Installing Wordpress from Scratch

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Setting up a fresh wordpress install using Ubuntu 18 as our VM OS, Azure as our cloud compute platform

Commands are highlighted in yellow
Code snippets and miscellaneous text are highlighted in green

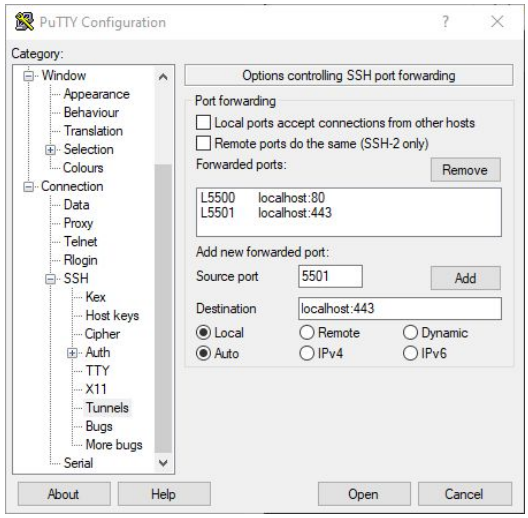
This guide is for someone who wishes to deploy their own wordpress installation onto a cloud computing platform, rather than using a hosting company.

Websites

https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-ubuntu-18-04
https://www.digitalocean.com/community/tutorials/how-to-install-wordpress-with-lamp-on-ubuntu-18-04
https://launchpad.net/~ondrej/+archive/ubuntu/php
https://phoenixnap.com/kb/ssh-port-forwarding

Initial Setup

- Deploy VM through Azure
    - Generate SSH keypair
        - ssh-keygen -t rsa -b 4096
- Quick UFW config
- Add all your cloud compute goodies, if you want (backup, monitors, etc)
- Set up SSH to forward port 80 and 443 to ports on your local machine
    - Can use PuTTy

    - 

    - ssh -i your_private_key -L 5500:localhost:443 your_user@your_server_ip
        - If you want both port 80 and 443, open two separate powershell instances
    -
- Can use Azure NSG or UFW to manage open ports. I use both for demonstration purposes.
- Point your domain nameservers to Azure
    - Add the following DNS records to your server
        - An A record with your_domain pointing to your server's public IP address.
        - An A record with www.your_domain pointing to your server's public IP address.

Requirement installation and configuration

- Add repos for PHP, certbot
    - sudo add-apt-repository ppa:ondrej/php
    - sudo add-apt-repository ppa:certbot/certbot
- Install apache
    - sudo apt install apache2
    - Optional
        - sudo ufw allow in "Apache Full"
    - Check that you can see the default page from the source port specified earlier
- Install mysql-server
    - sudo apt install mysql-server
    - sudo mysql_secure_installation
    - Change auth method of MySQL user account
        - sudo mysql
        - SELECT user,authentication_string,plugin,host FROM mysql.user;

        - ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'password';
        - FLUSH PRIVILEGES;
        - EXIT;
    - Add wordpress database and wordpress user
        - mysql -u root -p
        - CREATE DATABASE wordpress DEFAULT CHARACTER SET utf8 COLLATE utf8_unicode_ci;
        - GRANT ALL ON wordpress.* TO 'wordpressrobot'@'localhost' IDENTIFIED BY 'password';
        - FLUSH PRIVILEGES;
        - EXIT;
- Install PHP
    - sudo apt install php libapache2-mod-php php-mysql
    - Tell apache to prefer php over html files
        - sudo nano /etc/apache2/mods-enabled/dir.conf
            - On line 2 (which starts with DirectoryIndex), swap the first entry (index.html) with index.php. You can just rename the extensions by hand
            - Save and close
        - Restart apache
            - sudo systemctl restart apache2
    - Install more php extensions
        - sudo apt install php-curl php-gd php-mbstring php-xml php-xmlrpc php-soap php-intl php-zip php7.4-imagick
            - Restart apache
                - sudo systemctl restart apache2
- Set up virtual hosts in apache
    - sudo mkdir /var/www/mysite.com
    - Change ownership and permissions
        - sudo chown -R $USER:$USER /var/www/mysite.com
        - sudo chmod -R 755 /var/www/mysite.com
    - Drop in a quick sample HTML page
        - nano /var/www/mysite.com/index.html

```
<html>
    <head>
        <title>Welcome to mysite.com!</title>
    </head>
    <body>
        <h1>Yay. It works.</h1>
    </body>
</html>
```

