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# Ultimate Guide: Deploy Laravel 5.3 App on LEMP Stack (Ubuntu 16 and Nginx)



by  
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So you worked hard to build your Laravel 5.3 (or any version 5) application and now its time to deploy to the internet so you can share your hard work with everyone. In this tutorial we will learn to set up Laravel onto a virtual private server (VPS) using what is called a LEMP stack. LEMP is an acronym that stands for:

- Linux
- Engine-X (Nginx)
- MySQL
- PHP

The LEMP acronym represents the stack of technologies we will use to deliver our application. You may also be familiar with LAMP stack which is basically the same thing, but substitutes the Apache server for the Nginx server (pronounced Engine-X which gives LEMP the “E”).

## Why LEMP and not LAMP?

Well honestly it is up to you. The reason I chose to use LEMP with Laravel is that it seems to be the preferred stack among the Laravel community. Keep in mind however, that Laravel runs just perfectly fine on an Apache server, if you feel more comfortable with that. So for this tutorial we will use Nginx over Apache, but I may follow up with a LAMP stack tutorial if there is adequate interest from my fellow DevMarketers out there. Let me know in comments.

One other thing I should mention is that when running smaller server instances like we are (with 512mb RAM or maybe 1Gb) it has been shown that Nginx performs better with more limited resources. Of course Apache is the most popular server on the internet by far, so I have no hate towards either one.

## Where Should I Host?

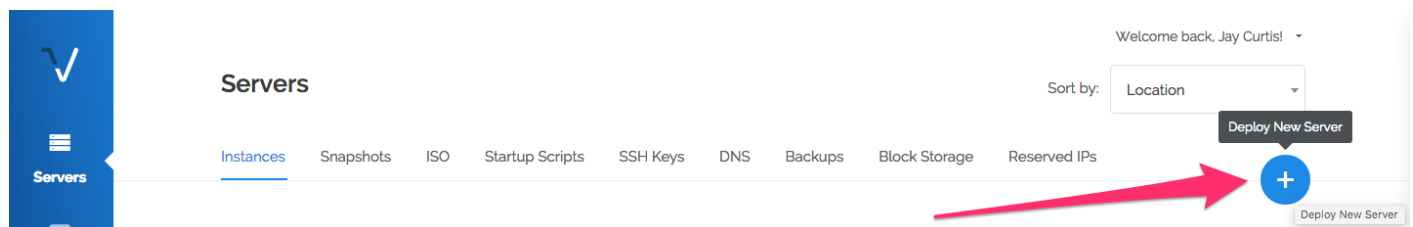
**You can host it anywhere that you wish.** Keep in mind that this tutorial will cover setting up your server through SSH into your VPS instance. This means that it really doesn't matter who you host through, once you have your IP address and you log into the server via SSH, the tutorial will work the same regardless of your host. So feel free to choose whoever you prefer for hosting your server, you can still follow this tutorial exactly the same.

Some hosts that I recommend would be [Vultr](#), [DigitalOcean](#), and [Linode](#). I have used all three in production and they work great. For this tutorial I will be using [Vultr](#) and if you would like to [sign up](#) through [DevMarketer](#) you will get \$20 to get started, absolutely free.

## Step 1: Set Up Your VPS

This is the only step that will vary depending on which host you choose. I will be using [Vultr](#), but the interface is almost 100% identical for [Digital Ocean](#), should you decide to use them. [Linode](#) has a more basic interface, but will ask almost identical questions.

### A. New Server (or Droplet)

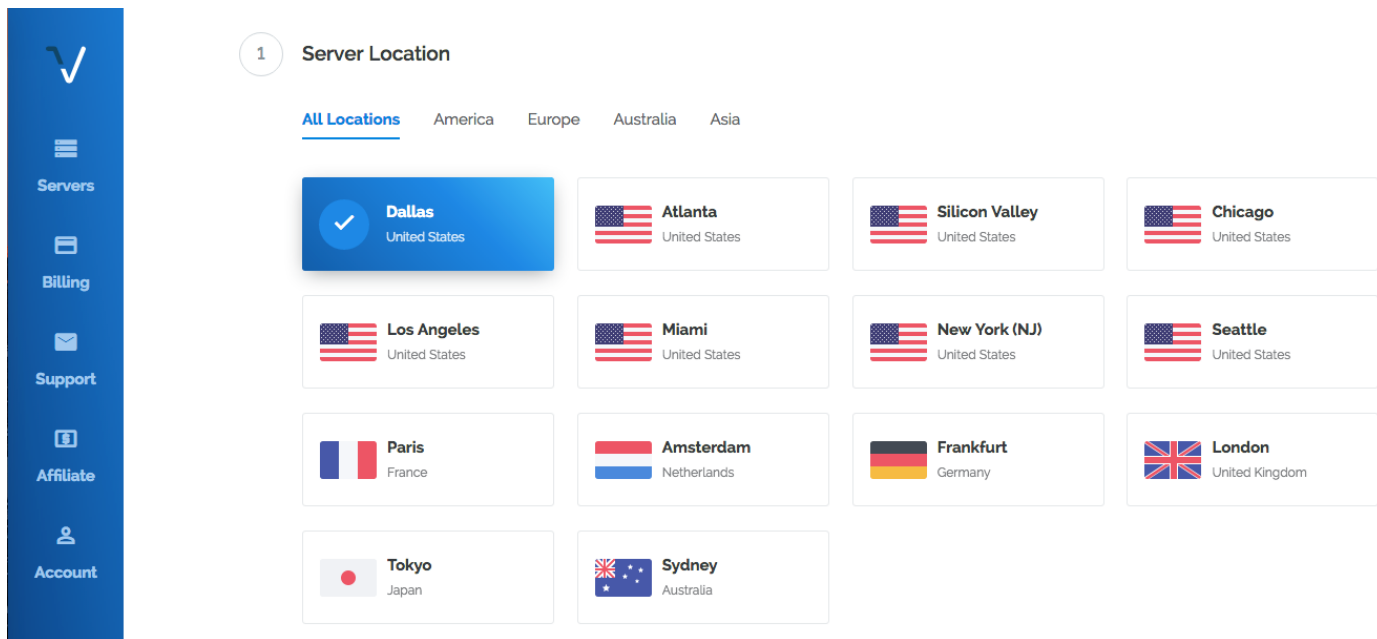


Click the large blue plus button on the right side.

To get started we need to boot up our wizard for creating a new server. You are looking for the button for “New Server”. If you are on [DigitalOcean](#), they call servers “Droplets”, so you select “New Droplet”.

### B. Configure Server Location

Now it is time to choose the physical location that your new server will be located. Each service has their own datacenter locations, but in general it is best to choose a location closest to where most of your users will be. So even if you are located in India, but most of your users are from the UK, then you should choose a London server. This makes your server fast for your users.

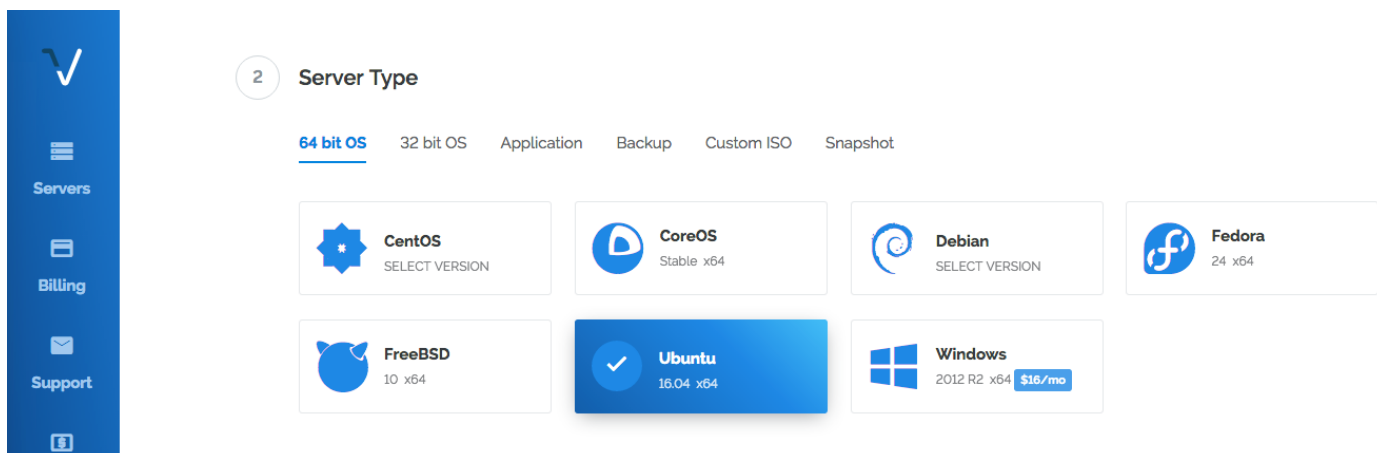


Select a good central location to most of your users.

Select a location that you prefer to host it at that location. On some services there will be multiple dataservers at a single location. You basically just choose a number at random, it won't make much difference, unless you have some sort of insider information at your disposal.

## C. Select Linux Distro

The next step requires you to select which version of Linux you would like to use (this will configure the "L" in our LEMP stack. For this tutorial we will be using Ubuntu 16.04 x64 as our distro. Of course any of these will work if you have experience with them, but I will be demonstrating Ubuntu 16 in this tutorial.



For this tutorial we will be setting our Linux distro to be Ubuntu 16.04 x64

## D. Server Size

This is the setting that will change the most depending on your application and what service you are using. Most Laravel applications are suggested to have a minimum of 1Gb Ram which is usually the \$10 a month plan for most services. However small Laravel apps work just fine on 512Mb or 768Mb servers too. Obviously you also want to take into account your traffic which will have the largest factor on which server size you select.

As you may notice, you get a slightly better deal by going with Vultr, as you get a little bit extra RAM for your \$5/mo plan.

**3 Server Size**

Plan	SSD	Price	CPU	Memory	Bandwidth
15 GB SSD	15 GB SSD	\$5/mo \$0.007/h	1 CPU	768MB Memory	1000GB Bandwidth
20 GB SSD	20 GB SSD	\$10/mo \$0.015/h	1 CPU	1024MB Memory	2000GB Bandwidth
45 GB SSD	45 GB SSD	\$20/mo \$0.03/h	2 CPU	2048MB Memory	3000GB Bandwidth
90 GB SSD	90 GB SSD	\$40/mo \$0.06/h	4 CPU	4096MB Memory	4000GB Bandwidth
150 GB SSD	150 GB SSD	\$80/mo \$0.119/h	6 CPU	8192MB Memory	5000GB Bandwidth
300 GB SSD	300 GB SSD	\$160/mo \$0.238/h	8 CPU	16384MB Memory	6000GB Bandwidth
600 GB SSD	600 GB SSD	\$320/mo \$0.476/h	16 CPU	32768MB Memory	10000GB Bandwidth
700 GB SSD	700 GB SSD	\$640/mo \$0.952/h	24 CPU	65536MB Memory	15000GB Bandwidth

Choose a server size that will be best for you. I start at \$5 a month and move up.

## E. Additional Settings

These additional settings aren't super important for now. Just choose what you think you will need.

These settings vary a little between hosts but most ask if you want to use IPv6 (recommended), auto backups and more. Vultr has a cool feature to protect against DDOS attacks if you are in certain datacenters. I suspect this will expand in the future to all of their datacenters.

**4 Additional Features**

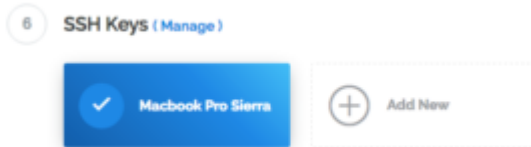
- ☐ Enable IPv6
- ☐ Enable Private Network [?]
- ☒ Enable Auto Backups \$1.00/mo
- ☐ Enable DDOS Protection [?] Unavailable

Choose whichever settings you feel are appropriate.

In Vultr you may also set up a Startup Script. You can leave this blank for now. We do not need it.

## D. SSH Keys

It is **HIGHLY RECOMMENDED** that you set up SSH keys here. You will need to have SSH keys set up for your account and once you do, then you can simply check the SSH keys on your account to allow them root access to your application. For DigitalOcean when you select an SSH key then they actually do not create a username and password for you (you can always add it later through SSH). On Vultr they still email you username and password after you boot up the server, but it's still a good idea to set up the SSH key as it is far more secure and more convenient.



It is **HIGHLY RECOMMENDED** that you set up SSH keys.

If you opt out of setting up SSH keys then the tutorial will still work the same, except that you will need to type in the username and password **ALOT!** So if you decide to skip SSH keys just know that you will be typing the password a lot and that you are actually less secure. It really is a win-win setting up SSH keys.

