Writing Assignment #2

A Manual for Setting up a WordPress Website on the Local Linux Server with Vagrant

Yuji Shimojo

WRTG 393

Instructor: Claudia M. Caruana

November 21, 2016

Introduction

This is a manual for setting up a WordPress website on your local Linux server with Vagrant in 12 steps. This manual covers building a local Linux server, installing and setting up WordPress, and getting started your first WordPress post.

What is WordPress?

WordPress is a free and open-source content management system. You can easily create a blog system by using it. The official website of WordPress is https://wordpress.org/.

Previous knowledge

You need basic knowledge of UNIX commands, Linux, Apache, PHP, and MySQL.

Advance preparations

You need to install Cyberduck and Oracle VM VirtualBox into your computer.

Environment

I am showing my overall environment in which I created this manual as follows.

- OS X 10.11 El Capitan
- Cyberduck 5.2.2
- Vagrant 1.8.1
- Oracle VM VirtualBox 5.0.20
- CentOS 7.2.1511
- Apache 2.4.6

- PHP 5.6.21
- MySQL 5.7.16
- WordPress 4.6.1

Instructions

- 1. Create a virtual machine with Vagrant.
 - I. Open Terminal.app.
 - II. Add a Vagrant base box of 64bit CentOS 7.0. Vagrant base boxes are package

formats for Vagrant environments.

\$ vagrant box add CentOS7.0 https://github.com/tommy-muehle/puppet-vagrantboxes/releases/download/1.1.0/centos-7.0-x86_64.box

III. Make directories for your virtual machine.

\$ mkdir ~/MyVagrant

\$ cd MyVagrant

\$ mkdir CentOS7.0

\$ cd CentOS7.0

IV. Initiate Vagrant.

\$ vagrant init CentOS7.0

V. Open Vagrantfile.

\$ vi Vagrantfile

VI. Uncomment the following line.

config.vm.network "private_network", ip: "192.168.33.10"

VII. Run the virtual machine.

\$ vagrant up

VIII. Log in to the server via SSH.

\$ vagrant ssh

IX. Change locale setting of CentOS 7, which is German by default.

\$ sudo localectl set-locale LANG=en US.utf8

\$ cat /etc/locale.conf

LANG=en_US.utf8

X. Change keymap setting of CentOS 7.

\$ sudo localectl set-keymap us

\$ cat /etc/vconsole.conf

KEYMAP=us

XI. Reflect the locale settings.

\$ source /etc/locale.conf

\$ localectl status

System Locale: LANG=en_US.utf8

VC Keymap: us

X11 Layout: us

X11 Model: pc105+inet

X11 Options: terminate:ctrl_alt_bksp

- 2. Install and configure Apache.
 - I. Install Apache.

\$ sudo yum -y install httpd

II. Start Apache process and make it always running.

\$ sudo systemctl start httpd.service

\$ sudo systemctl enable httpd.service

III. Stop firewalld and make it always stop.

\$ sudo systemctl stop firewalld

\$ sudo systemctl disable firewalld

IV. Open the configure file.

\$ sudo vi /etc/httpd/conf/httpd.conf

- V. Uncomment the following line if it is commented out, or add the line if it is not existing.
- VI. Add the following lines to enable use of .htaccess

<Directory "/var/www/html/wordpress">

Options FollowSymLinks

AllowOverride All

Order Allow, Deny

Allow from all

</Directory>

- 3. Install PHP.
 - I. Add Remi repository.

\$ sudo yum -y install epel-release

\$ cd /etc/yum.repos.d

\$ sudo wget http://rpms.famillecollet.com/enterprise/remi.repo

II. Install PHP 5.6 from Remi repository.

\$ sudo yum -y install --enablerepo=remi --enablerepo=remi-php56 php phpopcache php-devel php-pear php-mbstring php-mcrypt php-mysqlnd

III. Confirm the version of PHP.

\$ php -v

PHP 5.6.21 (cli) (built: Apr 28 2016 07:39:37)

- 4. Install MySQL.
 - IV. Add yum repository of MySQL 5.7.
 \$ sudo yum localinstall http://dev.mysql.com/get/mysql57-community-releaseel7-7.noarch.rpm
 - V. Install MySQL Community Server.

\$ sudo yum -y install mysql-community-server

VI. Confirm the version of MySQL.

\$ mysqld --version

mysqld Ver 5.7.16 for Linux on x86_64 (MySQL Community Server (GPL))

VII. Make MySQL always running.

\$ sudo systemctl enable mysqld.service

- 5. Create a table in MySQL database.
 - I. Log in to MySQL as root user.

