

The purpose of this document is to set up a Droplet on Digital Ocean. The Droplet will host a website and make it avaiable to the general public. Sucessfull completion will involve creating several componets and have them interact with each other. There will be:

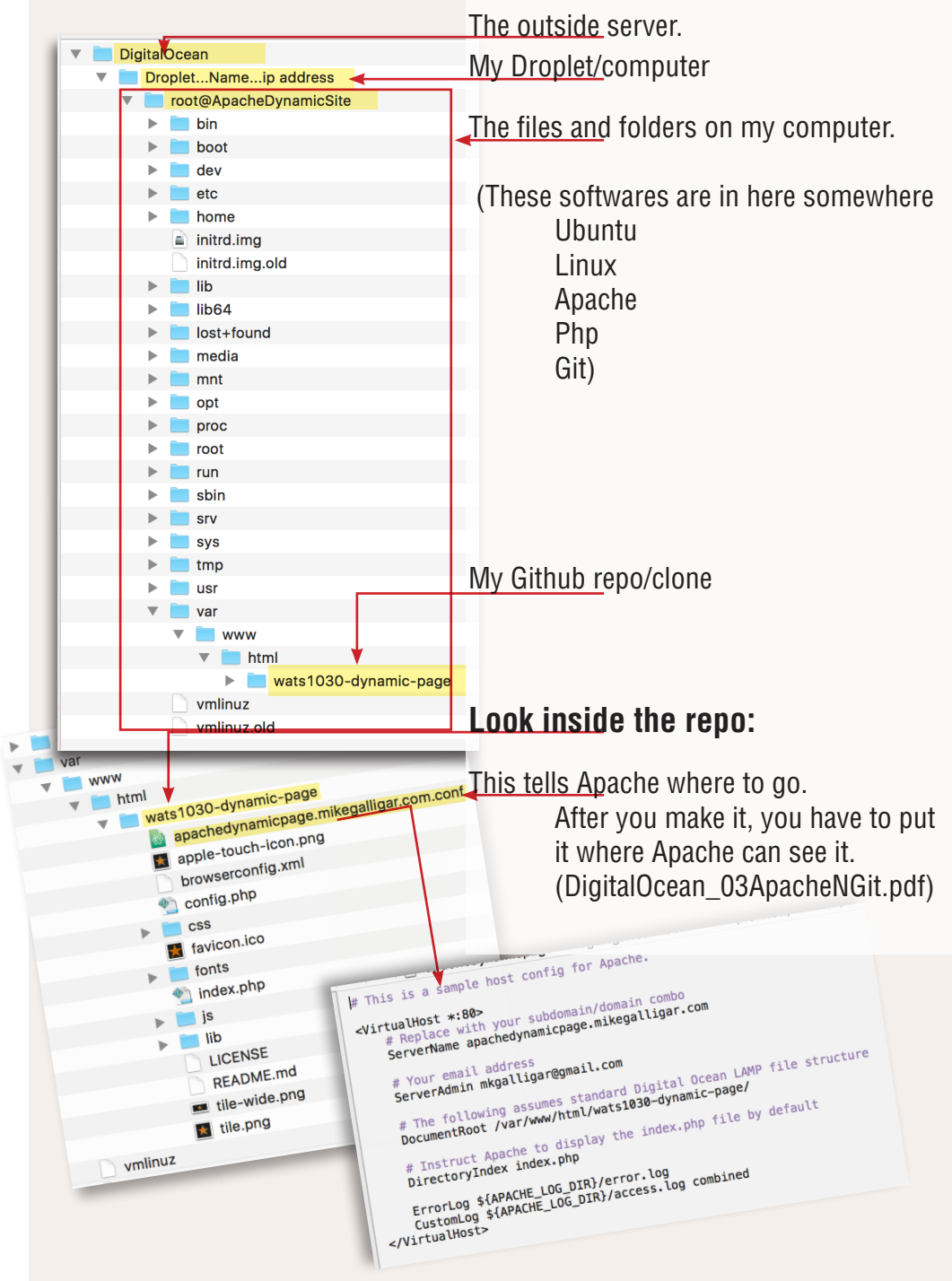
- a Repositotory on Github.
- a Droplet on Digital Ocean.
- a sub-domain.

