

DOCKER

**WPROWADZENIE DO KONTENERÓW
DLA PROGRAMISTÓW**

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- ♦ **SysAdmin**
- ♦ **Linux and Open Source enthusiast**

Dlaczego

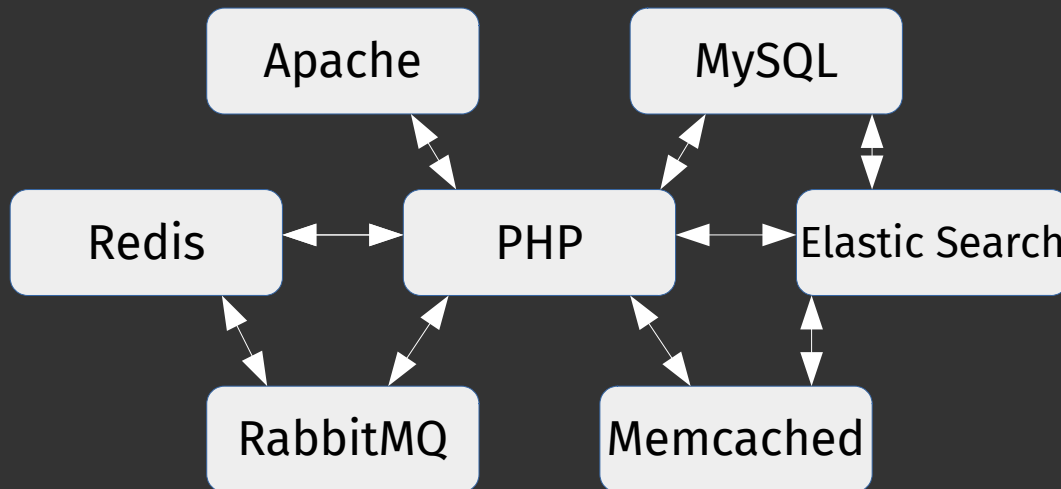
DOCKER?

Dlaczego **DOCKER**?



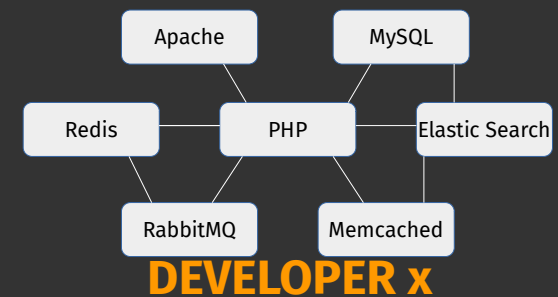
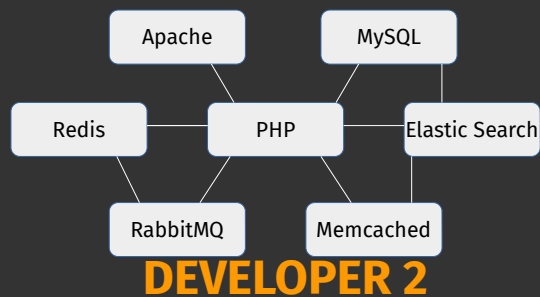
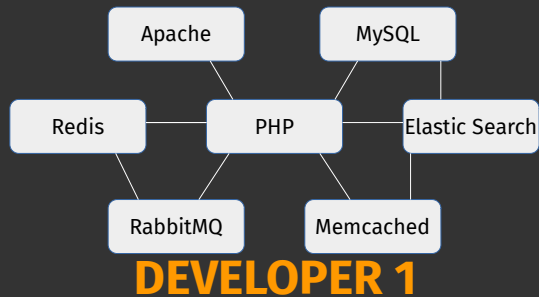
Dlaczego **DOCKER**?

