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.

**安装paramiko模块**

paramiko安装要求：

（1）、platforms supported: POSIX (Linux, Solaris, BSD, etc.); MacOS X; Windows

（2）、python 2.3:python 2.2 is also supported, but not recommended. 目前系统中的python版本都支持

（3）、pycrypto 2.1+下载最新的pycypto版本

一、下载软件包

wget http://ftp.dlitz.net/pub/dlitz/crypto/pycrypto/pycrypto-2.3.tar.gz

wget http://www.lag.net/paramiko/download/paramiko-1.7.7.1.tar.gz

二、安装

tar -zxvf pycrypto-2.3.tar.gz

cd pycrypto-2.3

python setup.py install注释：(当初编译时报错：error: command 'gcc' failed with exit status 1；因为缺少python-dev的软件包，所以apt-get install python-dev；重新执行python sedup.py install通过）

tar -zxvf paramiko-1.7.7.1.tar.gz

cd paramiko-1.7.7.1

python setup.py install如果执行上述命令没有问题，则可以测试安装在当前目录下执行，python test.py

[root@localhost ~]# python  
Python 2.4.3 (#1, May 5 2011, 16:39:10)  
[GCC 4.1.2 20080704 (Red Hat 4.1.2-50)] on linux2  
Type "help", "copyright", "credits" or "license" for more information.  
>>> import paramiko  
>>>

# When you install paramiko, [from Crypto import Random -> ImportError: cannot import name Random](http://stackoverflow.com/questions/7210873/from-crypto-import-random-importerror-cannot-import-name-random)

|  |
| --- |
| You mentioned that you installed Crypto in /usr/local/lib/python2.6/dist-packages/Crypto/.  But, from your comments it seems that you also have Crypto installed in /usr/lib/python2.6/dist-packages/Crypto/.  Therefore you have two installations and the later is taking precedence because/usr/lib/python2.6/dist-packages/ appears first in sys.path.  I had the exact same problem and fixed it by renaming /usr/lib/python2.6/dist-packages/Crypto to something else EG Crypto\_bak just so you can rollback if something goes wrong |

**安装pycassa模块**

pycassa是一个Cassandra的python客户端，见:<http://pycassa.github.com/pycassa/index.html>

When you failed to upload a file to the server, probably it’s because the attribute of the folder in the server is not enough. In this situation, login the ftp server and modify the attribute of this folder:

*# telnet 172.17.18.161 (Login this ftp server)*

*Trying 172.17.18.161…*

*Connected to 172.17.18.161.*

*…*

*login: lab (Need username and password to login this ftp server)*

*Password:*

*[lab@armor ~]$ su - (Switch to root to change the attribute)*

*Password:*

*[root@armor ~]# ls -al (This folder currently belongs to root)*

*drwxr-xr-x 4 root root 4096 Oct 12 2011 To\_SDC*

*[root@armor ~]# chmod -R lab.lab To\_SDC/ (Change the owner of this folder)*

*[root@armor ~]# ls -al (Now the owner of this folder is lab)*

*drwxr-xr-x 4 lab lab 4096 Oct 12 2011 To\_SDC*

Now you can upload files to this folder when you use the lab account to login this server.

A failover cluster is a group of servers that work together to maintain [high availability](http://searchdatacenter.techtarget.com/definition/high-availability) of applications and services. If one of the servers, or [nodes](http://searchnetworking.techtarget.com/definition/node), fails, another node in the cluster can take over its workload without any [downtime](http://whatis.techtarget.com/definition/uptime-and-downtime) (this process is known as [failover](http://searchstorage.techtarget.com/definition/failover)).