network flow control algorithms and developed custom protocol simulation tools in C to model and analyze network behavior under diverse conditions.
- Conducted advanced mathematical modeling and experimental research on high-temperature superconductors, applying quantitative methods and data analysis techniques later used in network systems engineering.
- Delivered undergraduate and postgraduate instruction in physics, mathematics, and programming, fostering foundational knowledge and mentoring early-career technologists.

EDUCATION

- **M.Sc.**, Computer Science, UNIVERSITY OF SASKATCHEWAN, Saskatoon, Canada
- **Ph.D.**, Applied Physics, OSMANIA UNIVERSITY, Hyderabad, India
- **M.Sc.**, Applied Physics and Electronics, OSMANIA UNIVERSITY, Hyderabad, India
- **CISSP** Certification by ISC2 (Scheduled in June 2025)

PUBLICATIONS, AWARDS, & ADDITIONAL INFORMATION

- Published 20 papers in refereed journals in data networking and experimental physics areas.
- Received multiple performance awards/letters of recognition at: MITRE (2019 & 2020); F5 Networks (in 2011, 2014, and 2016); at CA (in 2007); at Lucent (2000, 2001); and at TR Labs (1999). Awarded multiple research fellowships.
- **Citizenship/Security Clearances**: USA; **DOD-Secret**; Suitability clearance for: DHS/CISA and Dept of Justice.