

06_APM/NPM_Compile(Ubuntu_16.04) 설치

- 설치하기에 앞서 apt 패키지를 업데이트 및 업그레이드

```
$ sudo apt update && sudo apt upgrade  
  
$ reboot
```

- 필수 요소 설치

```
$ sudo apt-get install gcc g++ zlibc zlib1g zlib1g-dev libssl-dev openssl  
libxml2-dev ncurses-dev make
```

1. Apache 설치

1.1 관련 모듈 다운로드 및 설치

- apr 다운로드

```
$ wget http://archive.apache.org/dist/apr/apr-1.5.2.tar.gz  
  
$ tar xvfz apr-1.5.2.tar.gz  
  
$ rm -rf apr-1.5.2.tar.gz  
  
$ cd apr-1.5.2  
  
$ ./configure --prefix=/usr/local/apr  
  
$ make -j 2  
  
$ sudo make install
```

- apr-util 다운로드

```
$ wget http://archive.apache.org/dist/apr/apr-util-1.5.4.tar.gz  
  
$ tar xvfz apr-util-1.5.4.tar.gz  
  
$ rm -rf apr-util-1.5.4.tar.gz  
  
$ cd apr-util-1.5.4  
  
$ ./configure --prefix=/usr/local/aprutil --with-apr=/usr/local/apr  
  
$ make -j 2  
  
$ sudo make install
```

- pcre 다운로드

```
$ wget http://downloads.sourceforge.net/project/pcre/pcre/8.37/pcre-8.37.tar.gz

$ tar xvfz pcre-8.37.tar.gz

$ rm -rf pcre-8.37.tar.gz

$ cd pcre-8.37

$ ./configure --prefix=/usr/local/pcre

$ make -j 2

$ sudo make install
```

1.2 Apache 설치

```
$ cd ~

$ wget wget http://archive.apache.org/dist/httpd/httpd-2.4.23.tar.gz

$ tar xvfz httpd-2.4.23.tar.gz

$ rm -rf httpd-2.4.23.tar.gz

$ cd httpd-2.4.23

$ ./configure --prefix=/usr/local/apache2 \
  --with-apr=/usr/local/apr \
  --with-apr-util=/usr/local/aprutil \
  --with-pcre=/usr/local/pcre \
  --enable-module=so \
  --enable-so \
  --with-mpm=worker \
  --enable-cache

$ make -j 2

$ sudo make install
```

1.3 Apache 설정

- vi 에디터로 수정 및 추가

```
$ sudo vi /usr/local/apache2/conf/httpd.conf
```

- `ServerName localhost` 수정 및 주석 해제
- `<IfModule dir_module>` 찾아서 추가

```
DirectoryIndex index.html index.htm index.php
```

- `AddType` 찾아 확인 및 추가

```
AddType application/x-compress .Z
AddType application/x-gzip .gz .tgz
AddType application/x-httpd-php .php .htm .html .inc .php4 .php3
AddType application/x-httpd-php-source .phps
```

- httpd.conf

```
$ sudo cp /usr/local/apache2/bin/apachectl /etc/init.d/httpd

$ sudo /etc/init.d/httpd configtest

$ sudo /etc/init.d/httpd start
```

2. MySQL 설치

2.1 cmake 설치

```
$ sudo apt-get install cmake
```

2.2 MySQL 다운로드

```
$ cd ~

$ wget https://dev.mysql.com/get/Downloads/MySQL-5.5/mysql-5.5.14.tar.gz

$ tar xvfz mysql-5.5.14.tar.gz

$ rm -rf mysql-5.5.14.tar.gz

$ cd mysql-5.5.14
```

2.3 MySQL cmake 컴파일

```
$ cmake \
  -DCMAKE_INSTALL_PREFIX=/usr/local/mysql \
  -DMYSQL_DATADIR=/usr/local/mysql/data \
  -DMYSQL_UNIX_ADDR=/tmp/mysql.sock \
  -DSYSCONFDIR=/etc \
  -DDEFAULT_CHARSET=utf8 \
  -DMYSQL_TCP_PORT=3306 \
  -DWITH_EXTRA_CHARSETS=all \
  -DDEFAULT_COLLATION=utf8_general_ci \
  -DDOWNLOAD_BOOST=1 \
  -DWITH_BOOST=/usr/include/boost \
  -DWITH_INNOBASE_STORAGE_ENGINE=1 \
  -DWITH_PERFSCHEMA_STORAGE_ENGINE=1 \
  -DENABLED_LOCAL_INFILE=1

$ make -j 2

$ sudo make install
```

2.4 리눅스 계정 생성

```
$ sudo groupadd mysql  
  
$ sudo useradd -g mysql mysql
```

2.5 MySQL 그룹/계정 권한 주기

```
$ sudo chown root:mysql -R /usr/local/mysql  
  
$ sudo chown root:mysql -R /usr/local/mysql/data
```

