

Phc manual

for version 1.2 of Phc. Latest update: 12 July 2006.

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This manual documents version 1.2 of Phc, the validator of free proxy. The latest update of this manual: 12 July 2006.

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1 What is phc?

Phc is a customizable proxy hunter. (It is not a really brave hunter, but a lazy and kind one who will only select beasts puted before him or her,;-.)

It reads free proxy list from file and outputs data used to value speed or response of the free proxies available. All of the process can be customized by the user.

Certainly, you can learn and finish configuration in a few minutes. And then, if you have a big proxylist, just have a cup of coffe to wait for the result.

2 Featurelist

Featurelist

1. Full commandline options. All of configuration can be controlled by commandline options which makes it feasible to customize phc from scripts.
2. Checking free http proxy¹ with GET or CONNECT method:
 - HTTP_CONNECT
 - This kind of http proxy accepts CONNECT request. Most of application based on tcp can use this kind of proxies, for example: telnet,ssh, http etc.
 - This kind of http proxy usually do not limit strictly the range of target port of the request.
 - HTTP_GET
 - The common http proxy. It only proxy common service, such as http,ftp,gopher. It is due to the proxy server what kind of service can be supported.
 - It will benefit from cache of proxy server. So it is a good selection if many people use the same proxy to visit similar sites in the same time.
3. Checking free socks5 proxy with connect method:
 - SOCKS5_CONNECT
 - Socks5 proxies accept connect command. This method of socks5 proxy is very like the connect method of http proxy. Just above, it can be used as tcp tunnel. That is to say, it can proxy any request based on TCP.
4. Checking socks4 proxy with connect method:
 - SOCKS4_CONNECT
 - Just above, this type of socks4 proxies can be used as tcp tunnel.
5. Checking the testproxy² via myproxy.

Myproxy is the proxy which phc connect to it and go to testproxy via it. Now myproxy can be http (support CONNECT method) or socks5 (support connect command) proxy. (The support to socks4 myproxy in phc haven't been open now.)

Two kind of authentication of myproxy is supported for socks5 or http proxy:

Notice, the directly connection in phc is open. So you can validate testproxy without firewall now.

1. Authentication with username and password needed.
http: basic authentication socks5: username/password authentication(RFC1929).
2. no authentication.

That is to say, myproxy can be free proxy also. Certainly, you must have route to connect to myproxy directly.

6. Multithread.

¹ proxies without authentication and free to use by the others

² The free proxis in proxy list file

7. All delay on process are written to file and printed on screen in the same time.
There is a simple script available used to sort the result according to the speed of proxies.
8. You can use ctrl-c to kill it without loss on result.
9. Read testproxy by line but not reading to memory at a glance. Phc is expected to check big proxylist without influencing the other process.
10. Recv timeout or send timeout can be set to avoid wasting time on slow proxies.
11. Either the file phc read proxylist from or the file phc output result can be customized.
12. Flexible, customizable. All detail on validating can be customized,such as: user_agent: you can check testproxy as any browsers with it if you like. checksite: you can select the best testproxy for a single site. key: you can select a better key in the site of target to match the result thoroughly. ...

3 Requirements

Requirements

- CPU

i386,alpha,sparc and more

- OS

It has been tested on many linux dictribution, such as gentoo,debian ,fedora core. It works on SunOS and OSF1,too. I am not sure whether it will run at other operating system.

- Compile

Libpthread is needed. It was implemented in most of the glibc in the world. I compile it sucessfully with gcc. I am not sure whether it will be compiled by the other compilers.

- Network

A http or socks5 proxy which support CONNECT. This type of firewall is described as myproxy just as above.

Direct connection to testproxy without myproxy is supported without well test. Just let mytype=-1 to enable it. Marvin have written a patch for phc-1.0 to support connection directly without myproxy. If you met problems with mytype=-1 , you can also try this patch.

- Privilege.

Common user who can create,read,write socket and file is ok. If you are puzzled ,I am sure you have this privilege, :-). Just try it.

4 Quick start

You can use phc after a few minutes if you do like this step by step:

1. Extract from source and enter the work dir:

```
tar zxvf phc-1.2.tar.gz
cd phc-1.2
```

2. Compile && Install:

```
./configure
make
make install
```

3. Phc will search configuration file and proxylist file in current dir. If you still in work dir, just create configuration file like this:

```
cp doc/phc.conf.example phc.conf
```

You can put phc.conf to /etc/phc.conf or ~/.phc.conf. Phc will search ./phc.conf, then ~/.phc.conf, at last /etc/phc.conf until it found the first one.

