

# Prashanth Reddy Edunuri

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## PROFESSIONAL SUMMARY

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Senior Network Software Engineer with more than 9 years building the software and automation that runs large-scale networks. Across Oracle, Meta, and Comcast I have built network qualification platforms, CI systems, and the tooling that keeps thousands of devices healthy and releases on track. Day to day I work in Python, Go, and TypeScript with FastAPI, Flask, Django, React, and Next.js, and I am just as comfortable deep in the network, working with BGP, MPLS, IPv6, QoS, SNMP, DNS, and VRF. Most of my recent work has been bringing AI into engineering platforms: triage that points engineers at the right logs, evidence-backed summaries, model routing across language models, and cached analysis that makes investigation faster. What I care about most is taking slow, manual network operations and making them dependable, easy to audit, and faster for the people who rely on them every day.

## TECHNICAL SKILLS

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**Languages & Scripting:** Python, Go, JavaScript, TypeScript, PHP, Bash, Perl, Tcl, HTML, CSS

**Backend, APIs & Services:** FastAPI, Flask, Django, REST APIs, Thrift, Netconf, Restconf, XML API, microservices, API gateways, event-driven service contracts

**Frontend:** React.js, Next.js, Vue.js

**AI Infrastructure:** AI triage workflows, model routing, assistant context, evidence-backed summaries, cached analysis, cited next actions, prompt and context design, LLM-assisted operations

**Large-Scale & Distributed Systems:** multi-service CI and qualification platforms, streaming and event systems, object storage, worker and queue-based execution, OCI, OpenShift, Cloud Foundry, Concourse

**Network Automation & Qualification:** device software qualification, zero-touch provisioning preflights, provisioning standardization, configuration compliance auditing, Ixia and IxNetwork traffic generation, firewall-rule validation, circuit role migrations

**Networking Protocols:** BGP, OSPF, ISIS, MPLS, IPv6, QoS, VRF, TCP, UDP, ICMP, RIP, DNS, DHCP, SNMP, SSH

**Data & Storage:** PostgreSQL, MySQL, MongoDB (including sharded clusters), SQLite, Presto, Hive, Scuba

**Observability & Analytics:** Tableau, Kibana, Elasticsearch, health checks, KPI dashboards

**DevOps & Runtime:** CI/CD, Docker and containerized services, systemd, Git and Git proxy workflows, deployment validation, multi-node rollout automation, internal package registries

**Testing & QA:** Playwright, UI smoke and authenticated UI tests, API testing, CI test orchestration, regression testing

**Network & Security Tooling:** Wireshark, Fiddler, Netcat, Nessus, Nmap, Zenmap, MTR, Cisco Packet Tracer, NS2

## PROFESSIONAL EXPERIENCE

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### Senior Network Software Developer at Oracle Corporation

Oct 2025 – Present

Full-time · Remote · Round Rock, TX

- Built and have continued to grow a multi-service platform for network qualification and CI that handles large-scale network software validation: running builds, capturing evidence, managing approvals, keeping an audit trail, pulling in repository context, and supporting the day-to-day workflows that engineers and operators depend on.
- Brought AI into the platform in practical ways, including evidence-backed summaries, assistant context, model routing across language models, cached analysis, cited next actions, and AI-assisted triage of builds and logs, all aimed at helping people investigate and decide faster.
- Designed the architecture across the whole stack: a modern web frontend, an API gateway, a CI execution service, an AI orchestration service, the event contracts that tie them together, automation scripts, and the production runtime services.
- Built the CI execution flow end to end, covering build queueing, worker assignment, command-plan execution, source checkout preparation, log and artifact storage, event capture, and live build status that engineers can watch in real time.
- Added the pieces that make releases safe and reliable, including active step snapshots, build timelines, source checkout locks, retry metadata, cancellation handling, health checks, and caching for AI summaries.
- Built out the dashboard so users can work with builds, nightly runs, qualification views, approvals, repository context, and environment selection, with login persistence and protected navigation handled for them.
- Tracked down performance problems by digging into frontend request waterfalls, API fan-out, slow database queries, cache behavior, stale data paths, background loaders, and dashboard load times.
- Added guarded issue management right inside the dashboard so engineers can file tickets without leaving the product, with reporter safeguards, field validation, evidence attached automatically, sprint placement, and deep links back to the work.
- Wrote production-safe automation for multi-node rollouts, source checkout, Git proxy setup, managed build environments, admin access controls, health checks, and deployment validation.