## E. Server Hostname and/or Label

This setting is a little different between hosts, but it is basically asking you what you want to call the server. On DigitalOcean it will not ask for the hostname, only the label. Just use a friendly name to describe your application so you know what server this does when looking at all your servers on the dashboard screen. The same goes with Vultr as you want to know what this server does when looking at the dashboard screen, but Vultr also asks for a Server Hostname. I usually just set this to localhost for now. You can change this later.

## F. Deploy

Click the final button to deploy and create your server. It will take about 1 minute to set up the server and then you will be able to log in and get started.

## Step 2: Log-In via SSH

Before we get too carried away, make sure you have a way to SSH into your new server.

### Linux and Mac You're Covered

If you are using Linux (on your local machine) or MacOS then you will have SSH capabilities by default. You don't need to do anything to set it up, you will simply use your Terminal and use the `ssh` command which we will cover in a second.

### Windows Install SSH Client

Of course for some reason Windows doesn't have this built in (as usual with most web development stuff) so you need to install an SSH client. Most Windows users use puTTY as an SSH client. You can download puTTY from their site.

## PuTTY Download Page

[Home](#) | [Licence](#) | [FAQ](#) | [Docs](#) | [Download](#) | [Keys](#) | [Links](#)  
[Mirrors](#) | [Updates](#) | [Feedback](#) | [Changes](#) | [Wishlist](#) | [Team](#)

Here are the PuTTY files themselves:

- PuTTY (the SSH and Telnet client itself)
- PSCP (an SCP client, i.e. command-line secure file copy)
- PSFTP (an SFTP client, i.e. general file transfer sessions much like FTP)
- PuTTYtel (a Telnet-only client)
- Plink (a command-line interface to the PuTTY back ends)
- Pageant (an SSH authentication agent for PuTTY, PSCP, PSFTP, and Plink)
- PuTTYgen (an RSA and DSA key generation utility).

**LEGAL WARNING:** Use of PuTTY, PSCP, PSFTP and Plink is illegal in countries where encryption is outlawed. We believe it is legal to use PuTTY, PSCP, PSFTP and Plink in England and Wales and in many other countries, but we are not lawyers, and so if in doubt you should seek legal advice before downloading it. You may find useful information at [cryptolaw.org](http://cryptolaw.org), which collects information on cryptography laws in many countries, but we can't vouch for its correctness.

Use of the Telnet-only binary (PuTTYtel) is unrestricted by any cryptography laws.

There are cryptographic signatures available for all the files we offer below. We also supply cryptographically signed lists of checksums. To download our public keys and find out more about our signature policy, visit the [Keys page](#). If you need a Windows program to compute MD5 checksums, you could try this one at [pc-tools.net](http://pc-tools.net). (This MD5 program is also cryptographically signed by its author.)

## Binaries

### The latest release version (beta 0.67)

This will generally be a version we think is reasonably likely to work well. If you have a problem with the release version, it might be worth trying out the latest development snapshot (below) to see if we've already fixed the bug, before reporting it.

### For Windows on Intel x86

PuTTY:	<a href="#">putty.exe</a>	<a href="#">(or by FTP)</a>	<a href="#">(signature)</a>
PuTTYtel:	<a href="#">puttytel.exe</a>	<a href="#">(or by FTP)</a>	<a href="#">(signature)</a>
PSCP:	<a href="#">pscp.exe</a>	<a href="#">(or by FTP)</a>	<a href="#">(signature)</a>
PSFTP:	<a href="#">psftp.exe</a>	<a href="#">(or by FTP)</a>	<a href="#">(signature)</a>
Plink:	<a href="#">plink.exe</a>	<a href="#">(or by FTP)</a>	<a href="#">(signature)</a>
Pageant:	<a href="#">pageant.exe</a>	<a href="#">(or by FTP)</a>	<a href="#">(signature)</a>

You will notice that it feels like you are downloading a virus. Their website has a very Web1.0 feel. Everyone give a round of applause welcoming our Windows users to the 21st century.

## Logging Into Our Server

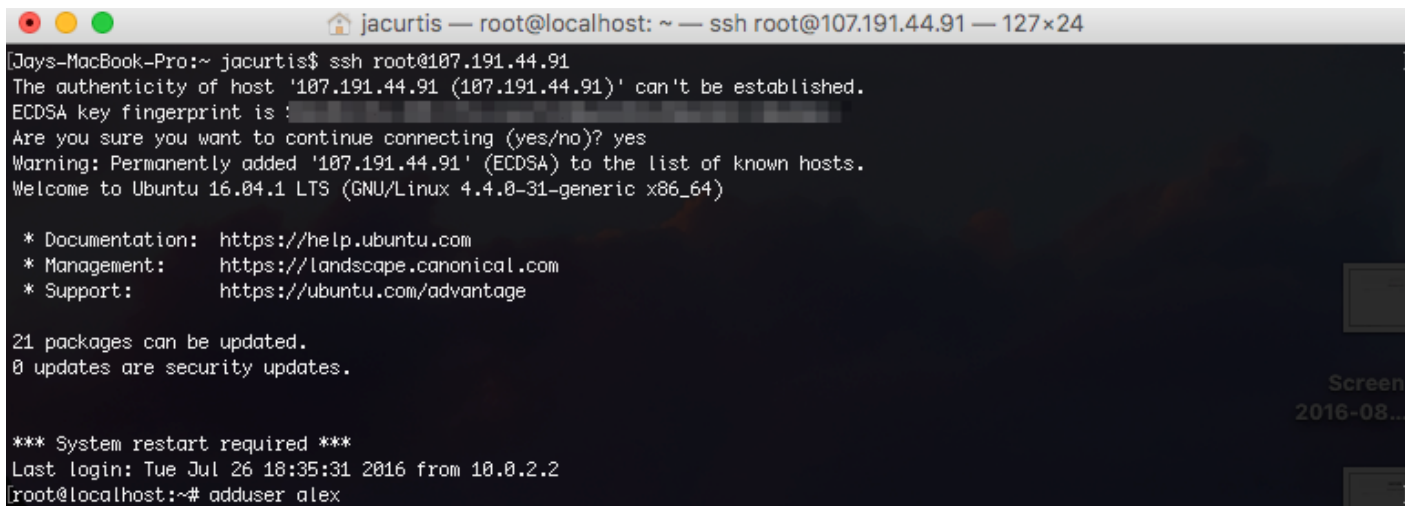
Now that you have an SSH client, it is time to log into our server so we can set it up. In the terminal type:

```
1 ssh root@100.100.100.100
```

Simply replace `100.100.100.100` with the IP address for your server. You will have this IP address in your dashboard on your host, or in an email sent to you from your host after the server finished setting up. You might want to write this down somewhere nearby for the time being since we will need it several times going forward.

The first time you boot into your server and you are using SSH Keys, you will probably get a message asking you if you want to trust or add this IP address to your list of known hosts. Just agree to it to continue and you will not get this message again.

Now that you are into your server you will get a welcome message from Ubuntu.

A screenshot of a terminal window titled 'jacurtis — root@localhost: ~ — ssh root@107.191.44.91 — 127x24'. The terminal shows the output of an SSH connection to 107.191.44.91. It displays a warning about the host's authenticity, asks for confirmation to continue, and shows the Ubuntu 16.04.1 LTS welcome message. It lists documentation, management, and support links, and indicates that 21 packages can be updated, including 0 security updates. It also shows a system restart requirement and the last login time. The prompt is root@localhost:~# and the user has entered 'adduser alex'.

```
Jays-MacBook-Pro:~ jacurtis$ ssh root@107.191.44.91
The authenticity of host '107.191.44.91 (107.191.44.91)' can't be established.
ECDSA key fingerprint is :
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '107.191.44.91' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 16.04.1 LTS (GNU/Linux 4.4.0-31-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

21 packages can be updated.
0 updates are security updates.

*** System restart required ***
Last login: Tue Jul 26 18:35:31 2016 from 10.0.2.2
root@localhost:~# adduser alex
```

This might seem crazy but you have full access to this computer now by typing messages into this terminal. This is the same as if you had the computer in front of you with a monitor, except that your only method to “see” into the computer is with a terminal command window. We can now install programs, set preferences, and manage files just like you would on any new computer, but via the SSH terminal window.

## Step 3: Update Package Installer

We will be using the **Apt-Get** package installer to install new programs on our server. Think of this like the Apple App Store or Google Play Store, except not as cool looking, and it is for Linux programs.

Before we start installing things, let’s make sure that our Apt-Get Installer is up to date. To do this just tell it to update with this command:

```
1 sudo apt-get update
```



You will see a bunch of text, and eventually you will get your command prompt again. I encourage you to read some of the output to get used to how apt-get works. The chances of this failing are pretty small, so everyone should be able to move on easily from here.

*Note: as a side note, you will see us using the term **sudo** in front of many of the commands in this tutorial. **Sudo** stands for “super-user do” and tells our computer to do whatever we are asking as the super user. The super user is basically the admin. By default we are using the **root** user which has super user privileges. In more advanced tutorials you might make another account for yourself and then give yourself super user privileges. For simplicity we will be using the **root** user account in this tutorial.*

## Step 4: Install Nginx

Now that we are up to date with our installer, let's use it to install our server Nginx.

```
1 sudo apt-get install nginx
```

It is surprising how easy this is. If you are using Ubuntu 16.04, then Nginx will even start running itself after being installed.

In fact you should be able to now visit your IP-Address and you will see that Nginx is working. You could even share this URL with your friends and they would be able to see it too (of course I don't know why you would want to).



If you see this page, then you know that your server is working and Nginx successfully installed.

Some configuration is still needed to get Nginx to show our Laravel app, but we will come back to that. We need to set up a few other things first such as Mysql and PHP.

## Step 5: Install MySQL

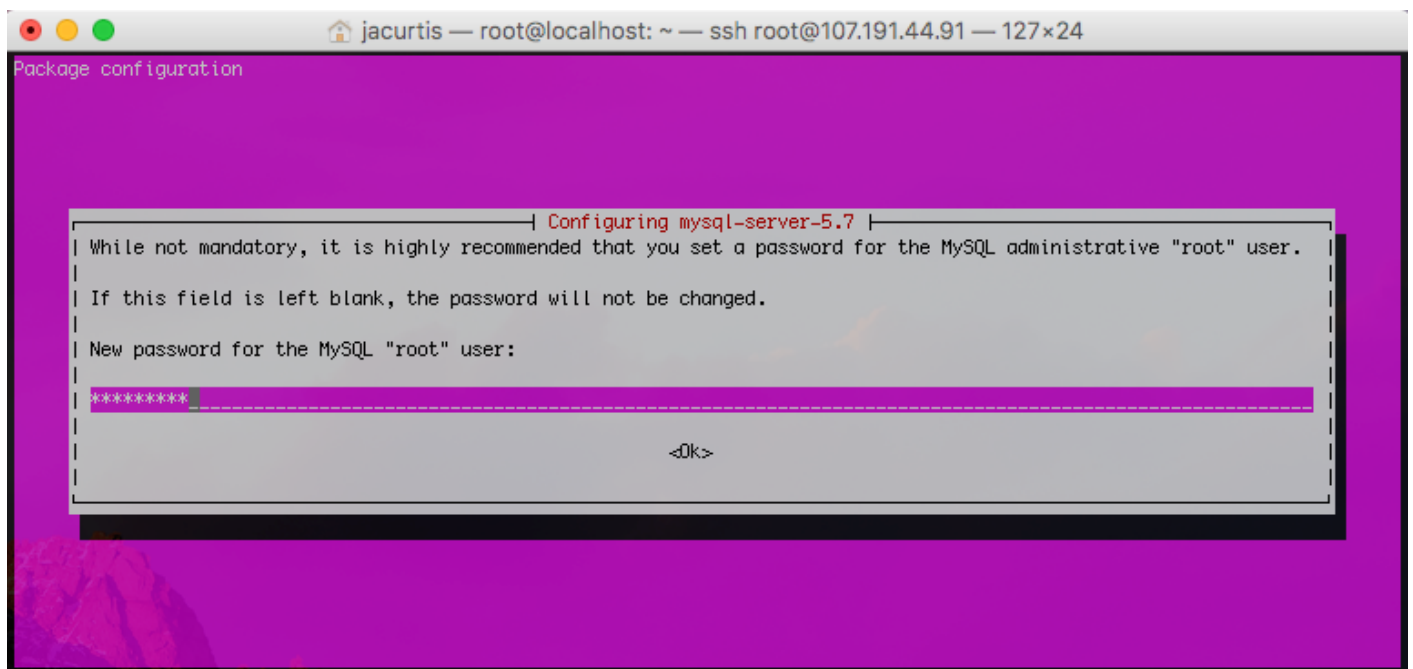


Ok, a server isn't much use without a database. In fact our Laravel application is kind of a waste unless we have a database to store our information (otherwise why not make a single page app or plain old HTML?).

