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SUMMARY

• Over 15 years of IT experience specializing in RDK-B QA, triage, and automation for CPEs
• Successfully launched the Storm Ready WiFi product for Comcast Cable, conducting extensive QA testing on WFO and GFO features for the XLE product.
• Expertise in triaging and debugging CPE defects/issues using Linux utilities like tcpdump & Wireshark, along with Python for automation testing.
• Enhanced Functional, Regression, and End-to-End (E2E) testing through a robust automation framework supporting DevOps solutions.

Testing & Validation Expertise:

◇ Conducting comprehensive QA testing, debugging, and triaging of RDK-B features across Residential & Business Gateways, Cable Modems, and Fiber Products.

◇ Validating and troubleshooting RDK-B features such as StormReady WiFi (WFO/GFO), Device Prioritization (DSCP Markings), Low Latency DOCSIS, XM Boost, Dial Spotify, MAP-T, DS-Lite, Webconfig Framework, Ethernet WAN, WiFi QoS, Presence Detection, IPv6 Delegation, Firewall, BridgeUtils, OVS, Cujo Security Features, Plume PODs, Parental Control (Aker), WiFi functionalities (Bandsteering, STB Video testing, Telemetry, Speed Test), and more.

◇ Manual and automation validation of private and public WiFi, Plume PODs, and MoCA-based WiFi & Ethernet on CPEs.

Defect Management & Troubleshooting:

◇ Skilled in debugging and triaging field-reported defects.

◇ Proficient in diagnosing issues using Linux systems and networking protocols, including packet captures via tcpdump & Wireshark.

◇ Reproducing field-reported defects for rapid fixes and hot patch releases.

Leadership & Process Optimization:

◇ Experienced in managing customer issues, escalations, and support activities related to QA.

◇ Leading test activities to ensure timely project delivery and high-quality assurance standards.

◇ Expertise in managing and mentoring QA teams of 15+ members, fostering efficiency in test execution.

◇ Implemented successful processes and strategies to enhance test coverage and optimize resource utilization.

Technical Expertise & Automation:

◇ Knowledge of DOCSIS 2.0, 3.0, 3.1 & 4.0 devices for clients like Comcast Cable.

◇ Strong understanding of networking protocols such as SNMPv2/v3, SSH, Telnet, DHCP, DNS, DSCP, WEBPA, TR069, PortScan, FTP, SMTP etc.

◇ Proficient in all phases of the software test life cycle, including Functional, System, Performance, Integration, Automation, and Regression testing using Python, Shell scripting, and Web UI testing techniques.

◇ Strong knowledge of Agile methodologies, SDLC, quality auditing processes, and test tracking systems.

Project & Quality Management:

◇ Experienced in managing and executing QA projects with high-quality standards and timely delivery.

◇ Effective in tracking document reviews, test results, bugs, team progress, and communicating risks to higher management.

Technical Experience:

Domain	Cable & Telecom
Programming Language	Python, Bash Script, Basic C
Operating Systems	Windows & Linux
Protocols	IEEE 802.11, DHCP, DSCP, TCP, UDP, FTP, TFTP, SNMP, Telnet, SSH, HTTP, HTTPS, TR069, TR181 & TR369, SIP, SNMPv2, SNMPv3, MQTT, ZMQ
Tools	Splunk, Wireshark, tcpdump, OmniPeek, DOCSIS Config Editor, NetSNMP MG-SOFT MIB Browser, iperf, Filezilla, insider, Jenkins, SPLUNK, Scout, NetPing, Nmap, Vulturwave DOCSIS, ELK, Postman, MS Visual Studio
Web UI testing	HTTP, Java Selenium, Python Selenium, REST API
Tracking tools	Git, Gerrit, Jira, Jenkins, Confluence, Quality Center (ALM), Octane

Education: Bachelor of Engineering, Uttar Pradesh Technical University, India.

Career Profile:

RDK-B Scripts Development & DevOps for CPEs:
Employer: Cognizant Technology Solutions Corporation
Client: Nvidia USA
Role: DevOps & Development
Location: USA
Duration: 7+ Months (Oct 2024 - Till date)

Description:
Developing/designing Solution for RDKB team to deliver RDK device software/firmware for embedded systems.

Key Responsibilities:

- IoT Solutions and Automation design using Nvidia Jetson for RDK-B software
- Developed features like Parental Control & Wi-Fi monitoring solutions for RDK-B
- Project Estimation and Budgeting
- Providing automation solutions to meet business requirements
- Creating automation test plans and conducting test plan reviews for continuous improvements
- Developing automated scripts based on business functional requirements and manual test cases
- RDK-B Features like WiFi Security Cases, Parental control feature implementation, Client connectivity Issues, Optimize Home Network etc. were developed
- Developed CI/CD pipeline with Flask API and Docker, Jenkins etc.
- Unit test development with Flask API, Jenkins CI/CD & build development and UI dashboard with slack notifications.
- Developed a PoC on Raspberry Pi using the MQTT protocol to generate device telemetry, integrated with GitHub CI/CD workflows. Created and validated RESTful APIs using Postman as unit tests within the GitHub workflow. (Developed similar PoC using ZeroMQ protocol also)
- Currently developing PoC for an AI voice assistant that can interact like a typical customer over a voice call to trigger and execute RDK-B scripts using RDK-B cloud infrastructure for performing configuration changes on the router.