\$ mysql -u root -p

II. Create a table for WordPress with a user name and a password.

mysql> create database example_wordpress;

mysql> grant all on example_wordpress.* to dbuser@localhost identified by 'your password';

- 6. Modify your Hosts file.
 - I. Open your Hosts file via Terminal.app.\$ sudo vi /private/etc/hosts
 - II. Add a mapping between dev.example.com and 192.168.33.10 in your Hosts file.192.168.33.10 dev.example.com.
- 7. Download wordpress and deploy it into the server.
 - I. Download the latest version of WordPress as a zip file to your local computer from the WordPress official website.
 - II. Unzip the .zip file.
 - III. Open Cyberduck.app.
 - IV. Click **Open Connection** in the upper left hand corner.

		Cyberduck		Unregistered
C +		🔽 🔅	1	
Open Connection	Quick Connect	Action Refresh	Edit	Disconnect
	😵 🔺 🕨			Q Search
+ 2 -				
0 Bookmarks				

V. Select **SFTP** as the network protocol from the drop-down list, input

192.168.33.10 into the Server text field, enter Username as shown in Figure 2.

Then click the **Connect** button.

* you don't need to enter Password when you log in as vagrant user.

Figure 2

Server	100 100 00 10	Port: 22
Server	192.168.33.10	POIL. 22
URL	: sftp://vagrant@192.168.33.10:22/	4
Username	: vagrant	
Password	Password	
	Anonymous Login	
	Add to Keychain	
	? Cancel	Connect

VI. If you have successfully logged in to the server, you will see the home directory

of vagrant user in the virtual machine as shown in Figure 3.

•••	崔 vagrant@192.168.3	3.10 – SFTP	Unregistered
C +	✓ ☆ ×	0	
Open Connection Quick	Connect Action	Refresh Edit	Disconnect
5 🛛 🕘 💝 🗨	home/vag	ırant 🔹 🖌	Q Search
Filename	~ Size	Modifie	d
zerodisk.sh		105 B 2015/0)7/16 15:44
🗋 virtualbox.sh		260 B 2015/0	07/16 15:44
🗋 vagrant.sh		674 B 2015/0	07/16 15:44
puppet.sh		360 B 2015/0	07/16 15:44
cleanup.sh		118 B 2015/0	07/16 15:44
base.sh		450 B 2015/0)7/16 15:44
6 Files			

VII. Drag the wordpress folder you unzipped and drag into the home directory as

shown in Figure 4.

					(
and a liter		🂰 vagran	t@192.168.33.10 - 9	SFTP	Unregistered
San Strake	C +		✓ ✿ < C		
	Open Connection	Quick Connect	Action Refresh	h Edit	Disconnect
	E 🛛 🕘	8 < >	/home/vagrant		Q Search
	Filename		√ Size	Modified	
The second second	zerodisk.sh		10	05 B 2015/07/10	5 15:44
	virtualbox.sh		20	60 B 2015/07/10	6 15:44
	vagrant.sh		6	74 B 2015/07/16	6 15:44
	puppet.sh		36	60 B 2015/07/16	6 15:44
	cleanup.sh		1	18 B 2015/07/10	6 15:44
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	base.sh		4	50 B 2015/07/16	6 15:44
SKIN LEADER					
MANA DA					
	27				
wordpress	0.51				0
ALL DESCRIPTION OF	0 FileS		VACA AND AND		=

Figure 4

VIII. Open Terminal.app and log in to the server via SSH again.

- IX. Move the wordpress directory in your home directory into /var/www/html, which is known as the document root.
- X. \$ sudo mv wordpress /var/www/html/
- XI. Change the owner of wordpress to apache user.

\$ cd /var/www/html

\$ sudo chown -R apache:apache wordpress

- 8. Install WordPress via WordPress dashboard.
 - I. Launch a web browser.
 - II. Type http://dev.example.com/wordpress in the address bar and press the **Enter** key.
 - III. If you have successfully accessed WordPress installing page, you will see the page as shown in Figure 5. Then select your language and Click the Continue button.



IV. Click the Let's go button.

Figure 6

 Welcome to WordPress. Before getting started, we need some information on the database. You will need to know the following items before proceeding. Database name Database username Database password Database host 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.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 gol

V. Type example_wordpress in the Database Name, dbuser in the Username, and your password you set when you created the database table for WordPress. Then click the Submit button.