ZŁOŻONE ZALEŻNOŚCI W PROJEKCIE

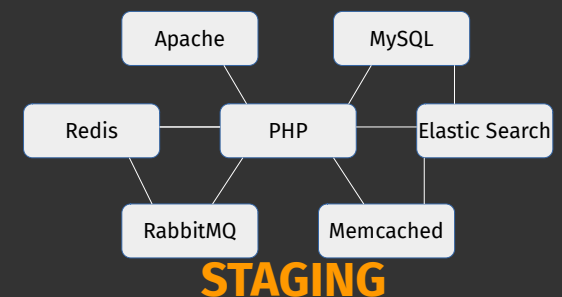
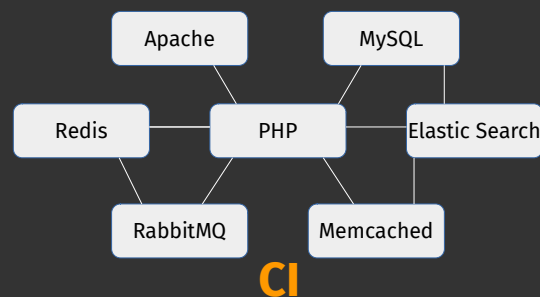
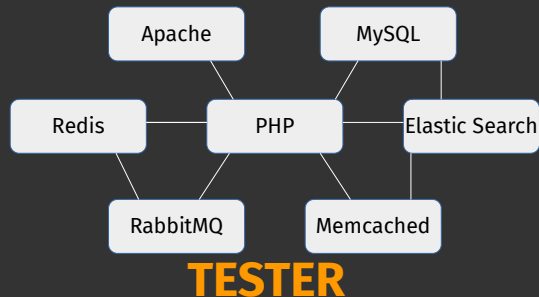


Dlaczego **DOCKER**?

























WIELE RÓWNOCZESNYCH PROJEKTÓW



***N projektów**



Dlaczego **DOCKER**?

	Dev	Stage	Prod	CI
nginx				
MySQL				
PHP				
Redis				
Elastic Search				
Rabbit MQ				

CO ZYSKUJEMY?

- ♦ **budujemy raz,
używamy gdzie chcemy**

CO ZYSKUJEMY?

- ♦ **nie występują problemy z zależnościami oraz z niekompatybilnością zależności**

CO ZYSKUJEMY?

- ♦ **brak narzutów VM**

CO ZYSKUJEMY?

- ♦ pełna automatyzacja

CO ZYSKUJEMY?

