

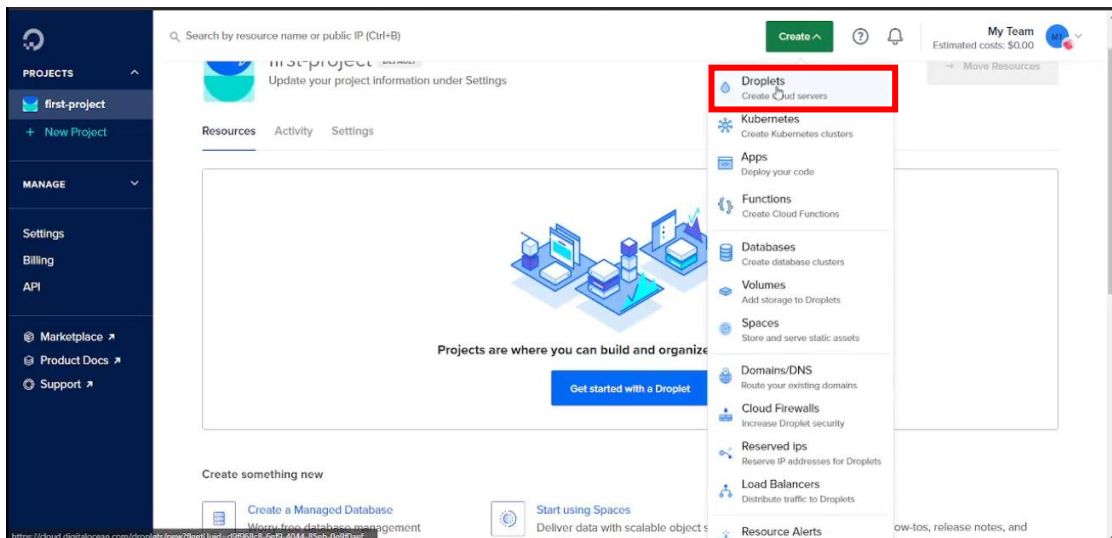
ภาคผนวก ก

คู่มือติดตั้งโปรแกรม

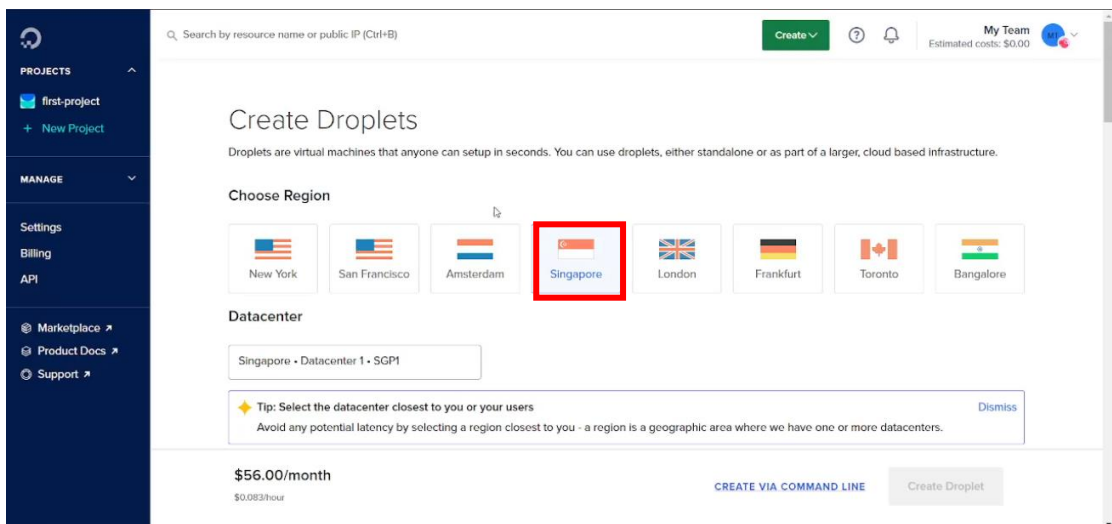
คู่มือการติดตั้งโปรแกรม

ติดตั้งโปรแกรมบน DigitalOcean

- เข้าเว็บไซต์ <https://www.digitalocean.com/try/developer-brand>
- กดเลือก Create จากนั้น เลือก Droplets



