开始学习如何使用 Zabbix，从最基础的安装做起。CentOS 上默认的 Zabbix 是默认 Apache 的，且版本较低，我比较追求新版本，明明白白安装软件的感觉，遂自行编译更加合适。

准备工作

- yum 安装的 mysql（mariadb-server），这个不多说。
- 编译安装的 php7.0.10 和 nginx1.10

Q：如何编译安装 **php7** 呢？

A：难点在于编译选项和依赖关系，整理步骤如下：1. 下载源码包到 /usr/local/src 目录下，解压后进入安装目录。（sha256sum：348476ff7ba8d95a1e28e1059430c10470c5
2. 使用 yum 安装 epel-release 3. 编译安装我写了一个脚本如下（php-fpm）：

```
#!/bin/bash
#
# created by Bekcpear
# 2016-08-21 CST(China Standard Time)
#
# This script is created to configuring and install php-7.0.10 from source code.
# When installation finished, the php installed will meet the requirments of the Laravel framework 5.2.
# It's my first shell script, being served for my Blog with nginx.

# update 160822 add support function for Zabbix 3.0.4

# !Make sure you have installed mariadb-server

# If you installed mariadb/mysql server from source code, please uncomment the line below and modify to correct path to mysql/
mariadb. This is wrong. Ignore it.
# CUS_MYSQLPATH = /usr/local/mysql

CONF="--prefix=/usr/local/php/ \
  --enable-fpm \
  --with-config-file-path=/usr/local/php/etc \
  --with-fpm-user=php-fpm \
```

```
  --with-fpm-group=php-fpm \
  --with-mysql-sock=/var/run/mysql.sock \
  --with-mysqli \
  --with-libxml-dir \
  --with-gd \
  --with-jpeg-dir \
  --with-png-dir \
  --with-freetype-dir \
  --with-iconv-dir \
  --with-zlib-dir \
  --with-mcrypt \
  --with-curl \
  --with-pear \
  --with-gettext \
  --enable-bcmath \
  --enable-sockets \
  --enable-soap \
  --enable-gd-native-ttf \
  --enable-ftp \
  --enable-exif \
  --enable-tokenizer \
  --with-pdo-mysql \
  --enable-mbstring \
  --with-openssl"
CONF_0=" --with-pdo-mysql"
CONF_1=" --with-pdo-mysql="$CUS_MYSQLPATH
# last 4 parameters are needed by Laravel

if [ -z $CUS_MYSQLPATH ]; then
  CONF=$CONF$CONF_0;
else
  CONF=$CONF$CONF_1;
fi


# Please install epel-release first.
```

```
PREBUILD="\
  gcc \
  libxml2 \
  libxml2-devel \
  openssl \
  openssl-devel \
  bzip2 \
  bzip2-devel \
  libjpeg \
  libjpeg-devel \
  libpng \
  libpng-devel \
  gettext \
  gettext-devel \
  freetype \
  freetype-devel \
  libmcrypt \
  libmcrypt-devel \
  libcurl \
  libcurl-devel"

yum install -y $PREBUILD;

if [ $? -eq 0 ];then
  ./configure $CONF && make && make install
fi
```

Q：如何配置 **php** 并使之适合 **zabbix3.0.4**？

A：配置项目其实很少，如下：0. 复制启动文件 /usr/local/src/php-7.0.10/sapi/fpm/php-fpm.service 到 /lib/systemd/system/php-fpm.service，并修改里面的路径到程序主目录 1. 新建用户 php-fpm 和组 php-fpm 2. 两个示例文件 /usr/local/php/etc/php-fpm.conf.example 和 /usr/local/php/etc/php-fpm.d/www.conf.example，去掉 example 字样 3. 一些基本的修改不赘述了，应 zabbix 要求，需要在 /usr/local/php/etc/php-fpm.d/www.conf 结尾加入如下内容，之后就可以运行了：

```
php_value[max_execution_time] = 300
```

```
php_value[post_max_size] = 16M
php_value[date.timezone] = "Asia/Shanghai"
```

Q：如何编译安装 **nginx1.10stable**？

A：这个相对来说就很简单了，如下：1. 下载源码包并解压。关于校验，官网有pgp 文件，公钥用这个。2. 进入源码目录下编译，可能需要解决写依赖关系：

```
CUS_CONF="\
  --prefix=/usr/local/nginx/ \
  --with-http_realip_module \
  --with-http_sub_module \
  --with-http_gzip_static_module \
  --with-http_stub_status_module \
  --with-http_ssl_module \
  --with-pcre"

./configure $CUS_CONF && make && make install
```