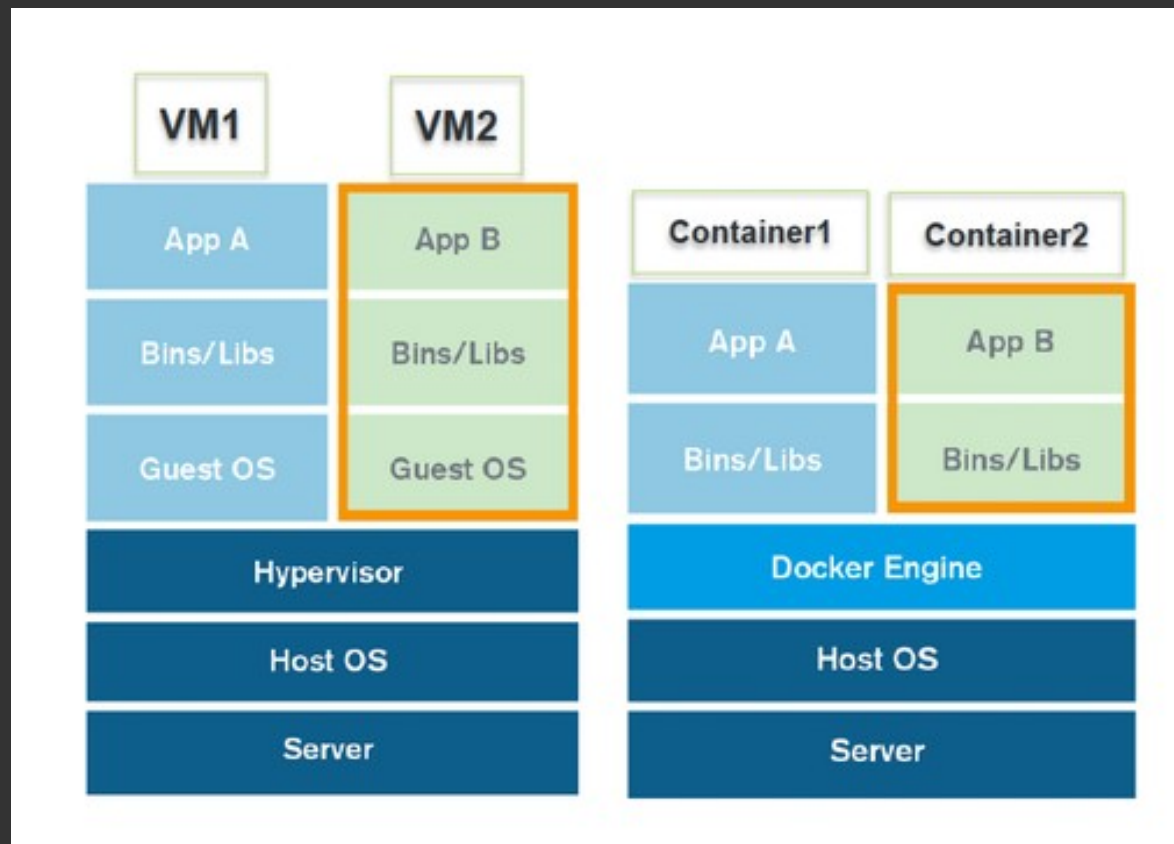
- ♦ łatwe skalowanie