Of course you could always install another database, but we will be installing MySQL here. To get started, we need to use Apt-Get to go install the base MySQL Install.

```
1 sudo apt-get install mysql-server
```

This will start installing MySQL. Let the install run until a bright pink/purple screen pops up. This might just be the worst color selection for any terminal application ever, but there isn't much we can do about it but to embrace it. You will want to type in a password to use for the **root** MySQL user. Choose something secure here and then click the **enter** key.



After selecting a password for MySQL it will ask you to confirm.

After you make your first password it will ask you to confirm. Obviously make sure they match. Also, this is a password you need to remember. So make sure you store the password somewhere safe or it is something you can remember. You will be using this password a lot going forward.

Once your command line finished and displays the `root@localhost:~#` line again, then you know you are complete with MySQL.

## Secure your Install

You know that friend that just has that reputation for being the person you can't tell a secret to no matter what? Well MySQL has a reputation for being insecure. It is not because it is insecure itself, but because most people that set it up leave many default settings in place and the default settings are not secure at all. For example, on my local computer my MySQL doesn't even have a password at all and the only user is **root**. This is ok because it is only on my local computer and because it doesn't store anything important, but on your server this is a bad idea.

MySQL luckily has a nice helper script which gets rid of a lot of these bad habits that MySQL has. For example it makes sure you don't have an empty password for your root user, it gets rid of the test database, and removes remote root user access. These setting changes will make your MySQL more secure. To get all these security fixes to take effect, just type this into the terminal:

```
1 sudo mysql_secure_installation
```

Depending on your version it might ask you to install the VALIDATE PASSWORD plugin. I personally don't think this is necessary since I will have control over making new users and I will make sure the passwords are secure enough, so I will skip over this setting. (Type 'N').

```
1 VALIDATE PASSWORD PLUGIN can be used to test passwords
2 and improve security. It checks the strength of password
3 and allows the users to set only those passwords which are
4 secure enough. Would you like to setup VALIDATE PASSWORD plugin?
5
6 Press y|Y for Yes, any other key for No:
```

Next it will ask you if you want to change the existing password for **root** user. If you just set a secure password in the last step then you can also skip this question by pressing any key (other than 'Y'). If you left the password blank or set up a silly password (like 'password' or '1234') then go ahead and change your password now.

Next it will ask you to remove an anonymous user. Type **Y** to remove the anonymous users, this is a major security risk.

Now it will ask if you want to *Disallow root login remotely?* and you should also select **Y** for this.

Another prompt asks to *Remove test database and access to it?* This is a good idea to do, so type **Y** again for this.

It may also ask to *reload privilege tables now?* This is always a good idea, so type **Y** again.

The terminal will tell you **All Done!** With this announcement we now have a LEM stack, which really isn't a think. But I thought you would like to know your progress as we just completed the **M** in **LEMP** with our MySQL instance. Now let's finish it up and get the **P**.

## Step 6: Install PHP

Ok I kind of tricked you, because your Ubuntu instance probably already has base PHP set up. But you need to set up PHP for processing. This comes in the form of a plugin called `php-fpm` which is a boring as hell name which sounds much cooler in its full version "FastCGI Process Manager".

We need to install both `php-fpm` and while we are at it, we will grab `php-mysql` which as you might guess, allows us to use PHP to talk to MySQL. Lastly we will install `php-mbstring` which is a requirement for Laravel.

```
1 sudo apt-get install php-fpm php-mysql php-mbstring
```

At the time of this writing, this will install the cool new version of PHP, version 7! With PHP now installed, **we have our full LEMP stack installed.**

## Step 7: Configure PHP

With the stack installed, it is now time to configure everything to get it working. There isn't much to configure with PHP, but there is one small security fix we need to make.

In your terminal, open up your `php.ini` file in whatever text editor you wish (VIM, or eMacs) but for simplicity, we will use Nano in this tutorial.

```
1 sudo nano /etc/php/7.0/fpm/php.ini
```

The line we need to edit is `cgi.fix_pathinfo=0` so you can either search for it like a needle in a haystack, or you can search for it using `Ctrl+W`, I personally recommend searching for it.

Press `Ctrl+W` and now type in `cgi.fix_pathinfo=` and click `enter`. This will take you to the right line right away. You will see a semicolon the left of this line. Delete the semi colon and then change the `1` into a `0` and save the file. The file should look like this upon saving:

```

GNU nano 2.5.3 /etc/php/7.0/fpm/php.ini
;cgi.redirect_status_env =

;cgi.fix_pathinfo provides *real* PATH_INFO/PATH_TRANSLATED support for CGI. PHP's
;previous behaviour was to set PATH_TRANSLATED to SCRIPT_FILENAME, and to not grok
;what PATH_INFO is. For more information on PATH_INFO, see the cgi specs. Setting
;this to 1 will cause PHP CGI to fix its paths to conform to the spec. A setting
;of zero causes PHP to behave as before. Default is 1. You should fix your scripts
;to use SCRIPT_FILENAME rather than PATH_TRANSLATED.
; http://php.net/cgi.fix-pathinfo
cgi.fix_pathinfo=0

; FastCGI under IIS (on WINNT based OS) supports the ability to impersonate
; security tokens of the calling client. This allows IIS to define the
; security context that the request runs under. mod_fastcgi under Apache
; does not currently support this feature (03/17/2002)
; Set to 1 if running under IIS. Default is zero.
; http://php.net/fastcgi.impersonate
;fastcgi.impersonate = 1

```

Change `cgi.fix_pathinfo=1` to a 0 and uncomment the line.

To save something in Nano, just press `Ctrl+X` and type `Y` and then press `Enter`.

Before the changes can take effect we need to restart `php-fpm` by typing in this command:

```
1 sudo systemctl restart php7.0-fpm
```

Now our change has taken effect.

## Step 7: Configure Nginx

Here is where things will start to get a little tricky. Get your thinking caps on and let's configure our server engine. All the configuration we need to make is in the following config file. Go ahead and open it up in Nano using the following command (use another editor if you prefer).

```
1 sudo nano /etc/nginx/sites-available/default
```

You will see a lot of lines with `#` in front of them, these are comments. For simplicity, we will remove comments in this tutorial to make it easier to see what changed.

```

1 <span class="s1">server {
2 </span><span class="s1"><span class="Apple-converted-space">    </span>listen 80 default_serv
3 </span><span class="s1"><span class="Apple-converted-space">    </span>listen [::]:80 default
4
5     root /var/www/html;
6     index index.html index.htm index.nginx-debian.html;
7
8     server_name _;
9
10    location / {
11        try_files $uri $uri/ =404;
12    }
13 }
14 </span>

```

The first change we need to make to this file is to allow it to recognize index.php as a valid file to deliver.

In the line with all of the index names, we will add `index.php` to the list of allowed file types to deliver by default. What this line tells Nginx is to first look for an `index` file, then look for an `index.php` file, then an `index.html` file and so forth. It will start at the beginning and work down until it finds a matching file. Then the matching file is what is sent to the user. We want it to deliver an `index.php` file before an `index.html` file, so the order is important here. Add the red text shown below.

```

1 <span class="s1">server {
2 </span><span class="s1"><span class="Apple-converted-space">    </span>listen 80 default_serv
3 </span><span class="s1"><span class="Apple-converted-space">    </span>listen [::]:80 default
4
5     root /var/www/html;
6     index <span style="color: #ff0000;">index.php</span> index.html index.htm index.nginx-deb
7
8     server_name _;
9
10    location / {
11        try_files $uri $uri/ =404;
12    }
13 }</span>

```

Next we need to add our public domain or IP address to the `server_name` line. This tells Nginx the domain to respond to. I am going to use an IP address for this tutorial since I am not setting up a domain. But if you have a domain name that you want this server to use then you would put the domain name here instead.

```

1  <span class="s1">server {
2  </span><span class="s1"><span class="Apple-converted-space">    </span>listen 80 default_serv
3  </span><span class="s1"><span class="Apple-converted-space">    </span>listen [::]:80 default
4
5      root /var/www/html;
6      index index.php index.html index.htm index.nginx-debian.html;
7
8      server_name <span style="color: #ff0000;">107.191.44.91</span>;
9
10     location / {
11         try_files $uri $uri/ =404;
12     }
13 }</span>

```

Now we need to do a few other housecleaning items. You will want to just trust me on these as they get more complex, but the concepts of what they accomplish should make sense to you. First things first we want to tell Nginx to use your `php-fpm` that we installed earlier. This will be represented by the first `location` block that we add (it will actually be the second on in the document though, make sure to leave the first `location` block alone (for now, we will come back to configure it for Laravel later).

The second `location` block we are adding (the third in the file) will be telling Nginx to ignore `.htaccess` files. This is because `.htaccess` files are for Apache and we are using Nginx. Sometimes Laravel files will have `.htaccess` files in them by default so let's just make sure that if one gets onto our server to make sure it doesn't interfere with anything and our users do not have access to it.

These changes are marked in red below. If you scroll down in your file you will notice that these two location blocks are already written for you, just uncomment the lines if you like or write it as shown below. If you decide to uncomment the lines, make sure you leave the notes commented out and also there is a line that reads `fastcgi_pass 127.0.0.1:9000` that should stay commented. Basically just make sure that your uncommented lines match what is below.

```

1  server {
2      listen 80 default_server;
3      listen [::]:80 default_server;
4
5      root /var/www/html;
6      index <span class="highlight">index.php</span> index.html index.htm index.nginx-debian.ht
7
8      server_name 107.191.44.91;
9
10     location / {
11         try_files $uri $uri/ =404;
12     }
13
14     <span style="color: #ff0000;"><span class="highlight">location ~ \.php$ {</span>
15         <span class="highlight">include snippets/fastcgi-php.conf;</span>
16         <span class="highlight">fastcgi_pass unix:/run/php/php7.0-fpm.sock;</span>
17     <span class="highlight">}</span></span>
18
19     <span class="highlight">location ~ /\.ht {</span>
20         <span class="highlight">deny all;</span>
21     <span class="highlight">}</span></span>
22 }

```

So that is all we need to do for now. We will come back to this file again in a moment, but let's save and close it for now just to make sure everything is good to go.

To save it remember to press `Ctrl + x` and then type `y` and then press `enter`.

Now that we have saved the file, make sure it is error free by typing:

```
1 sudo nginx -t
```

If everything was correct then you should get this notice when submitting the command:

```

1 <span class="s1">nginx: the configuration file /etc/nginx/nginx.conf syntax is ok</span>
2 <span class="s1">nginx: configuration file /etc/nginx/nginx.conf test is successful</span>

```

This means you have no errors. Good work, now to let it take effect you can restart Nginx:

```
1 sudo systemctl reload nginx
```

With this set up, you are now ready to deploy any PHP application. The server is all set up to accept and deliver it. So in the next few steps we will set it up specifically to work for Laravel 5.

## Step 8: Create A Folder for Laravel

Now that our server is ready to serve files, let's get Laravel files set up so that our server can do what it was born to do and serve them. By default Nginx will look in our `/var/www/` folder as the root of where to serve files. So we will add another folder in here called `laravel` (or whatever you want to call it) and place our Laravel app there.



```
1 sudo mkdir -p /var/www/laravel
```

Now we have a folder to store Laravel in. Let's update Nginx so that it knows about this folder. Of course we don't just tell Nginx about the folder, we need to tell it where to find the default page to run whenever there is a web request. This means we need to understand something about Laravel first.

In Laravel, there is a file called `index.php` in our `public` directory. This file is a php file that is actually most of the magic behind Laravel. Regardless of our routes, we always want to load this file. This file then grabs information about the request and sends it to our routes file (in `routes/web.php` in Laravel 5.3) which then parses the url that was passed into it to determine which controller to send it over to. When the routes file determines which controller and action to implement it does so, executes your controller action, which most likely returns a view that is what ultimately is returned to the user.

The reason that this workflow is important to understand is that regardless of which route you go to, the page that is always loaded is the `index.php` page. All the routes and views that you see are actually the result of loading this same page on every request. I share this information with you to explain that we just need to tell Nginx to always load the `index.php` page no matter what, and after that Laravel will do the rest.

In order to update Nginx, we are going to edit the same file we edited before. I will use Nano again, using this command:

```
1 sudo nano /etc/nginx/sites-available/default
```

This time our focus will be on the `root` line which is the location that Nginx starts looking for a file to send back to the user. Right now it will default to `/var/www/html` which is actually just fine location for our app if you want to use it. But we will change it to the `laravel/` folder that we just created.

```
1  server {
2      listen 80 default_server;
3      listen [::]:80 default_server ipv6only=on;
4
5      root <span class="highlight" style="color: #ff0000;">/var/www/laravel/public</span>;
6      index <span class="highlight">index.php</span> index.html index.htm;
7
8      server_name <span style="color: #999999;">100.100.100.100</span>;
9
10     location / {
11         try_files $uri $uri/ =404;
12     }
13
14     # more location blocks continue below
15     # (no changes needed beyond this point)
16 }
```

**Just edit the one red line** on root, even though the rest of the file is not displayed above, leave it how it was in the previous steps, only edited the red text.