Figure 7

Below you should enter host.	your database connection details	5. If you're not sure about these, contact your
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		

VI. Click the **Run** the install button.

All right, sparky! You've made it through this part of the installation. WordPress can now communicate with your database. If you are ready, time now to Run the install	
	All right, sparky! You've made it through this part of the Installation. WordPress can now communicate with your database. If you are ready, time now to Run the Install

VII. Set your arbitrary Site Title, Username, Password, Your Email. Uncheck theSearch Engine Visibility box. Then click the Install WordPress button.

Figure 9

Welcome		
Welcome to the famo you'll be on your way world.	us five-minute WordPress installati to using the most extendable and p	on process! Just fill in the information below and bowerful personal publishing platform in the
Information ne	eeded	
Please provide the fol	lowing information. Don't worry, yo	ou can always change these settings later.
Site Title	My first WordPress	
Username	shimojo	
	Usernames can have only alphanumeric @ symbol.	 characters, spaces, underscores, hyphens, periods, and the
Password	•••••	(Show
	Strong	
	Important: You will need this passwo	ord to log in. Please store it in a secure location.
Your Email	yjshimojo@gmail.com	
	Double-check your email address before	continuing.
Search Engine	Discourage search engines t	from indexing this site
Visibility	It is up to search engines to honor this re	quest.
Install WordPress		

VIII. You have successfully installed WordPress. Click the Log in button.

Success! WordPress has been installed. Thank you, and enjoy! Username shimojo Password Your chosen password. Log in	Success! WordPress has been installed. Thank you, and enjoy! Username shimojo Password Vour chosen password. Log In		
WordPress has been installed. Thank you, and enjoy! Username shimojo Password Your chosen password. Log In	WordPress has been installed. Thank you, and enjoy! Username shimojo Password Your chosen password. Log In Your chosen password.	Success!	
Username shimojo Password Your chosen password.	Username shimojo Password Your chosen password. Log In	WordPress has bee	n installed. Thank you, and enjoy!
Password Your chosen password.	Password Your chosen password.	Username	shimojo
Log in	Log in	Password	Your chosen password.
		Log In	

IX. Enter your **username or email** and **password** you set when you installed

WordPress. Then click the Log in button.

Figure 11

Username or Email Shimojo Password essword Remember Me Log In Lot your password?	Username or Email Shimojo Password Password Demember Me Log In Lost your password? Back to My first WordPress
Password Password Log in Lot your password?	Password Password Log In Lost your password? ← Back to My first WordPress
Log In	Log In Lost your password? ← Back to My first WordPress
Lost your password?	Lost your password? ← Back to My first WordPress
	← Back to My first WordPress
← Back to My first WordPress	

X. If you have successfully logged in to WordPress, you will see the page as shown in Figure 12, which is called dashboard.

🕅 🙆 My first WordPre	ss ♥ 0 + New Dashijoaici		Howdy, shimojo
Home Updates	Welcome to WordPress! We've assembled some links to get yo	ou started:	© Dismiss
 ✓ Posts ⑦ Media I Pages ♥ Comments ✓ Appearance 	Get Started Customize Your Site or, change your theme completely	Next Steps Vrite your first blog f + Add an About page View your site	More Actions I Manage widgets or menus I Mana
¥ Plugins ▲ Users ⊁ Tools 5 Settings	At a Glance At a Glance 1 Post 1 Dost 1 Dost 1 Dost	A Quage T	ick Draft
Collapse menu	WordPress 4.6.1 running Twenty Sixteen theme. Activity Recently Published		inve Draft
	Today, 7:53 an Hello world! Recent Comments Image: Comment of the second seco	II world! with moderating, editing, and do mments screen in Te	ordPress News A A A A A A A A A A A A A
	All (1) Pending (0) Approved (1) Spam (0)	Trash (0) W Sv Cc W To	Tavern: Automattic Clarifies .blog Landrush Process After Bait and htch Allegations PTavern: WordPress Passes 27% Market Share, Banks on Customizer for ntinued Success PTavern: 2nd Global WordPress Translation Day Brings 780 Translators gether Across 133 Locales
		Po	pular Plugin: Clef Two-Factor Authentication (Install)
	Thank you for creating with WordPress.		Version 4.1

- 9. Change permalink structure
 - I. Select **Settings** in the left side bar and click **Permalinks** in the **Settings** menu.