Jak działa

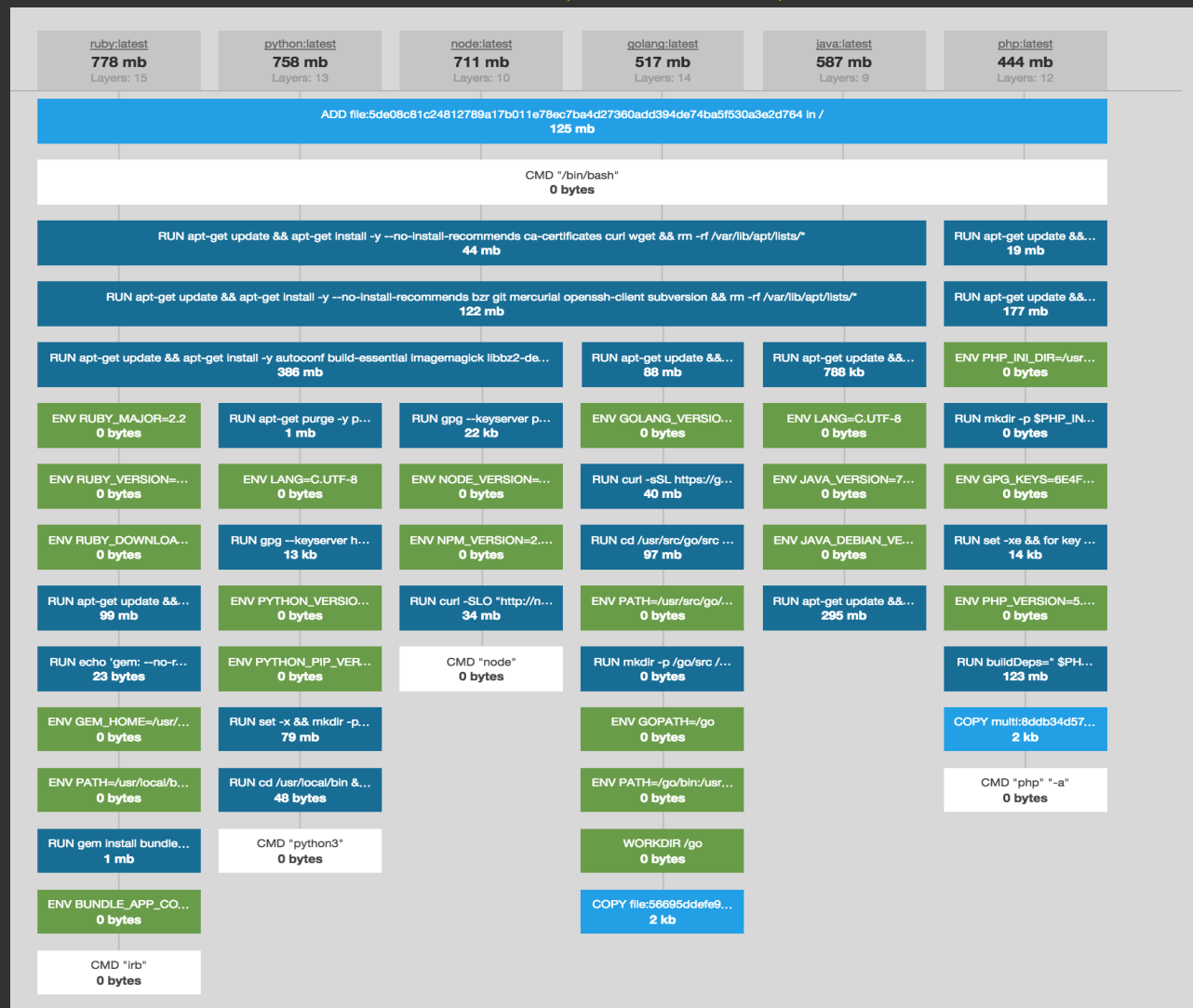
DOCKER?

