

Web Testing Service User Guide

Version 1.0

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1 Introduction

Web Testing Service is a sharing service that can perform customized Web tests and show test results on Web platforms (e.g. Phone, IVI), OS (e.g. Windows, Linux, Android, Tizen) and Web Browsers (e.g. Chrome, Firefox). It does so by connecting to backend Web Service such as Apache2 CGI, Web Socket Server, some test Media Stream, test APPs and performing Web tests from comprehensive Web test suites, including Web APIs defined by W3C specs, Khronos specs and so on. This testing service has a friendly user interface to display tests according to the classification of specs, and easy instructions for customizing web test and web test streams. Besides that, it also presents consolidate test results on Web Browsers as well as generate the results on target device. The Web Testing Service will extend a interface for W3C Testing Service which include all W3C CSS and Platform tests.

This guide is intended to help people prepare for deployment, serve as a resource during the deployment, and help navigate the challenges of maintenance.

2 Deployment Overview

In preparing for a deployment, the people need to understand exactly what this term entails. A better understanding of the aspects of deployment will help them know what to expect next.

2.1 Prior Knowledge

The platform of the service is based on Ubuntu Linux OS, the HTTP server which the service uses is Apache2 or Python base HTTP Server, which means you must know below basic Knowledge:

- Linux Basic Knowledge: <http://www.tldp.org/guides.html> and <http://www.tldp.org/LDP/sag/html/index.html>
- Installation of Ubuntu Desktop or Server: <http://www.ubuntu.com/>
- Configurations of Apache2.*: <http://httpd.apache.org/docs/>
- CGI supports of Apache2.*: <http://httpd.apache.org/docs/2.2/howto/cgi.html>
- Python Runtime: <http://docs.python.org/> Ubuntu also built-in those related packages already

- Shell Basic Knowledge: <https://help.ubuntu.com/community/UsingTheTerminal> and <http://www.tldp.org/LDP/abs/html/index.html>

2.2 Reference Environment

This reference environment also is the default environment which the following sections talk about if no special instruction.

- Platform environment
 - Ubuntu 12.04 LTS Server 64-bit
 - Apache2.2
 - Python2.7.3

- Network environment

Client need access the below ports of Web Testing Service Server

- 80 port
 - ✧ Home Page: <http://server-ip:80>
 - ✧ Web Testing Service Runner: <http://server-ip:80/webtests>
 - ✧ W3C Testing Service Tests Repo: [http:// server-ip/w3c/](http://server-ip/w3c/)
- 8080 port: For tests which need cross domain checking
- 800* port: For W3C Testing Service
 - ✧ <http://server-ip:8000/tools/runner/index.html>: W3C Testing Service Runner
 - ✧ TBD

3 Deployment Phase

3.1 Install Ubuntu OS

Please should follow

<http://www.ubuntu.com/download/server/install-ubuntu-server> to install the Ubuntu OS.

After the installation, please use Ubuntu terminal tools to continue following phases.

3.2 Install Apache

```
sudo apt-get install apache2
```

3.3 Install Service Deploy Package

Before the deployment, besides this document, a deployment package named wts-version.zip also provided or you also would follow the [‘README’ file](#) to generate this wts-version.zip package from the source codes by yourself. Basically, this package contains all tests resources, e.g. test case html files, CGI scripts, media stream. Here are the steps of package deployment:

- `su root`
- `unzip path/to/wts-version.zip -d /opt/`
- `mkdir /opt/webtestingservice`
- `unzip /opt/wts/wts_tests.zip -d /opt/webtestingservice`
- Update the variables which depends on the server network
 - Manual Configuration: execute the following step 1) 2) 3) 4) in the terminal command line:
Get the server’s IP and save the result to var ipaddr:


```
1) ipaddr=`ifconfig eth0 | awk '/inet/ {split($2,x,".");print x[2]}`
```

The result likes: 192.168.1.2, then using the following commands to replace the string ‘MACRO_IPADDR’ of the files under /opt/webtestingservice:

```
2) replace_records=/tmp/replace_ipaddr.txt
3) grep -rn "MACRO_IPADDR" /opt/webtestingservice | cut -d ':' -f1 | sort | uniq > ${replace_records}
4) for replace_file in `cat ${replace_records}`;do sed -i "s/MACRO_IPADDR/${ipaddr}/g" ${replace_file};done
```
 - Auto Configuration: execute “/opt/wts/update_tests.sh” which includes the above Manual Configuration steps


```
./opt/wts/update_tests.sh
```
- Deploy CGI binaries

