**Shankar Goud Vemula** – Technology Lead

**Contact No:** +1 8563941958 **Current Location:** Philadelphia, PA, USA

**Email id**: Shankar\_Vemula@infosys.com **Role Designation and Job Level:** Technology Lead

**Summary**

* **10+ years** of experience in development, design, analysis, automation, scripting and protocol testing in telecom and networking domain.
* Proficient Knowledge and debugging experience in basics of Networking protocols and Cable domain.
* Programming experiences in C++, and Core Java.
* Knowledge of the data structures and algorithms.
* Very good hands on experience on Linux OS and debugging of the system and writing of shell scripts.
* Have very good of Hands on and knowledge of the DevOps tools such as Ansible, Kubernetes and Docker concepts.
* Very good hands on working with Code Repo like git (creating PRs, review, merging, tagging, resolving conflicts).

• Good Knowledge of the AWS concepts.

• Worked with SDN technologies such as ONOS.

* Worked with the SIP Stack development, WebRTC framework for both Android and iOS mobiles.
* Good Understanding of the IMS Concepts & its interfaces, SIP, SDP and DIAMETER protocols.
* Deep knowledge of the signaling call flows in IMS and voice call flows in GSM (2G).
* Good experience on writing scripts using the TTCN3 & TTCN2 frameworks for TC automation.

• Knowledge of the 3gpp specs of GSM & IMS.

• Worked on projects in waterfall and agile methodology.

• Good Knowledge of SDLC life cycle.

* Experience in working with multiple vendors and geographically distributed teams.

**Key Domain and Technical Knowledge**

• Domain : Cable, Networking, GSM, GPRS, IMS, WebRTC.

• Programming Languages : C++ (Boost Library), Core Java.

* Protocols : TCP/IP, UDP, NTP, DNS, DHCPv4 and DHCPV6, IPV4, IPV6,PTP, SIP, SDP, DIAMETER, RTP, A-interface, Abis-interface.
* Environments : UNIX, Ubuntu, Mac, AWS EC2 Instances.

• Tools : Eclipse, Android Studio, XCode, Svn, GitHub and Clear case

• Platform tools : Kubernetes, Docker, Ansible, Jenkins

• SDN Technologies : ONOS

* Logging and Monitoring tools : Wireshark, Elastic Search, Kibana, Prometheus, Grafana.

**Academic Qualification**

* Bachelor of Technology in Electrical Engineering in 2008 from Jawaharlal Nehru Technology University, Anantapur, Andhra Pradesh, India.
* Intermediate from Board of Intermediate Education, Andhra Pradesh in MAR-2003.
* Secondary School Education from State Board of Secondary Education, Andhra Pradesh in MAR-2001.

**Certifications / Professional Awards:**

• Certified in Core Java.

• Certified in IMS and SIP domain.

**Total Work Experience: 10+ Years**

**Company**: Infosys Limited **Period:** Dec2013 to till date

**Company:** Wipro Limited **Period:** July2009 to Nov2013

**Projects Information:**

**Project Title: Virtual CMTS (Next Generation Network Access)**

**Client : American multinational media company in broadcasting and cable service provider.**

**Duration: From March2017 to till date**

**Software:** C++ (Boost Library) , Shell Scripting, ONOS, Kubernetes, Docker, Ansible, Kibana, Elastic Search, Kibana.

**Environment:** HP Moon shot servers, Linux (Ubuntu OS), AWS Servers.

**Description**: Comcast offers a suite of High Speed Internet, Digital Voice and Video services to its subscribers. This is first time in the cable industry that the new technologies will be leveraged to enable cable modem services and would revolutionize the way services are being delivered to customer in terms of features, bandwidth and time to deliver and penetrate new markets. With VCMTS, the service will be delivered via innovative technologies like Application Services Virtualization, NFV (Network virtualization) and SDN (Software defined networking).

GCPP is a Principle Core Configuration Application, which has been developed using the C++ Boost Library (for network Programming) for the provisioning and configuring the Remotephy devices (of different Vendors) with the Video Configuration which has various frequencies and modulation techniques defined as per the Cable Labs remotephy specs. This application is developed based on the protocol called GCP(Generic Control Plane) which enables it communicate with the Remotephy devices as per the standards defined in the Cable Lab Specification.

This application maintains TCP connections to the more than 200+ RPHY Devices simultaneously and also provides the continuous Health checkup and read the data from these RPHY devices and send the same data to the Monitoring and logging tools such as the Kibana and Grafana. This monitoring the will help in debugging and alerting the operations teams for the Video Service related issues of the Cable Modems or CPEs and STBs.

This application is converted into a Containerized application (using Docker) so that it can be deployed on a platform with Ubuntu, Docker, Kubernetes s/ws, SDN which makes the application highly available and makes it auto recover in case of failures so that it provides a seamless and continuous support for the RPHY Devices. This complete end to end product is called VCMTS.

**Roles and Responsibilities:**

* Design and development of new features for NGAN Module Generic Control Plane principle (as per the new updates or changes defined in the Cable labs RPHY Specifications.
* Design and development of the platform tools (such as Ansible, and Docker and Kubernetes) so that this application can be deployed and integrated in the Kubernetes, docker environment.