- จากนั้นเลือก Region เป็น Singapore



- เลือก Ubuntu เป็น Version 20.04(LTS)x64

The screenshot shows the DigitalOcean OS Marketplace interface. The 'Ubuntu' icon is highlighted with a red box. Below it, the 'Version' dropdown menu is set to '20.04 (LTS) x64' and is highlighted with a yellow box. The 'Choose Size' section shows the 'Basic' droplet type selected under the 'SHARED CPU' category. The price is listed as \$56.00/month (\$0.083/hour). A 'Create Droplet' button is visible at the bottom right.

- เลือก Droplet Type เป็น Basic
- จากนั้นเลือก Premium Intel และเลือก \$7/mo ก่อนสามารถเปลี่ยนทีหลังได้

The screenshot shows the DigitalOcean Droplet Type selection screen. The 'Basic' droplet type is selected under the 'SHARED CPU' category, highlighted with a red box. Below this, the 'CPU options' section shows 'Premium Intel with NVMe SSD' selected, also highlighted with a red box. The pricing table below shows the '\$7/mo' option selected, highlighted with a red box. The price is listed as \$7.00/month (\$0.010/hour). A 'Create Droplet' button is visible at the bottom right.

Price	Hourly Rate	CPU	RAM	Storage	Transfer
\$7/mo	\$0.010/hour	1 Intel CPU	1 GB	25 GB NVMe SSDs	1000 GB
\$14/mo	\$0.021/hour	2 Intel CPU	2 GB	50 GB NVMe SSDs	2 TB
\$21/mo	\$0.031/hour	2 Intel CPUs	2 GB	60 GB NVMe SSDs	3 TB
\$28/mo	\$0.042/hour	4 Intel CPUs	4 GB	80 GB NVMe SSDs	4 TB
\$56/mo	\$0.083/hour	8 Intel CPUs	8 GB	160 GB NVMe SSDs	5 TB
\$112/mo	\$0.167/hour	16 Intel CPUs	16 GB	320 GB NVMe SSDs	6 TB

- เลือก Password สามารถ gen password และ copy มาใส่ได้

Block storage volumes add extra disk space. We automatically format and mount your volume so it's available as soon as your Droplet is, and you can move volumes seamlessly between Droplets at any time. Think of it like a flash drive for your VM.

Choose Authentication Method ?

SSH Key
Connect to your Droplet with an SSH key pair

Password
Connect to your Droplet as the "root" user via password

Create root password *

#27V6q6pN82>

Gen Password

PASSWORD REQUIREMENTS

- ✓ Must be at least 8 characters long
- ✓ Must contain 1 uppercase letter (cannot be first or last character)
- ✓ Must contain 1 number
- ✓ Cannot end in a number or special character

\$7.00/month
\$0.010/hour

CREATE VIA COMMAND LINE [Create Droplet](#)

- ตั้งชื่อ ตามต้องการ กด Create Droplet

Search by resource name or public IP (Ctrl+B)

Create

My Team
Estimated costs: \$0.00

+ Advanced Options

Finalize Details

Quantity
Deploy multiple Droplets with the same configuration.

