虚谷号搭建 LNMP 和 WordPress

虚谷系统为 **2019-12-16** 的固件版本
日期：2020/2/19 豪

一、安装 Nginx

1. 安装

```
scope@localhost:~$ sudo apt install nginx
```

2. 卸载

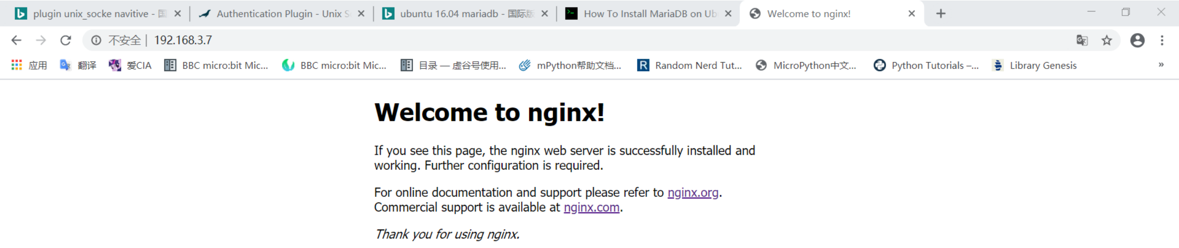
```
scope@localhost:~$ sudo apt --purge remove nginx
scope@localhost:~$ sudo apt --purge remove nginx-common
scope@localhost:~$ sudo apt --purge remove nginx-core
```

3. Nginx 服务器目录

```
scope@localhost:~$ cd /var/www/html/
scope@localhost:/var/www/html$ ls
index.nginx-debian.html
scope@localhost:/var/www/html$
```

4. 验证 Nginx 服务器

打开浏览器，输入虚谷号 IP 地址，会出现经典的 Nginx 页面



Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

二、安装 MariaDB

1. 安装

```
scope@localhost:~$ sudo apt-get install mariadb-server
```

2. 查看版本

```
scope@localhost:~$ mysqld --version
mysqld  Ver 10.0.38-MariaDB-0ubuntu0.16.04.1 for debian-linux-gnu on aarch64
(Ubuntu 16.04)
200219 11:55:41 [Note] mysqld (mysqld 10.0.38-MariaDB-0ubuntu0.16.04.1) starting
as process 16758 ...
```

3. 安全配置

```
scope@localhost:~$ sudo mysql_secure_installation
[sudo] scope 的密码:

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user.  If you've just installed MariaDB, and
you haven't set the root password yet, the password will be blank,
so you should just press enter here.

Enter current password for root (enter for none):  # 回车

OK, successfully used password, moving on...

Setting the root password ensures that nobody can log into the MariaDB
root user without the proper authorisation.

Set root password? [Y/n] y  # 输入 y 设置密码
New password:  # 设置 root 用户密码

Re-enter new password:  # 再次输入设置的密码

Password updated successfully!
Reloading privilege tables..
 ... Success!


By default, a MariaDB installation has an anonymous user, allowing anyone
to log into MariaDB without having to have a user account created for
them.  This is intended only for testing, and to make the installation
go a bit smoother.  You should remove them before moving into a
production environment.

Remove anonymous users? [Y/n] y  # 是否删除匿名用户
 ... Success!

Normally, root should only be allowed to connect from 'localhost'.  This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] n  # 是否禁止 root 远程登录
 ... skipping.

By default, MariaDB comes with a database named 'test' that anyone can
access.  This is also intended only for testing, and should be removed
before moving into a production environment.
```

```
Remove test database and access to it? [Y/n] y  # 是否删除 text 数据库
 - Dropping test database...
 ... Success!
 - Removing privileges on test database...
 ... Success!

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] y  # 是否重新加载权限表
 ... Success!

Cleaning up...

All done!  If you've completed all of the above steps, your MariaDB
installation should now be secure.

Thanks for using MariaDB!
scope@localhost:~$
```

4. 设置 MySQL

```
scope@localhost:~$ sudo mysql -u root  # 以 root 登录 MySQL

'''
或者用以下命令登录 MySQL
'''

scope@localhost:/var/www/html$ mysql -u root -p
# -u 参数，后接登录 MySQL 的用户名
# -p 参数，密码
```

```
MariaDB [(none)]> select user, authentication_string, plugin from mysql.user;
# 查看 mysql 数据库下的 user、authentication_string、plugin
```

```
MariaDB [(none)]> show databases;  # 列出现有的数据库
```

```
MariaDB [(none)]> use mysql;  # 使用 mysql 数据库
```

```
MariaDB [mysql]> update user set plugin="mysql_native_password" where
user="root";
# 设置 plugin 为 mysql_native_password，便于后续使用 root 来远程登录 WordPress 数据库
```

```
MariaDB [mysql]> flush privileges;  # 刷新权限
```

```
MariaDB [mysql]> exit  # 退出
```

```
scope@localhost:~$ sudo mysql -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 49
```

```
Server version: 10.0.38-MariaDB-0ubuntu0.16.04.1 Ubuntu 16.04

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> select user, authentication_string, plugin from mysql.user;
+------+-----------------------+-------------+
| user | authentication_string | plugin      |
+------+-----------------------+-------------+
| root |                       | unix_socket |
+------+-----------------------+-------------+
1 row in set (0.00 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
+--------------------+
3 rows in set (0.00 sec)

MariaDB [(none)]> use mysql;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

MariaDB [mysql]> update user set plugin="mysql_native_password" where
user="root";
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [mysql]> flush privileges;
Query OK, 0 rows affected (0.00 sec)

MariaDB [mysql]> select user, plugin from mysql.user;
+------+-----------------------+
| user | plugin                |
+------+-----------------------+
| root | mysql_native_password |
+------+-----------------------+
1 row in set (0.00 sec)

MariaDB [mysql]> exit
Bye
scope@localhost:~$
```