Q：如何配置启动 **nginx**？

A：依旧是 nginx 配置文件 + systemd 启动服务文件。1. 启动服务文件可以从nginx.com上复制：2. 配置文件在 /usr/local/nginx/conf/nginx.conf，安装需求修改，比如针对 Zabbix 的一段内容，之后就可以启动 nginx 了：

```
server {
    listen 8080;

    access_log  /usr/local/nginx/logs/1.access.log  main;
    error_log  /usr/local/nginx/logs/1.error.log;
    root   /home/html/1;

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

```
    #error_page   404                /404.html;

    # redirect server error pages to the static page /50x.html
    #
    error_page   500 502 503 504  /50x.html;
    location = /50x.html {
        root   /usr/local/nginx/html;
    }


    # pass the PHP scripts to FastCGI server listening on 127.0.0.1:9000
    #
    location ~ \.php$ {
        fastcgi_pass   127.0.0.1:9000;
        fastcgi_param  SCRIPT_FILENAME $document_root$fastcgi_script_name;
        include        fastcgi_params;
    }
}
```

准备工作结束了，如何编译安装 **Zabbix** 呢？

其实可以参考官方网站的内容，也很简单。

整理了一下如下：###1. 下载源码包，解压并进入。这个我没有找到校验文件... ###2. 创建用户，一般就创建一个组为 zabbix 的 zabbix 用户即可，注意的是，当 Zabbix 的 server 和 agent 同时运行在一台主机上时，推荐是将 server 的运行用户独立于 agent 的运行用户的，不然 agent 可以访问 server 的配置文件，甚至数据库。###3. 创建数据库，这个在源码包里面有现成的脚本，一般这样子使用（针对我的 Mysql 数据库）：

```
shell> mysql -uroot -p<password>
mysql> create database zabbix character set utf8 collate utf8_bin;
mysql> grant all privileges on zabbix.* to zabbix@localhost identified by '<password>';
mysql> quit;
shell> cd database/mysql
shell> mysql -uzabbix -p<password> zabbix < schema.sql
# 如果仅仅是运行一个agent代理的话，下面的数据库文件不需要导入
shell> mysql -uzabbix -p<password> zabbix < images.sql
shell> mysql -uzabbix -p<password> zabbix < data.sql
```

4. 配置编译安装。配置选项 **--prefix=/usr/local/zabbix --enable-server --enable-agent --with-mysql --enable-ipv6 --with-net-snmp --with-libcurl --with-libxml2**，这将安装上 **server** 和 **agent** 两个功能

5. 编辑 **Zabbix** 目录 **etc** 目录下的配置文件，因为我是在一台机器上同时运行服务器和代理的，所以两个配置文件都需要配置。这边贴出来的删除了大量没有配置的选项及其注释，但是对于已经配置的选项的注释并没有删除。

```
##/usr/local/zabbix/etc/zabbix_agentd.conf
# This is a configuration file for Zabbix agent daemon (Unix)
# To get more information about Zabbix, visit http://www.zabbix.com

############ GENERAL PARAMETERS #################

### Option: PidFile
#    Name of PID file.
#
# Mandatory: no
# Default:
PidFile=/tmp/zabbix_agentd.pid

### Option: LogFile
#    Log file name for LogType 'file' parameter.
#
# Mandatory: no
# Default:
# LogFile=

LogFile=/var/log/zabbix/zabbix_agentd.log

### Option: LogFileSize
#    Maximum size of log file in MB.
#    0 - disable automatic log rotation.
#
# Mandatory: no
# Range: 0-1024
# Default:
LogFileSize=5
```

```
### Option: Server
#    List of comma delimited IP addresses (or hostnames) of Zabbix servers.
#    Incoming connections will be accepted only from the hosts listed here.
#    If IPv6 support is enabled then '127.0.0.1', '::127.0.0.1', '::ffff:127.0.0.1' are treated equally.
#
# Mandatory: no
# Default:
# Server=

Server=127.0.0.1


### Option: ListenPort
#    Agent will listen on this port for connections from the server.
#
# Mandatory: no
# Range: 1024-32767
# Default:
ListenPort=10050


### Option: ListenIP
#    List of comma delimited IP addresses that the agent should listen on.
#    First IP address is sent to Zabbix server if connecting to it to retrieve list of active checks.
#
# Mandatory: no
# Default:
ListenIP=127.0.0.1


### Option: ServerActive
#    List of comma delimited IP:port (or hostname:port) pairs of Zabbix servers for active checks.
#    If port is not specified, default port is used.
#    IPv6 addresses must be enclosed in square brackets if port for that host is specified.
#    If port is not specified, square brackets for IPv6 addresses are optional.
#    If this parameter is not specified, active checks are disabled.
#    Example: ServerActive=127.0.0.1:20051,zabbix.domain,[::1]:30051,::1,[12fc::1]
#
```

```
# Mandatory: no
# Default:
# ServerActive=

ServerActive=127.0.0.1:10051


### Option: Hostname
#    Unique, case sensitive hostname.
#    Required for active checks and must match hostname as configured on the server.
#    Value is acquired from HostnameItem if undefined.
#
# Mandatory: no
# Default:
# Hostname=