2.6 환경설정 기본 파일 복사 및 수정

```
$ cd /usr/local/mysql/support-files  
  
$ sudo cp my-huge.cnf /etc/my.cnf
```

- vi 에디터로 파일 열고 [mysqld] 부분에 추가

```
$ sudo vi /etc/my.cnf
```

```
[mysqld]  
character-set-server = utf8  
collation-server = utf8_general_ci  
character-set-client-handshake = false
```

2.7 DataBase 생성

```
$ cd /usr/local/mysql  
  
$ sudo ./scripts/mysql_install_db --user=mysql --datadir=/usr/local/mysql/data
```

2.8 서버 데몬 구동

```
$ sudo ./bin/mysqld_safe &
```

2.9 MySQL root 계정 비밀번호 변경

```
$ sudo ./bin/mysqladmin -u root password root
```

3. PHP 설치

3.1 사전 설정

```
$ sudo apt-get install -y pkg-config sqlite3 libsqlite3-dev
```

3.2 PHP 다운로드 및 설치

```
$ wget https://www.php.net/distributions/php-7.4.3.tar.gz

$ tar xvfz php-7.4.3.tar.gz

$ rm -rf php-7.4.3.tar.gz

$ cd php-7.4.3

$ ./configure \
  --prefix=/usr/local/php \
  --with-apxs2=/usr/local/apache2/bin/apxs \
  --enable-mysqlnd \
  --with-mysqli=/usr/local/mysql/bin/mysql_config \
  --with-pdo-mysql=/usr/local/mysql \
  --with-config-file-path=/usr/local/apache2/conf \
  --enable-exif \
  --with-openssl \
  --with-imap-ssl \
  --disable-debug \
  --with-iconv \
  --enable-fpm

$ make

$ make test

$ sudo make install
```

3.3 Apache와 PHP 연동

```
$ sudo cp php.ini-production /usr/local/apache2/conf/php.ini
```

```
$ sudo vi /usr/local/apache2/htdocs/index.php
```

```
<?php
    phpinfo();
?>
```

System	Linux ubuntu 4.4.0-174-generic #204-Ubuntu SMP Wed Jan 29 06:41:01 UTC 2020 x86_64
Build Date	Mar 11 2020 10:30:16
Configure Command	'./configure' '--prefix=/usr/local/php' '--with-apxs2=/usr/local/apache2/bin/apxs' '--enable-mysqldb' '--with-mysqli=/usr/local/mysql/bin/mysql_config' '--with-pdo-mysql=/usr/local/mysql' '--with-config-file-path=/usr/local/apache2/conf' '--enable-exif' '--with-openssl' '--with-imagick' '--enable-gd-native-ttf' '--with-iconv' '--enable-fpm'
Server API	Apache 2.0 Handler
Virtual Directory Support	enabled
Configuration File (php.ini) Path	/usr/local/apache2/conf
Loaded Configuration File	/usr/local/apache2/conf/php.ini
Scan this dir for additional .ini files	(none)
Additional .ini files parsed	(none)
PHP API	20190902
PHP Extension	20190902
Zend Extension	320190902
Zend Extension Build	API320190902,TS
PHP Extension Build	API20190902,TS
Debug Build	no
Thread Safety	enabled
Thread API	POSIX Threads
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
IPv6 Support	enabled
OTrace Support	disabled
Registered PHP Streams	https, ftps, php, file, glob, data, http, ftp, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, tls, tlsv1.0, tlsv1.1, tlsv1.2
Registered Stream Filters	convert.iconv.*, string.rot13, string.toupper, string.tolower, string.strip_tags, convert.*, consumed, dechunk

This program makes use of the Zend Scripting Language Engine:
 Zend Engine v3.4.0, Copyright (c) Zend Technologies



Configuration

apache2handler

4. NGINX 설치

4.1 NGINX 다운로드

```
$ wget https://nginx.org/download/nginx-1.12.0.tar.gz
```

```
$ tar xvfz nginx-1.12.0.tar.gz
```

```
$ rm -rf nginx-1.12.0.tar.gz
```

4.2 PCRE 다운로드

```
$ cd nginx-1.12.0
```

```
$ wget http://downloads.sourceforge.net/project/pcre/pcre/8.37/pcre-8.37.tar.gz
```

```
$ tar xvfz pcre-8.37.tar.gz
```

```
$ rm -rf pcre-8.37.tar.gz
```

4.3 zlib 다운로드

```
$ wget http://zlib.net/zlib-1.2.11.tar.gz

$ tar xvfz zlib-1.2.11.tar.gz

$ rm -rf zlib-1.2.11.tar.gz
```