The repository on Github contains the files that make-up a website.
The Droplet will host the website.
The Sub-domain receives a copy of the Droplet’s ip address, this will point the internet to the droplet so the website can be viewed.

To make everything work, the Droplet will need several programs. Some of these programs will be configured to perform the task of presenting the site. Then the website files will be cloned from Github to the Droplet. At this point, a site visitor can enter our sub-domain.domain.com and they will be taken to the site. A lot of this configuring will take place in Terminal. We use Terminal to send codes and files to the Droplet sso it performs in the way we want.

The Goal:
Create a computer
hosted on an outside server to show our website

This shows the directory structure that is created by going through this process.



Digital Ocean

Runs/Has:
Droplet
SSH Key
ip address
Ubuntu
LAMP
Git
Repo from Github

Github

Runs/Has:
Repository
Copy of Droplet’s SSH Key
This allows Git & This Droplet to interact.

Domain

Runs/Has:
Sub-domain
Copy of Droplet’s ip address
Because of this, when you type:
sub-domain.domain
You will be taken to see what’s in the Droplet/ What the Droplet has been configured to show you.

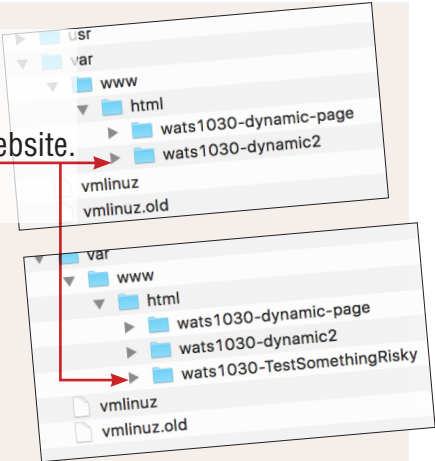
Terminal

What to do in Terminal?
You have, a Droplet, a Sub-domain, and a Github repository.
Now what?

If you started correctly the droplet already has Ubuntu and LAMP stack.

- 1) Install Git on the Droplet.
- 2) Configure Git.
- 3) Create SSH Key on the Droplet.
Copy the public SSH Key to your Github account.
This allows the Droplet & Git to interact.
- 4) Clone the Git repository to the Droplet.
Change the directory into...~/var/www/html/**Your Clone**
- 5)Configure the virtual host files,
so apache shows this repo when:
sub-domain.domain is typed into a web browser

Add more to your Droplets.
Another repo/sub-domain/website.



This sheet is to show how to create, a new Droplet, a new subdomain, and point the subdomain to the droplet.

Log into Digital Ocean: <https://cloud.digitalocean.com/droplets>
This droplet is for a dynamic page. It will need an operating system and a server.

Choose an operating system:
Ubuntu

The droplet will need software. Digital Ocean provides a number of options. For now, we'll choose LAMP:
LAMP stands for:
LINUX Operating System
APACHE Web Server
MySQL DataBase
PHP
[http://en.wikipedia.org/wiki/LAMP_\(software_bundle\)](http://en.wikipedia.org/wiki/LAMP_(software_bundle))

Choose a size:

Choose a region:

Add an SSH key:
You can make an SSH key for your computer and use that.

Choose a host name:
Make the host name match the subdomain. That way it will be easier to remember which things go together.

