QoS Test Suite on Switches

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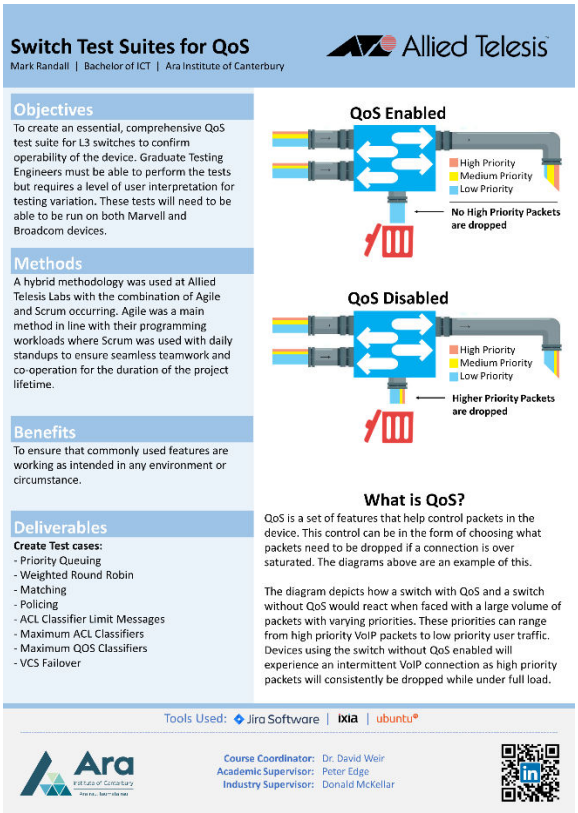
ABSTRACT

This document outlines the methods employed to create a test suite of working test cases within Allied Telesis Lab's QoS division. The test cases have been designed to be comprehensive tests of major features for their operating system while being flexible enough for users to adapt the test to their personal methods. These tests will become useful in confirming operability with new revisions of the operating system and newer versions of chips.

Keywords: Networking, Testing, Stressing, Development

1. Introduction

Companies and organisations demand ever increasing requirements for both speed and reliability in networking infrastructure. This means that the need for progressively more complex test cases are becoming more sort after within the field of hardware development. By having test cases developed for every feature within a product stack, the likelihood of having a flawed software decreases as well as the likelihood of experiencing a fatal error which leads to downtime.



Allied Telesis Labs provides networking hardware to medium to large organizations with products including routers, switches, firewalls, and wireless access points. The test cases that were conducted focus solely in the switching products they develop.

This project concentrated on developing a suite of test cases for Allied Telesis Labs within their QoS division. The test cases originally included Policing, Matching, and Egress Queuing but later expanded to include ACL Classifier Limit Messages, Limit QoS Classifiers, Limit ACL Classifiers, and QoS VCS Failover.

Each test case needed to be clear enough to be able to be completed by new graduate test engineers, but also flexible enough to be able to be run on all future revisions of their operating system.

2. Process

The goal of this project is to create a suite of test cases within Allied Telesis Labs to check and help ensure operability of their switches newest operating system. This involved researching how to configure the proposed features, finding any possible loopholes or other methods of implementing it, and creating a test that will stress the device. This method of creating the test cases also helps simulate how a technician outside of Allied Telesis would configure the device with publicly available information.

The test suite needed to be written in a way that a newly hired graduate testing engineer can configure the features appropriately, but also flexible enough to work on all switches in future revisions of the operating system.

Allied Telesis utilized a combination of Agile and Scrum throughout the development and testing of their products. This involved using Agile's framework for their software development with Scrum complementing that process with management and organizational frameworks. These processes were recognized in the form of daily developers builds for their operating system, and daily standups for team communications.

3. Conclusion

The overall goal of Allied Telesis Labs was to create a universal test suite for their switching gear. I believe this need has been filled with the introduction of this test suite. It provides flexible tests which graduate testing engineers can understand.

The skills and knowledge that were taken away from the time with Allied Telesis Labs will prove to be a great asset for years to come. The process of researching new concepts, implementing them, and ensuring they operate as they should has already proven useful outside of the working environment. The use of Agile and Scrum within Allied Telesis Labs has been a great learning experience on how two different methods can interact seamlessly with one another and expand strengths in both.

References

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