4.4 OpenSSL 다운로드

```
$ wget http://www.openssl.org/source/openssl-1.0.2f.tar.gz

$ tar xvfz openssl-1.0.2f.tar.gz

$ rm -rf openssl-1.0.2f.tar.gz
```

4.5 NGINX 설치

```
$ ./configure \
    --prefix=/usr/local/nginx \
    --with-zlib=./zlib-1.2.11 \
    --with-pcre=./pcre-8.37 \
    --with-openssl=./openssl-1.0.2f \
    --with-http_ssl_module \
    --with-http_stub_status_module

$ make

$ sudo make install

$ rm -rf ~/nginx-1.12.0
```

4.6 실행권한 설정

```
$ cd /usr/local/nginx/sbin

$ sudo chown root nginx

$ sudo chmod +s nginx
```

4.7 실행 및 테스트

```
$ cd /usr/local/nginx/sbin

$ ./nginx # 시작

# 포트 오류시
$ sudo vi /usr/local/nginx/conf/nginx.conf # listen 80 수정

$ ./nginx -s stop
```

4.8 NGINX와 PHP 연동

- php-fpm

```
$ sudo cp ~/php-7.4.3/php.ini-production /usr/local/lib/php.ini

$ sudo cp /usr/local/php/etc/php-fpm.conf.default /usr/local/php/etc/php-fpm.conf

$ sudo cp /usr/local/php/etc/php-fpm.d/www.conf.default /usr/local/php/etc/php-fpm.d/www.conf
```

- sysv-rc-conf 설정

```
$ sudo cp ~/php-7.4.3/sapi/fpm/init.d.php-fpm /etc/init.d/php-fpm

$ sudo chmod 700 /etc/init.d/php-fpm

$ sudo apt-get install sysv-rc-conf # ubuntu는 chkconfig가 없다

$ sudo sysv-rc-conf php-fpm on
```

- vi 에디터 실행 후 아래 내용 수정

```
$ sudo vi /usr/local/nginx/conf/nginx.conf
```

- php 부분 주석 제거 후 수정

```
location / {
    root html;
    index index.html index.htm index.php;
}

location ~ \.php$ {
    root            /usr/local/src/nginx/html;
    fastcgi_pass    127.0.0.1:9000;
    fastcgi_index   index.php;
    fastcgi_param   SCRIPT_FILENAME
/usr/local/src/nginx/html$fastcgi_script_name;
    # /scripts
    include         fastcgi_params;
}
```

- index.php 작성

```
$ sudo vi /usr/local/nginx/html/index.php
```

```
<?php
    phpinfo();
?>
```

- 유저 및 그룹 추가

```
$ useradd nginx

$ groupadd nginx
```


- www.conf 수정

```
$ sudo vi /usr/local/php/etc/php-fpm.d/www.conf
```

```
user = nginx
group = nginx
```

- 재시작

```
$ ./nginx -s stop
```

```
$ ./nginx
```

```
$ sudo /etc/init.d/php-fpm start
```

PHP Version 7.4.3



System	Linux ubuntu 4.4.0-174-generic #204-Ubuntu SMP Wed Jan 29 06:41:01 UTC 2020 x86_64
Build Date	Mar 11 2020 10:30:16
Configure Command	'./configure' '--prefix=/usr/local/php' '--with-apxs2=/usr/local/apache2/bin/apxs' '--enable-mysqld' '--with-mysql=/usr/local/mysql/bin/mysql_config' '--with-pdo-mysql=/usr/local/mysql' '--with-config-file-path=/usr/local/apache2/conf' '--enable-exif' '--with-openssl' '--with-ldap-ssl' '--disable-debug' '--with-iconv' '--enable-fpm'
Server API	FPM/FastCGI
Virtual Directory Support	enabled
Configuration File (php.ini) Path	/usr/local/apache2/conf
Loaded Configuration File	/usr/local/apache2/conf/php.ini
Scan this dir for additional .ini files	(none)
Additional .ini files parsed	(none)
PHP API	20190902
PHP Extension	20190902
Zend Extension	320190902
Zend Extension Build	API320190902,TS
PHP Extension Build	API20190902,TS
Debug Build	no
Thread Safety	enabled
Thread API	POSIX Threads
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
IPv6 Support	enabled
DTrace Support	disabled
Registered PHP Streams	https, ftps, php, file, glob, data, http, ftp, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, tls, tlsv1.0, tlsv1.1, tlsv1.2
Registered Stream Filters	convert.iconv.*, string.rot13, string.toupper, string.tolower, string.strip_tags, convert.*, consumed, dechunk

This program makes use of the Zend Scripting Language Engine:
Zend Engine v3.4.0, Copyright (c) Zend Technologies

zendengine

Configuration

cgi-fcgi