三、安装 PHP

1. 安装

```
scope@localhost:~$ sudo apt install php-fpm php-mysql
'''
安装 php-fpm、php-mysql 即能直接装好php
注意到版本是 7.0
'''
```

2. 查询版本

```
scope@localhost:~$ php --version
PHP 7.0.33-0ubuntu0.16.04.11 (cli) ( NTS )
Copyright (c) 1997-2017 The PHP Group
Zend Engine v3.0.0, Copyright (c) 1998-2017 Zend Technologies
    with Zend OPcache v7.0.33-0ubuntu0.16.04.11, Copyright (c) 1999-2017, by
Zend Technologies
```

3. 配置 PHP 文件

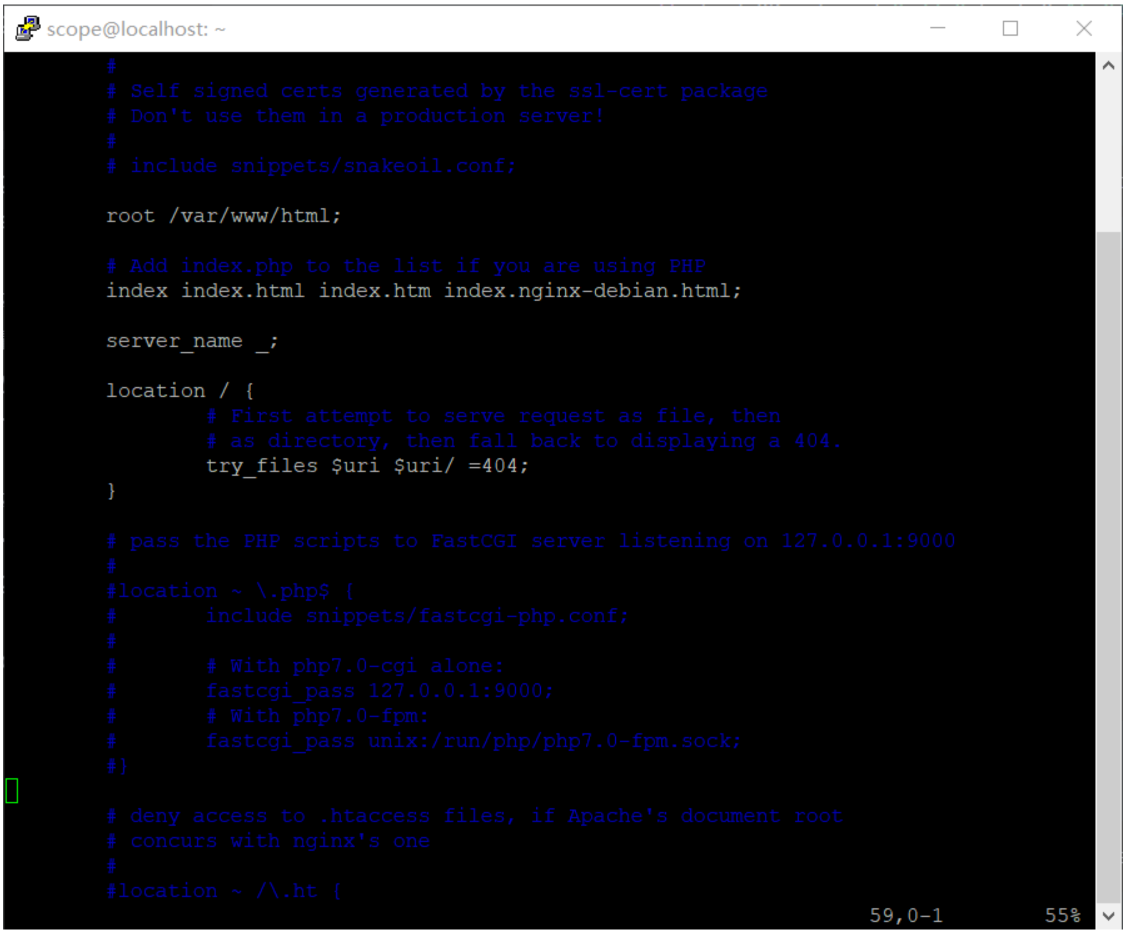
```
scope@localhost:~$ sudo nano /etc/php/7.0/fpm/php.ini
```

```
'''
搜索 cgi.fix_pathinfo，可改可不改

原内容为：
;cgi.fix_pathinfo=1
改为：
cgi.fix_pathinfo=0
原来为1，允许网站其他用戶上传图片，改为0 禁止
注意要把开头的";"去掉
'''
cgi.fix_pathinfo=0
```

