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FreeBSD: Nginx FastCGI PHP Configuration

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Q. How do I configure PHP as FastCGI under FreeBSD Nginx webserver?

A. You can easily configure php as FastCGI application under Nginx for performance. You need following components:

[a] **spawn-fcgi binary** - For spawning a FastCGI process. This binary can be installed from Lighttpd webserver project. Nginx does not automatically spawn FCGI processes. You must start them separately using spawn-fcgi.

[b] **start.php.sh** : A shell script to stop / start / restart php fastcgi process. This script swap php process on 127.0.0.1 IP and 9000 port. Once backend is started Nginx can be configured to connect to PHP.

FreeBSD Install PHP5

If php5 is not installed type the following commands (make sure you select FastCGI option):

```
# cd /usr/ports/lang/php5
# make config
# make install clean
```


[5]

Fig.01 Enable FastCGI support by selecting FastCGI option

Also installed required php extensions such as php-msyql, php-gd and so on:

```
# cp /usr/local/etc/php.ini-recommended /usr/local/etc/php.ini
# cd /usr/ports/lang/php5-extensions/
# make install clean
```

Install spawn-fcgi

Grab latest spawn-fcgi from another Lighttpd installation or just install it as follows:

```
# pkg_add -r -v lighttpd
```

Sample output:

```
scheme:   [ftp]
user:     []
password: []
host:     [ftp.freebsd.org]
```

```
port:      [0]
document: [/pub/FreeBSD/ports/amd64/packages-7.0-release/Latest/lighttpd.tbz]
---> ftp.freebsd.org:21
looking up ftp.freebsd.org
connecting to ftp.freebsd.org:21
<<< 220 Welcome to freebsd.isc.org.
>>> USER anonymous
<<< 331 Please specify the password.
.....
.....
x lib/lighttpd/mod_access.so
x lib/lighttpd/mod_accesslog.a
x lib/lighttpd/mod_accesslog.la
x lib/lighttpd/mod_accesslog.so
x lib/lighttpd/mod_alias.a
x lib/lighttpd/mod_alias.la
x lib/lighttpd/mod_alias.so
x lib/lighttpd/mod_auth.a
x lib/lighttpd/mod_auth.la
.....
..
```

Now you can use /usr/local/bin/spawn-fcgi to swap process. If you want you can copy /usr/local/bin/spawn-fcgi to /root or other directory and just delete lighttpd package by typing the following commands:

```
# cp /usr/local/bin/spawn-fcgi /root/
# pkg_delete -v lighttpd-1.4.18_1
# cp /root/spawn-fcgi /usr/local/bin/spawn-fcgi
```

Now you can start PHP Fastcgi from command line as follows:

```
# /usr/local/bin/spawn-fcgi -a 127.0.0.1 -p 9000 -u www -g www -f /usr/local/bin/php-cgi
```

Where,

- **-a 127.0.0.1** : PHP FastCGI bind IP address, where Nginx will connect.
- **-p 9000**: PHP FastCGI port number, where Nginx will connect.
- **-u www** : PHP FastCGI username.
- **-g www** : PHP FastCGI groupname.
- **-f /usr/local/bin/php-cgi** : Path to PHP5 fastcgi binary.

Verify that php running as FastCGI, enter:

```
# sockstat -4 | grep 9000 [6]
```

Sample Output:

```
www       php-cgi    8998  0   tcp4   127.0.0.1:9000    *:*
www       php-cgi    8997  0   tcp4   127.0.0.1:9000    *:*
www       php-cgi    8996  0   tcp4   127.0.0.1:9000    *:*
www       php-cgi    8995  0   tcp4   127.0.0.1:9000    *:*
www       php-cgi    8994  0   tcp4   127.0.0.1:9000    *:*
www       php-cgi    8993  0   tcp4   127.0.0.1:9000    *:*
```

