Adarsh Permukha, BE E&C

(+91) 9972681332, permukhaadarsh@gmail.com

Summary:

- Responsible for designing, developing, testing, and maintaining validation test solutions across different interfaces (SAS, NVMe) for SSD products.
- Test framework development using C, C++ and python for SSD software solutions.
- Worked on designing and writing python framework for automating the entire test execution and triaging process using Jenkins automation tool.
- Worked directly with Firmware Development Engineers and Architects to identify the proper tools and test coverage for testing the FW across multiple projects.
- Work closely with different teams within organization and tracking FW blocker bugs to closure.
- Usage of Jira, SVN, Git repository, linux bash, Matlab, pytest, UNH
- Usage of command tracer tools like Xgig, Lecroy.
- A coding enthusiast and seasoned coder in multiple competitive coding platforms.
- Solid understanding of OOPS, data structures and algorithms.
- Experience in working with linux environment.
- Experience in working in agile model project.
- Worked in test planning, framework design and documentation.

Work Experience:

Senior Engineer, FW Verification, Micron India Feb 2021 – Till now

- Designed and developed tests to test the back-end aspects of the 3DXP product.
- Gained knowledge on multi-function NVMe device and SRIOV concepts.
- Gained knowledge on 3DXP SSD architecture.
- Currently working on a ZNS-QLC product.

Engineer, FW Verification, SanDisk Jul 2018 – Jan 2020

Description: Firmware verification role involves providing maximum white box test coverage to various SSD FW layers mainly FTL (Flash Translation Layer), FM (Flash Module).

Responsibilities:

White Box Testing:

- Designed and developed tests to test the FTL algorithms at system level. Coming up with scenarios to trigger various FTL level events at system level and increasing the test coverage was the challenge. Some of the FTL algorithms include logger, read error recovery, program failure, flash array manager, ZNS, unmap, data integrity recycling etc
- Adding waypoints in the FW and diagnostic FW framework development.
    - Diagnostic FW has access to call the FTL APIs. By calling the APIs in the diagnostic FW we could change the FW variables and accelerate the test scenario hit. My work mainly involved in adding APIs in the diagnostic framework and developing new tests using them.
    - Waypoints are the statement in the FW code which indicate control has reached that point in the FW. Using callback mechanism when waypoint is hit test could validate or perform operations like reset/pfail etc. My responsibility was to go through FW code and add waypoint for new test cases and test scenarios.
- Mentoring college graduates to understand the SSD architecture overview, FW and test framework walk through.
- Owned the responsibility of white box testing of various NVMe features like ZNS, Muliti-Namespace, Unmap, Atomic Write etc.
- Contribution in reviewing the technical proposal from WBT side for ZNS related NVMe spec changes.
- Contributed in developing end to end error path testing framework.
- Test framework ownership, design documentation, mandatory reviewer for any code check-in to the framework.
- Debugging the FW code using lauterbach.

Intern, FW Verification, SanDisk Jan 2018 – June 2018

- Worked on automation of the test execution, coverage analysis reporting using Jenkins. Documented the entire automation process flow which would help new joiners, interns.

- Gathered knowledge on SSD architecture.
- Learnt the basics of NVMe, PCIe.
- Learnt to use trace analyzer tools like Xgig, Lecroy. These tools are helpful in identifying the root cause of the FW issue at system level.
- Worked on triaging and test bug fixing.
- Experience with I2C, UART embedded protocols.

Skills:

Operating System: Windows, Linux

Programming Language: C, C++, Python

Skills: Data structures and algorithms, Documentation

Education:

- RV College of Engineering 2014-2018 with 8.2 percentile
- CET 333 rank
- Class 12 Vivekananda PU College Puttur with 92%.

Extra-Curricular:

- Served as student placement coordinator during final year of Engineering. This role helped in improving the communication, people management, event organization, time management skills.
- Event organization during college fest.
- Campus ambassador for the Byju’s the Learning App.