4. 配置 Nginx 文件

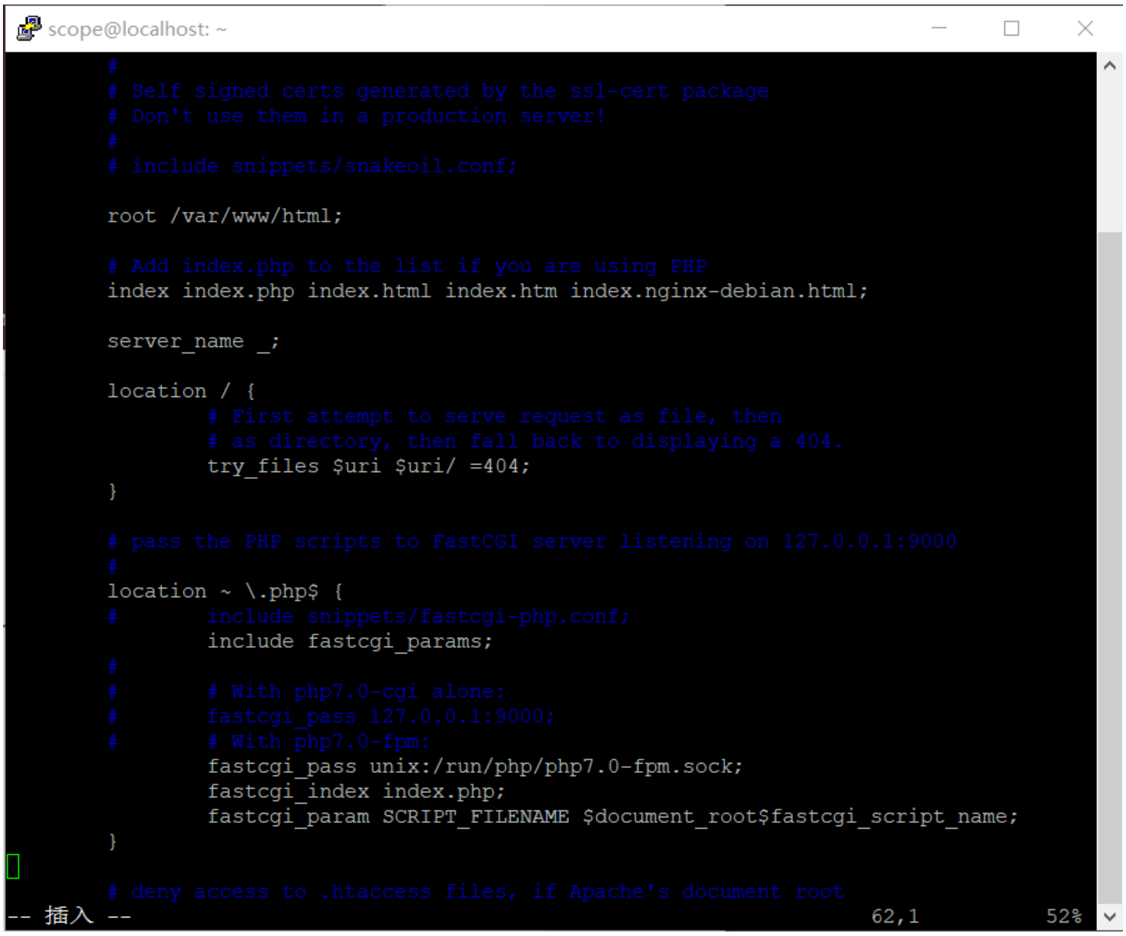
```
scope@localhost:~$ sudo vim /etc/nginx/sites-available/default
# 此处用到 vim 编辑器，便于后面截图显示，有高亮效果
```

- 原文件内容



```
        #
        # Self signed certs generated by the ssl-cert package
        # Don't use them in a production server!
        #
        # include snippets/snakeoil.conf;

        root /var/www/html;

        # Add index.php to the list if you are using PHP
        index index.html index.htm index.nginx-debian.html;

        server_name _;

        location / {
                # First attempt to serve request as file, then
                # as directory, then fall back to displaying a 404.
                try_files $uri $uri/ =404;
        }

        # pass the PHP scripts to FastCGI server listening on 127.0.0.1:9000
        #
        #location ~ \.php$ {
        #       include snippets/fastcgi-php.conf;
        #
        #       # With php7.0-cgi alone:
        #       fastcgi_pass 127.0.0.1:9000;
        #       # With php7.0-fpm:
        #       fastcgi_pass unix:/run/php/php7.0-fpm.sock;
        #}

        # deny access to .htaccess files, if Apache's document root
        # concurs with nginx's one
        #
        #location ~ /\.ht {
                                                             59,0-1        55%
```

- 更改后内容



```
        #
        # Self signed certs generated by the ssl-cert package
        # Don't use them in a production server!
        #
        # include snippets/snakeoil.conf;

        root /var/www/html;

        # Add index.php to the list if you are using PHP
        index index.php index.html index.htm index.nginx-debian.html;

        server_name _;

        location / {
                # First attempt to serve request as file, then
                # as directory, then fall back to displaying a 404.
                try_files $uri $uri/ =404;
        }

        # pass the PHP scripts to FastCGI server listening on 127.0.0.1:9000
        #
        location ~ \.php$ {
        #       include snippets/fastcgi-php.conf;
                include fastcgi_params;
        #
        #       # With php7.0-cgi alone:
        #       fastcgi_pass 127.0.0.1:9000;
        #       # With php7.0-fpm:
                fastcgi_pass unix:/run/php/php7.0-fpm.sock;
                fastcgi_index index.php;
                fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
        }

        # deny access to .htaccess files, if Apache's document root
-- 插入 --                                                  62,1          52%
```