1 Droplet

Hostname
Give your Droplets an identifying name you will remember them by.

stg-01

Tags
Type tags here

Project
first-project

\$7.00/month
\$0.010/hour

CREATE VIA COMMAND LINE [Create Droplet](#)

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- ต่อไปเป็นการลง root@ พิมพ์คำสั่ง `curl -fssl get.docker.io | sh` แล้วกด Enter

```

root@stg-01: ~# curl -fssl get.docker.io | sh
# Executing docker install script, commit: 41282167c425347a931ccfd95cc91fab041d414f
+ sh -c apt-get update -qq >/dev/null

```

- ต่อไปจะเป็นการลง docker-compose ให้พิมพ์คำสั่ง `sudo -L "https://github.com/doker/compose/releases/download/1.29.2/docker-compose-$(uname -s)-$ -(uname -m)" -o /usr/local/bin/docker-compore`

```

root@stg-01: ~# dokcer ps
Command 'dokcer' not found, did you mean:
  command 'docker' from snap docker (20.10.17)
  command 'docker' from deb docker.io (20.10.12-0ubuntu2~20.04.1)
See 'snap info <snapnames>' for additional versions.

root@stg-01: ~# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
root@stg-01: ~# sudo curl -L "https://github.com/doker/compose/releases/download/1.29.2/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compore
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload  Total   Spent    Left   Speed
  0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
100 12.1M 100 12.1M    0     0  14.8M    0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0
root@stg-01: ~#

```

- จากนั้นใช้คำสั่ง `docker pull nginx` เพื่อ pull image ออกมา

```

root@stg-01: ~# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
root@stg-01: ~# docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
e9995326b091: Pull complete
71689475aec2: Pull complete
f88a23025338: Pull complete
0df440342e26: Pull complete
eef26ceb3309: Pull complete
8e3ed6a9e43a: Pull complete
Digest: sha256:943c25b4b66b332184d5ba6bb18234273551593016c0e0ae906bab111548239f
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
root@stg-01: ~# d

```

- ทดสอบว่าสามารถรันได้หรือไม่ ด้วยคำสั่ง `docker run --name nginx -p 8080:80 nginx` (8080:80 คือพอร์ตในการเชื่อมต่อบน DigitalOcean ของโปรเจค)

```

root@stg-01: ~
root@stg-01:~# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
root@stg-01:~# docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
root@stg-01:~# docker images
REPOSITORY    TAG        IMAGE ID      CREATED      SIZE
nginx         latest    76c69fae34e  4 days ago  147MB
root@stg-01:~# docker run --name nginx -p 8080:80 nginx
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2022/10/29 13:05:27 [notice] 1#1: using the "epoll" event method
2022/10/29 13:05:27 [notice] 1#1: nginx/1.23.2
2022/10/29 13:05:27 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2022/10/29 13:05:27 [notice] 1#1: OS: Linux 5.4.0-122-generic
2022/10/29 13:05:27 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2022/10/29 13:05:27 [notice] 1#1: start worker processes
2022/10/29 13:05:27 [notice] 1#1: start worker process 28

```

- เมื่อเราทำการ Docker ให้เข้า visual studio code จากภาพเป็นการอัป backend ก่อน (ฐานข้อมูลเป็น MongoDB บน cloud)

```

File Edit Selection View Go Run Terminal Help
Dockerfile - backend_e_commerce - Visual Studio Code
EXPLORER
BACKEND_E_COM...
  helpers
  models
  node_modules
  public
  routers
  .dockerignore
  .env M
  .gitignore
  JS app.js M
  docker-compose.yml
  Dockerfile
  package-lock.json
  package.json
  Procfile
  README.md
Dockerfile > ...
1
2 FROM node:16.14.0
3
4 # Create app directory
5 RUN mkdir -p /usr/src/app
6 WORKDIR /usr/src/app
7
8 # Install app dependencies
9 COPY package.json /usr/src/app/
10 RUN npm install
11
12 # Setup environment variables
13 ENV NODE_ENV development
14 ENV PORT 9000
15
16 # Bundle app source
17 COPY . /usr/src/app
18
19 EXPOSE 9000
20 CMD ["npm", "start"]

