

Prashanth Reddy Edunuri

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Professional Summary:

I'm a Senior Network Software Engineer with more than 8 years of experience designing, automating, and optimizing large-scale network systems for Meta and Comcast. My background blends strong software engineering skills (Python, Flask, Django, React.js, and automation frameworks), with deep networking knowledge, including BGP, MPLS, and network provisioning. I've led initiatives to modernize infrastructure, reduce operational errors through automation, and build intelligent tools using AI/ML for network insights. I'm passionate about driving operational excellence through smart engineering and am now looking to contribute to cutting-edge projects in a high-impact role.

Technical Skills:

- **Programming & Scripting Languages:** Python, PHP, HTML, CSS, JavaScript, Bash, Perl, Tcl
- **Frameworks:** PHP, Flask, Vue.js, Git, Django, React.js, REST API, Netconf, Restconf, XML API, Thrift, Mercurial
- **Databases:** MySQL, MongoDB, SQLite, Scuba, Presto, Hive
- **Applications:** Concourse, OpenShift, Kibana, Elastic Search, Whitesource, Cloud Foundry, Tableau
- **Network Analyzers:** Wireshark, Fiddler, Netcat, Nessus, Nmap, Zenmap, MTR
- **Simulation Tools:** Ixia, Cisco Packet Tracer, Network Simulator (NS2)
- **Network Protocols:** ISIS, OSPF, BGP, TCP, UDP, MPLS, ICMP, RIP, DNS

Work Experience:

Senior Network Software Engineer at Astreya (Full-time) (Remote - Austin, TX)

Aug 2022 – Present

Client - Meta Platforms (Facebook)

- Comprehensive Pre-Production Testing Environment – develop and maintain a robust test environment to ensure **backbone network's** reliability, optimize performance, and identify potential issues before deployment.
 - Created **ixia automation framework** to integrate **IxNetwork** functionality for traffic generation and/or simulation.
 - Developed an interface with handlers and CLI runners for interactions between internal tools and the framework.
 - Generated controlled **network traffic** with specific characteristics to test network behavior under various scenarios.
- Standardized over **100+ network provisioning steps** to improve consistency and operational efficiency, effectively addressing longstanding issues related to **team ownership**. This initiative significantly reduced the time required to identify issues and **assign accountability**, leading to **faster resolution** and improved performance.
- Developed new provisioning steps that check **device health, storage, availability, and interoperability**.
- Developed tests that conduct software qualification for all new devices before releasing them for use in **pre-production** and **production** environments.
- **Modernized and optimized network infrastructure** by executing circuit role migrations, implementing automation for configuration management and monitoring, and conducting **comprehensive validation of routing, switching, and security protocols** to ensure seamless integration.
- Validated firewall rules by **configuring automated traffic flows** that test the counters for inbound/outbound traffic.
- **Improved network reliability** through configuration management, test case development, and audit optimization.
- Improved the efficiency of automated processes by identifying and **addressing delays, reducing errors**, eliminating redundant steps, and managing access control, resulting in streamlined operations and enhanced productivity.
- Developed **Tableau dashboards** that improved visibility into KPIs, monitored automated processes & health checks.
- Collaborated with cross-functional teams to align test results, and streamline automation workflows.

Network Engineer III, Automation at Comcast (Full-Time) (Remote - Austin, TX)

Dec 2020 – Aug 2022

- Developed applications that actively monitor the network devices, do **pre/post maintenance checks**, and provide real-time insights.
- Developed **KPI dashboards** for providing the insights on tool usability and performance.
- Manage the infrastructure of the applications/tools maintained by my team.
- Deployed pipelines to automate the code push to all dev/prod sites.
- Build automation tools for **Operations & Reliability** teams to minimize the manual interaction with network devices.
- Created load balanced routes to distribute the traffic across multiple instances.
- Implemented **machine learning use cases** for network-related events and **device data trends**.