- 更改内容说明

```
'''
找到
# Add index.php to the list of you are using PHP
index index.html index.htm index.nginx-debian.html;
在列表中添加 index.php
'''
# Add index.php to the list of you are using PHP
index index.php index.html index.htm index.nginx-debian.html;

'''
修改 PHP scripts to FastCGI server 这部分的内容
'''
location ~ \.php$ {
    include fastcgi_params;
    fastcgi_pass unix:/run/php/php.3-fpm.sock;
    fastcgi_index index.php;
    fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
}
```

四、测试

1. 测试配置文件

对 Nginx 配置文件进行语法检查

```
scope@localhost:~$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
```

2. 重新加载

```
scope@localhost:~$ sudo systemctl reload nginx
```

3. 修改权限

```
scope@localhost:~$ sudo chmod 755 -R /var/www/
scope@localhost:~$ sudo chown -R scope /var/www/*
```

五、安装 WordPress

1. 下载并解压

```
scope@localhost:~$ cd /var/www/html/  # 进入到 /var/www/html/ 文件夹下
scope@localhost:/var/www/html$ wget https://wordpress.org/latest.zip  # 下载
scope@localhost:/var/www/html$ sudo unzip -q latest.zip  # 解压
scope@localhost:/var/www/html$ sudo cp -r wordpress/* /var/www/html/
# 把解压后得到的 wordpress 文件夹内的所有文件，考到 /var/www/html/ 文件夹下

scope@localhost:/var/www/html$ sudo rm -rf wordpress  # 删除 wrodpress 文件夹
scope@localhost:/var/www/html$ sudo rm -rf latest.zip  # 删除下载包
```

2. 在 MySQL 中创建数据库

```
scope@localhost:/var/www/html$ mysql -u root -p
# -u 参数，后接登录 MySQL 的用户名
# -p 参数，密码
```

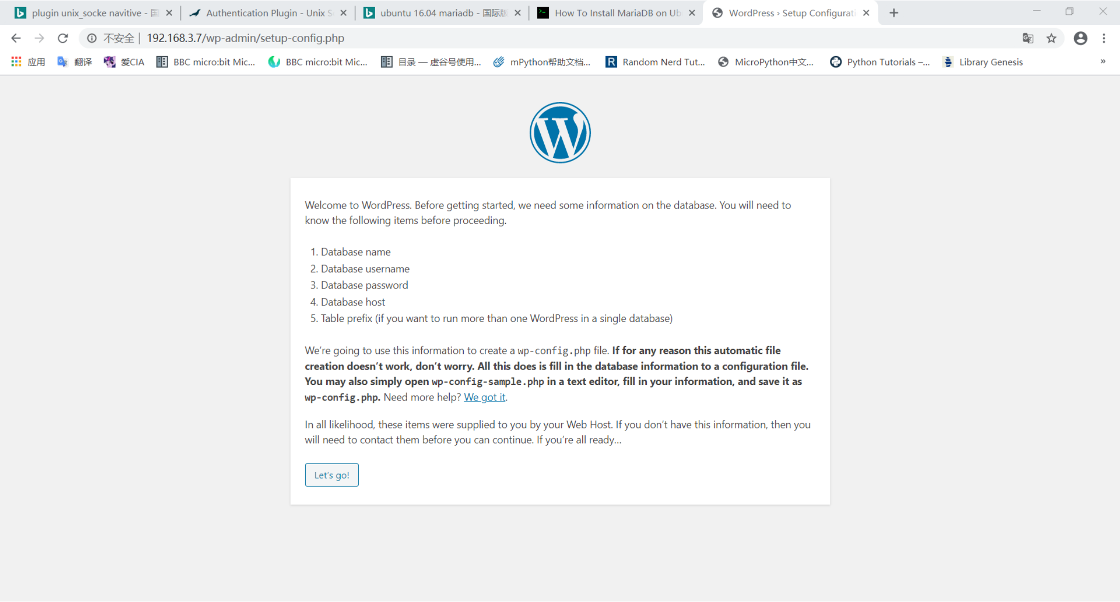
```
MariaDB [(none)]> create database wordpress;  # 创建一个名叫 wordpress 的数据库
```

```
MariaDB [(none)]> show databases;  # 列出现有的数据库
```

```
scope@localhost:/var/www/html$ mysql -u root -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 56
Server version: 10.0.38-MariaDB-0ubuntu0.16.04.1 Ubuntu 16.04

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> create database wordpress;
Query OK, 1 row affected (0.01 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| wordpress          |
+--------------------+
4 rows in set (0.00 sec)

MariaDB [(none)]> exit
Bye
scope@localhost:/var/www/html$
```

3. 安装 WordPress

- 浏览器输入虚谷号的 IP 地址



192.168.3.7/wp-admin/setup-config.php

Welcome to WordPress. Before getting started, we need some information on the database. You will need to know the following items before proceeding.