```

- ทำการ push ด้วยคำสั่ง `docker push name sanpukwan-api-dev`

```

8
9 COOKIE_EXPIRE = 5
10
11 SMTP_SERVICE = gmail
12
13 //อีเมลส่ง เป็นเมสที่ยืนยันตัวตน 2 ชั้นก่อน และ ยืนยันตัวตนสำหรับแอป แลจะได password มา
14 SMTP_MAIL = num1667@gmail.com
15
16 // password ผู้รับ (อีเมลผู้ส่งต้องการยืนยันตัวตน 2 ชั้น และ ยืนยันตัวตนสำหรับแอป แลจะได password มาของทาง gmail ที่ใช้สำหรับการส่งเมล)
17 SMTP_PASSWORD = bnigpssobivuyaqk
18
19 SMTP_HOST = smtp.gmail.com
20
21 SMTP_PORT= 456
22
23 CONNECTION_STRING = mongodb+srv://dxterous1159:pattie0922586617@cluster0.ogd55ci.mongodb.net/?retryWrites=true&w=majority

```

```

PS C:\Users\pattie\Documents\react\mern_project> docker push sanpukwan-service-api-dev
Using default tag: latest
The push refers to repository [docker.io/library/sanpukwan-service-api-dev]
b9231b48fae: Preparing
5ceaddcd7ff6: Preparing
2ea3c46dadcd: Preparing
5f70b7fba0b0: Preparing
23454a33ff3c: Preparing
4314a8a8ea369: Waiting
0a69ca1954c9: Waiting
996562d9026d: Waiting
23a4b35a343d: Waiting
13e8b36cbbec: Waiting
821bf6371720: Waiting
8d3476a52917: Waiting
4b572195ea84: Waiting
024959e1462f: Waiting
denied: requested access to the resource is denied
PS C:\Users\pattie\Documents\react\mern_project> docker login

```

- Install Docker ใน visual studio code โดยใช้คำสั่ง `docker run --name sanpukwan-api -p5000:5000 sanpukwan-service-api-dev` คือ พอดเชื่อมต่อ

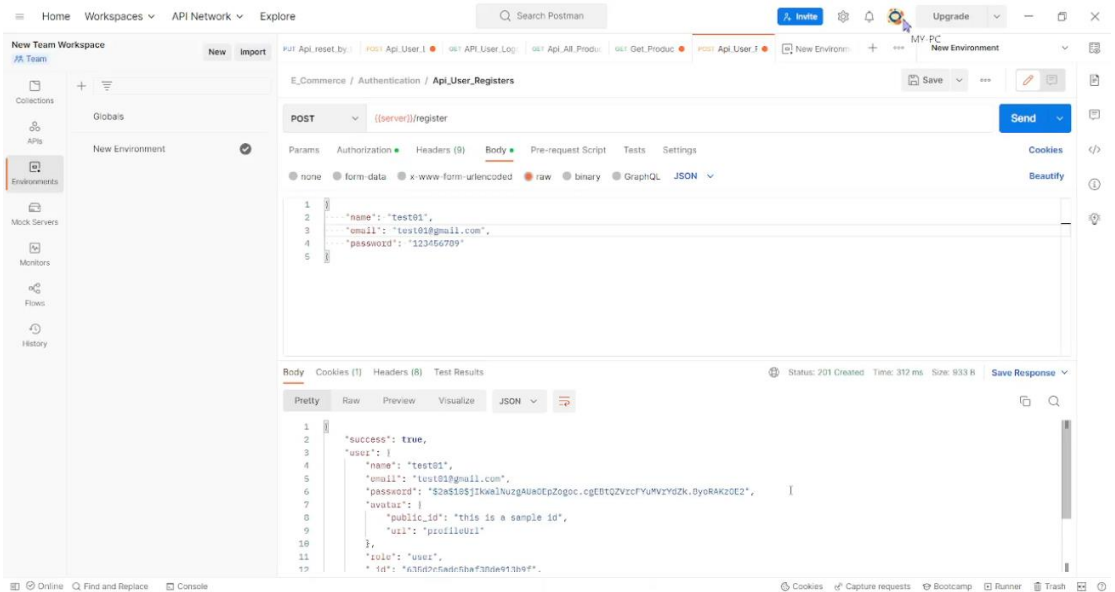
```

PS C:\Users\pattie\Documents\react\mern_project\backend> docker images
REPOSITORY          TAG          IMAGE ID       CREATED        SIZE
sanpukwan-service-api-dev  latest      d4ded1f33118  20 seconds ago  25.7MB
PS C:\Users\pattie\Documents\react\mern_project\backend> docker run --name sanpukwan-api -p5000:5000 sanpukwan-service-api-dev
> ecommerce@1.0.0 start
> node server.js

Server is working on http://localhost:5000
MongoDB connected with server: ac-slsamoo-shard-00-01.ogd55ci.mongodb.net