You will now see that we point to the `laravel/public/` directory. This is because the `index.php` file that we want to use is inside the `public/` folder. You can see below that once it gets in that folder it will start looking for `index` and then `index.php` where it will find our file and then in turn execute Laravel.

Finally you might remember how I said that the `index.php` file collects the query data in order to pass it into Laravel. Well we need to do that now, attaching our query string onto the end of the `index.php`. We will do this after the `$uri` and `$uri/` so that if there is something that needs to overwrite Laravel, they can execute before it gets to Laravel. An example of this is like if you have `example.com/phpmyadmin` you want the `phpmyadmin` uri to execute before Laravel. But most stuff will just get caught by Laravel. We also remove the 404 error because we will let Laravel decide if something needs to respond with a 404 error.

Change only the red text and leave everything as it was (remember that the `server_name` on this example will not match your file, yours will either be the domain name or IP address you were given):

```
1 server {
2     listen 80 default_server;
3     listen [::]:80 default_server ipv6only=on;
4
5     root /var/www/laravel/public;
6     index index.php index.html index.htm;
7
8     server_name <span class="highlight" style="color: #999999;">100.100.100.100</span>;
9
10    location / {
11        try_files $uri $uri/ <span class="highlight" style="color: #ff0000;">>/index.p
12    }
13
14    # more location blocks continue below
15    # (no changes needed beyond this point)
16}
```

Now make sure to save the file (Ctrl + X and then Y and then press the enter key). Once you are back at your ssh session (exited Nano) you can restart Nginx so the changes we made take effect.

```
1 sudo service nginx restart
```

Try visiting your url now in the browser and if everything worked then **you should now get a 404 page instead of the Nginx success page** (this is actually a GOOD thing). This is because now Nginx is pointing at the Laravel folder (specifically the public folder inside the Laravel folder) instead of the html folder which contains that success page. Of course we haven't installed Laravel yet, so that public folder doesn't exist, hence the 404 error.

## Step 9: Create Swap File (Optional)

Before we install composer or Laravel, we need to think about memory. Installing these applications require a larger download (compared to the other little stuff we have been downloading) and might potentially eat up all of our RAM if we are on a smaller server with less than 1Gb of memory. So if your server has more than 1Gb of memory then you can probably skip this step. If not, then it's a good idea to create a swap file to accomodate the extra download sizes and leave some memory in RAM for our server to run during the download.

Building a swap file allows the operating system to move data off the RAM memory and onto the SSD when it doesn't have enough space. This is mostly only important while installing larger applications.

We will create a 1Gb swap file on the SSD:

```
1 sudo fallocate -l 1G /swapfile
```

Now we tell Ubuntu to format it as swap space:

```
1 sudo mkswap /swapfile
```

And finally to start using it we type:

```
1 sudo swapon /swapfile
```

Now we are good to install larger stuff.

## Step 10: Install Composer

You have installed composer before (otherwise you wouldn't have made it to this point in your life where you are reading a tutorial about how to deploy a Laravel app), and this is no different than before. Follow the instructions just like on the [GetComposer.org](https://getcomposer.org) website.

```
1 cd ~
2 curl -sS https://getcomposer.org/installer | php
```

Now we have `composer.phar` in our home folder, and it's time to move it into our bin so we can use composer commands easier by just typing `composer`.

```
1 sudo mv composer.phar /usr/local/bin/composer
```

You can try typing `composer` right now and you should get all the composer help files you are used to getting when using it on your local computer. Hopefully you are starting to feel at home.

## Step 11: Install Git

Since the year is 2016 and not 2006 you really should be using git to deploy your application. So you could always use SFTP to get your Laravel 5.3 app onto your server, but that is not only less secure, but it also WAY SLOWER. While it might work fine the first time, it becomes a pain in the ass for future updates. Using git, pushing to our server is effortless and has virtually no downtime.

We will install Git onto our server now in a folder called `/var/repo/` which is near our Nginx folder of `/var/www/laravel1/`. Let's make the folder now.

```
1 cd /var
2 mkdir repo && cd repo
```

This will move us into our `/var/` directory and then make a new directory called `repo/` and then move us into that folder. You should now be inside `/var/repo/` when you execute the next commands.

```
1 mkdir site.git && cd site.git
2 git init --bare
```

The `--bare` flag might be a new one for you, and that is because it is generally only used on servers. A `bare` repo is a special kind of repo whose sole purpose is to receive pushes from developers. You can learn more about these types of repositories from the [official git site](#).

We now have a git repository in `/var/repo/site.git` congratulations!

## Step 12: Setting Up Git Hooks

Git repositories have a cool feature called hooks that we are going to use to move our files after a git push. Think of git hooks like webhooks or maybe wordpress hooks. Basically you can create scripts that execute when certain hooks are triggered. There are three hooks available through Git: *pre-receive*, *post-receive*, and *update*.

We will focus on the *post-receive* hook which triggers after the repo has fully downloaded your files and completed receiving a push.

To set up hooks we need to move into the hooks directory inside of our `site.git` folder. In `/var/repo/site.git#` we can type `ls` to see all the files and folders inside. You will see the `hooks/` directory which we need to `cd` into.

Once you are inside the `hooks/` directory we are going to create the *post-receive* script. We will be using a new command called *touch* which makes an empty file.

```
1 sudo nano post-receive
```

Now you will open up a blank file in Nano (terminal text editor). Type the next two lines into the file and save and exit the file.

```
1 #!/bin/sh
2 git --work-tree=/var/www/laravel --git-dir=/var/repo/site.git checkout -f
```

Now save and exit (the same way we keep doing it `Ctrl + X` then `Y` to confirm the save and `enter` to save it as `/var/repo/site.git/hooks/post-receive`. This file is where all of the magic happens.

The `--work-tree=` tells git where to copy received files to after it has completed. We set it to point to the folder for our Laravel application that we made earlier. The `--git-dir=` tells git where the bare git directory is that has received the files. It is that simple. Make sure that the whole command is on one line (including the `checkout -f`).

After you save the `/var/repo/site.git/hooks/post-receive` file, you need to make one last command before we leave this folder and push our files up. The `post-receive` file needs execution permissions in order to copy these files over. So we can do that really quick with one line of code. Make sure you are still in `/var/repo/site.git/hooks/` folder when you type this command:

```
1 sudo chmod +x post-receive
```

That is it! Now when we push to this repository on our server, the files will be placed in our `/var/www/laravel/` directory and Nginx can begin to serve them to our users.

We are now done on our server for now, we need to exit the ssh session to access our local machine for the next step. Type the following command to end your `ssh` session.

```
1 exit
```

Your command prompt should now change to the name of your computer instead of `root@localhost#`. This indicates you are no longer on your server and you are making changes now to your local computer.

## Step 12: Set up our Local Computer to Push to Production

Now that our server is set up to receive the files, let's set up our local computer so that it can push the files to our server. We will be using git, so make sure that your local computer's laravel directory is under git version control before you continue.

Just like when we push our files up to github, we set up a `git remote` called `origin` that represents github. So when we want to push to github we make a command like this `git push origin branchname`. This tells git to push the branch (branchname in this example) to our origin remote.

Now in the same fashion that we set up github as a push location, we will also set up our new server as a push location. I like to call this `remote` by the name `production` which represents our *live production website*. The goal is that after we set it up, we can tell it to push to our server from our local computer by just typing the command `git push production master` and this will push the master branch to our production server. You can continue to push to github using `git push origin master` but then when you are ready to make changes go live you will run the push to `production`.

*Note: You can create as many “remotes” as you want in git. It is common to have a secondary server called “staging” which is where push your project to for quality testing before pushing to a live site. The staging site is like a beta for you to test internally in a production-like environment before the whole world sees it in real production. In this case you could create another server (just following the directions in this tutorial again) and create another “remote” called “staging”. Now you can use a command like `git push staging master` to push to staging for testing. Then when you feel that the version is safe for the public, you can run `git push production master` to push it to the production server. You can also set up other remote servers for git backups (like gitlab) or testing servers, or alpha tests and stuff.*

To set up a new remote you use the `git remote add` command. Before you do this make sure you are in the correct location. First of all you should no longer be on your server. If you still see `root@localhost#` in your prompt then you are on your server still. Type `exit` and click enter to leave the server. You should see the name of your computer in the command prompt now. Use `cd` commands to get into your laravel project folder that you want to push to the server. In my case my project is under `/Sites/blog` so i type this to get into my folder via the terminal:

```
1 cd Sites/blog
```

Also make sure you have git setup for this project. I am assuming you have already made at least one commit (but probably many) and you are currently on your `master` branch which contains your latest production-ready code.

Make sure that you substitute the red text with your domain name or IP address that you use to ssh into your server.

```
1 git remote add production ssh://root@example.com/var/repo
```



Make sure to substitute the red text with your domain or IP address. The command should mimic the ssh command you use to log into your server. So if you type `ssh root@100.100.100.1` to get into your server than `100.100.100.1` is what it should show on the command above.

With this command we now created a remote called *production* that sends our files to the new bare git repo we made on our server.

Now once again, assuming your project code is production ready and is on your master branch then you can type this command to push it up to your server:

```
1 git push production master
```

The output will look just like when you push to github, but this time you are pushing to your own server! Let's log back into our server now to make sure it worked.

## Step 13: Verify our Git Hook Works

Now let's make sure our code is in the right place. It should be in our `/var/www/laravel/` folder on our server. It is easy to check, jut log back into your server and look at the directory.

```
1 ssh root@<span style="color: #ff0000;">example.com</span>
```

Remember that `example.com` needs to be changed to your domain or ip address. Now `cd` into your laravel folder.

```
1 cd /var/www/laravel
2 ls
```

You should now see what appears to be a Laravel project. You can poke around but it should mimic your files from your local computer. Honestly anything in here is a good sign because it was empty the last time we logged off the server. If you have your Laravel project in here then you have done everything right.

## Step 14: Run Composer

Hey remember when we installed composer a while ago? Well let's use it. Now that we have Laravel on our server and all the files we need, lets run composer to get it working. Make sure you are in `/var/www/laravel/` when you run composer commands because you want to be inside your laravel project.

```
1 composer install --no-dev
```

The `--no-dev` command flag is very important. Without it, composer will try to install a bunch of stuff that you **do not need on production**. It is also very likely that the install will fail as well, since some of the dev dependencies won't work on our server. By adding `--no-dev` we are only installing the main require elements and not other random things.

## Step 15: Laravel Permissions

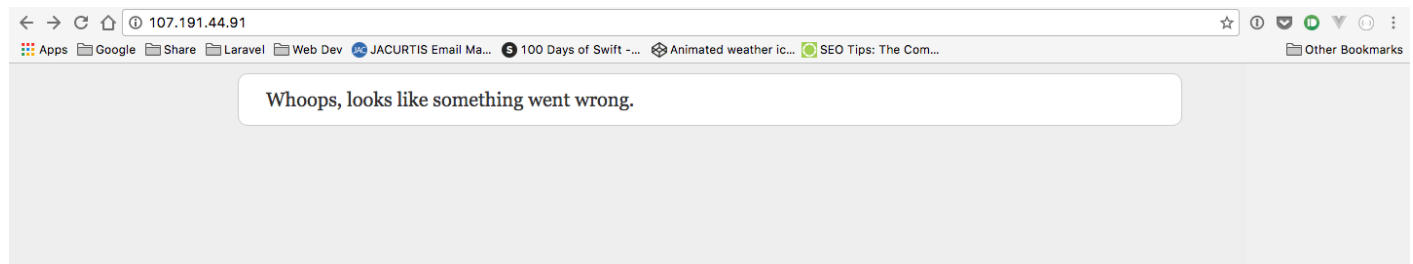
In order to run, Nginx needs certain permissions over the Laravel directory we made. We need to first change ownership of the laravel directory to our web group.

```
1 sudo chown -R :www-data /var/www/laravel
```

Now the web group owns the files instead of the root user. Next we need to give the web group write privileges over our storage directory so it can write to this folder. This is where you store log files, cache, and even file uploads.

```
1 sudo chmod -R 775 /var/www/laravel/storage
```

Now go to your web browser and type in your domain or IP address to attempt to view the site. What do you see?



This is actually a good thing to see.

If everything went “right” then you should see an error, Haha. This time though you will see a Laravel error, however which actually means that now Laravel is working. You know the all-to-familiar “Whoops something went wrong!” message and should recognize it with Laravel. If you tried this before then you got a simple 500 server error displayed by your browser, not by Laravel. The fact we see this error is actually a good thing because it means that Laravel is giving us the error and not Nginx.

Now I skipped a step intentionally. Before we go back and fix it, I wanted to show you how to troubleshoot on your server. If you thought troubleshooting was hard on your local machine, just wait till the world of live servers. Of course the idea is that you test your app so well before

pushing to production that this never happens (trust me that is a pipe dream, every developer will experience errors on production at some point, just try to keep them to a minimum).