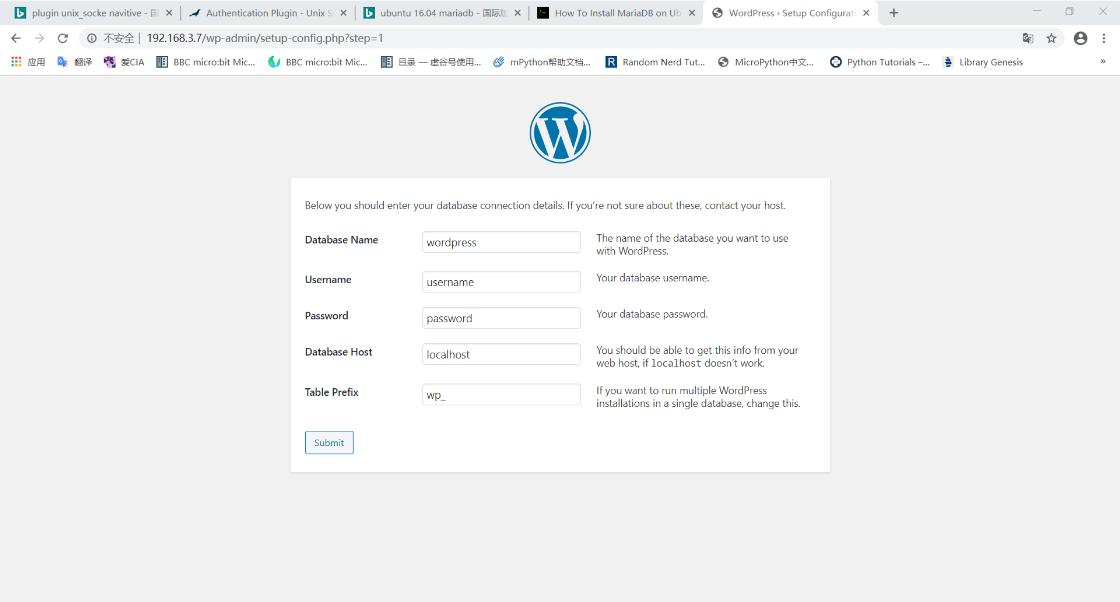
1. Database name
2. Database username
3. Database password
4. Database host
5. Table prefix (if you want to run more than one WordPress in a single database)

We're going to use this information to create a `wp-config.php` file. **If for any reason this automatic file creation doesn't work, don't worry. All this does is fill in the database information to a configuration file. You may also simply open `wp-config-sample.php` in a text editor, fill in your information, and save it as `wp-config.php`.** Need more help? We got it.

In all likelihood, these items were supplied to you by your Web Host. If you don't have this information, then you will need to contact them before you can continue. If you're all ready…

Let's go!

- 输入创建的数据库名称 wordpress、用户名 root、密码为设置的 root 密码，其他两项不改



192.168.3.7/wp-admin/setup-config.php?step=1

Below you should enter your database connection details. If you're not sure about these, contact your host.

Database Name	wordpress	The name of the database you want to use with WordPress.
Username	username	Your database username.
Password	password	Your database password.
Database Host	localhost	You should be able to get this info from your web host, if `localhost` doesn't work.
Table Prefix	wp_	If you want to run multiple WordPress installations in a single database, change this.

