**Narasimha**

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* C/C++ Embedded Software Engineer with 8+ years of hands on experience in Software Development, Production, Support, troubleshooting & Maintenance.
* Strong experience in C/C++ on Linux using STL, multithreading (POSIX), Boost libraries, data structures, IPC (TCP/IP socket programming).
* Strong in Object-Oriented Programming (OOP), Object Oriented Analysis and Design patterns
* Experience in various aspects of system architecture, software design, development, implementation and validation.
* Worked on Python, Bash Shell Scripting, Perl Scripting, Kernel Debugging and Qt5 QNX/QML.
* Strong experience in creating Test Plans and Test procedures, driving Test Strategies and tools identification, Managing Test design through cross functional teams and creating Test Summary Reports.
* Good exposure to Digital Logic Design using Verilog, VHDL, SPICE and implementing in Xilinx FPGA and good experience in Embedded Linux Platform, Building Embedded Linux.
* Profiling, optimization and bug fixing trading system back-end.
* Experience in SVN, Git, Jenkins. Hands on knowledge about business tools, Repo and build maintenance tools, and different firmware & software development tools.
* Experience with application migration to cloud platforms like AWS.
* Experience with QT and QML UI Development.
* Used Boost C++ library for Documentation providing an elegant and efficient platform independent to needed services
* Good hands on experience on Web services like RESTful API, SOAP API and XML data integration.
* Very strong exposure on software development on Embedded Linux, RTOS.
* Proficient at debugging code using gdb tools. Acted as second and third level support at various positions.
* Understand Confidential version 2010 of FIX protocol and map CTCI fields to FIX tags.
* Good debugging and analytical skills on x86 and ARM platforms. Performed Debugging profiling for optimization purpose and finding bugs in Linux platform.
* Experience using in Python, Shell, Bash, Pearl scripting, Kernel debugging and QT-QNX.
* Experience in various SCM tools GIT, GitHub, CVS, Gerrit.
* Have experience in working on UML on creating class, sequence, activity, deployment diagrams.
* Have good skills in writing requirement, design and unit test documents.
* Knowledge on voice/video application over wireless network. Development experience with XML, JSON, TCP/IP, UDP/IP and multithreaded application using IPC mechanism.
* Used Design patters for Program creation and organizing code into objects and relationships of objects
* Good experience on Wi-Fi/I2C/BLE/ZigBee protocols.
* Have excellent analytical, problem solving, communication and interpersonal skills, with ability to interact with stakeholders at all levels and work as a part of a team and independently.
* Have exposure with Agile software methodology and Scrum activities.

**TECHNICAL STRENGTHS**

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| **Languages** | C++, Embedded C, Core Java, RESTful, JSON |
| **Operating System** | Linux, RHEL, Unix, Ubuntu, Windows7/10 |
| **Scripting** | UNIX Shell Scripting, Python |
| **Databases** | Oracle, PL/SQL, IBM DB2, SQLite, MongoDB |
| **OOAD** | UML, Design Patterns |
| **Configuration Management tools** | CVS, SVN, Git/GitHub |
| **Debugging Tools** | gdb, dbx |
| **Build Tools** | Make |
| **Bug Tracking tools** | Bugzilla, Jira |
| **Protocols** | TCP/IP, I2C, SPI, UART, RS232, Bluetooth, Wi-Fi |
| **Libraries & Frameworks** | STL, IPC, multithreading, QT/QML, Sockets, signals/event handling, Google Test |

**PROFESSIONAL EXPERIENCE**

**DirectV, PA Feb 2022 to present**

**Embedded/C++ Developer**

**Responsibilities**

* Experienced in STL concepts of C++ in developing the application.
* Developed a State Machine which handles Data Collection components.
* Involved in developing a component named Data Collection, it is used to approach for pausing the generation and posting of data collection messages from the firmware when the data collection cloud service is unavailable, unreachable, or in an error state.
* Hands on experience in data processing automation using python.
* Used python to extract data information from XML Files.
* Performed Configuration module testing and worked on NAND Flash Utility testing.
* Experience with networking and application protocols like Ethernet, Wi-Fi, TCP/IP.
* Production support, bug/defect fixing, integration, field visit to solve customer issues Performed Test Driven Development (TDD) in an Agile development environment
* Created new UI Screens for SSLVPN.
* Confidential FIX protocol implementation for trade reporting to Confidential
* Hands-on experience performing extractions, margin calculations, and validations on data via Java and re-entering the data into the Murex system
* Worked on improvement of configuration and monitoring tools. Bug fixing, trading support, monitoring and troubleshooting.
* Developed applications to consume Transaction Processing Facility (TPF) messages coming from IBM mainframes and submit the results in Oracle and/or DB2 databases.
* Debugged problems for traders with Murex support.
* Developed Fix adapter for communicating execution reports from WEX/FLEX trading systems to Murex.
* Created suite of UNIX tools for DSP code generation and analysis.
* Studied the FIX Protocol Server. Downloaded their C++ Source code sample application that streams FIX messages.
* Used Strong Swan to native NETKEY IPsec stack of the Linux kernel it is running on.
* Experienced in Google Protobufs.
* Implemented unit tests using unittest++ framework.
* Analyzed, designed, developed and deployed new C++ classes and modules for implementing Main Message Flow (MMF), a layer that ensures persistence and delivery guarantee.
* Design and develop solutions using C, C++, Multi-Threaded, Shell Scripting.
* Using Golang, developed scripts.