You might wonder why you don't get the stack trace or why you don't get a message explaining what the error is, like you are used to when you ran into this screen on your local computer. This is because our Laravel environment is currently set to *production* so Laravel recognizes that and intentionally does not output detailed error messages when something goes wrong. This is for your security. Would you want all of your visitors to see a full stack trace of your application? No, this is like giving your stalker full access to your diary, its a terrible idea. So on production you will only see these types of messages when something goes wrong. To see what happened, we need to look at our log file. Luckily now that Laravel has access to our write to our `storage/` folder, it now has the ability to create log files (which it couldn't do before).

Let's go take a look at our log file to see what went wrong. To find the log file, navigate to `/var/www/laravel/storage/logs` and if you type `ls` in this folder you will find a lone `laravel.log` file. Go ahead and open this file up in your terminal and let's see what is inside.

```
1 nano laravel.log
```

You should now see the errors that you are used to seeing on the error page. This is a safe place to store error messages because the only person that can read them are people that have full access to the server. If a hacker gets full access to your server then you have much bigger problems than the fact that they can read your log files.

Here is what my log file says. Your file should look similar:

```
[2016-08-29 02:10:21] production.ERROR: ErrorException: file_put_contents(/var/www/laravel/bootstrap/cache/services.php): failed to open stream: Permission denied in $
Stack trace:
#0 [internal function]: Illuminate\Foundation\Bootstrap\HandleExceptions->handleError(2, 'file_put_conten...', '/var/www/larave...', 81, Array)
#1 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Filesystem/Filesystem.php(81): file_put_contents('/var/www/larave...', '<?php return ar...', 0)
#2 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/ProviderRepository.php(187): Illuminate\Filesystem\Filesystem->sput('/var/www/larave...', '<?ph$
#3 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/ProviderRepository.php(135): Illuminate\Foundation\ProviderRepository->writeManifest(Array)
#4 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/ProviderRepository.php(68): Illuminate\Foundation\ProviderRepository->compileManifest(Array)
#5 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/Application.php(520): Illuminate\Foundation\ProviderRepository->load(Array)
#6 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/Bootstrap/RegisterProviders.php(17): Illuminate\Foundation\Application->registerConfiguredProv$
#7 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/Application.php(283): Illuminate\Foundation\Bootstrap\RegisterProviders->bootstrap(Object(Illu$
#8 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/Http/Kernel.php(232): Illuminate\Foundation\Application->bootstrapWith(Array)
#9 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/Http/Kernel.php(127): Illuminate\Foundation\Http\Kernel->bootstrap()
#10 /var/www/laravel/vendor/laravel/framework/src/Illuminate/Foundation/Http/Kernel.php(99): Illuminate\Foundation\Http\Kernel->sendRequestThroughRouter(Object(Illum$
#11 /var/www/laravel/public/index.php(53): Illuminate\Foundation\Http\Kernel->handle(Object(Illuminate\Http\Request))
#12 {main}
```

Some information flows off the screen.

The important part is the first line which gives you the error (and the timestamp of when it happened). To help us identify the error, I added bold green text over the important parts.

```
1 <span class="s1">[2016-08-29 02:10:21] production.ERROR: RuntimeException: file_put_contents(/va
2
3 <span class="s1">Stack trace:
4
5 // Continues below with full stack trace...</span>
```

Basically this error says that it is unable to write to the `/bootstrap/cache/` folder. If we look at the [Laravel Installation Documentation](#) we can see that we were supposed to make the `bootstrap/cache/` folder writable in addition to the `/storage/` folder. So let's go back and fix that.

```
1 <span class="s1">sudo chmod -R 775 /var/www/laravel/bootstrap/cache</span>
```

Ok, now the `cache` folder is writable. There are a few things though that we need to do. But we are getting really close to our app being ready to deploy.

## Step 16: Database Setup

So we installed MySQL a while back, but we haven't set up an actual database inside of it yet to store our application data. So now is the time to go set that up, so that we can configure it and run our migrations.

Lets get into MySQL by typing the following command:

```
1 mysql -u root -p'<span style="color: #ff0000;">yourpassword</span>'
```

Make sure to change the red text with your actual password (but keep the single quotation marks). Also note that there is no space between the `-p` and the first quotation mark.

Now you will see a command prompt change to:

```
1 mysql>
```

This indicates that you are in the MySQL CLI now instead of the ssh. We aren't going to learn all of the MySQL CLI commands here today, just the essential ones.

```
1 SHOW DATABASES;
```

This will show you all of the databases you have on this system. Now we need to make a new database for our Laravel app to use. You can call it whatever you want. Just make sure to remember the name and keep it all lowercase.

```
1 CREATE DATABASE <span style="color: #ff0000;">blog</span>;
```

The red text is where you substitute the name of your new database. I called it *blog* in this case.

Now if you wanted, you could run `SHOW DATABASES;` again and you will find the list of databases and your new database should be in the list.

That is all we needed. We have set up our database now, we can configure Laravel to start using it and then run migrations onto it.

To leave the MySQL command prompt you simply type:

```
1 exit
```

MySQL is super friendly and will say 'Bye'.

## Step 17: Configuring Laravel

Now all we have left is to configure our Laravel app. This is the same way you would configure your Laravel app on your computer. We will use the `config` files and also set up a `.env` file.

Remember that when we push to production that any file in our `.gitignore` will not be sent to our server. So any of those files need to be set up again. If done correctly, this isn't a big deal, your `node_modules` should not be there, or your `vendor` files, which is ok because you don't need them on production (you should use Elixir to compile the ones you need into your `public/` or `resources/assets/` folders prior to pushing to production).

Also remember that by default your `storage` directory is in your `.gitignore` file which means that anything stored in there (like user avatars) will not be transferred to the server. This is by design, but explaining this design decision is more complicated than we can get into right now.

It is just a good idea to look at your `.gitignore` and understand that everything in your `.gitignore` file will NOT be on the server. If you see something important on there than you either need to recreate it on your server or you need to edit your `.gitignore` file so that it includes it in your repository.

## Understanding the .env File

Really the only important file in your `.gitignore` file that our application really needs is the `.env` file. Now once again this is by design, so do not hastily remove it from the `.gitignore` file. Keep it in there, because it is very dangerous to put your `.env` file into your repository. The `.env` will contain private information, passwords, SMTP credentials, API keys, and more **that all need to be kept very secret**. So you should make a `.env` file for your server that represents your production environment and this will be different from the one on your local machine which contains information for your local environment.

For example, you might use mailtrap.io as your mail server on local, so that is the settings you put in your `.env` file under SMTP settings. However on production we need an actual SMTP server to send real emails from so the server's `.env` file will contain your SMTP credentials for SendGrid, Amazon SES, or whatever you choose to use for mail delivery.

Another example is database information, which will be different between your local and production environments. Some devs even use different database drivers, opting for SQLite on local and PostgreSQL in production.

Once you have a `.env` file set up for your server and one for your local then you can push your code between your local computer and your server and the different settings will instantly take effect. Because git doesn't touch your `.env` file, then it will not change when the other code is pushed, but Laravel will use the information in the `.env` to run everything.

Ok, I think we now know why we use a `.env` file, so now let's create one for our server.

## Creating our .env file

One file is kept in our git repo and that is the `.env.example`. This is an example `.env` file that we can use to get started. So we will start with this example file to create our server `.env`. Let's copy the `.env.example` and rename it `.env`. We want to copy instead of move because that way the `.env.example` file doesn't get pulled from the repo and we can use it again later as a template if we mess up.

To copy and rename the file we will use the `cp` linux command. Make sure before you do this that you are inside your laravel folder (in `/var/www/laravel/`) because that is where the `.env.example` is located.

To make sure that you are in the right place, run the `ls` command but run it with the `-A` flag so that you can see the hidden files (the `.` before the filename indicates that it is hidden).

```
1 ls -A
```

This should show all of your folders and files, including the hidden files. You should see your normal Laravel structure ( `app/` , `public/` , `storage/` and so forth) and also normal files like `composer.json` , `gulpfile.js` , and finally your `.env.example` . Now you know you are in the right spot.

Now that you are in the right spot, lets copy the file.

```
1 cp .env.example .env
```

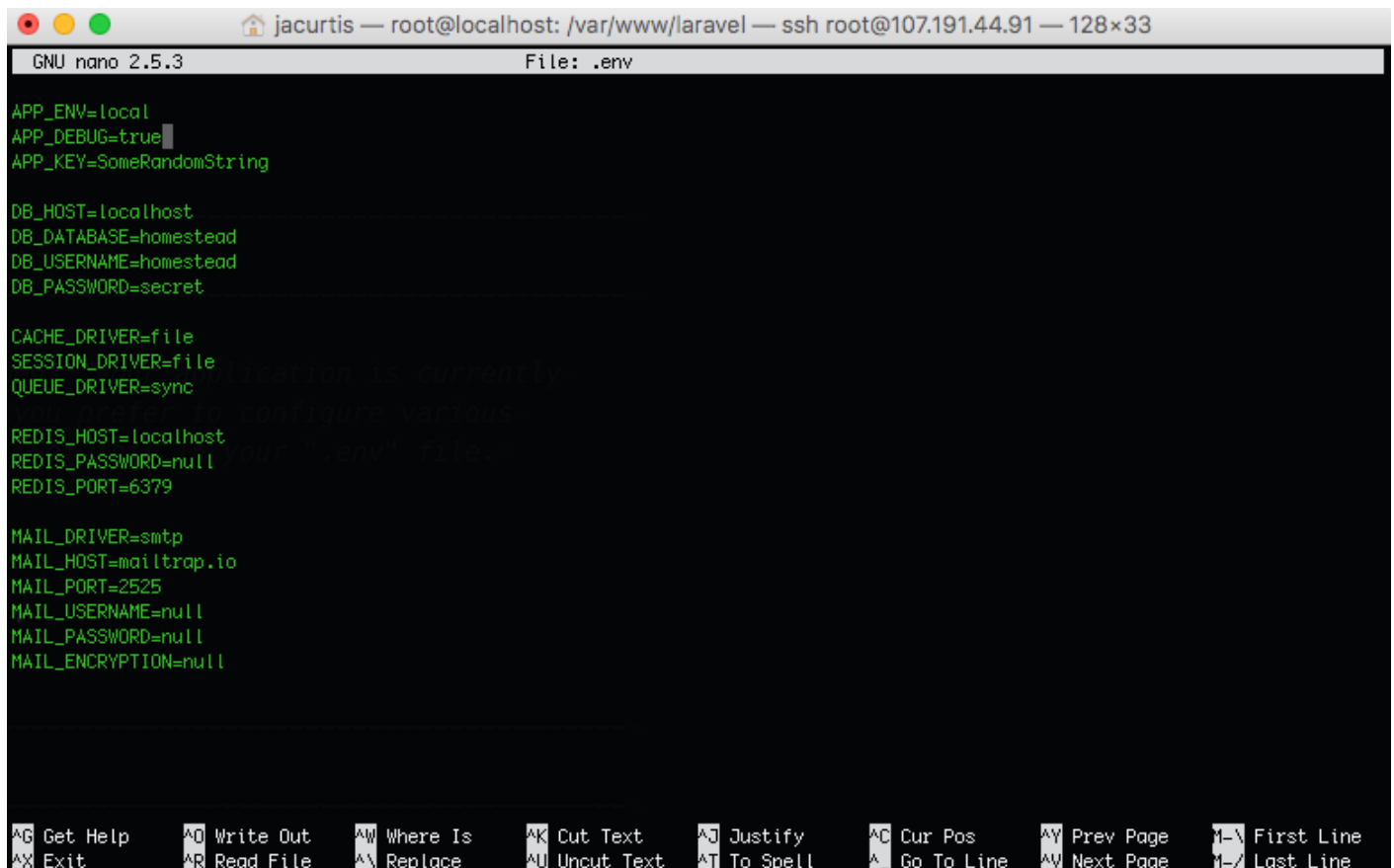
If you run `ls -A` again then you should see your `.env` file next to your `.env.example` (they should both be there).

Now we can edit our `.env` by opening it with a text editor of your choice (once again we will use `nano` for simplicity).

```
1 nano .env
```

Inside this file you will be able to overwrite many of the config settings. Remember that anything in the `.env` file will override whatever is in the `config` files.





```
GNU nano 2.5.3 File: .env
APP_ENV=local
APP_DEBUG=true
APP_KEY=SomeRandomString

DB_HOST=localhost
DB_DATABASE=homestead
DB_USERNAME=homestead
DB_PASSWORD=secret

CACHE_DRIVER=file
SESSION_DRIVER=file
QUEUE_DRIVER=sync

REDIS_HOST=localhost
REDIS_PASSWORD=null
REDIS_PORT=6379

MAIL_DRIVER=smtp
MAIL_HOST=mailtrap.io
MAIL_PORT=2525
MAIL_USERNAME=null
MAIL_PASSWORD=null
MAIL_ENCRYPTION=null
```

Now that we have created this `.env` file, it is going to override the settings in our config file. So for example, our `config/app.php` file has our environment set to `'production'` but our new `.env` file has the `APP_ENV` set to `local` instead. So now this will switch our application to `local` which is a security concern. So we either need to remove the line or change it to what we want.