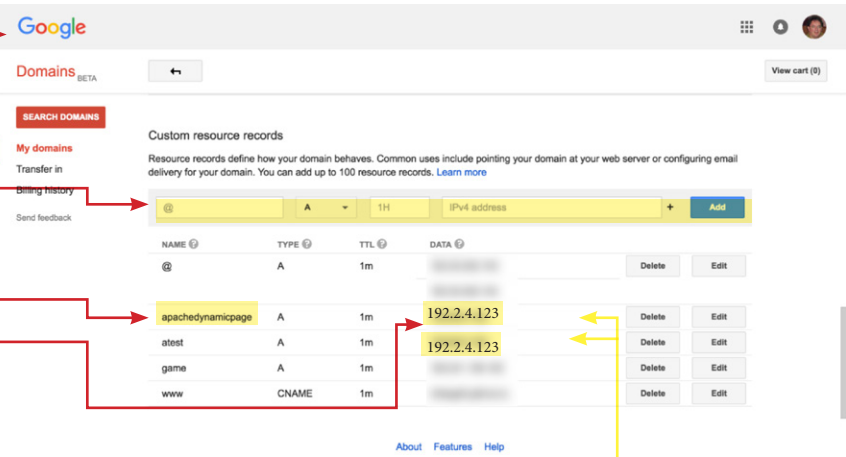
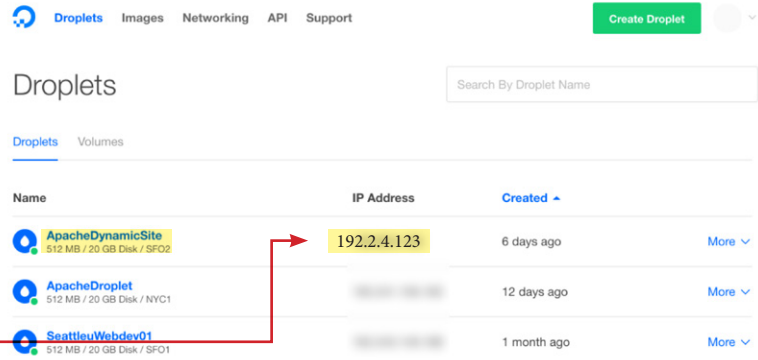
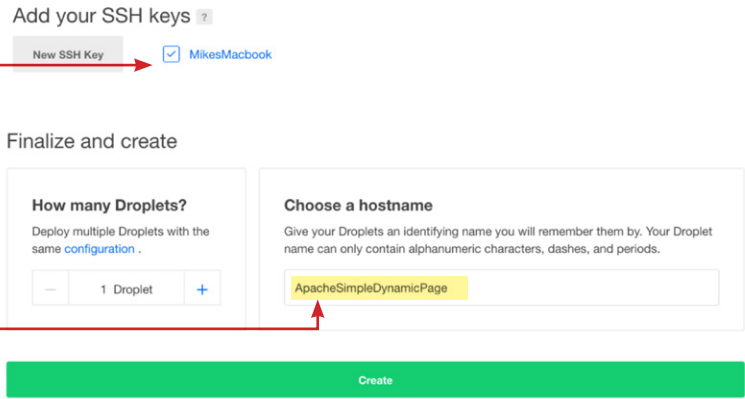
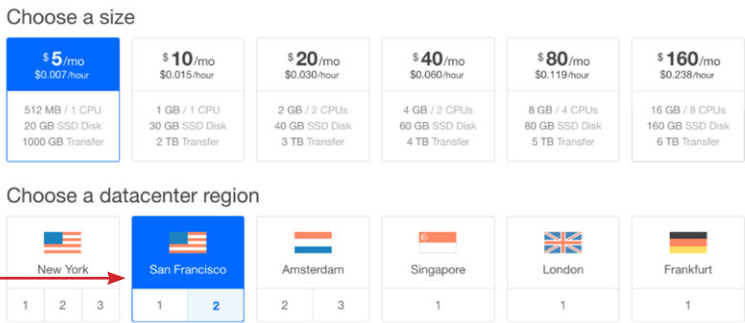
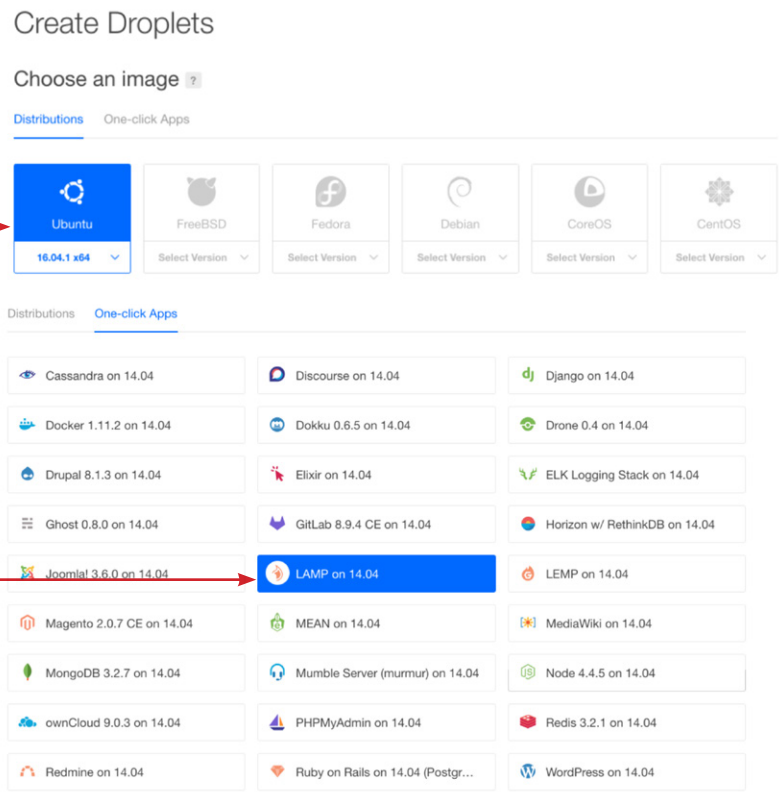
Make note of the ip address of the Droplet.
This will be pasted into the new subdomain.