Now read the configuration file "phc.conf". Notice: The line begin with '#' is comment line. The line after the line begin with '#' must be customized with you own setting. And the line begin with

```
'#! if'
```

need be updated only if the condition expression after "if" is true.

5 Introduction to basic configuration

- `mytype` The type of myproxy, which phc connect to directly. 1 for http proxy without authentication. 2 for socks5 proxy without authentication. 3 for http proxy with basic authentication. 4 for socks5 proxy with username/password authentication. -1 for connection to testproxy without myproxy(Testing).
- `myhost` The ip of domain name of myproxy. This will be in effect only if `mytype != -1`
- `myport` The http proxy service port of myproxy. This will be in effect only if `mytype !=-1`
- `myuser` This will be read only if `mytype=3` or 4.
- `mypass` This will be read only if `mytype=3` or 4.

For example, you username at myproxy is abc, password is guest, then you should set `myuser` and `mypass` like this:

```
myuser=abc
mypass=guest
```

- `httptestmethod` The http method which should be supported by the testproxy. `httptestmethod=0(HTTP_GET)` or `1(HTTP_CONNECT)` is supported now. If you need a HTTP CONNECT proxy, just set it to 1:
`httptestmethod=1`
 - `socks5testmethod` The socks5 command which should be supported by the test-proxy. Only 2 support to `(SOCKS5_CONNECT)` is implemented now. You should leave it intact now:
`socks5testmethod=2`
 - `socks4testmethod` BIND isn't implemented for socks4. So you should leave it intact:
`socks4testmethod=5`
 - `logfilename` The logfile with full path. If you prefer screen output:
`logfilename=.`
If you want to see it laterly:
`logfilename=./phc.log`
4. If you have proxy list file like the file `proxylist` in directory `doc`, just rename it as `proxylist`. Otherwise, you can copy the `proxylist` file in `doc` to current directory to begin test immediately:

```
cp doc/proxylist .
```

Notice, `phc.conf` must be in the same directory now.
 5. At last, start checking:

```
phc
```

Tips: If you have found enough free proxies, you can use "`^C`" to stop `phc` at any time. The result of validating will be printed on screen and saved to file named `proxyout` in current directory immediately after any free proxy is found .
 6. Example of configuration.

- Conditions: a socks5 proxy(socks.you.com) with username/password authentication. socks5 service port:1080, username:abc,password:def.

Want to validate: free http CONNECT proxy and free socks5 proxy which support connect command.

Your configuration should look like this:

```
#You must customize the follow
mytype=4
myhost=socks.you.com
myport=1080
myuser=abc
mypass=def
httpstestmethod=1
#You should leave the following items intact.
socks5testmethod=2
socks4testmethod=5
#Optional to be changed. But you SHOULD NOT comment or remove it.
threads=50
checksite=http://www.google.com:80/webhp?hl=en
key=2006 Google
user_agent=User-Agent: MSIE 6.0
myconreplysize=256
testconreplysize=256
testtagreplysize=65535
rcvtimeo=10
sndtimeo=5
logfilename=phc.log
```

- Conditions: a http proxy(proxy.you.com) without authentication. http proxy service port:8080.

Want to validate: Common free http proxy and free socks5 proxy which support connect command.

Your setting will be similar with this:

```
#The follow lines must be customized.
mytype=1
myhost=proxy.you.com
myport=8080
httpstestmethod=0
#Please leave the following items intact.
socks5testmethod=2
socks4testmethod=5
#The follow lines is optional to be changed , but you should not
#delete or remove it.
threads=50
checksite=http://www.google.com:80/webhp?hl=en
key=2006 Google
user_agent=User-Agent: MSIE 6.0
```

```
myconreplysize=256
testconreplysize=256
testtagreplysize=65535
rcvtimeo=10
sndtimeo=5
logfilename=phc.log
```

6 Advanced configuration

Please read See Chapter 4 [Quick start], page 5. to know the meaning of '#!' or '#!' if' at the start of a line and what are the vars that must be customized.

Syntax: a line will be ignored unless it is in the format like this:

```
varname=value
```

Notice: No chars (such as whitespace,quote) will be exceptional. So any chars before, after or inside "varname=value" will be recognized as part of "varname=value".