•. Gathering of the requirements and Change Requests for the product from the client.

* Assigning the tasks to the team members and reviewing their work for both quality and on time deliverables.
* Application integration with external Components such as the Configmanager, bothriftserver and RLCM.
* Deploying this application in live sites and Supporting the post deployment activities.
* Capturing the packet traces (using tcpdump) and analyze the application issues
* Maintenance of new platform and system integration across all sites for all the back-office components.
* Develop scripts for the CI/CD tools, including Jenkins and Sonar Qube for the automatic build generation, deployment and Code Coverage.
* Monitoring the live performance of the application in the Production sites and acting on the alerts.
* Providing the detailed RCA for the bugs/issues in the application and fixing the same.
* Production support during the upgrades and deployment.

**Project Title: Comcast Voice2Go**

**Client: American multinational media company in broadcasting and cable service provider.**

**Duration: From Dec2013 to till date**

**Software:** Android SDK, Eclipse, Oracle VM Virtual Box, XCode, Android NDK, iTunes

**Environment:** Mac machine, Windows7 machine, Mobiles devices both Android and iOS s/w, Wifi server.

**Description:** This project involves the development of new features and providing support for Comcast Xfinity Mobile Application with a SIP Library & WebRTC Code, which provides Voice services and Video calling to its subscribers on mobile handsets running iOS and Android platforms.

SIP Library is based on PJSIP Stack. It is a multimedia communication library written in C language implementing standard based protocols such as SIP, SDP, RTP, STUN, TURN, and ICE. It is both compact and feature rich. It involves development and support for various features, such as audio, video, presence, and instant messaging etc.

WebRTC is a free, open project that provides browsers and mobile applications with Real-Time Communications (RTC) capabilities via simple APIs.

**Roles and Responsibilities:**

* Implementation of new features and fixing bugs in SIP Stack using C.
* Implementation of webrtc framework and fixing bugs using Java and Objective C Testing with the help of Android and iOS mobiles.
* Analyzing the issues reported by customer in Rally and working on fixes.
* Bugs reproduction with the mobiles and giving the patches for the fixes.
* Upgrading and compiling the code for different architectures.
* Responsible for verification of functionality of the android/iOS app like checking normal, conference calls, hold and Retrieve scenarios with the mobile devices (android & iOS).
* Participated in code and design reviews for new feature implementations and quality improvements.

**Project Title: CSCF Test Automation**

**Client: Swedish Multi-national Corporation in communication technology and services.**

**Duration: From Nov2011 to Dec2013**

**Software: TTCN3-Framework, Java, Wire Shark**

**Environment: IMS Nodes ISP-CSCF, HSS & AS**

**Description:** Ericsson IMS subsystem consists of different IMS labs involving IMS nodes like CSCF, HSS. The project involves verification of IMS nodes CSCF, HSS, AS and Charging entities functionality

w.r.to various features such as Registration, Registration Event, Default handling, Offline charging, Online charging.

The verification is done by writing the TC scripts, executing them and analyzing them. Scripts are developed using the TTCN3 framework, which was implemented to automate the SIP, SDP and DIAMETER protocols in IMS.

**Roles and Responsibilities:**

* Analyzing of the Test Spec document for the new features.
* Implementation and execution of TC Scripts using the TTCN3 framework.
* Implementation of TTCN3 framework written in Java.
* Capturing and analysis of the logs using Wireshark tool.
* Involves in code reviews & document reviews.
* Involves in issues resolution that came up during the regression, which is performed for each for each delivery package.

**Project Title: BSC Testing**

**Client: Multinational data networking and telecommunications Equipment  Company.**

**Duration: From Oct2009to Oct2011**

**Software: TTCN2-Framework, C, QC, HIT, IDA**

**Environment: BSC, Solaris Protocol simulators**

**Description:** This project involves the verification of the functionality of the BSC w.r.to layer3 messages of its interfaces Abis and A for the various types of call flows, power control and Handover scenarios.

NSN BSC is the core component of GSM/GPRS/EDGE, capable of handling TRXs. The BSC handles allocation of radio channels, receives measurements from the mobile phones, and triggers, and controls various kinds of handovers. It acts as a concentrator where many different low capacity connections to BTS’s (with relatively low utilization) become reduced to a smaller number of connections towards the Mobile Switching Center (MSC) (with a high level of utilization). NSN BSC interfaces into the core network using 3GPP defined Abis and A-interface

**Roles and Responsibilities:**

* Functional testing and Regression testing of NSN product S15 BSC with respect of radio resources management, handover and power control functionality with TTCN tool.
* Regression testing for the for new NSN BSC products.
* Setup, configuration and maintenance of Simulators, readiness of test bed.
* Making TTCN2 scripts with A and Abis interface layer3 signaling messages for test automation
* Test planning and test case designing based on new requirements and writing them in Quality Center.
* Test execution, analysis of results, debugging and reproducing of the customer issues & working with design team in fixing the bugs (Pronto Testing)

**Personal Information**

• Gender : Male

• Marital Status : Married

• Visa Details ( If any) : H1B Work Permit (3 years left).