The orgional domain is made on Google.
Go to: <https://domains.google.com>

Create a new subdomain by filling out this row.

Make the subdomain name match the Droplet name.
Copy the Droplet ip address & paste it here.

After you have a Droplet, you can:
Create mutiple directories/websites.
Just point the new sbudomains to the same (Droplet) ip address.
Next, you need to configure Apache inside the new directory in the Droplet



This sheet is to show how to configure Apache and Git for a new droplet.

Use a command line to connect to the droplet. The following commands will install & configure Git on the droplet. Git needs to be installed at the root level of the Droplet. When done, you can start cloning Git repositories to the droplet.

Note: Git repos should cloned into ~/var/www/html/**Name-of-repo**
In this example it will be:
root@**NameofDroplet**:/var/www/html/**NameofRepo**

The root in this example uses the name of the Droplet.
root@ApacheDynamicSite:/var/www/html/wats1030-dynamic-page

From Terminal:

Connect to the droplet:
ssh root@**ip address**

INSTALL GIT TO THE DROPLET.
root@ApacheDynamicSite:~# sudo apt-get install git

SET GIT ON THIS DROPLET TO USE THIS NAME.
root@ApacheDynamicSite:~# git config --global user.name “**Name**”

SET GIT ON THIS DROPLET TO USE THIS EMAIL.
root@ApacheDynamicSite:~# git config --global user.email “**email**”

CREATE SSH KEY
root@ApacheDynamicSite:~# ssh-keygen -t rsa -b 4096 -C “**email**”

CREATE SPECIFIC ID FOR SSH
root@ApacheDynamicSite:~# eval “\$(ssh-agent -s)”

ADD ID TO THE SSH KEY
root@ApacheDynamicSite:~# ssh-add ~/.ssh/id_rsa

SHOW ME THE PUBLIC SSH KEY. SO I CAN PASTE IT INTO GITHUB.COM
root@ApacheDynamicSite:~# cat ~/.ssh/id_rsa.pub
Go to: Github.com/settings/SSH and GPG keys
Use a title that helps you remember what this key is for.
Paste the key here.

CHANGE TO WEB ROOT DIRECTORY
root@ApacheDynamicSite:~# cd ..
root@ApacheDynamicSite:~# cd /var/www/html

CLONE MY GIT FORK INTO MY DROPLET.
root@**ApacheDynamicSite**:/var/www/html/**wats1030-dynamic-page**#
git clone git@github.com:**GithubUserName**/**GithubRepo**

CHECK YOUR WORK.
root@ApacheDynamicSite:/var/www/html/wats1030-dynamic-page# ls
THE CLONE IS HERE!
wats1030-dynamic-page

Next, Configure Apache to present the info in this droplet/this directory

This exercise contains sample files. Some of these files are the website we want to present, others are used to tell Apache what to do.