`APP_DEBUG` is what sets those error messages that we talked about earlier. We need to make sure that is set to `false`.

`APP_KEY` needs to also be set, but we will set that in a moment with an artisan command.

Next comes your database settings. You will need to configure your `DB_HOST` to be `localhost`, set the `DB_DATABASE` to be the name of the database we just created in the last step, and then set your username and password for the database in the `DB_USERNAME` and `DB_PASSWORD` fields.

You might want to adjust your cache, queue, and session drivers if you know what you are doing. But the defaults are good for most apps.

Lastly you will want to change the `MAIL` settings as well. Just configure it based on the settings for your email service provider. The settings are pretty self-explanatory and outside of the scope of this tutorial.

Now Save the file using the `Ctrl + X` command we usually do.

```

1 <span class="s1">APP_ENV=production</span>
2 <span class="s1">APP_DEBUG=false</span>
3 <span class="s1">APP_KEY=SomeRandomString</span>
4
5 <span class="s1">DB_HOST=localhost</span>
6 <span class="s1">DB_DATABASE=<span style="color: #ff0000;">blog</span></span>
7 <span class="s1">DB_USERNAME=root</span>
8 <span class="s1">DB_PASSWORD=<span style="color: #ff0000;">XXXXXXXXXX</span></span>
9
10 <span class="s1">CACHE_DRIVER=file</span>
11 <span class="s1">SESSION_DRIVER=file</span>
12 <span class="s1">QUEUE_DRIVER=sync</span>
13
14 <span class="s1">REDIS_HOST=localhost</span>
15 <span class="s1">REDIS_PASSWORD=null</span>
16 <span class="s1">REDIS_PORT=6379</span>
17
18 <span class="s1">MAIL_DRIVER=smtp</span>
19 <span class="s1">MAIL_HOST=<span style="color: #ff0000;">sendgrid.com</span></span>
20 <span class="s1">MAIL_PORT=<span style="color: #ff0000;">2525</span></span>
21 <span class="s1">MAIL_USERNAME=<span style="color: #ff0000;">XXXXXXXXXXXX</span></span>
22 <span class="s1">MAIL_PASSWORD=<span style="color: #ff0000;">XXXXXXXXXXXX</span></span>
23 <span class="s1">MAIL_ENCRYPTION=null</span>

```

Take extra care to make sure the red parts get changed. If you are not using Redis database then you can delete those lines (but keeping them in won't hurt anything either). Take extra care to double check that the `APP_ENV` is set to `production` and that `APP_DEBUG` is set to `false`.

I always like to take a look at my local `.env` file as well just to make sure that I didn't add any other `.env` settings while building my app. An example is in many of my apps I create a `GOOGLE_MAPS_API` setting to pull my Google Maps API key. If I forget to add that to my production `.env` file then my maps won't work and I will have javascript errors.

We should now have most of our app set up. Just a few more configurations to make.

## Encryption Key

There is one line we left default in our `.env` file, the `APP_KEY`. Laravel needs this key to be set up in order to encrypt our sessions, cookies, and passwords. This needs to be a random key that is unique to our application to make everything more secure. We can generate this key with an artisan command. Remember those? Yeah, we can use those directly on our server, just like we did on our local computer.

Let's run the `artisan` command to generate a secure encryption key.

```
1 php artisan key:generate
```

After clicking `enter` you should see a green line that says:

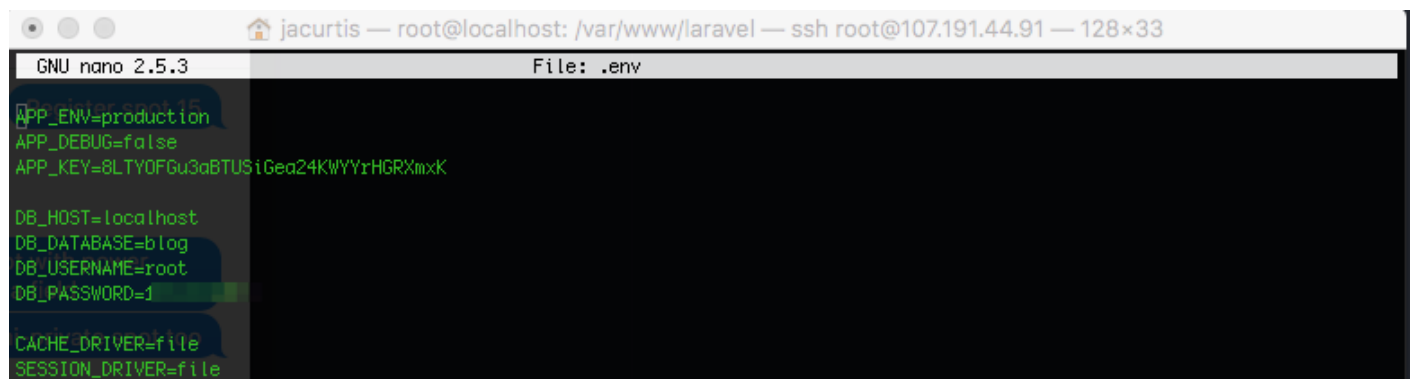
```
1 <span class="s1" style="color: #99cc00;">Application key [8LTY0FGu3aBTUSiGea24KWYYrHGRXmxK] se
```

Of course the long number inside the square brackets will be different for you, because it is supposed to be random.

If you are curious, this `artisan` command will actually write to your `.env` file for you. So you really don't need to do anything. But for the adventurous among you, go back to your `.env` file and look inside.

```
1 nano .env
```

You should see the `APP_KEY` filled out now with your random key.



```
GNU nano 2.5.3 File: .env
APP_ENV=production
APP_DEBUG=false
APP_KEY=8LTY0FGu3aBTUSiGea24KWYYrHGRXmxK
DB_HOST=localhost
DB_DATABASE=blog
DB_USERNAME=root
DB_PASSWORD=
CACHE_DRIVER=file
SESSION_DRIVER=file
```

Your `APP_KEY` will now be filled out automatically with your random key.

## A Few More Config Settings To Change

Our `.env` file is complete, but there are just a few more settings we want to change before we are live. These settings are all in our `config/` files.

In `config/app.php` there are a few things to edit. Set the `'url'` to your actual domain name. Also make sure that your `'timezone'` is set correctly too. This needs to be an officially supported PHP time zone string. If you are not sure what your timezone string is, you can find the [official timezone strings on the PHP Manual](#).

```

1 <?php
2
3 return [
4     'env' => env('APP_ENV', 'production'),
5
6     'debug' => env('APP_DEBUG', false),
7
8     'url' => '<span style="color: #ff0000;">http://example.com</span>',
9
10    'timezone' => '<span style="color: #ff0000;">America/Denver</span>',
11
12    'locale' => '<span style="color: #ff0000;">en</span>',
13
14    'fallback_locale' => '<span style="color: #ff0000;">en</span>',
15
16    [CONTINUES BELOW]
17 ]

```

Change the red sections (note that comments were removed for readability). Save the file and you are done with your configuration.

## Cache Configuration Settings

You might have noticed that there are lots of **config** files in our application. They inherit and cross reference each other, all of which makes the configuration easier to read, but slower for PHP to compile on the fly.

Because of this, it is a good idea to cache all of the configuration settings into one cached config file. We can do this with another `artisan` command.

In your terminal (in the `/var/www/laravel/` folder):

```
1 php artisan config<span class="token punctuation">:</span>cache
```

This will output:

```

1 <span class="s1" style="color: #99cc00;">Configuration cache cleared!</span>
2 <span class="s1" style="color: #99cc00;">Configuration cached successfully!</span>

```

Now all of our configuration settings are compiled together into one quick file. Of course don't forget now that they are cached. So if you make another change to your `.env` file or to a file in your `config/` folder, that you need to also recompile the config cache before it will take effect.

## Step 18: Migrate our Database

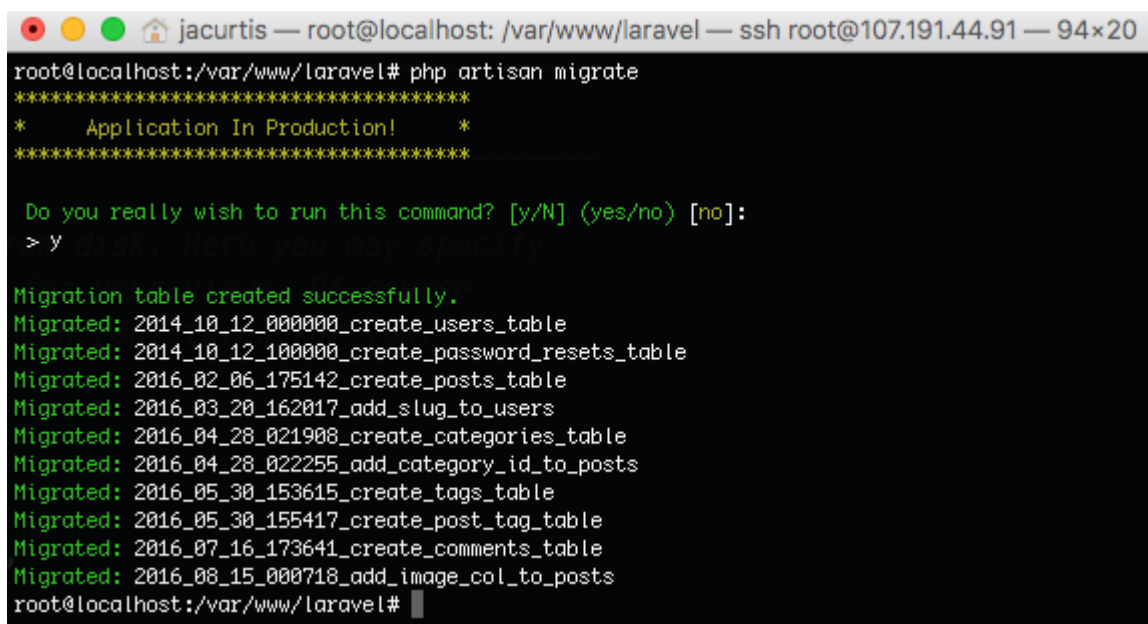
Now that everything else is set up you can actually run your app. The only problem you might still have is that if your app relies on a database, then you need to migrate your database. We do this in much the same way as on our local computer. At this point our configuration files should have

everything we need to set up and communicate with our database, so migrating now should be simple.

```
1 php artisan migrate
```

This will warn you that your app is in production and make sure that you want to actually run your migrations. The default setting is “no” also so its very difficult to accidentally migrate your live database. This can be good because sometimes you might forget you are logged into your server on SSH and just grab the nearest terminal window to run what you think are local migrations, but really they are production migrations. This script makes sure we know what we are doing.

Type **Y** to continue and migrate your database.



```
root@localhost:/var/www/laravel# php artisan migrate
*****
*      Application In Production!      *
*****

Do you really wish to run this command? [y/N] (yes/no) [no]:
> y

Migration table created successfully.
Migrated: 2014_10_12_000000_create_users_table
Migrated: 2014_10_12_100000_create_password_resets_table
Migrated: 2016_02_06_175142_create_posts_table
Migrated: 2016_03_20_162017_add_slug_to_users
Migrated: 2016_04_28_021908_create_categories_table
Migrated: 2016_04_28_022255_add_category_id_to_posts
Migrated: 2016_05_30_153615_create_tags_table
Migrated: 2016_05_30_155417_create_post_tag_table
Migrated: 2016_07_16_173641_create_comments_table
Migrated: 2016_08_15_000718_add_image_col_to_posts
root@localhost:/var/www/laravel#
```

After you select **Y** to migrate, you will see all of your migration catch up.

That's it! Your database is now set up and ready to go.

## Step 19: Miscellaneous Things

That is it! We have everything set up we need in order to start using our application on production. Remember that you have a database, but the database is empty. You might need to create a default admin user or something. You can run a database seed now if you have one set up. You can run it using the artisan command:

```
1 php artisan db:seed
```

Or if you do not have a seed setup then you can run:

```
1 php artisan tinker
```

This opens up a console where you can add Laravel commands and execute them immediately. To make a new default user for example you could use:

```
1 $user = new App\User;
2 $user->name = '<span style="color: #ff0000;">Alex Curtis</span>';
3 $user->email = '<span style="color: #ff0000;">alex@example.com</span>';
4 $user->password = Hash::make('<span style="color: #ff0000;">password</span>');
5 $user->save();
6
7 exit
```

This will create a user in our database named Alex Curtis with an email of alex@example.com and a password of password (it will save the hashed version of course, but password would be the password we type in).