```

- ทดสอบในโปรแกรม Postman ว่าเชื่อมฐานข้อมูลได้หรือไม่



- จากนั้น Build docker ใช้คำสั่ง `docker build -t dxterous1159/project:sanpukwan-service-api-dev .`

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL JUPYTER
PS C:\Users\pattie\Documents\react\mern_project> docker build -t dxterous1159/project:
PS C:\Users\pattie\Documents\react\mern_project> history

Id CommandLine
-----
1 docker ps
2 clear
3 docker images
4 docker push sanpukwan-service-api-dev
5 docker login -u dxterous1159 -p pattie0922586617
6 clear

PS C:\Users\pattie\Documents\react\mern_project> docker build -t dxterous1159/project:sanpukwan-service-api-dev .
[+] Building 0.0s (1/2)
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 2B 0.0s
failed to solve with frontend dockerfile.v0: failed to read dockerfile: open /var/lib/docker/tmp/buildkit-mount3884536324/dockerfile: no such file or directory
PS C:\Users\pattie\Documents\react\mern_project>

```


- จากนั้น Push docker ใช้คำสั่ง `docker push dxterous1159/project:sanpukwan-service-appi-dev`

```

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  JUPYTER

Use 'docker scan' to run Snyk tests against images to find vulnerabilities and learn how to fix them
PS C:\Users\pattie\Documents\react\mern_project\backend > docker push dxterous1159/project:sanpukwan-service-appi-dev
The push refers to repository [docker.io/dxterous1159/project]
b9231b48faee: Pushed
5ceaddcd7ff6: Pushed
2ea3c46dadcd: Pushed
5f70bf18a086: Pushed
29454a3aff3c: Pushed
4314eadea369: Pushed
0a69ca1954c9: Pushed
996562dd026d: Pushed
23a4b35a343d: Pushed
13e8b36cbbec: Pushing [=====] 225.4MB/510.2MB
821bf6371720: Pushed
8d3476a52917: Pushed
40572195ea84: Pushed
024595e1462f: Pushed

```

- เปิดdocker ใช้คำสั่ง `docker pull dxterous1159/project:sanpukwan-service-appi-dev`

```

root@stg-01: ~
root@stg-01:~# docker pull dxterous1159/project:sanpukwan-service-appi-dev
sanpukwan-service-appi-dev: Pulling from dxterous1159/project
1c9a8b42b578: Pull complete
163066942b43: Extracting [=====] 6.095MB/7.834MB
cf70e03a8272: Download complete
86c5ff335494: Download complete
8c03e72651e6: Downloading [=====] 154.4MB/192.4MB
0ba5b187bf1b: Download complete
4efdf6f1b568: Download complete
38284072a01e: Download complete
825c06994469: Waiting
571a1d42f7c: Waiting
4f4fb700ef54: Waiting
14eaf3e09bcd: Waiting
be86173282d5: Waiting
5620235dd084: Waiting

```

- ใช้คำสั่ง `docker run --name sanpukan-web -p5001:3000 dxterous1159/project:sanpukwan-web-dev` สามารถทดสอบเว็บไซต์ได้เลย

```
root@stg-01: ~# docker run --name sanpukwan-web -p5001:3000 dxterous1159/project:sanpukwan-web-dev
> frontend@0.1.0 start
> react-scripts start
```