Specially, based on the deploy Ubuntu version, you need copy the corresponding CGI binaries to Ubuntu system folder “/usr/bin”, for Ubuntu 64-bit:

```
cp /opt/wts/tools/64bits/* /usr/bin/
```

Or for Ubuntu 32-bit:

```
cp /opt/wts/tools/32bits/* /usr/bin/
```

- Copy the /opt/wts/webtestingservice to /etc/apache2/sites-available and create a soft-link in /etc/apache2/sites-enabled:

```
cp /opt/wts/webtestingservice /etc/apache2/sites-available
rm /etc/apache2/sites-enabled/000-default #here 000-default maybe was changed
to 000-othername once you have configured apache service before
ln -s /etc/apache2/sites-available/webtestingservice
/etc/apache2/sites-enabled/000-webtestingservice
```

Specially, on non-reference platform, you may need update the content of webtestingservice file as the different version of apache2 may involve new config features. This document will create new section for descriptions of this config file. Please refer to chapter **4.3 Service Apache2 Config Analysis**.

- Some special steps of W3C Service:
 - Add below lines to /etc/hosts file as W3C Service need resolve the hostnames

```
Ser-ip      web-platform.test
Ser-ip      www.web-platform.test
Ser-ip      www1.web-platform.test
Ser-ip      www2.web-platform.test
Ser-ip      xn--n8j6ds53lwwkrqhv28a.web-platform.test
Ser-ip      xn--lve-6lad.web-platform.test
```

- The "Ser-ip" variable is the Ubuntu Server IP and can get by

```
ifconfig eth0 | awk '/inet/ {split($2,x,"");print x[2}]'
```

3.4 Launch the Service

- Launch W3C Testing Service

```
cd /opt/webtestingservice/suites/w3c/web-platform-tests
python serve.py&
```

- Launch Web Testing Service

```
/etc/init.d/apache2 restart
```

4 Maintenance Phase

4.1 Uninstall Web Testing Service

■ Manual Uninstall Configuration:

- `su root`
- Stop the W3C Testing Service

Get the processes of the Service by below command and kill them

```
ps -ax | grep python | grep "python\ serve\.py"
```

- Stop the Web Testing Service

```
/etc/init.d/apache2 stop
```

- Clean the Service data

```
rm -rf /opt/webtestingservice
```

```
rm -rf /etc/apache2/sites-available/webtestingservice
```

```
rm -rf /etc/apache2/sites-enabled/000-webtestingservice
```

- Clean CGI binaries

```
rm /usr/bin/cgi-getcookie /usr/bin/cgi-getfield
```

- Clean the /etc/hosts

Delete the below lines you added before

```
xxxxx      web-platform.test
xxxxx      www.web-platform.test
xxxxx      www1.web-platform.test
xxxxx      www2.web-platform.test
xxxxx      xn--n8j6ds53lwwkrqhv28a.web-platform.test
xxxxx      xn--lve-6lad.web-platform.test
```

You can use this command:

```
sed -i '/web-platform\.test/d' /etc/hosts
```

- Auto Uninstall Configuration: execute `/opt/wts/uninstall.sh` which includes the Manual Uninstall Configuration steps.

```
su root
```

```
./opt/wts/uninstall.sh
```

4.2 Upgrade the Service

You need uninstall the service then install the new version again for Service Upgrade

4.3 Service Apache2 Config Analysis

Some time, there will always be some people want to customize the Service Deployment due to the special environment, here, this section will talk about the details of Service apache2 config file.