You might also need to start a queue worker and other various tasks like that. But if you navigate over the browser you should now have access to your full application in its entirety.

## Step 20: Share with Your Friends

You have a world wide url now to share your server with your friends. Tweet it out to @\_jacurtis on twitter so that I can see it as well. Also if you found this ultimate guide helpful, be sure to share it wherever great Laravel content is consumed.

TAGGED IN

[employees](#)[Font](#)[reading list](#)[terminal](#)[website](#)[white hat](#)

J. Alexander Curtis



 **118 COMMENTS**

Ron



1 year ago

Great Guide!

Would love to read a follow up about the Lamp stack though.

Thanks for your work!

---



Luiz

1 year ago

Very nice article/tutorial!

Very well explained , and didactic.

I will share my blog soon.

Thanks for that!

---



david echeta

1 year ago

that was helpfull hoping you would pls do a video tutorial on deployment...thank you

---



Jacurtis

AUTHOR

1 year ago

The video series is live on YouTube.

---



Rana Shahzad

1 year ago

Very Nice Work .

well explained!!

always love to listen and read ” JACURTIS”

he is really driving my ideas to the next level.

Thanks.

---





Jacurtis

AUTHOR

1 year ago

Thanks so much! I am glad I have been able to help.

---



Amigo

1 year ago

Hi Alex, Sorry if I ask here, What kind of search engine do you use in this website, Laravel 5.3 Scout? or something else?

---



Jacurtis

AUTHOR

1 year ago

This is currently wordpress (as of September 2016). Our next site is being built on Laravel and will use Algolia as the search engine.

---



Anatolii

1 year ago

Great work. Thanks a lot for this guide. Was searching exactly for this information.

---



Jacurtis

AUTHOR

1 year ago

Awesome, glad you found us here 😊

---



Ankit Balyan

1 year ago

Great Work. Specially the git hooks and deployment. But I've a question, how feasible it will be if we install a new library into the project via composer.  
because It may cause error as soon we push it to the production. At this point, when we should install the dependencies, before or after the production push?

---



Jacurtis

AUTHOR

1 year ago

You can run `php artisan down` on your server to put it into maintenance mode and then push your project to production from your local computer to add the new files on your server. Now go back to your server, run `composer install` in order to install those new dependencies. The server will show the maintenance screen during this time while you are installing dependencies. Once your composer install script has finished and everything is installed then you can `php artisan up` to move your server out of maintenance mode and your site can now run using your new composer packages.



Peter R.

1 year ago

How does the server know which git repository to watch? I can't see where you've configured the server to use the git origin or production.



Peter R.

1 year ago

OK I understand now, you're pushing from local directly to server (bypassing the github).



Jacurtis

AUTHOR

1 year ago

Correct 😊



Jacurtis

AUTHOR

1 year ago

The server never really “knows”. Think about the git repository as a bucket. It will move anything put into that bucket over into the Laravel folder. So you can toss a Ruby on Rails project in there and it will move the Ruby on Rails project into our Laravel folder. In this way, the git repo is kind of “dumb” it just blindly does whatever is thrown at it. Likewise it doesn't care much about where the file is pushed from. So on your local computer we set up the `production` remote which points to the address of the git bucket. But we could just as easily call it anything as long as the address

points of that remote points to that git bucket (the ssh folder command). Many people call it “live” or “server” or something like that. I chose “production” in this tutorial but you can call it anything. Just set up `git remote add live` if you want to call it “live” instead of “production”. Just make sure that the SSH command is correct so it points to the right place. Then git doesn’t care from there, it will push anything that it receives from that bucket into our Laravel folder.



Peter Leyva

1 year ago

Hey alex nice tutorial, one question , where can i buy a Domain for my application? or what you recommend , its easy to configure Domain in VULTR ? i saw some option called DNS to creat a domain but nothing happened

thanks Alex great work!!



Jacurtis

AUTHOR

1 year ago

I personally buy all my domains through [thirstylink linkid="580" linktext="Namecheap" class="thirstylink" title="Namecheap"]. I runs about \$9 a year. Once you own your domain then you need to change the DNS servers to point to Vultr. I can do a tutorial on this soon because it has been a popular question.



Willie Mwewa

12 months ago

Please do a tutorial on this soon. Its what am trying to figure our at the moment. And thanks a lot for this tutorial.



R. Falkner

1 year ago

I’ve tried following step by step on a Digital Ocean droplet to no avail – that’s whether I try to push the files through git, or if I bypass that stage all all together. I wind up with a 404 Nginx error. I’m using PHP 7 on 16.04 LTS.

Nginx config: <http://pastebin.com/FTDF0AYp>



david echeta

1 year ago

@alex ..of all the bunchs of laravel tutorial on youtube we can't find a simple mature laravel tutorial project on Ecommerce-website..pls you really need to help us with that to keep moving the DEVMARKETKER.io community forward..

---



Jacurtis

AUTHOR

1 year ago

Yes the E-Commerce series is coming up soon. It is a large undertaking and so it takes some time. It will be well worth the wait though 😊

---



david echeta

1 year ago

@alex hope one day to be like you base on programming..currently am 25 i hav been learning JavaScript and php evryday on YouTube tutorials for the past nine months now..is there any possibilities in the next two years i wil been finishing a live production project for client...thanks for your guardians

---



Jacurtis

AUTHOR

11 months ago

Yes for sure! Code every day and you will learn so fast. Force yourself to do things you don't know how to do and it will push you to learn more. Best of luck and stay in touch!

---



Will

1 year ago

Hi Alex, I just signed up to vulture by following your link and linked my card but I haven't got the \$20 credit, did you have to enter a code or anything to activate it?

Thanks

---

Jacurtis

AUTHOR



11 months ago

It should happen automatically. Try asking Vultr support about the credit.

---



Matthias Kuhs

1 year ago

Hi Alex,

Thanks for the great tutorial! Well written, with good background info!

Regarding the GIT hooks etc. – is it possible to have the Staging and Production repo on the same server? How would you distinguish the two when defining them locally and remote?

Thanks!

Matthi

---



Jacurtis

 AUTHOR

11 months ago

Yes you can, in fact I am doing this right now on one of my live enterprise level software projects. We have staging set up as a secondary server in Nginx. Basically we route all beta.domain.com requests through to a secondary staging directory. So we tell Nginx to use a different folder when someone is using the beta.\* subdomain.

Then when I want to test changes on staging I push to that folder instead of master. Changes are reflected now on the beta.domain.com but not on domain.com. This allows my team to test things and when we are ready we then push to master to get the new changes to show on the live site. It works very well.

In fact I have three environments: staging, beta, and live. Staging has a testing database with dummy data but otherwise the full code. Then we push to beta which actually shares the same server as live so that changes on beta show up on live also. This means I can use beta for real world work. This helps me catch additional bugs. Then when beta has been appropriately tested then we push to live.

You really follow the same steps as you did here. The only difference is to put your beta or staging code in its own folders at the same level as your live site. Then use Nginx server blocks to route those specific domains to the folder belonging to that domain.

---



laravel\_nginx

12 months ago

thanks!

the only tutorial that worked for configuring nginx and laravel!



Chace

12 months ago

Thank you for this awesome work of yours! I have been searching for this for a very long time and finally found it ! Big shout to Alex



Jacurtis

AUTHOR

11 months ago

Thanks. You're right, there is no good tutorial on how to deploy Laravel.



charlyRoot

9 months ago

Ditto



Jeet Dholakia

12 months ago

Hello,

Thank you for the detailed article on how to guide. Can you just tell me how to install phpmyadmin with php7 and LEMP stack. I tried it but not getting it.



Jacurtis

AUTHOR

11 months ago

Yeah i can follow up with a PHPmyAdmin video



Andre

11 months ago

I'm looking forward to the followup video on PHPmyAmin, too, Alex 😊

---



Andre

11 months ago

Hey Jeet,

Not sure if you have sorted the issue out. In case you would still be any interested, the link below has been very helpful for me to tackle the same issue.

<https://www.digitalocean.com/community/tutorials/how-to-install-phpmyadmin-on-a-lemp-server>

Just a quick heads-up that you need to create the symbolic link to the PHPMyAdmin folder into the public folder rather than the Laravel folder. Otherwise, it wouldn't work.

Hope this helps! Wish you happy coding!

---



yash chaudhary

9 months ago

getting error when going to [mysite.com/phpmyadmin](http://mysite.com/phpmyadmin)

---



Jacurtis

AUTHOR

6 months ago

This tutorial doesn't cover installing PHPMyAdmin, so unless you installed it yourself, then you won't have it installed. You would need to install it and set it up (thats a whole other tutorial) before you can get this working.

---



Ab

11 months ago

Hey Thanks for awesome guide.

I need some help here.

I Have one IIS server with a public IP and one VM with internal IP hosting my Project.

Now the thing is i want to rout my all traffic to my My VM (which is in internal network). i tried with IIS reverse proxy and can able to route my first page e.h <http://www.mydomain.com> to my VM (Nginx) and it serves well but when I navigate to any other page URL is change with internal IP which is not intended here.

I don't this question is relevant with this post or not but it would be great if some one help me out.

Thanks again Jacurtis! you are awesome.



Sanjay

11 months ago

great guide , now waiting for you ecommerce project 😊



Jacurtis

AUTHOR

11 months ago

Thanks! It is coming soon. Just trying to find the time to truly dedicate to it.



ALESSIO

11 months ago

I get this error: src-refspec-master-does-not-match-any-when-pushing-commits-in-git

All files are in the local folder, not in Github, only in local.

What am i suppose to do?



Jacurtis

AUTHOR

10 months ago

Usually when I get this error it is because you are trying to push `git push` without any commits. Make sure you have staged your files and committed them with a message and everything before you push to the server. This should eliminate the issue. Also, it's good to make sure you keep some sort of cloud repository in place as a "central repo". This can be Gitlab, Github, or BitBucket (or a custom Git server).





shashik

11 months ago

thank you very much ....this is very help .you are awesome  
awesome dude.....

---



shashik

11 months ago

i uploaded my laravel project to server and its running well...but after that i did some tweek and  
changers to my site ...so how i gonna update that changes in the server...  
should i have to do whole thing again...  
or there is a another way to do that....  
if i push again is it work.... will it update the changes

---



Jacurtis

AUTHOR

10 months ago

Yes every time you make a change you just want to push to your server repo that we set up. You can  
push the whole project with Git and it will update the project accordingly. If you make an  
adjustment to your `composer.json` then you might need to run `composer install` again also.

---



Martin Barajas

11 months ago

Fantastic! The best tutorial, i tried too many times with other guides.  
This guide is pure gold man, Thank you!

---



Jacurtis

AUTHOR

10 months ago

Thank you, please share it in your networks if you found it useful.

---



Bobby

8 months ago

I can't believe I've been going for years without knowing that.



Shannon

11 months ago

When running `composer install --no-dev` the server warns Do not run Composer as root/super user! See <https://getcomposer.org/root> for details

Thanks for the guide. It's been super helpful. This should be part of the laravel documentation!



Jacurtis

AUTHOR

10 months ago

Thanks so much! I agree they need better documentation on Laravel.com about this process. Technically you really should be making another user (that is not root) for yourself to SSH into the server as. This is for security reasons. I decided not to get into that here, because we were already covering enough other things. But it really is a good idea to make a different user. Some VPS hosts do this automatically. It isn't hard to do though if you want to try.



Nathan

11 months ago

Thank you very much!!!



John

10 months ago

Great tutorial so far! However, I am getting very stuck at the git part as I do not already have a git setup on my local machine that has a working laravel version inside of it. It sounded like you did this in a previous post. Can you please direct me to that post or give me some insight on how to accomplish this? I am on a mac. Thank you so much so far!



Jacurtis

AUTHOR

10 months ago

Yes, you can find all the tutorials on Git setup on YouTube: <https://www.youtube.com/playlist?list=PLwAKR305CRO-fenwcN2-IC0rgaB6vaJgD>



Wayan

10 months ago

Hi, i'm following your instructions and got stuck when pushing to server with git.  
I've created dir using 'sudo' command under 'myusername' not under 'root' user.  
So when i 'git push production master' , i have error like shown below :

```
$ git push production master
```

```
Counting objects: 3058, done.
```

```
Delta compression using up to 4 threads.
```

```
Compressing objects: 100% (2982/2982), done.
```

```
remote: fatal: Unable to create temporary file '/var/repo/site.git/.objects/pack/tmp_pack_XXXXXX':
```

```
Permission denied
```

```
fatal: sha1 file " " write error: Broken pipe
```

```
error: failed to push some refs to 'ssh://myusername@IP_address/var/repo/site.git'
```

How to fix this?

please help



Eleazar Resendez

10 months ago

This post is incredibly complete. Excellent



Tunde

10 months ago

Hello jacurtis, love your video. However, my organization prefers the apache server. Would love to know how to adapt the configuration of nginx to apache and which files I need to configure



Jacurtis

AUTHOR

6 months ago

Yeah that is coming soon. However i have to warn you, that Apache can only maintain about half the concurrent users (with Laravel at least) than Nginx. Really convince them to switch to Nginx, it is the future!

