The architecture of browser manipulation is: operators -> front-end (browser) -> back-end. There are four ways to simulate or test the operations of web:

1. WebGUI: Operate the browser directly. Not suitable for the case of opening lots of web pages. Selenium can be used to simulate the function call of browser GUI.
2. JSON -> Backend. Suitable for the case when lots of web pages open. JSON is a format of transferring data and then packed by HTTP so that the packet can be sent to backend. Compared to HTML, HTML is stricter then JSON is.
3. CLI

The test cases can be divided into three categories:

1. Sanity: The test cases included new and unstable features. It’s required to test them each time when the new build is released.
2. Regression: If the features are tested for very long time and stable, the test cases can be moved from “Sanity” to “Regression”.
3. Scaling: These test cases are used in order to test multiple machines working parallel. One machine supports ten thousand APs theoretically. If one of four machines is dead, other machines should take over the job of dead machine.

Before running the test cases, you have to install two other packages: paramiko and pycassa.