JAK DZIAŁA DOCKER?

Maszyna Wirtualna vs. Docker

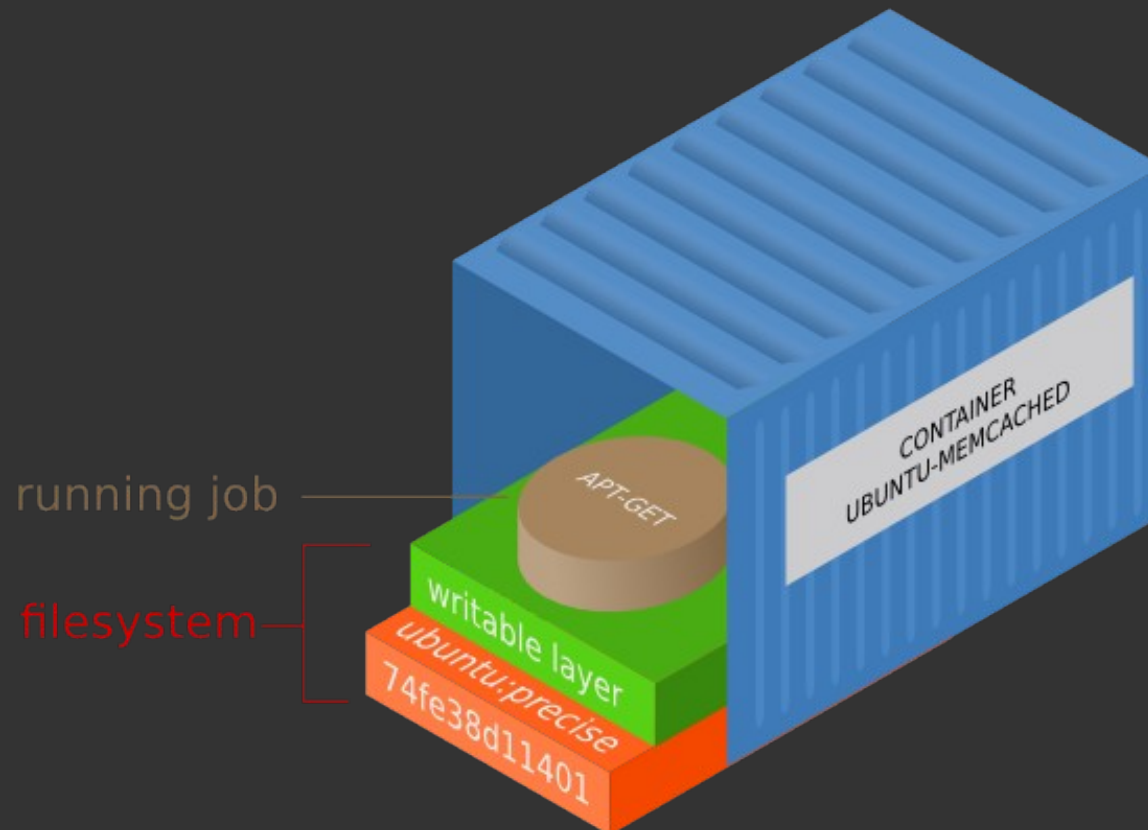


JAK DZIAŁA DOCKER? Obraz (IMAGE)



JAK DZIAŁA DOCKER?

Kontener (CONTAINER)



JAK DZIAŁA DOCKER?

Repozytorium (REPOSITORY)

Oficjalne

DOCKER HUB

<https://hub.docker.com>

Prywatne

REGISTRY

registry:latest

WORKSHOP TIME

URUCHAMIAMY KONTENER

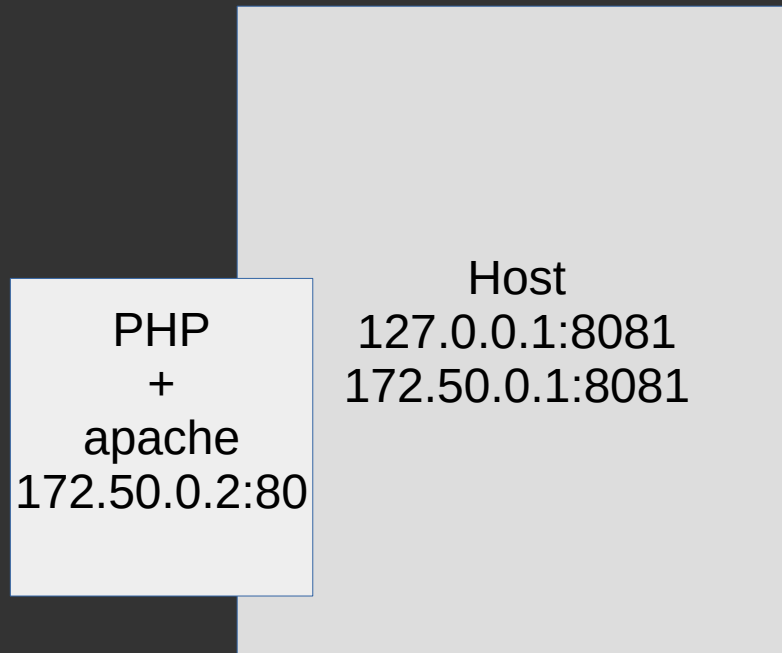
```
$ docker run -v $PWD:/var/www/html -p 8081:80 php:7.4-apache
```

URUCHAMIAMY KONTENER

```
$ docker run -v $PWD:/var/www/html -p 8081:80 php:7.4-apache
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URUCHAMIAMY KONTENER

```
$ docker run -v $PWD:/var/www/html -p 8081:80 php:7.4-apache
```



URUCHAMIAMY KONTENER

\$ docker ps

CONTAINER ID	IMAGE	COMMAND	CREATED
STATUS	PORTS	NAMES	
019d4c24fbbf	php:7.4-apache	"docker-php-entrypoi.."	19 minutes ago
Up 19 minutes	0.0.0.0:8081->80/tcp	zen_hamilton	

DOCKER – WPROWADZENIE DO KONTENERÓW

```
$ docker run -v $PWD:/var/www/html -p 8081:80 php:7.4-apache  
php:5.6-apache
```

```
$ ls .  
index.php
```

```
$ cat index.php  
<?php  
phpinfo();
```

Warianty obrazów dla PHP:

- php:<version>-**cli**
- php:<version>-**apache**
- php:<version>-**fpm**
- php:<version>-**alpine**

Dockerfile

```
$ ls .  
Dockerfile  index.php  php.ini
```

```
$ cat Dockerfile  
FROM php:7.4-apache  
  
RUN apt-get update && apt-get -y install libcurl4-openssl-dev \  
    && docker-php-ext-install pdo \  
    && docker-php-ext-install pdo_mysql.  
  
