

Web server configuration

NGINX

CIS 2235 Linux System Administration

Installing nginx

package varies based on distribution

	RHEL/CentOS	Debian/Ubuntu	FreeBSD
Package name	nginx ^a	nginx	nginx
Daemon path	/sbin/nginx	/usr/sbin/nginx	/usr/local/sbin/nginx
Configuration root	/etc/nginx	/etc/nginx	/usr/local/etc/nginx
Virtual host config ^b	conf.d/	sites-available/ sites-enabled/	<i>No prescribed location</i>
Default user	nginx	www-data	nobody

a. You must enable the EPEL software repository; see fedoraproject.org/wiki/EPEL.

b. Relative to the configuration root directory

Installing nginx on Ubuntu

package name is nginx

```
ldamon@ubuntu_lts:~$ sudo apt install nginx
[sudo] password for ldamon:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0 libjpeg-turbo8
  libjpeg8 libnginx-mod-http-geoip libnginx-mod-http-image-filter
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream libtiff5 libwebp6
  libxpm4 nginx-common nginx-core
Suggested packages:
  libgd-tools fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
  fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0 libjpeg-turbo8
  libjpeg8 libnginx-mod-http-geoip libnginx-mod-http-image-filter
  libnginx-mod-http-xslt-filter libnginx-mod-mail libnginx-mod-stream libtiff5 libwebp6
  libxpm4 nginx nginx-common nginx-core
0 upgraded, 18 newly installed, 0 to remove and 42 not upgraded.
Need to get 2,461 kB of archives.
After this operation, 8,194 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

NGINX service control

Once installed, nginx can be controlled via the `systemctl` command:

```
systemctl start nginx  
systemctl stop nginx  
systemctl restart nginx  
systemctl status nginx
```

There are a few more options, to see them:

```
service help nginx
```

since they start/stop a daemon, they require root privileges
after install, Ubuntu starts the service

NGINX service control continued

```
ldamon@classubuntu:~$ systemctl status nginx
```

```
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2022-03-02 19:13:06 UTC; 20h ago
     Docs: man:nginx(8)
  Process: 15613 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=0)
  Process: 15624 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0)
 Main PID: 15625 (nginx)
    Tasks: 2 (limit: 1066)
   Memory: 2.6M
    CGroup: /system.slice/nginx.service
            └─15625 nginx: master process /usr/sbin/nginx -g daemon on; master_process on;
               └─15626 nginx: worker process

Mar 02 19:13:06 classubuntu systemd[1]: Starting A high performance web server and a reverse proxy engine: nginx.
Mar 02 19:13:06 classubuntu systemd[1]: Started A high performance web server and a reverse proxy engine: nginx.
```


NGINX configuration

top level config directory is /etc/nginx

```
[ldamon@ubuntuLTS:/etc/nginx$ ls /etc/nginx
conf.d          fastcgi_params  koi-win        nginx.conf      scgi_params     sites-enabled   uwsgi_params
fastcgi.conf    koi-utf         mime.types     proxy_params    sites-available snippets        win-utf
[ldamon@ubuntuLTS:/etc/nginx$ ]
```

- global configuration file is:
 nginx.conf — primary file
- Many details here:

<https://www.nginx.com/resources/wiki/start/>

Using nginx

sites are controlled by sites-enabled directory default site is /
etc/nginx/sites-enabled/default

```
# You should look at the following URL's in order to grasp a solid understanding
# of Nginx configuration files in order to fully unleash the power of Nginx.
# http://wiki.nginx.org/Pitfalls
# http://wiki.nginx.org/QuickStart
# http://wiki.nginx.org/Configuration
#
# Generally, you will want to move this file somewhere, and start with a clean
# file but keep this around for reference. Or just disable in sites-enabled.
#
# Please see /usr/share/doc/nginx-doc/examples/ for more detailed examples.
##

# Default server configuration
#
server {
    listen 80 default_server;
    listen [::]:80 default_server;
```

Using nginx - default site

```
listen 80 default_server;
```

says server is listening to all incoming traffic on port 80

a full config would also include additional details

Using nginx - default site (cont)

```
root /var/www/html;
```

```
# Add index.php to the list if you are using PHP
```

```
index index.html index.htm index.nginx-debian.html;
```

root configures where the beginning of the document tree is

This is where you place files

Notice that the default is the same as apache

This means that if you have apache installed, you'll get the apache default page, served by nginx

NGINX config - install php

To enable php, install php-fpm:

```
ldamon@ubuntu_lts:/etc/nginx$ sudo apt install php-fpm
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libsodium23 php-common php7.2-cli php7.2-common php7.2-fpm php7.2-json php7.2-opcache
  php7.2-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libsodium23 php-common php-fpm php7.2-cli php7.2-common php7.2-fpm php7.2-json
  php7.2-opcache php7.2-readline
0 upgraded, 9 newly installed, 0 to remove and 42 not upgraded.
Need to get 4,056 kB of archives.
After this operation, 17.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

NGINX php configuration - php-fpm config

edit /etc/php/7.2/fpm/php.ini, and add:

`cgi.fix_pathinfo=0`

```
; cgi.fix_pathinfo provides *real* PATH_INFO/PATH_TRANSLATED support for CGI. PHP's
; previous behaviour was to set PATH_TRANSLATED to SCRIPT_FILENAME, and to not grok
; what PATH_INFO is. For more information on PATH_INFO, see the cgi specs. Setting
; this to 1 will cause PHP CGI to fix its paths to conform to the spec. A setting
; of zero causes PHP to behave as before. Default is 1. You should fix your scripts
; to use SCRIPT_FILENAME rather than PATH_TRANSLATED.
; http://php.net/cgi.fix-pathinfo
;cgi.fix_pathinfo=1
cgi.fix_pathinfo=0
```

- reload the php7.2-fpm service:

`sudo systemctl reload php7.2-fpm`

NGINX php configuration - update nginx config

edit /etc/nginx/sites-available/default

uncomment out the php-fpm lines in the file

```
location ~ \.php$ {  
    include snippets/fastcgi-php.conf;  
    #  
    # With php-fpm (or other unix sockets):  
    fastcgi_pass unix:/var/run/php/php7.2-fpm.sock;  
    # With php-cgi (or other tcp sockets):  
    # fastcgi_pass 127.0.0.1:9000;  
}
```

- reload the nginx service:

```
sudo systemctl reload nginx
```

Debugging

Logging goes into file in `/var/log/nginx`

`access.log` — record of who has sent requests

`error.log` — any errors reported by server

NGINX resources

PHP/MySQL with NGINX:

[HowToForge Install NGINX](#)

NGINX wiki:

<https://www.nginx.com/resources/wiki/start/>

the wiki includes many “canned” configs for various tools.

Show and Tell - using the web server

Summary of steps

When running in virtual box, will need to make your networking work. Either

(if bridged): enter the ip address in a browser

(if NAT):

setup a port forward for port 80

put localhost:<local port> in your browser

At this time you should see a default page

Place new files into /var/www/html