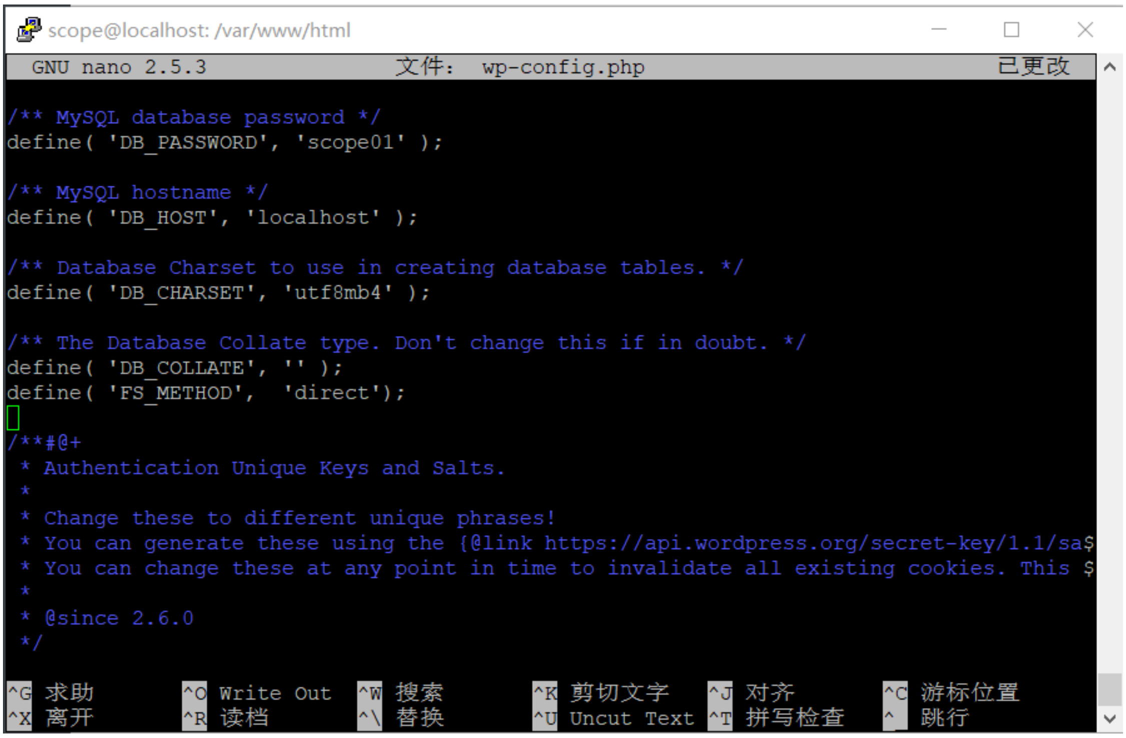
Submit

- 根据提示在 `/var/www/html` 文件夹下创建 `wp-config.php` 文件，并考入页面的代码

```
scope@localhost:~$ cd /var/www/html/
scope@localhost:/var/www/html$ sudo nano wp-config.php
```

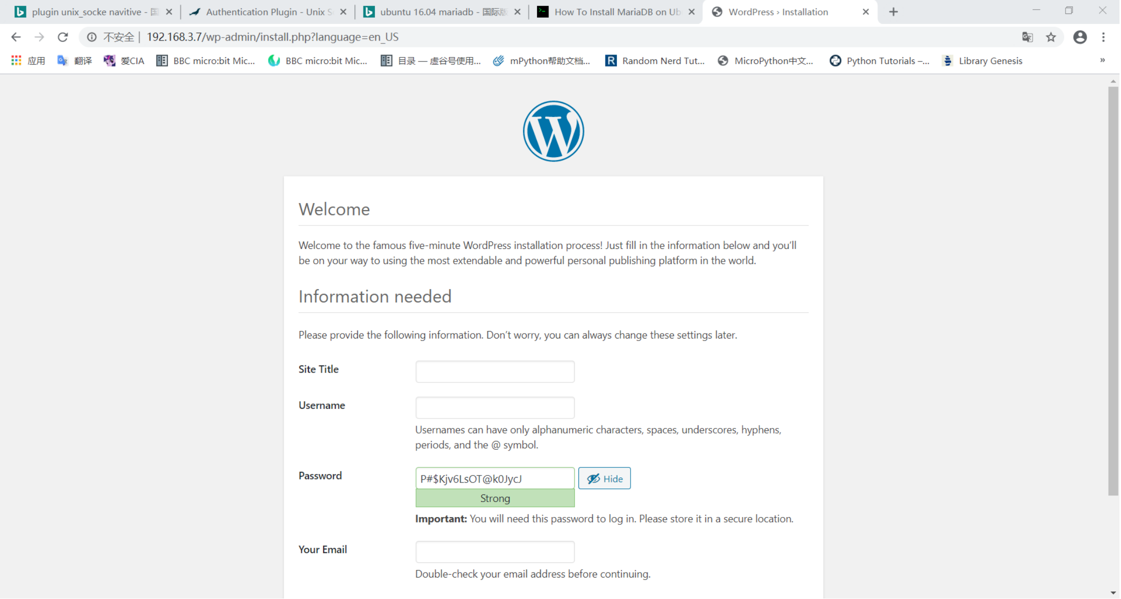
考入代码并添加： `define( 'FS_METHOD', 'direct');`

```
define( 'DB_COLLATE', '' );
define( 'FS_METHOD', 'direct');
```



```
  GNU nano 2.5.3                文件:  wp-config.php                      已更改

/** MySQL database password */
define( 'DB_PASSWORD', 'scope01' );

/** MySQL hostname */
define( 'DB_HOST', 'localhost' );

/** Database Charset to use in creating database tables. */
define( 'DB_CHARSET', 'utf8mb4' );

/** The Database Collate type. Don't change this if in doubt. */
define( 'DB_COLLATE', '' );
define( 'FS_METHOD',  'direct');

/**#@+
 * Authentication Unique Keys and Salts.
 *
 * Change these to different unique phrases!
 * You can generate these using the {@link https://api.wordpress.org/secret-key/1.1/sa$
 * You can change these at any point in time to invalidate all existing cookies. This $
 *
 * @since 2.6.0
 */

^G 求助       ^O Write Out  ^W 搜索       ^K 剪切文字   ^J 对齐       ^C 游标位置
^X 离开       ^R 读档       ^\ 替换       ^U Uncut Text ^T 拼写检查   ^_ 跳行
```

- 点击 `Run the installation`
- 创建标题，注册用户名和密码



Welcome

Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.

Information needed

Please provide the following information. Don't worry, you can always change these settings later.

Site Title

Username

Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.