**Environment:** C, C++ 14/17, AWS, OOPS, Python, Java, Golang, Jenkins, FPGA, Github, Jira, QT/QMLSQL, Eclipse, gdb, REST, PL/SQL, UNIX, Linux, Shell Scripting, Perl Scripting,UML, RTOS, Python 2.6/2.7, JavaScript, HTP, JSON, XML,

**DELL, TX Nov 2019 to Jan 2022**

**Embedded/C++ Developer**

**Responsibilities**

* Responsible for designing, implementing, testing, debugging software for MTAS (Mobile Telephone Authentication Service) used for SIM activation, deactivation.
* Participated in the entire lifecycle of the project, which involve, understanding scope of the project, functionality, Object-oriented Data Modelling, Design patterns and development in C++.
* Worked on developing configuration module in C++ for Verizon Femto cell application on ARM processor.
* Developed Event based State machine to read XML files and populate in C++ STL datatypes for processing and config changes by user.
* Used Python for auto generation of C++ header files for compilation.
* Used Valgrind tool for identifying memory leaks debugging and profiling.
* Performed Configuration module testing and worked on NAND Flash Utility testing.
* Worked on fixing Data leakage from Application using multiple interfaces of http, xcap and migrated to HTTPS without changing app functionality.
* Developed application code in the Windows environment using Microsoft Visual Studio for API testing.
* Developed the ARM based processor supporting drivers and firmware using C/C++.
* Written documentation of technical architectural design.
* Define test cases and write test automation which effectively validate module designs.
* Built a Custom Pipeline for Jenkins to automate the whole build and Sanity testing process.
* Worked on automation of Quality Check tasks by creating PL/SQL procedures, cursors, functions in SQL.
* Performed Unit testing and Google Test to test the functionality of services.

**Environment:** C, C++, Jenkins, Github, Jira,SQL, Eclipse, gdb, REST, PL/SQL, UNIX, Linux, Shell Scripting, Perl Scripting, UML, Python 2.6/2.7.

**Tracfone Wireless Inc. Elgin, IL Sep 2017 to Oct 2019**

**C++ developer**

**Responsibilities**

* Seasoned in delivering under complete GE Transportation Software Development Life Cycle methodology (requirement, analysis, design, data modelling, business process modelling, implementation and deployment).
* Major role as an embedded engineer using C/C++ on QNX RTOS for design and development of HMI screens for Trip Optimizer (TO) to configure on EMD Locomotives.
* Design and Implement Trip Optimizer Interface which can fetch Locomotive information and relative data from Trip Optimizer and record this data for later use.
* Understanding of existing source code and addressing Change requests (Defects) in existing applications and new feature integration, new applications based on requirements.
* Verification and Validation of multiple sub systems in Locomotive in LAB, VSIM and on real-time locomotives in manufacturing Floor based on test procedures.
* Capture Network data between server-client to understand and debug the messaging protocols such as CPO mechanism using tools like Wireshark.
* Worked in Test Driven Development and testing Trip Optimizer sub systems and updating the Validation Plan, Test cases and Function Requirement Documents in DOORS with connection to IBM database.
* Working in Kanban, Agile Methodology in a 2-week sprint environment.

**Environment:**C, C++, Linux, VSIM - Virtual Simulator, Python, Shell, Trip Optimizer, Event Log Reader,gdb, QNX, HMI, DOORS, WinSCP, Visual Studio

**Bell Solutions, IndiaJuly 2015 – June 2017**

**C++ developer**

**Responsibilities**

* Worked as C/C++ developer with Test Driven environment and embeddedIoT software applications deployed for Logistics.
* Container Tracker is cloud-based software that enhances supply chain performance by delivering real time data-driven insights.
* Major role as an embedded software developer for scheduling, planning and tracking the containers using IoT based solution using x86 platform.
* Integration of IoT gateway with AWS using DynamoDB and ApiGateway services with REST API between client/server.
* Preparing Maintenance Manual, System Description Document and Functional documents.
* Automation done for generating various kinds of reports by using Perl/Shell scripts.
* Involved in writing optimization techniques for more accuracy of data filtering and aggregation.
* Reproduced software bugs/defects present in current software deliveries and implemented potential fixes and provided detailed root cause analysis.

**Environment**: C, C++, OOAD, STL, SSL/TLS, Integrated Development Environment and Debug Tools, Ubuntu Linux, POSIX Threads, Intel IoT platform, MQTT, MongDB, AWS