My first WordPr			Hov	vdy, shimojo 🧗
📌 Posts	Permalink structure updated.			٢
97 Media	WordPress offers you the ability to forward-compatibility of your links	create a custom URL structure for your pern A <u>number of tags are available</u> , and here are	nalinks and archives. Custom URL structures can improve the aesthetics, usability some examples to get you started.	/, and
Comments	Common Settings			
Appearance	O Plain	http://dev.example.com/wordpress/	?p=123	
Plugins Users	Day and name	http://dev.example.com/wordpress/	2016/11/21/sample-post/	
لام مح	Month and name	http://dov.evample.com/wordpress/	7015/11/sommle_post/	
General				
Writing	O Numeric	http://dev.example.com/wordpress/	archives/123	
Reading	O Post name	http://dev.example.com/wordpress/	sample-post/	
Media Permalinks	O Custom Structure	http://dev.example.com/wordpress	/%year%/%monthnum%/%day%/%postname%/	
Collapse menu	Optional			
	If you like, you may enter custom s http://dev.example.com/word	tructures for your category and tag URLs he press/topics/uncategorized/ . If you h	e. For example, using topics as your category base would make your category ave these blank the defaults will be used.	/ links like
	Category base			
	Tag base			
	Save Changes			
	Thank you for creating with WordP	ress.		Version 4.6.1

- II. Change permalink structure **default** to **Day and name**.
 - * The short string of characters "sample-post" is called Slug which represents each your article.
- III. Click the **Save Changes** button.
 - * At this time, a .htaccess file will automatically be created in the wordpress home directory in the server. The .htaccess file allows to rewrite URL requests. Note that if you didn't enable URL rewriting when you configure the httpd.conf unsuccessfully, you will get a 404 Page Not Found Error when you access your post after this.
- 10. Modify your Hosts file.

I. Open Terminal.app and log in to the server via SSH again.

\$ cd Documents/MyVagrant/CentOS7.0/

\$ vagrant ssh

- II. Create 'uploads' directory under /var/www/html/wordpress/wp-content/.
 \$ cd /var/www/html/wordpress/wp-content
 \$ sudo mkdir uploads
- III. Change the owner of 'uploads' directory.

\$ sudo chown -R apache:apache uploads

IV. Give the full access permission to 'uploads' directory.

\$ sudo chmod 777 uploads

- 11. Add new category
 - I. Go back to the dashboard.
 - II. Select **Posts** in the left side bar and click **Categories** in the **Posts** menu.



III. Decide Name and Slug. Then Click the Add New Category button.

12. Add new post

I. Select Add New in the Posts menu.

My first WordPre	POSIS Add New					Howdy, shimojo 🧗
🖈 Posts	1 post restored from the Trash.					ø
All Posts Add New Categories Tags	All (1) Published (1) Bulk Actions \$ Apply All dates \$ All Categories	Filter	Categories	Τααs		Search Posts 1 item Date
ිදා Media මූ Pages	Hello world!	shimojo	Uncategorized	-	ņ	Published 2 hours ago
Comments	Title	Author	Categories	Tags	•	Date
 ➢ Appearance ➢ Plugins ▲ Users ➢ Tools ☑ Settings ④ Collapse menu 	Bulk Actions 🗘 Apply					1 item
	Thank you for creating with WordPress.					Version 4.6.1

II. Before you add a new post, check the **Slug** box in the **Screen Options**.

My first WordPress • + New Format Categories Tags Featured Image Excerpt Send Trackbacks Custom Fields Discussion V Slug Author Layout 1 column 2 columns Additional settings V Enable full-height editor and distraction-free functionality.	Howdy, shimojo 📗
Add New Post	
Letter title here Publish	v
P: Add Media Visual Text B I ** I I : :::::::::::::::::::::::::::	* * *
Word count: 0	
Slug Thank you for creating with WordPress.	Version 4.6.1

III. Enter a title, a main text, and a slug, and choose categories. Then click thePublish button in the right side side menu.