The list of advanced vars:

- threads The number of threads opened at the same time. This should be set according to ulimit. The number can't be more than 65535. Though nocache header is used, it is expected that less threads give more precise delay information to evaluate the proxies better.
- myconreplysize The size of buffer used to receive reply after sending CONNECT request for testproxy to myproxy. This is used for some weird proxies. Please leave it intact if unsure.
- testconreplysize The size of buffer used to receive reply after sending CONNECT request for target to testproxy. It is only be used when you validate HTTP CONNECT proxies. Just as above, do not change it if unsure.
- testtagreplysize The size of buffer used to receive reply after sending GET request to the target. Phc will find key from this buffer.
- user_agent Identified as Browsers or others to "cheat" some proxies.
- rcvtimeo Receiving timeouts in second.
- sndtimeo Sending timeouts in second.
- logfilename Redirect stderr to log file. Use a single "." ("." is just before LF) to leave stderr as it is.
- phcin The input file with full path which phc read proxylist from. If you do not set it, phc will use file named "proxylist" in the current directory.
- phcout The output file with full path which phc output result to. If you do not set it, phc will user file nameed "proxyout" in the current directory.If this file do not exists, phc will creat it. Otherwise, it will be overwrote.

The line begin with other strings which do not appeare here or See Chapter 4 [Quick start], page 5. will be ignored.

7 Options

Invoke it as:

```
./phc -help
```

You can see the table of map from commandline options to configuration options like this:

```
./phc: invalid option --  
Phc 1.2, a customizable proxy hunter.  
Usage: phc [OPTION]...
```

`-V` display the version of Phc and exit.

All of the other options need arguments!

Commandline only options:

`-f` the argument is configuration file

Configuration options:

`-t` threads
`-g` user_agent
`-m` mytype, the type of myproxy.
`-p` myport, the port of myproxy.
`-h` myhost, the ip or domainname of myproxy.
`-u` myuser, the username of myproxy if need.
`-s` mypass, the password of myproxy if need.
`-c` checksite, the target site used to check testproxies.
`-k` key, the keyword used to check whether testproxies give correct response.
`-r` revtimeo, socket recv timeout in seconds.
`-n` sndtimeo, socket send timeout in seconds.
`-S` myconreplysize
`-T` testconreplysize
`-G` testtagreplysize
`-H` httptestmethod
`-5` socks5testmethod
`-4` socks4testmethod
`-l` logfilename
`-i` phcin, the proxylist file used as input of phc.
`-o` phcout, the file which phc output result to.

Notice: The option ‘-f’ is used to customize configuration file which haven’t been used in configuration file. The option ‘-V’ is used to print version of phc.

8 Scripts

There are two scripts in directory scripts.

- creatlist

A script used to filter and create proxylist file from raw file.

Only line in format of "ip:port@proto.*" will be reserved and the chars after proto in the line will be removed. All duplicate line will be removed.

What the script does is: start->read a line from raw file->capitalize ->find port between : and @->port is number->check the string after @ to find proto -> proto is SOCKS5 or HTTP -> write ip:port@proto to tmpfile -> continue read next line ... loop

If any of the steps failed, just break and continue with the next line from start.

After all of lines are filtered, changed and saved to tmpfile, sort and uniq are used to remove duplicate line.

Usage: `./createlist infile outfile` Example:

```
./createlist p proxylist
```

- sortlist

sort the file proxylist. Usage:

```
cp doc/sortlist .  
./sortlist
```

9 Format of proxylist

The format of proxylist accepted by phc should like this:

ip:port@proto.*

or

ip:port

I remove support on domain, so ip must be IPV4 address. The port must be integer range from 1 to 65535. The proto can only be HTTP,http,socks5,SOCKS5,socks4 or SOCKS4. All of the chars afterproto will be ignored.

If no @ in the line, proto is default as HTTP. Differently, no other chars after port can be appeared.