Sample **Shell Script To Start / Stop PHP FastCGI process** [7]

```sh
#!/bin/sh
# NGINX FastCGI php5 startup shell script
# Feedback <vivek@nixcraft.com>
# http://bash.cyberciti.biz/web-server/fastcgi-php-server-start-stop-script/
# Set ME #
PROVIDES=php-cgi
LIGHTTPD_FCGI=/usr/local/bin/spawn-fcgi
SERVER_IP=127.0.0.1
SERVER_PORT=9000
SERVER_USER=www
SERVER_GROUP=www
```

```
PHP_CGI=/usr/local/bin/php-cgi
PGREP=/bin/pgrep
KILLALL=/usr/bin/killall
### No editing below ####
cmd=$1

pcgi_start(){
    echo "Starting $PROVIDES..."
  $LIGHTTPD_FCGI -a $SERVER_IP -p $SERVER_PORT -u $SERVER_USER -g $SERVER_GROUP -f $PHP_CGI
}

pcgi_stop(){
 echo "Killing $PROVIDES..."
 $KILLALL $PROVIDES
}

pcgi_restart(){
 pcgi_stop
 pcgi_start
}

pcgi_status(){
        $PGREP $PROVIDES > /dev/null
  [ $? -eq 0  ] && echo "$PROVIDES running" || echo "$PROVIDES NOT running"

}

pcgi_help(){
    echo "Usage: $0 {start|stop|restart|status}"
}

case ${cmd} in
[Ss][Tt][Aa][Rr][Tt]) pcgi_start;;
[Ss][Tt][Oo][Pp]) pcgi_stop;;
[Rr][Ee][Ss][Tt][Aa][Rr][Tt]) pcgi_restart;;
[Ss][Tt][Aa][Tt][Uu][Ss]) pcgi_status ;;
*)      pcgi_help ;;
esac
```

Install [above shell script](#) [7]:

```
# cd /tmp
# fetch http://bash.cyberciti.biz/dl/251.sh.zip
# unzip 251.sh.zip
# mv 251.sh /usr/local/etc/rc.d/php.cgi.sh
# chmod +x /usr/local/etc/rc.d/php.cgi.sh
# rm 251.sh.zip
```

To start php FastCGI, enter:

```
# /usr/local/etc/rc.d/php.cgi.sh start
# sockstat -4 | less
```

To stop php FastCGI, enter:

```
# /usr/local/etc/rc.d/php.cgi.sh stop
```

Connect Nginx Webserver To PHP FastCGI Process

Open your ngixn.conf file, enter:

```
# vi /usr/local/etc/nginx/nginx.conf
```

Append following config directives so that Nginx can pass the PHP scripts to FastCGI server listening on 127.0.0.1:9000:

```
location ~ \.php$ {
```

```
            fastcgi_pass   127.0.0.1:9000;
            fastcgi_index  index.php;
            fastcgi_param  SCRIPT_FILENAME  /websites/example.com/http$fastcgi_script_name
            include        fastcgi_params;
    }
```

If your website is hosted at /home/www/theos.in/http, your config should look like as follows:

```
server {
 listen  80;
        server_name  theos.in www.theos.in;

        access_log  /var/log/nginx/theos.in/access.log  main;

        location / {
            root   /home/www/theos.in/http;
            index  index.php index.html index.htm;
        }

        error_page   500 502 503 504  /50x.html;
        location = /50x.html {
            root   /usr/local/www/nginx-dist;
        }

       # pass the PHP scripts to FastCGI server listening on 127.0.0.1:9000
        location ~ \.php$ {
            fastcgi_pass   127.0.0.1:9000;
            fastcgi_index  index.php;
            fastcgi_param  SCRIPT_FILENAME  /home/www/theos.in/http$fastcgi_script_name;
            include        fastcgi_params;
        }

        location ~ /\.ht {
            deny  all;
        }
}
```

[Restart Nginx web server](#) [2]

```
# nginx -c /usr/local/etc/nginx/nginx.conf -t
# /usr/local/etc/rc.d/nginx restart
```

Test php with following sample script:

```php
<?php
  phpinfo [8] ();
?>
```

Continue reading rest of the *Nginx Webserver Tutorial* series (TOC):

1. [FreeBSD Install Nginx Webserver](#) [9]
2. [FreeBSD: Start / Stop / Restart Nginx Web Server](#) [2]
3. FreeBSD: Nginx FastCGI PHP Configuration
4. [FreeBSD: Nginx Virtual Hosting Configuration](#) [1]

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[5] Image: **http://www.cyberciti.biz/faq/wp-content/uploads/2008/10/freebsd-php5-fastcgi.png**
[6] sockstat -4 | grep 9000: **http://www.cyberciti.biz/tips/freebsd-lists-open-internet-unix-domain-sockets.html**
[7] Shell Script To Start / Stop PHP FastCGI process: **http://bash.cyberciti.biz/web-server/fastcgi-php-server-start-stop-script/**
[8] phpinfo: **http://www.php.net/phpinfo**
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