Hostname=your hostname


### Option: AllowRoot
#    Allow the agent to run as 'root'. If disabled and the agent is started by 'root', the agent
#    will try to switch to the user specified by the User configuration option instead.
#    Has no effect if started under a regular user.
#    0 - do not allow
#    1 - allow
#
# Mandatory: no
# Default:
# AllowRoot=0


### Option: User
#    Drop privileges to a specific, existing user on the system.
#    Only has effect if run as 'root' and AllowRoot is disabled.
#
# Mandatory: no
# Default:
User=zabbix-agent
```

```
##/usr/local/zabbix/etc/zabbix_server.conf
# This is a configuration file for Zabbix server daemon
# To get more information about Zabbix, visit http://www.zabbix.com


############ GENERAL PARAMETERS #################


### Option: ListenPort
#    Listen port for trapper.
#
# Mandatory: no
# Range: 1024-32767
# Default:
ListenPort=10051


### Option: LogFile
#    Log file name for LogType 'file' parameter.
#
# Mandatory: no
# Default:
# LogFile=


LogFile=/var/log/zabbix/zabbix_server.log


### Option: LogFileSize
#    Maximum size of log file in MB.
#    0 - disable automatic log rotation.
#
# Mandatory: no
# Range: 0-1024
# Default:
LogFileSize=5


### Option: PidFile
#    Name of PID file.
#
# Mandatory: no
```

```
# Default:
PidFile=/tmp/zabbix_server.pid


### Option: DBName
#    Database name.
#    For SQLite3 path to database file must be provided. DBUser and DBPassword are ignored.
#
# Mandatory: yes
# Default:
# DBName=

DBName=zabbix


### Option: DBUser
#    Database user. Ignored for SQLite.
#
# Mandatory: no
# Default:
# DBUser=

DBUser=zabbix


### Option: DBPassword
#    Database password. Ignored for SQLite.
#    Comment this line if no password is used.
#
# Mandatory: no
# Default:
DBPassword=passwd


### Option: DBSocket
#    Path to MySQL socket.
#
# Mandatory: no
# Default:
DBSocket=/var/lib/mysql/mysql.sock
```

```
### Option: DBPort
#    Database port when not using local socket. Ignored for SQLite.
#
# Mandatory: no
# Range: 1024-65535
# Default (for MySQL):
DBPort=3306


############ ADVANCED PARAMETERS ################

### Option: ListenIP
#    List of comma delimited IP addresses that the trapper should listen on.
#    Trapper will listen on all network interfaces if this parameter is missing.
#
# Mandatory: no
# Default:
# ListenIP=0.0.0.0

ListenIP=127.0.0.1

### Option: Timeout
#    Specifies how long we wait for agent, SNMP device or external check (in seconds).
#
# Mandatory: no
# Range: 1-30
# Default:
# Timeout=3

Timeout=4

### Option: LogSlowQueries
#    How long a database query may take before being logged (in milliseconds).
#    Only works if DebugLevel set to 3, 4 or 5.
#    0 - don't log slow queries.
#
```

```
# Mandatory: no
# Range: 1-3600000
# Default:
# LogSlowQueries=0


LogSlowQueries=3000


### Option: AllowRoot
#    Allow the server to run as 'root'. If disabled and the server is started by 'root', the server
#    will try to switch to the user specified by the User configuration option instead.
#    Has no effect if started under a regular user.
#    0 - do not allow
#    1 - allow
#
# Mandatory: no
# Default:
# AllowRoot=0

### Option: User
#    Drop privileges to a specific, existing user on the system.
#    Only has effect if run as 'root' and AllowRoot is disabled.
#
# Mandatory: no
# Default:
User=zabbix
```

6. 启动 **zabbix server** 和 **zabbix agentd**

```
# zabbix_server
# zabbix_agentd
```

7. 接下来就是安装 **Zabbix** 的 **Web** 接口了

这个非常简单，把源码目录下的 `frontends/php` 这个目录整个拷贝到 nginx 配置的根目录下，然后网页访问后，根据提示配置即可。注意防火墙权限，注意复制过去后，将目录权限开放给 PHP 的用户，我这里是 php-fpm 这个用户。不然可能无法配置成功。

配置安装时候遇到的几个问题。

- ``configure: error: MySQL library not found''，这个是因为没有安装 mariadb-devel 导致的。
- ``configure: error: Invalid NET-SNMP directory - unable to find net-snmp-config''，这个是因为没有安装 net-snmp net-snmp-devel 导致的。
- 配置到数据库的时候，出现 ``Error connecting to database: No such file or directory''，最后发现是因为 mysqli 下使用 localhost 作为地址连接 mysql 数据库的问题，真奇怪，改成 127.0.0.1 就好了…

以上。