Example:

61.132.89.130:80@HTTP

202.123.52.156:8080

10 Format of output

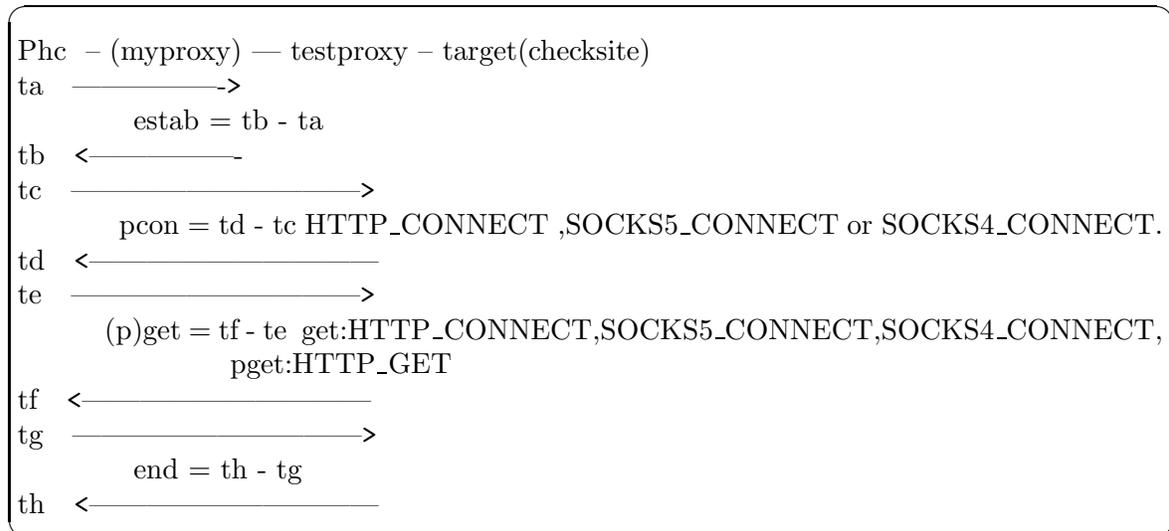
The current version of phc output timeouts of every steps of validation:

Method	Output (time increase ->)
HTTP_GET	host:port@HTTP estab pget end
HTTP_CONNECT	host:port@HTTTPC estab pcon get end
SOCKS5_CONNECT	host:port@SOCKS5 estab pcon get end

The figure on process of validation. See the table for the meaning of symbol in the figure:

symbol	meaning
-	start to send, the left string is time.(such as ta)
<-	The data entered,the left string is the time when data come in.

Figure:



delay	define
estab	Delay from the time(ta) phc send CONNECT request for test-proxy to myproxy (or connect to testproxy directly) to the time(tb) it receives "Connection Established".
pcon	Delay from the time(tc) phc send CONNECT request for target to testproxy to the time(td) it receives "Connection Established". With HTTP_GET method, it is impossible to get "connection delay" for that is added to pget delay. It is only be used with HTTP_CONNECT or SOCKS5_CONNECT method.
get	Delay from the time(te) phc send HTTP GET request to target to the time(tf) it receives the first byte data returned. This is only be used with HTTP_GET method and the "middle-delay"(like pcon) can't be got by the client.

pget Delay from the time(te) phc send GET request for target to testproxy to the time(tf) it receives the first byte data returned.

end Delay from the time(tg or tf) phc receive the first byte data to the time time(th) it receives data including key.

The value of the delays:

```

estab resp of TP
pcon  resp of TP + relay of TP + resp of TG
get   resp of TP + relay of TP + resp of TG + servicestart of TG
pget  2*resp of TP + 2*relay of TP + 2*resp of TG + servicestart of TG
end   0.5*resp of TP + 0.5*relay of TP + 0.5*resp of TG + serviceend of TG

```

The guide to use the delay

- If you want to select a testproxy with best response to myproxy(or phc), just sort the result according to estab.
- If you need a testproxy through which you can get the best response (shortest route?) from the target defined in configuration, please sort according to pcon , get or pget.
- On the other hand , if you care for the bandwidth of the whole route to target, you should sort according to end.

Tips:

- You can sort testproxies according to estab if you want to browse webpages via test-proxy(through myproxy firstly or not).
This is the common choice if you need quick response ,dynamic targets to access and little data to transfer.
- You can sort testproxies according to end if you want to download files via test-proxy(through myproxy firstly or not) from target.
Bandwith but not delay is important to bulk download.
- The less delay, the more speed. You should select the testproxies with the shortest delay, such as estab,pcon,get,pget or end.

11 TODO

- SOCKS5_UDP
- https.
- cgi
- text interface?
- graphic interface? A very lame gtk interface to phc is developed by me.
- sort in checking. It may waste plenty of time. For large number of proxylist, I guess it will be awful.
- switchproxy I have written a few scripts and simple codes to select best proxies. The main scripts update proxies as frequently as you like.

more... updating

Please contact with me if you have ideas on phc.

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