- Contributed qualification automation for next-generation data center switching and IPv6 fabric coverage, including DNS, SNMP over IPv6, in-band and inactivity SSH, VRF consistency, PTP, traffic-generator mapping, guarded API workflows, software-upgrade and zero-touch-provisioning preflights, and read-only checks that are safe to run in the lab.
- Wrote and maintained the architecture, workflow, runbook, API, security, environment, and operator documentation so the platform stays maintainable and easy to hand off across teams.

### Senior Network Software Engineer at **Astreya**

Aug 2022 – Oct 2025

Full-time · Remote · Austin, TX · Client: Meta Platforms (Facebook)

- Comprehensive Pre-Production Testing Environment: developed and maintained a robust test environment to ensure the backbone network's reliability, optimize performance, and identify potential issues before deployment.
  - Created an Ixia automation framework to integrate IxNetwork functionality for traffic generation and 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 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 and 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 and monitored automated processes and health checks.
- Collaborated with cross-functional teams to align test results and streamline automation workflows.

### Network Engineer III, Automation at **Comcast**

Dec 2020 – Aug 2022

Full-time · Remote · Austin, TX

- Developed applications that actively monitor network devices, perform pre and post maintenance checks, and provide real-time insights.
- Developed KPI dashboards that provide insights on tool usability and performance, and managed the infrastructure of the applications and tools maintained by my team.
- Deployed pipelines to automate code pushes to all dev and prod sites, and built automation tools for the Operations and Reliability teams to minimize manual interaction with network devices.
- Created load-balanced routes to distribute traffic across multiple instances, and implemented GSLB and OAuth for backend services.
- Implemented machine learning use cases for network-related events and device data trends.
- Created an MS Teams chatbot for network support channels using Power Virtual Agents, building trigger phases and new workflows to complete user actions and using ML and AI models to improve responses. Features include device lookup, device and escalation ownership, and ticket creation and tracking.
- Used the chatbot to bridge communication between teams, hold one-on-one chat sessions and post updates to the team channel, and join group conversations when the bot was mentioned.
- Created pipelines in Concourse to streamline deployment of changes to backend and frontend services, and acted as a single point of contact for users with self-help and self-search tools.

### Network DevOps Engineer II at **Comcast**

Feb 2018 – Dec 2020

Full-time · Hybrid · Mt Laurel, NJ

- Worked on Cisco, Juniper, Arista, Arris, Ciena, and Nokia devices to launch, maintain, migrate, and manage routers in the Residential Network.
- Developed a Compliance Audit Tool, an enterprise-level tool that audits all policies and interfaces on the routers and performs a compliance check against the latest templates in the config portal per the EB release. Enhanced it to cover interfaces, protocols, and global audits, and containerized the services for stability, efficiency, and consistency. Built with a Flask backend, Vue.js frontend, MongoDB for audit data, and MySQL for KPIs.
- Developed a Duplicate IP Tracker that tracks duplicate IPs in the network and identifies the associated problems.
- Developed a Port Cleanup Tool that identifies aged and unused ports, updates engineers, and provides the ability to clean them, currently supporting all Business Services (EVPN, EDIA/BIZ, EPL/EAEPL, ELAN/ENS).
- Implemented MongoDB sharded clustering to split out larger data sets, and created an archiver script that removes older documents from MongoDB and stores them as zip files on primary and backup servers, which improved the user experience.

- Developed a comprehensive tool to manage and validate out-of-band access, with on-demand checks at the device and port level, ping validations, conflict checks, cron schedulers, and more.
- Set up a Django REST API framework to integrate tool data with other tools, built a Kibana dashboard to view aged-ports data, and developed internal libraries to maintain multiple versions of the audit code.