    - Create a configuration file for your domain
        - sudo nano /etc/apache2/sites-available/mysite.conf

```
<VirtualHost *:80>
```

```
    ServerAdmin webmaster@localhost
    ServerName mysite
    ServerAlias www.mysite.com
    DocumentRoot /var/www/mysite.com
    <Directory /var/www/wordpress/>
        AllowOverride All
    </Directory>
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

    - Enable your site, disable the default apache config file (000-default.conf)
        - sudo a2ensite mysite.conf
        - sudo a2dissite 000-default.conf
    - Check config for errors
        - sudo apache2ctl configtest
    - Restart apache
        - sudo systemctl restart apache2
- You should now be able to see the sample HTML page on the source port, instead of the apache default page.
- Enable mod_rewrite for Wordpress
    - sudo a2enmod rewrite
- (Optional but recommended) Verify that PHP works
    - sudo nano /var/www/mysite/info.php

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

    - Navigate to the localhost source and add a /info.php to it
        - Should see a page with “PHP version” in the top left, and some info below.
    - Cleanup the site directory
        - rm /var/www/mysite.com/index.html /var/www/mysite.com/info.php
- (Optional but recommended) Get an SSL cert for your website
    - Install certbot
        - sudo apt install python-certbot-apache
    - Run certbot
        - sudo certbot --apache -d your_domain -d www.your_domain
            - I’d recommend going with option 2, redirect, for simplicity’s sake

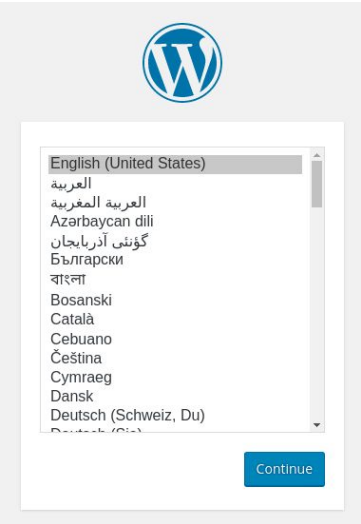
Installing Wordpress

Make sure port 80 and 443 are NOT open to the internet at the beginning of this section!

- Download wordpress and extract it
  - cd /tmp
  - curl -O https://wordpress.org/latest.tar.gz
  - tar xzvf latest.tar.gz
- Add .htaccess file
  - touch /tmp/wordpress/.htaccess
- Copy WP sample config
  - cp /tmp/wordpress/wp-config-sample.php /tmp/wordpress/wp-config.php
- Create the WP upgrade directory
  - mkdir /tmp/wordpress/wp-content/upgrade
- Copy wordpress from tmp to var
  - sudo cp -a /tmp/wordpress/. /var/www/mysite.com
- Adjust ownership and permissions
  - sudo chown -R www-data:www-data /var/www/wordpress
- Set correct permissions on WP directories and files
  - sudo find /var/www/wordpress/ -type d -exec chmod 750 {} \;
  - sudo find /var/www/wordpress/ -type f -exec chmod 640 {} \;
- Request secure values from the WP secret key generator
  - curl -s https://api.wordpress.org/secret-key/1.1/salt/
- Edit the WP configuration file, add secret keys and update database connection settings
  - sudo nano /var/www/mysite.com/wp-config.php
    - Change the dummy values to the secret keys you obtained in the previous step
    - Update database connection properties, set filesystem method to direct

```
. . .

define('DB_NAME', 'wordpress');

/** MySQL database username */
define('DB_USER', 'wordpressuser');

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

. . .

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

- We are successful. Go to your source port and you will see the WP welcome dialog



- Set that bad boy up, and then feel free to open port 80 and 443!

Congratulations, you have now set up Wordpress!

NOTE: Make sure to change the wordpress address and site address under Settings > General to reflect your domain PRIOR to closing the localhost:5500 tunnel. Otherwise it will not be accessible from the internet, and will try to force all clients to connect to port 5500.