Password P#$Kjv6LsOT@k0JycJ Hide

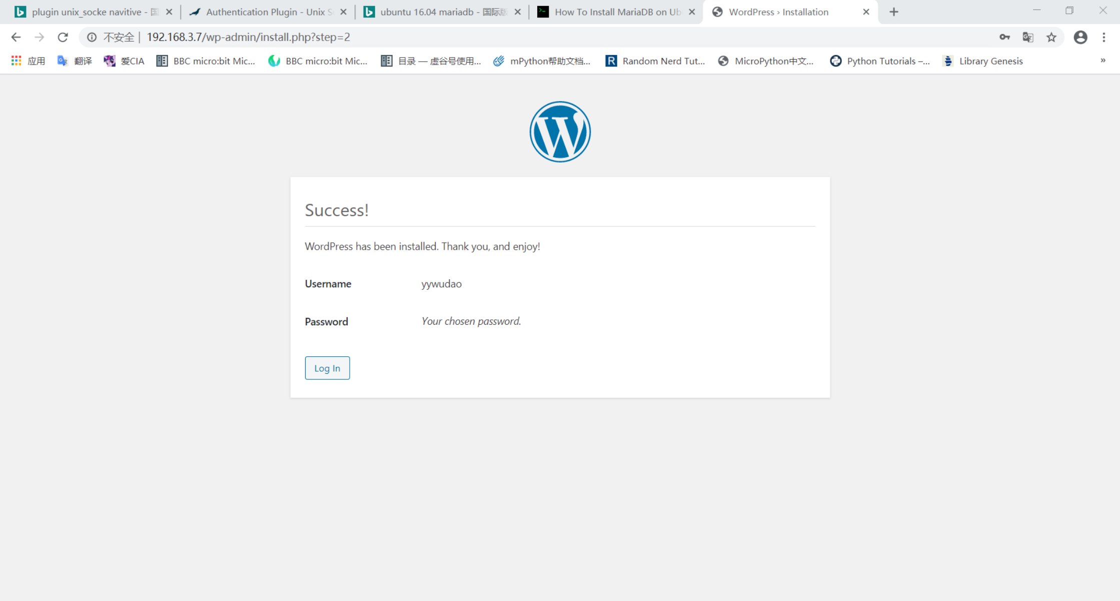
Strong

Important: You will need this password to log in. Please store it in a secure location.

Your Email

Double-check your email address before continuing.

- 安装完成



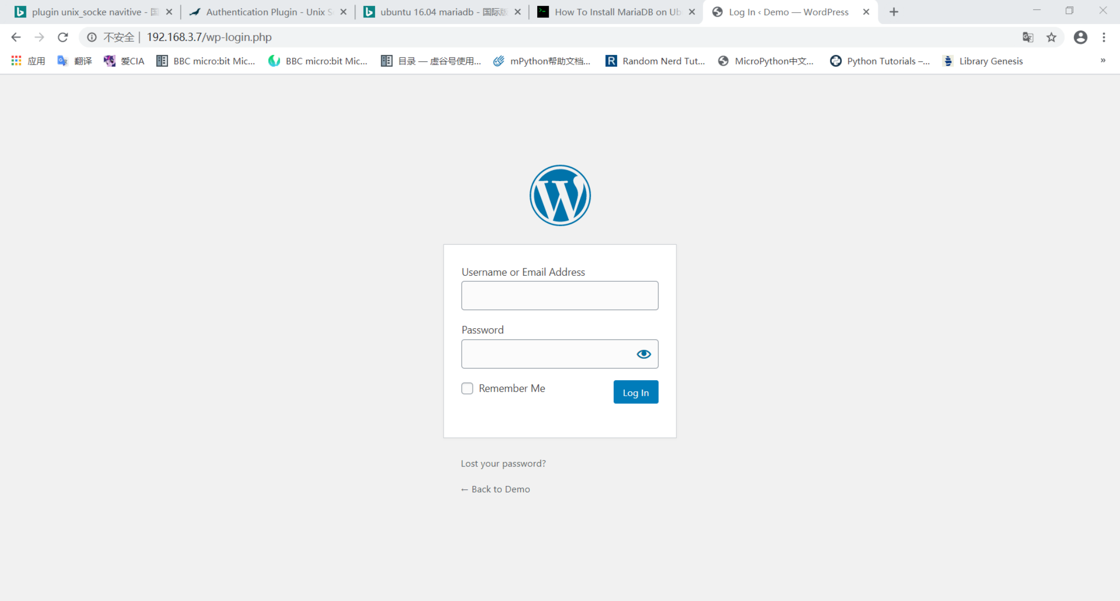
Success!

WordPress has been installed. Thank you, and enjoy!

