Analysis

The CloudConnect software quality assurance (SQA) engineers at Symantec test server software that verifies and handles consumer product licensing and activations. While several quality assurance team members manually test the software, others write tests handled by an automation tool known as *AutoFLEX*. In order to emulate user experiences in different environments, the CloudConnect SQA engineers must understand how the tool works in collaboration with a startup program that installs the necessary dependencies and executes the tests. This program consists of several scripts written using Python and Python libraries part of the *Atrium* framework. As a result of the complexity of *Atrium* and *AutoFLEX*, the team has created this manual to train incoming CloudConnect quality assurance personnel.

A good user manual explains the usage of a product to a target audience and should be split into multiple sections covering the details of each aspect. It needs to be clear enough such that the lowest common denominator of the target audience can understand how the entire product works. In addition, high quality manuals include pictures, tables, and figures to address the needs of every type of learner. While the combined *AutoFLEX* and *Atrium* documentation fulfills each of these requirements, improvements can be made. First, only material relevant to the CloudConnect team is covered. This may satisfy current requirements, but if features are added or changed in the future, then the current content may not be exhaustive enough to provide assistance for team members. Another issue is that the present documentation is written in Markdown and HTML. Although these features make formatting and adding resources to the documentation simple, it is not as straightforward as creating a text-based document. If the formatting is considered too complicated for other SQA engineers, the manual may have to be rewritten, taking time away from more important tasks.

Even though *AutoFLEX* and *Atrium* have a steep learning curve, they are powerful products that make test automation manageable and convenient for software developers and SQA engineers on the CloudConnect team alike. Test automation can be approached in many different ways; however, at the time of writing, it still requires some human interaction. *AutoFLEX* helps users keep this interaction minimal by providing remote virtual machines to run tests on. Furthermore, it has a built-in database to store resources in a common location. Once the *Atrium* script is set up and the proper resources uploaded to the *AutoFLEX* database, users can set a trigger to run tests at any time of the day, even when the office is closed. Consequently, teams can focus on test writing and other high-priority tasks without having to use time executing automated tests manually. The *Atrium* framework works closely with *AutoFLEX* and standardizes how communication between the two pieces of software occurs. Having a standard method of communication between the project and automation tools prevents confusion that may arise between team members, possibly creating delays.

Because *AutoFLEX* and *Atrium* are specifically designed for Symantec teams, CloudConnect engineers have decided that using these together is the best option to improve automated testing efficiency. In addition, because *AutoFLEX* is a powerful tool, it has become an important asset for storing CloudConnect resources and executing tests remotely. The *Atrium* framework has also improved testing conditions. Because it is compatible with Python, a programming language commonly used by the SQA team, and integrates easily with *AutoFLEX*, the framework allows for considerable feature expansions in the future. For example, tests could be uploaded and executed individually without the need to re-upload the entire project every time, something that can be done with Python and *Atrium*, but not with *AutoTask*, the previous tool used to create testing projects.