COPY MOVE & RE-NAME THE DEFAULT APACHE CONFIG FILE
cp /etc/apache2/sites-available/**000-default.conf** /etc/apache2/sites-available/**sub-domain.domain.com.conf**
This will put the config file where Apache can find it.

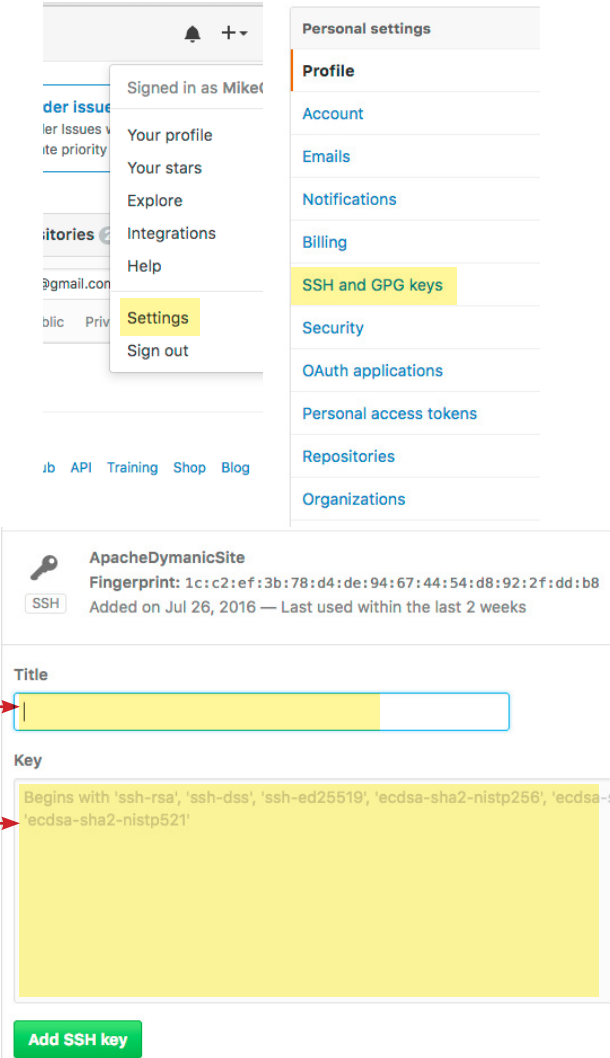
OPEN OUR NEWLY CREATED CONFIG FILE AND MODIFY IT.
Change directory to: ~/etc/apache2/sites-available
root@ApacheDynamicSite:/etc/apache2/sites-available# less **sub-domain.domain.conf**

Tell Apache your **sub-domain.domain**.
Show Apache the path to your files.
Tell Apache which file to display.

TELL APACHE, THIS IS THE DEFAULT CONFIG TO USE.
root@ApacheDynamicSite:~# sudo a2ensite **subdomain.domain.com.conf**

RE-START APACHE
root@ApacheDynamicSite:~# service apache2 reload

```
root@ApacheDynamicSite:~# cat ~/.ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQDBVGMV+yk3CeUv/qR+CFeX0yuodA+6Hz10zUxfhGU0r0
0AqJ0ZipsJbWi87dtrB76xW1h+KiPwaM5hy9dMYE1hiYt0nTpIWEJ/PaMr0t2410Bw04NTdnPocINcRfgS
Dho9upBPEx596s2nkRQKhjhXyLa8ykBIEnBllE8I1e+N8TGzgGxA1HlEfdAZQN61u5bWNHfL8AqEijJN2g
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DcMcyfWUCAsACKgg8d4EypxzknjXYbMvL7mL7a2/NQ== mkgalligar@gmail.com
root@ApacheDynamicSite:~#
```



Re-name this to this

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# This is a sample host config for Apache.

<VirtualHost *:80>
    # Replace with your subdomain/domain combo
    ServerName apachedynamicpage.mikegalligar.com

    # Your email address
    ServerAdmin mkgalligar@gmail.com

    # The following assumes standard Digital Ocean LAMP file structure
    DocumentRoot /var/www/html/wats1030-dynamic-page/

    # Instruct Apache to display the index.php file by default
    DirectoryIndex index.php

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```