RDK-B Tool Development for Dev-Ops Execution:

Employer: Infosys Technologies Ltd.
Client: Comcast Cables Inc, USA
Role: Tools Development
Location: USA
Duration: 9+ months (Feb 2024 – Oct 2024)

Description:
Developing a tool for triage enhancement on CPE device for RDK-B features validations.

Key Responsibilities:

- Developed comprehensive automation scripts for end-to-end feature validation on CPEs
- Developed RDK features using python and shell programming language
- Created utilities on Linux systems using shell and Python scripts (e.g., CPE MAC, RDK Logger)
- Built a Flask API server to enable seamless interaction between clients and servers for feature validation
- Developed a JAR utility for encrypting API data
- Secured API validation using Linux open-source utilities
- Implemented features such as WiFi Testing, Bridge Mode, XLE Validation (WFO/GFO), Device Prioritization, Cujo Security Testing, WiFi Speed Test, Ethernet Speed Test, Gateway Server Speed Test, Bridge Mode Validation, Port Scanning, and Port Forwarding
- CI/CD pipeline development with Github, Docker and Jenkins.

Development, Triage and Automation & Execution for CPEs:

Employer: Infosys Technologies Ltd.
Client: Comcast Cables Inc, USA
Role: Automation & Triage Lead
Location: USA
Duration: 8+ Years (Mar 2016 – Mar 2024)

Description:
Development, Debugging & Triaging and Validation of RDK-B features for CPE device software/firmware.

Key Responsibilities:

- Leading a team of 10+ members under the RDKB Dev team, coordinating activities and mentoring
- Developed RDK-B features like Bridge-mode, MSO UI on Ethwan config and Remote Management & DMZ features developed using C programming language
- Supporting operations teams in field issue triage and field deployment testing
- Debugging and triaging field issues & sprint builds
- Experience in RDK-B code review using C programming language
- Providing automation solutions to meet business requirements and collaborating with Product and Dev teams for sprint planning
- Creating and reviewing automation plans for continuous improvement
- Developing automated scripts based on business functional requirements and feature improvement
- Collaborating with Product and Architecture teams for new feature development and integration
- Evaluating project progress and results, making technical recommendations to the RDKB Dev Team and Product
- Leading continuous improvement process initiatives
- Managing defect tracking and management using JIRA
- Handling requirement validation and feature automation using Autoamtics 3.0

- Integrating features in the RDKB Stack, such as Ethernet WAN, Plume PODs, AKER Parental Control, CUJO Security, Commscope & TCH Xi6, WHIX, xDNS, SNMP v3, iPerfv3 Speed Test, and xFi
- Involved in requirement gathering, analysis, scrum planning, and effort estimations
- Extensive experience in debugging and triaging field-reported defects using tools like tcpdump, Wireshark, using C/C++, Python & Linux shell script
- Proven track record in managing and executing projects with high-quality standards and timely delivery

Advanced Customer Premise Equipment Validation

Employer: Infosys Technologies Ltd.
Client: Comcast Cables Inc
Role: QA Automation
Location: India
Duration: 3 Years (Jan 2014 - Mar 2016)

Description:
This project involved triaging and validation RDK-B CPE devices.

Key Responsibilities:

- Developed a tool with RDK-B feature WEBPA (TR-181 cURL Request), SNMP functionalities, and knowledge management
- Designed and developed RDK-B scripts using C/C++, JAVA, Python, and Linux SHELL scripts
- Conducted end-to-end validation of eRouter and eMTA modules for RDKB Devices
- Performed embedded software and hardware testing for CPE Devices
- Tested SNMP, TR-069, TR-181, and WebPA for cloud components
- Tested NAT applications, remote management, and various networking protocols (DHCP, DNS, UPnP, FTP, TFTP, HTTP, HTTPS, SSH, Telnet, ICMP, SFTP, SMTP, ARP)
- Developed an automation platform for eRouter module testing
- Created and executed test suites and manual test cases
- Managed a team of 6 members for module testing
- Reported, triaged, and validated defects for the RDK-B software stack

Design & Stress Engineering Analysis

Employer: Infosys Technologies Ltd.
Client: Triumph Aero-structures, Dallas, USA
Role: Test Engineer
Location: India
Duration: 3+ Years (Mar 2010 – Dec 2013)

Description:

Design & Stress Analysis of Aero Components using Classical Approach & Tools

Key Responsibilities:

- Developed Scripts for Automation using C/C++
- Requirements gathering and analysis
- Work as an SME for project
- Involved in Daily Scrum Call

- Work allocation & review & handled 9 members team
- Involved in Manual Testing Process
- Designing and Execution of Aircraft components
- Create tools for enhancing test quality using MSEXCEL & VBMACROS
- Preparations of Final Report using MS Word