My first post		Publish	
Permalink: http://dev.example.com/wordpress/2016/11/21/this-is-my-first-post/ Edit Q1 Add Media	Visual Text	Save Draft P Status: Draft Edit	Pre
B $I \iff \exists i \in (4 - \exists i \exists i \in (4 - \exists i \exists i \in (4 - \exists i = \exists i \in (4 - i \in (4 - \exists i \in (4 - i (3 - i \in (4 - i \in (4 - i \in (4 - i \in (4 - i (3 - i \in (4 - i \in (4 - i (3 -$	×	 Visibility: Public <u>Edit</u> Publish immediately <u>Edit</u> 	
		Format	Pu
		Categories Most Used ✓ Diaries Meals Uncategorized	
Word count: 7	Draft saved at 10:10:54 am.	+ Add New Category	
Slug started	*	Tags	
		Featured Image	
Thank you for creating with WordPress.			Ver

IV. Go to dev.example.com/wordpress. If you have successfully created a post, you

will see the page as shown in Figure 18.



🕅 🍘 My first WordPress 🖌 Customize 🛡 0 🕂 New	Howdy, shimojo 📃 🔍
My first WordPress	
Just another WordPress site	
My first post	Search - Q
November 21, 2016 Hi there! This is my first pos	
Leave a comment	RECENT POSTS
Edit	My first post
	RECENT COMMENTS
	ARCHIVES
	November 2016

V. When you create a new post with an image, click the Add Media button.

Figure 19

Enter title here	Publish	
Permalink: <u>http://dev.example.com/wordpress/2016/11/21/i-cooked-gova-champuru/</u> Edit 93 Add Media B I 써 표 는 는 44 - 는 는 는 문 문 양 않 프 프	Save Draft Visual Text Visual Text Save Draft P Status: L Save Draft P Status: L Save Draft P Status: L Save Draft P Status: L Move to Trast	Previd rraft <u>Edit</u> Public <u>Edit</u> mmediately <u>Edit</u> th Public
	Format Categories All Categori Diaries	es Most Used
Word count: 0	Draft saved at 10:22:01 am.	egorized Category
Slug	.▲ Tags	
	Featured In	nage
hank you for creating with WordPress.		Versior

VI. Insert your image by dragging it and dropping into the web browser to upload as shown in Figure 20.

Figure 20

0	🕥 😤 My first WordPress 💗	0 + New	Howdy, shimojo 📗
Carlos a	Insert Media	Insert Media	×
Territoria de	Create Gallery Featured Image	Upload Files Media Library	
	Insert from URL	Drop files anywhere to upload or Select Files Maximum upload file size: 2 MB.	
IMG_1270.JI			Insert into post

VII. Enter a title, a main text, and a slug, and choose categories. Then click thePublish button in the right side side menu.

My first WordPress	0 + New		Howdy, shimojo
Enter title here			Publish 🔺
Permalink: <u>http://dev.exa</u>	mple.com/wordpress/2016/11/21/i-cooked-goya-champuru/	Visual Text	Save Draft Preview Preview Status: Draft Edit
» B I мн∈ ⊟ ⊟	u – ≡ ≡ Ø ‰ ≡ ■	×	Visibility: Public Edit
<i>у</i>			Move to Trash Publish
_ عر 10			Format +
0			Categories
			All Categories Most Used
			Diaries Meals Uncategorized
Word count: 0		Draft saved at 10:22:01 am.	+ Add New Category
Slug		*	
			Tags v
			Featured Image v
Thank you for creating with	WordPress.		Version 4.6.1
Insert Media	Insert Media		×
Featured Image	Upload Files Media Library	A Court	
	All dates	ç Search	ATTACHMENT DETAILS
Insert from URL			November 21, 2016 181 KB 640 × 480 Edit Image Delete Permanently
	1 selected Clear		Insert into post

Figure 22



VIII. Access the link of the post such as

http://dev.example.com/wordpress/2016/11/21/goya/. If you have successfully

created a post, you will see the page as shown in Figure 23.

Figure 23



References

- HashiCorp, Inc. (n.d.). VAGRANT GETTING STARTED. Retrieved from <u>https://www.vagrantup.com/docs/getting-started/</u>
- Oracle Corporation and/or its affiliates. (n.d.). MySQL Documentation. Retrieved from http://dev.mysql.com/doc/
- The Apache Software Foundation. (n.d.). Apache HTTP Server Version 2.4 Documentation.
 Retrieved from https://httpd.apache.org/docs/2.4/
- The PHP Group. (n.d.). PHP Documentation. Retrieved from <u>http://php.net/docs.php</u>
- Wikimedia Foundation. (n.d.). The Developer's Guide to WordPress. Retrieved from https://en.wikibooks.org/wiki/The Developer's Guide to WordPress
- WordPress.org. (n.d.). WordPress Codex. Retrieved from <u>https://codex.wordpress.org/</u>