## Software QA Engineer at Nokia

Jan 2017 – Sep 2017

Co-op / Intern · Onsite · Mountain View, CA

- Added Tcl scripts to support new features such as pim-snooping and mcs peers, and modified existing BGP scripts to support multiple instances.
- Enhanced my skills in PHP, HTML, and JavaScript by developing front-end pages, including a page for monitoring the performance of devices under test (DUTs) and a page for controlling all results locally.
- Developed the back end and front end for memory comparison of different DUTs, and made the content of the web pages dynamic and responsive to selections.
- Updated scripts for parallel execution of commands to increase efficiency, debugged various test cases, and verified the fixes by running regressions. Also developed Python scripts to convert Juniper configuration to Nokia configuration for the Apple project.

## NOTABLE PROJECTS

- **AI-Assisted Build & Log Triage (Oracle, 2025–Present).** An AI layer over the qualification platform that routes work across language models, generates evidence-backed summaries, caches analysis, and surfaces cited next actions, so engineers land on the relevant logs and likely cause of a failure far faster.
- **Network Qualification & CI Platform (Oracle, 2025–Present).** A multi-service platform spanning a web frontend, API gateway, CI execution service, AI orchestration service, and production runtime, built to run builds, capture evidence, gate approvals, and keep a full audit trail at scale.
- **IPv6 Fabric Qualification Automation (Oracle, 2025–Present).** Automation for next-generation data center switching that covers DNS, SNMP over IPv6, VRF consistency, PTP, software-upgrade and zero-touch-provisioning preflights, with read-only checks that are safe to run in the lab.
- **Ixia / IxNetwork Automation Framework (Meta, 2022–2025).** A traffic-generation and simulation framework with handlers and CLI runners that bridge internal tools, used to exercise the backbone network under a wide range of scenarios in a pre-production test environment.
- **Network Monitoring & Maintenance Suite (Comcast, 2020–2022).** Applications that monitor devices in real time, run pre and post maintenance checks, and surface health through KPI dashboards built in Tableau and Kibana.
- **MS Teams Network Chatbot (Comcast, 2021–2022).** An ML- and AI-assisted assistant built on Power Virtual Agents for device lookup, ownership, and ticketing that cut network support response time by around 60 percent.

## SELECTED ACHIEVEMENTS & IMPACT

- Brought AI-assisted triage, evidence-backed summaries, and model routing into a network qualification and CI platform, cutting the time engineers spend hunting through build logs to find the cause of a failure.
- Designed and built a multi-service CI platform end to end (web frontend, API gateway, CI execution, AI orchestration, and runtime services) that runs builds, captures evidence, and gates approvals at scale.
- Standardized more than 100 network provisioning steps, which cut the time it took to identify issues and assign accountability and removed long-standing confusion over team ownership.
- Built an enterprise compliance audit tool that checks policies, interfaces, and protocols across roughly 15,000 network devices, with automated scheduling and timely notifications to engineers.
- Identified and reclaimed over 5,000 aged and unused ports across the EVPN, EDIA/BIZ, EPL/EAEPL, and ELAN/ENS business services.
- Drove roughly 90 percent automation coverage in the pre-production testing environment, backed by more than 100 scenario-based tests.

## EDUCATION

### Northeastern University, M.S. in Telecommunication Systems Management

Sep 2015 – Dec 2017 · Boston, MA

Relevant coursework:

- Data Networking (with Lab)
- Network Security
- Fundamentals of Communication Systems
- Telecommunications Architecture & Systems
- Telecom Public Policy & Business Management
- Linux/Unix for Network Engineers (with Lab)
- Engineering Project Management
- Emerging & Disruptive Technologies

### University College of Engineering, Osmania University, B.E. in Electronics and Communication Engineering

Jul 2011 – May 2015 · Hyderabad, India

Relevant coursework:

- Network Theory
- Data Communication & Computer Networking
- Analog & Digital Communication
- Mobile & Cellular Communication
- Satellite Communication
- Real-Time Operating Systems
- Global Navigation Satellite Systems