COPY ./php.ini /usr/local/etc/php
```

```
$ docker build -t myphp .
```

```
$ docker run -v $PWD:/var/www/html -p 8081:80 myphp
```


DOCKER COMPOSE

```
$ docker run -v $PWD:/var/www/html -p 8081:80 php:7.4-apache
```

DOCKER COMPOSE

~~\$ docker run -v \$PWD:/var/www/html -p 8081:80 php:7.4-apache~~

docker-compose.yml

version: '3.8'

Services:

www:

image: php:7.4-apache

volumes:

- ./www:/var/www/html

ports:

- 8080:80

docker-compose.yml

version: '3.8'

Services:

www:

image: php:7.4-apache

volumes:

- ./www:/var/www/html

ports:

- 8080:80

\$ docker-compose up

```
Starting demo3_www_1 ... done
```

```
Attaching to demo3_www_1
```

```
www_1 | AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.21.0.2. Set the 'ServerName' directive globally to suppress this message
```

```
www_1 | AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.21.0.2. Set the 'ServerName' directive globally to suppress this message
```

```
www_1 | [Sun Sep 06 10:48:29.292702 2020] [mpm_prefork:notice] [pid 1] AH00163: Apache/2.4.38 (Debian) PHP/7.4.10 configured -- resuming normal operations
```

```
www_1 | [Sun Sep 06 10:48:29.292741 2020] [core:notice] [pid 1] AH00094: Command line: 'apache2 -D FOREGROUND'
```

DOCKER COMPOSE

Łączenie kontenerów



Docker-compose.yml

```
version: '3.8'
services:
  www:
    image: php:7.4-apache
    volumes:
      - ./www:/var/www/html
    ports:
      - 8080:80
    depends_on:
      - redis
  redis:
    image: redis
```

www/index.php

```
<?php
    require_once __DIR__.'/vendor/autoload.php';

    $client = new Predis\Client(['host'=>'redis']);

    $counter = $client->incr('counter');