- Web Testing Service use two "VirtualHost", there are 80 and 8080, below is the example of Apache2 "VirtualHost" config lines:

```
NameVirtualHost *:80
Listen 80
<VirtualHost *:80>
XXXXXXXXXXXXXXXXXXXXX
</VirtualHost>
NameVirtualHost *:8080
Listen 8080
<VirtualHost *:8080>
XXXXXXXXXXXXXXXXXXXXX
</VirtualHost>
```

- Port 80 is the main interface of the Service, home page, runner UI and most of tests entry all host on this port:

```
DocumentRoot /opt/webtestingservice/homepage
<Directory /opt/webtestingservice/homepage/>
    Options Indexes FollowSymLinks MultiViews
    AllowOverride None
    Order allow,deny
    allow from all
</Directory>
```

- The "DocumentRoot" should point to the home page html files folder. E.g.


```
DocumentRoot /opt/webtestingservice/homepage
<Directory /opt/webtestingservice/homepage/>
    Options Indexes FollowSymLinks MultiViews
    AllowOverride None
    Order allow,deny
    allow from all
</Directory>
```

- The URL `"/opt"` should map to the tests folder. E.g

```
ScriptAlias /opt "/opt/webtestingservice/suites/opt/"
<Directory "/opt/webtestingservice/suites/opt/">
    AllowOverride None
    Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
+FollowSymLinks +Indexes
    Order allow,deny
    Allow from all
    AddHandler
default-handler .html .htm .css .js .png .xml .gif .ogv .mp4 .ttf .jpg .jpeg .wgt .x
ht .xhtml .exe .mp3 .webm .json #Files having these name extension
</Directory>
```

This `"/opt"` folder should support CGI handler of `*.cgi` files

- The URL `"/webtests"` point to the test runner folder. E.g.

```
Alias /webtests "/opt/webtestingservice/harness"
<Directory "/opt/webtestingservice/harness">
    Options FollowSymLinks MultiViews
    AllowOverride None
    Order deny,allow
    Allow from all
</Directory>
```

- The Service also reserved a URL for W3C tests repo. E.g.

```
Alias /w3c "/opt/webtestingservice/suites/w3c/"
<Directory "/opt/webtestingservice/suites/w3c/">
    Options Indexes
```

```

        AllowOverride None
        Order deny,allow
        Allow from all
    </Directory>

```

With this W3C URL supports, the end user can access W3C tests to view the tests files.

- Port 8000 is used for some cross domain tests and only involved URL `"/opt"` to point to the tests folder, the URL has the same config lines as Port 80 `"/opt"`
- Here is the whole config file example for deployment reference:

```

<VirtualHost *:80>
    ServerAdmin webmaster@localhost

    DocumentRoot /opt/webtestingservice/homepage #Directory that forms
    the main document tree visible from the web, here is '/opt/webtestingservice',
    <Directory />
        Options FollowSymLinks
        AllowOverride None
    </Directory>
    <Directory /opt/webtestingservice/homepage/>
        Options Indexes FollowSymLinks MultiViews
        AllowOverride None
        Order allow,deny
        allow from all
    </Directory>
    ErrorLog ${APACHE_LOG_DIR}/error.log
    LogLevel warn
    CustomLog ${APACHE_LOG_DIR}/access.log combined
    ScriptAlias /opt "/opt/webtestingservice/suites/opt/"
    <Directory "/opt/webtestingservice/suites/opt/">
        AllowOverride None
        Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
+FollowSymLinks +Indexes
        Order allow,deny

```

```

        Allow from all

        AddHandler
default-handler .html .htm .css .js .png .xml .gif .ogv .mp4 .ttf .jpg .jpeg .wgt .xht .xht
ml .exe .mp3 .webm .json #Files having these name extension

    </Directory>

    Alias /webtests "/opt/webtestingservice/harness"

    <Directory "/opt/webtestingservice/harness">

        Options FollowSymLinks MultiViews

        AllowOverride None

        Order deny,allow

        Allow from all

    </Directory>

    Alias /w3c "/opt/webtestingservice/suites/w3c/"

    <Directory "/opt/webtestingservice/suites/w3c/">

        Options Indexes

        AllowOverride None

        Order deny,allow

        Allow from all

    </Directory>
</VirtualHost>
NameVirtualHost *:8080
Listen 8080
<VirtualHost *:8080>

    ScriptAlias /opt "/opt/webtestingservice/suites/opt/"

    <Directory "/opt/webtestingservice/suites/opt/">

        AllowOverride None

        Options +ExecCGI -MultiViews +SymLinksIfOwnerMatch
+FollowSymLinks +Indexes

        Order allow,deny

        Allow from all

```

```

        AddHandler
default-handler .html .htm .css .js .png .xml .gif .ogv .mp4 .ttf .jpg .jpeg .wgt .xht .xhtm
.exe .mp3 .webm .json

    </Directory>

</VirtualHost>

```

5 Appendix A Terminology

[illegible]