- Created a **MS Teams Chatbot** for network support channels, used **Power Virtual Agents** to create the chatbot.
- Build **trigger phases** and create new workflows to complete user action, using **ML/AI models** to improve responses.
- Features include **device lookup, device/escalation ownership, creating tickets** and **tracking ticket status**.
- Leverage the chatbot to bridge the communication between different teams.
- Ability to do **one-on-one chat sessions** with the user and post the updates to the teams channel.
- Participate in **group conversation** when the bot's name is mentioned in the team's channel.
- Implemented **gsib, oauth** for backend services.
- Create pipelines in concourse to streamline the deployment of changes to backend/frontend services.
- Escalate user requests between multiple teams.
- Act as a **single point-of-contact** for the user with **self-help, self-search tools** and guiding them to proper direction.

Network DevOps Engineer II at Comcast (Full-Time) (Hybrid - Mt Laurel, NJ)

Feb 2018 – Dec 2020

- Worked on Cisco, Juniper, Arista, Arris, Ciena, Nokia devices.
- Launch, Maintain, Migrate, & Manage routers in the **Residential Network**.
- Automation Tools Developed:
 - **Compliance Audit Tool** – enterprise level tool to audit all policies, interfaces on the routers.
 - **Duplicate IP Tracker** – tracks any duplicate ips in the network, identify associated problems.
 - **PortCleanup Tool** – Identify and update the engineers with all the **aged/unused ports** and provide the ability to clean them. (Currently supporting all Business Services - **EVPN, EDIA/BIZ, EPL/EAEPL, ELAN/ENS**).
- Helping other teams to set up **LaaS** for their tools for monitoring, logging, reports, and troubleshooting.
- Collaborating with other teams for projects to identify and resolve any network issues with automated scripts.
- Built a **dashboard using Kibana** to view the aged ports data.
- Collaborated with other developers to accomplish below tasks.
- Developed an **enterprise level tool** to audit all policies on the routers.
- Audit does a compliance check with latest templates in the config portal (as per the EB release).
- Enhanced the tool to do **interfaces, protocols, and global audit**.
- Containerized the services for stability, efficiency, and consistency.
- Used **Flask Server** for backend, **Vue.js** for frontend, **MongoDB** for audit data, **MySQL** for KPI.
- Developed **internal libraries** to maintain multiple versions of audit code.
- Automated tasks are scheduled to do audits and users are notified in a timely manner.
- Implemented mongodb sharded clustering to split out larger data sets.
- Created an **archiver script**, which removes older documents from mongodb, store them as zip files primary & backup servers, this helps to make user experience better.
- Developed a comprehensive tool to manage/validate **out of band access**.
- Ability to do on_demand checks/validation at **device-level** or **port-level**.
- Other features include ping validations, conflict checks, **cron schedulers** and more.
- Setup a **Django REST API Framework** to integrate tool data with other tools.

Software QA Engineer at Nokia (Co-op/Intern) (Onsite - Mountain View, CA)

Jan 2017 – Sep 2017

- Added Tcl scripts for supporting new features like **pim-snooping, mcs peers** etc.
- Enhanced my skills in **PHP, HTML** and **JavaScript** by developing the front-end pages.
- Developed front end page for monitoring the performance of **DUT(devices under testing)**.
- Developed front end page for controlling all the results locally.
- Modified the existing scripts for **bgp features** to support multiple instances.
- Changed the existing scripts for several **Tcl files** to support new features.
- Updated the scripts for **parallel execution** of commands, for increased efficiency.
- Debugged various test cases and verified the fixes by running **regressions**.
- Developed back end and front end for memory comparison of different DUTs(devices under testing).
- Made the content of web pages **dynamic** and **responsive** to selections.
- Edited the **master configuration files** and reduced the no. of lines by added loops.
- Developed **python scripts** to convert **Juniper** configuration to **Nokia** configuration for **Apple** project.

Education:

Northeastern University

Boston, MA

Master of Science –Telecommunication Systems Management

Sep 2015 – Dec 2017

Courses – Data Networking, Network Security, Linux/Unix for Network Engineers

University College of Engineering, Osmania University

Hyderabad, India

Bachelor of Engineering – Electronics and Communication Engineering

July 2011 – May 2015