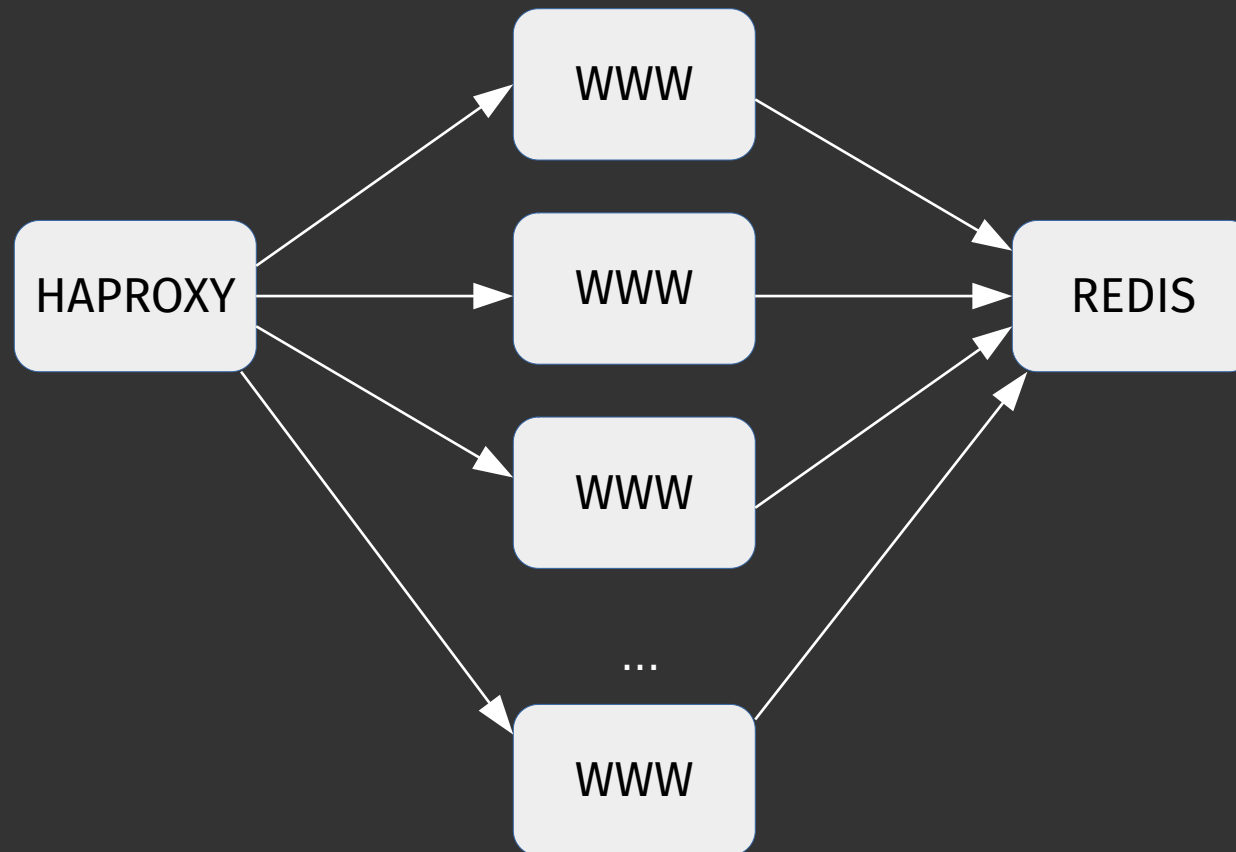
    echo 'Hostname:'.gethostname().'<br/>';
    echo 'Counter:'. $counter.'<br/>';
```

```
$ cd www && composer require predis/predis && cd ..
```

```
$ docker-compose up -d
```

```
$ docker-compose ps
```

SKALOWANIE APLIKACJI



Docker-compose.yml

```
version: '3.8'
```

```
services:
```

```
  www:
```

```
    image: php:7.4-apache
```

```
    volumes:
```

```
      - ./www:/var/www/html
```

```
    ports:
```

```
      - 8080:80
```

```
    depends_on:
```

```
      redis
```

```
  redis:
```

```
    image: redis
```

Docker-compose.yml

```
version: '2'
```

```
services:
```

```
  www: ...
```

```
  redis: ...
```

```
  haproxy:
```

```
    - image: dockercloud/haproxy:latest
```

Docker-compose.yml

```
version: '2'
services:
  www: ...
  redis: ...
  haproxy:
    - image: dockerccloud/haproxy:latest
  links:
    - www
```

Docker-compose.yml

```
version: '2'
services:
  www: ...
  redis: ...
  haproxy:
    - image: dockerccloud/haproxy:latest
  links:
    - www
  ports:
    - 80:80
```

Docker-compose.yml

version: '3.8'

services:

www: ...

redis: ...

haproxy:

- **image:** dockerccloud/haproxy:latest

links:

- **www**

ports:

- **80:80**
- **1936:1936**

volumes:

- **/var/run/docker.sock:/var/run/docker.sock**

environment:

- **STAT_AUTH='admin:password'**

Docker-compose.yml

```
$ docker-compose up -d
```

```
$ docker-compose scale www=3
```

```
$ docker-compose ps
```

PROSTY MIKROSERWIS w PHP

Docker

MySQL + phpmyadmin

Fat Free

RedBean ORM

PROSTY MIKROSERWIS w PHP

Enpointy:

* /

* /product

* /product/<uid>

* /product/insert

CO DALEJ?

DOCKER SWARM

KUBERNETES

APACHE MESOS

PLIKI Z WARSZTATÓW

<https://github.com/multiart/docker/>

DZIĘKUJĘ ZA UWAGĘ
PYTANIA?