Haha, that tut is coming though. I know we all get stuck with organizations sometimes that demand specifics like that.



Aries Mendoza

10 months ago

Can you deploy multiple laravel project in one vps server? And how will you do that? Thanks! Great tutorial!



Jacurtis

 AUTHOR

6 months ago

Yeah one day. It will be in my upcoming book if nothing else.



Niyaz

10 months ago

Excellent tuts.. Great friend. very useful. Loved it.. Thanks.



Sumon

10 months ago

Thanks for your great tutorial. Would you please make a tutorial for ubuntu-nginx with wordpress multisite including custom ip setup firewall and memory limit.

Sorry for my poor English.

Thanks again



Jacurtis

 AUTHOR

6 months ago

Unfortunately my days with WordPress are over. I have abandoned that framework and no longer keep up with its development.

Pingback: Ultimate Guide: Deploy Laravel 5.3 App on LEMP Stack (Ubuntu 16 and Nginx) | Knowledge Sharing

---



charlyRoot

9 months ago

Vultr has no usable startup LEMP scripts in their docs. Create one from this and you could own that search too.

I'm new to Linux but working on the startup script. Will share when it 100% works on Vultr.

My results are contaminated but I just googled "deploy laravel Kemp guide" and got this for to result.

Thanks for your work. I keep all of your vids available offline so I can learn while driving and running.

---



Tatenda

9 months ago

This should seriously be part of the official Laravel docs. Nice in depth tutorial!

A tutorial on deploying with Docker would be helpful, hopefully you'll consider the proposal 😊

---



Zubaer Ahammed

9 months ago

Fantastic... especially maintaining the App with git... amazing. Thanks, man!

---



Shashank

9 months ago

Hey Alex can you I have have problem to view tags that belongs to the posts and displaying posts by category if you get time the plz reply.

---



James

9 months ago

A very helpful tutorial!



charlyRoot

9 months ago

If I win the lottery, I'm going to overpay you to be my boss! Thanks for the time and effort to help others. I tweeted you and will G+ it too. I'm not on facebook.

RE: ROOT: I completely wrecked my deployment last night trying to get a non-root user to work. I know I'm missing something very simple with permissions but after hours and hours, I rm -rf'ed \* and recreated server and local sites so I could at least get my updates to work. I'm not going to tell you what I did because I don't want to take any more of your time than you feel I should. But but but... can you provide a link to something on DO or elsewhere that should help?

Where it failed was when I pushed it went fine but the hook would not update the web root. It works fine as root so I know I didn't miss a step. Just getting the perms to jive so the hook would fire kicked my tail. In the end, I couldn't even remember how to change every back so had to scrap. Which is a good thing. I can probably do it without your guide now!

FYI: I moved all of my stuff from Azure to Vultr because of you. Couldn't do the coupon but wished you could get credit for it. It's not much but it will be one day. Man it's nice that people like you are on the Blue Planet.



Jacurtis

AUTHOR

6 months ago

Wow i am so glad you got this working finally. Thanks for writing out what helped so other people can find it helpful. I'd love to be your boss one day 😊



yash chaudhary

8 months ago

error in laravel log:

production.ERROR: RuntimeException: No supported encrypter found. The cipher and / or key length are invalid. in /var/www/laravel/bootstrap/cache/compiled.php:7771

Stack trace:

#0 /var/www/laravel/bootstrap/cache/compiled.php(7761):

Illuminate\Encryption\EncryptionServiceProvider->getEncrypterForKeyAndCipher(NULL, 'AES-256-CBC')

---



Jacurtis

AUTHOR

6 months ago

Make sure you are generating an encryption key. This is done by typing `php artisan key:generate` inside the laravel project folder.



Chock Hong

8 months ago

Hello,

Alex, First I thank you for all the great tutorials. I was watching “\$this” tutorial (YouTube) and I wanted to create a VPS in order to follow you, But none of your link (for \$10/\$20 on DigitalOcen/Vultr) is valid now. So I cant follow you now, Coz I have money but no way to pay those companies, I’m in East Asia. I will be really happy if you do something about it,

Thank you very much again



Jacurtis

AUTHOR

6 months ago

Sorry about that, fixing it now.



Himan

8 months ago

Hi

Thanks for this great guide. I followed all the steps but when i pushed the master to production i saw the files going on the terminal but nothing happens on the server i can’t find the files. the Laravel folder is empty.



Jacurtis

AUTHOR

6 months ago

You might have moved them to the wrong place. Make sure you keep tabs on where you are located structurally in the server (this is shown in the command line before the `$` ). It will move your files there if you arent explicit or careful. A common error is that the files get moved to your root of the server, you can check there. Otherwise its also possible that the git clone failed.



yash chaudhary

8 months ago

getting error:Your requirements could not be resolved to an installable set of packages.

---



Dennis

8 months ago

Deployed my first Laravel site using your tutorial.

Thanks a lot!

Can you explain what is this line doing?

```
sudo chown -R :www-data /var/www/laravel
```

---



Jacurtis

AUTHOR

6 months ago

This is making the `:www-data` user (which is Nginx) the permissions to be an owner (and in turn do whatever it wants) to the `/var/www/laravel/` folder. This is where our project is, so we want to make sure that our server has full access to this folder and can save files (such as file uploads) or write to files (such as log files).

---



Paul

8 months ago

Thanks Alex, as always, superb. Are you still planning on doing an Apache LAMP version? Maybe just expand this one and split for Apache/Nginx at the relevant sections. May not be that simple though.

---



Jacurtis

AUTHOR

6 months ago

Yes one day 😊 Spending a lot of time starting my new company lately.

---



Eury Rodriguez

8 months ago



This guide is really useful and straightforward. Thanks Jacurtis.

---



Fahmi

8 months ago

By far the best tutorial on how to setup Laravel 5.3 + Ubuntu 16 + Nginx + PHP 7

---



Marius

8 months ago

Very very thanks for this!! I've been searching around internet for something like this. What would you recommend for non-server guy to reach the same goal in a shorter time?

---



Jacurtis

AUTHOR

6 months ago

Pay \$15 a month for Laravel Forge. It automates everything here so you can just click “start” and it creates everything automatically.

---



nigelhv

7 months ago

Excellent tutorial, thanks. Any idea why my install requires a password? I thought the ssh key would take care of that?

---



Jacurtis

AUTHOR

6 months ago

Everytime you run `sudo` you are telling it to run as super user which requires a password for your server's safety. Sudo is so dangerous that it requires further authentication beyond just your SSH key.

---



Sergio Araya Villalobos

7 months ago

I have follow the guide to deploy my laravel app. But I am getting a 502 error when it was suposed to have a 402. I notice that it occurs when I change the server route.

What can it be?



Jacurtis

AUTHOR

6 months ago

You will have to check your logs. Generally a 502 is because you are getting a server side error for some reason (could be anything but your logs will be what tells you the error). A 404 on the other hand (or a 402) is because a page doesn't exist. So the 502 means you have a server side error, check your logs to see what it is.



Tim

6 months ago

The first few lines of the error actually is:

[2017-03-18 03:26:46] production.ERROR: RuntimeException: No supported crypter found. The cipher and / or key length are invalid. in /var/www/laravel/bootstrap/cache/compiled.php:7717



Jacurtis

AUTHOR

6 months ago

This is probably because you do not have an encryption key set yet. Run `php artisan key:generate` and this should generate a key and then try what you were doing again and I think it will work.



Daniel Gamboa

6 months ago

I would like to thank you for some very insightful content! These tutorials that bridge the gaps between beginner and a well rounded advanced user is just what i needed.

Please let us know what we can do in order to keep you going, I know that there are a lot of areas that still need to be mapped and i just hope that you don't shy away from such a daunting task and make creating new content part of your weekly routine.

If you ever need any help to lighten the load, please let me know and i will be more than glad help out.

---



Richard

6 months ago

Hi I ran into an issue executing “composer install –no-dev” see below error message. I updated my php.ini mem flag to 1G but still same issue.

```
> Illuminate\Foundation\ComposerScripts::postInstall
```

```
> php artisan optimize
```

PHP Fatal error: Allowed memory size of 1073741824 bytes exhausted (tried to allocate 262144 bytes) in /var/www/html/website/vendor/laravel/framework/src/Illuminate/Container/Container.php on line 549

---



Ryan

6 months ago

Just wanted to say thanks for the great tutorial! I tried a few different ones, but this got everything running smoothly. Keep up the great work!

---



Jacurtis

AUTHOR

6 months ago

Glad to hear it finally works. I will keep it up to date so you can check back regularly when you do another deployment.

---



Joran

6 months ago

Hey, thanks for this, its awesome, and i love and learn a lot from your other tutorials too, keep up the great work 😊

Just wondering though, about the LAMP part (insted of LEMP) version ? is it coming or is on ice ?

Cheers,

---



Jacurtis

AUTHOR

6 months ago

Very popularly requested. Will get the LAMP stack up soon.

---



Jason

6 months ago

Alex, great guide. I don't know if other has pointed this out. For Laravel 5.4 you need to install php-xml. Otherwise, you will get error Class Domdocument not found when sending email.

Hope it helps others running into the same problem

---



Jacurtis

AUTHOR

6 months ago

This should only be required for PHPUnit. As long as you run `composer install --no-dev` instead of just `composer install` then you should be ok. I believe it is the PHPUnit package requiring the DOM extensions (which is what php-xml installs) and you don't want PHPUnit in production. So make sure you are running `composer install --no-dev` with that `--no-dev` flag at the end.

---



vmar

6 months ago

Thanks for this one ! I checked a tons website and find you. It works. Anh, how can I connect database with navicat or view database?

---



Mike

6 months ago

should `#!/bin/sh`

be

`#!/bin/bash`

typo? was just following with the youtube vid...

---

Jacurtis

AUTHOR



6 months ago

Depends if you are using BASH or SH as your shell. Either should work. Most distros have both

---



John Samuel

5 months ago

I spent several hours trying to set up my first server to no success. Following your guide, it was simple and straight forward. Everything worked as expected. My sincerely Love to you for putting up a guide so detailed as this. Thank you very much.

---



Berb

5 months ago

Thank you, great tutorial. Can I deploy multiple apps on a single droplet? And can these apps be built in different web technologies. For example: Can I have laravel and nodejs apps on one droplet? How difficult is it to configure?

---



Benedict

5 months ago

Thank you so much. Its my first time to develop a web system as a school project and my first time pay for a hosting service and was looking on how to deploy my app. Your tutorial is extremely helpful for someone like me. More power to you man!

---



Nicolas

5 months ago

Thanks so much Curtis, this tutorial series was very useful for me.

---

Izzudin Anuar



5 months ago

Thanks for the lesson. Helped me a lot!

---



David

5 months ago

Hi, when I want to test the git push command to the production. It shows this error, what cause that happen?

remote: /bin/bash: git -work-tree=/var/www/laravel -git-dir=/var/repo/site.git checkout -f: No such file or directory

---



Cyril-Benjamin

4 months ago

I have my project up and running on using laravel homestead with vagrant and virtualbox on my local machine, I deployed to my LEMP stack as shown above, but I noticed some of my links not working. It enters a continuous loop trying to load page but fails with a time out error trouble shooting is taking two months now with no headway .

I need some assistance from anyone to point me in the right direction am getting worked up now.

Pingback: DigitalOcean - One Click Apps or Distribution image for Laravel? - Laravel Questions

---



Universe

4 months ago

I have an error when I try to execute this command git push production master

Error is “remote: fatal: This operation must be run in a work tree”

What I have to do with this problem?

---



Universe

4 months ago

Ok, I resolve this problem.

---



Shubhendu Singh

4 months ago

In Step 8 this block must include “include fastcgi\_params;” for parameter passing with url location ~ \.php\$ {  
include snippets/fastcgi-php.conf;  
fastcgi\_pass unix:/run/php/php7.0-fpm.sock;  
}



Lebis

4 months ago

Man, this guide's never failed me, I'm saving it as a treasure. Thank you so much!



fahmi

4 months ago

I just found out that the composer binary is the only one who sits in /usr/local/bin folder when other binaries sit in /usr/bin folder.

Can I move it into the other folder too?



Amol Kamble

4 months ago

Hi Jacurtis,

Nice tutorial. But I have problem , I have two application one is Front end and other one is backend how can I host both the application on nginx. Thanks in Advance.



DevMarketer

4 months ago

Yes you just need to configure another server block in Nginx for the second app. You can run as many apps on the same server as you wish with Nginx.



Sufi

4 months ago

Firstly, thanks for this awesome guide. I've followed the guide and works fine until i got stuck on step 15.. where i need to set laravel privilege..i don't get "whoops" laravel error message and i don't get any error log in my laravel.log. Hope you could help me solve this issue.. Thanks in advance.