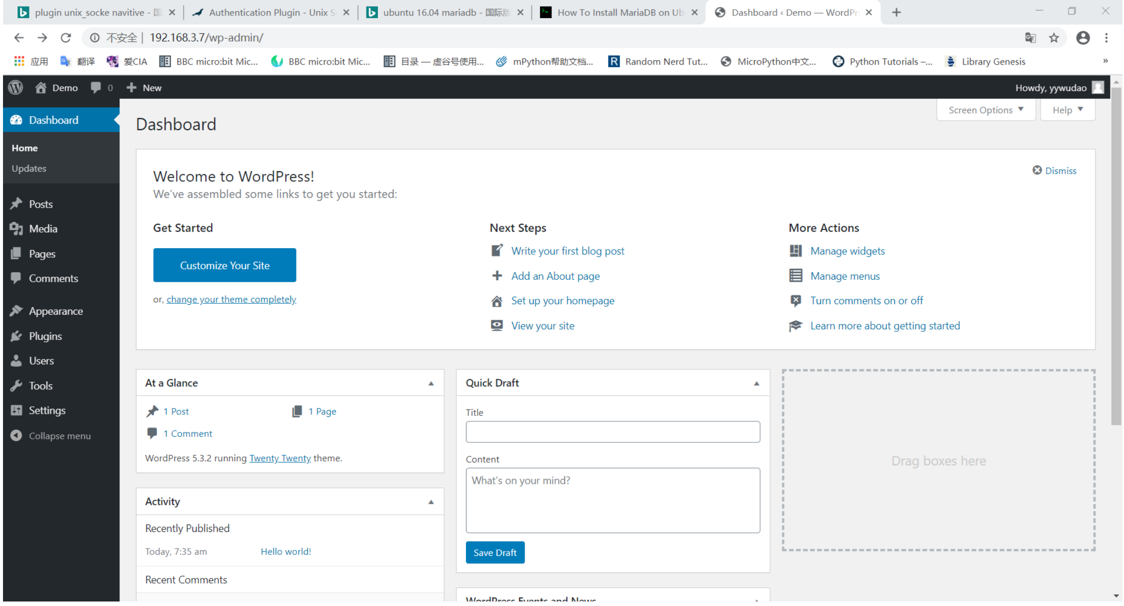
Username yywudao

Password *Your chosen password.*

- 使用注册的用户名和密码进行登录



-



Dashboard

Welcome to WordPress!

We've assembled some links to get you started:

Get Started

or, change your theme completely

Next Steps

Write your first blog post

Add an About page

Set up your homepage

View your site

More Actions

Manage widgets

Manage menus

Turn comments on or off

Learn more about getting started

At a Glance

1 Post 1 Page

1 Comment

WordPress 5.3.2 running Twenty Twenty theme.

Quick Draft

Title

Content

What's on your mind?

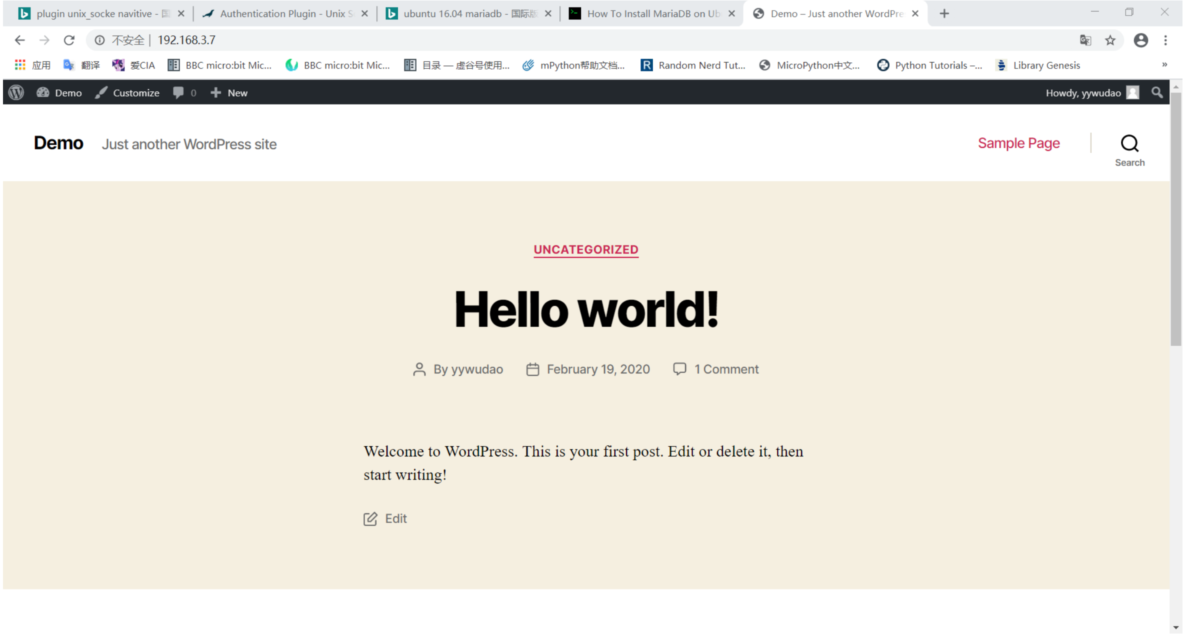
Activity

Recently Published

Today, 7:35 am Hello world!

Recent Comments

六、欢迎来到 WordPress



UNCATEGORIZED

Hello world!

By yywudao February 19, 2020 1 Comment

Welcome to WordPress. This is your first post. Edit or delete it, then start writing!

Edit

1. 配置上传权限问题

```
scope@localhost:~$ sudo chown -R www-data:www-data /var/www/html/
```

2. 配置上传图片大小

- 修改 PHP 配置文件

```
scope@localhost:~$ sudo nano /etc/php/7.0/fpm/php.ini

'''
修改下面两项内容的参数
post_max_size = 8M
upload_max_filesize = 2M
'''
```

- 重新启动 PHP

```
scope@localhost:~$ sudo systemctl restart php7.0-fpm.service
```

附录

参考内容：

- **MySQL----mysql_secure_installation 安全配置向导**
  https://blog.csdn.net/damys/article/details/50177331
- **Raspberry Pi 3 搭建个人网站服务器 | Nginx + MySQL + PHP + WordPress**
  https://v.youku.com/v_show/id_XNDExMzExMDAyOA==.html?spm=a2hzp.8253869.0.0