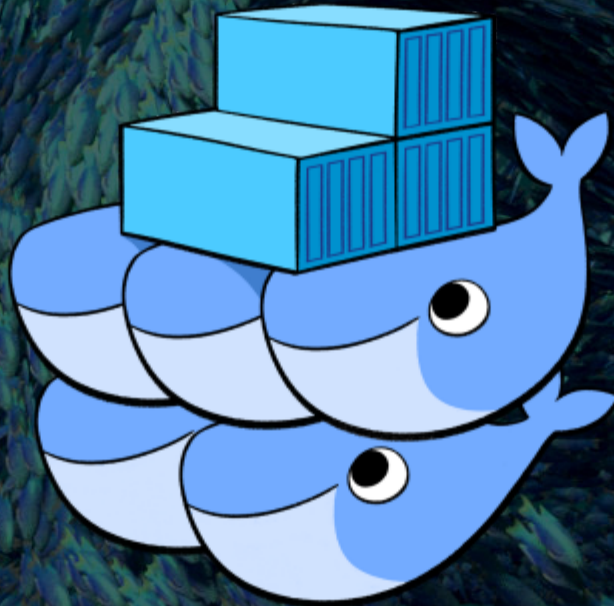




CHALLENGES DEPLOYING AND RUNNING PHP APPLICATIONS ON MULTI NODE DOCKER SWARM

IKE DEVOLDER



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STUDIO EMMA



@studioemma

Magento Silver Solution Partner

Pimcore Gold Solution Partner

TOPICS

- our requirements
- some history
- docker swarm
- demo time

AND THEN THERE WAS

#Docker Platform and @Moby
Project add
@Kubernetesio #dockercon



TOPICS

- **our requirements**
- some history
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- demo time

further improve software stack consistency

can be hosted by us

easy to manage

easy for deployment

TOPICS

- our requirements
- **some history**
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```
$ docker run -e MYSQL_ROOT_PASSWORD=toor -d \  
  --name mysql mysql:5.7  
$ docker run --link mysql -d \  
  --name my-phpapp myphpapp:latest  
$ docker run --link my-phpapp -d \  
  -p 80:80 \  
  --name my-nginx mynginx:latest
```

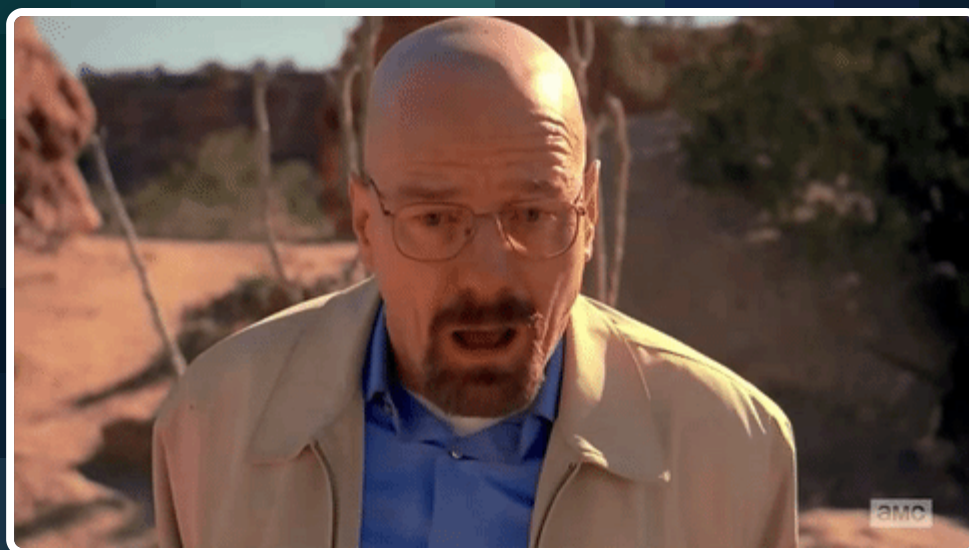
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Check out our examples and dive
into the next generation of digital
data management.

[See it in Action](#)

```
$ uptime
```

```
20:04:33 up 16 min,  8 users,  load average: 0,63, 0,46, 0,34
```





This site can't be reached

pimcore-demo.test refused to connect.

Try:

- Checking the connection
- [Checking the proxy and the firewall](#)

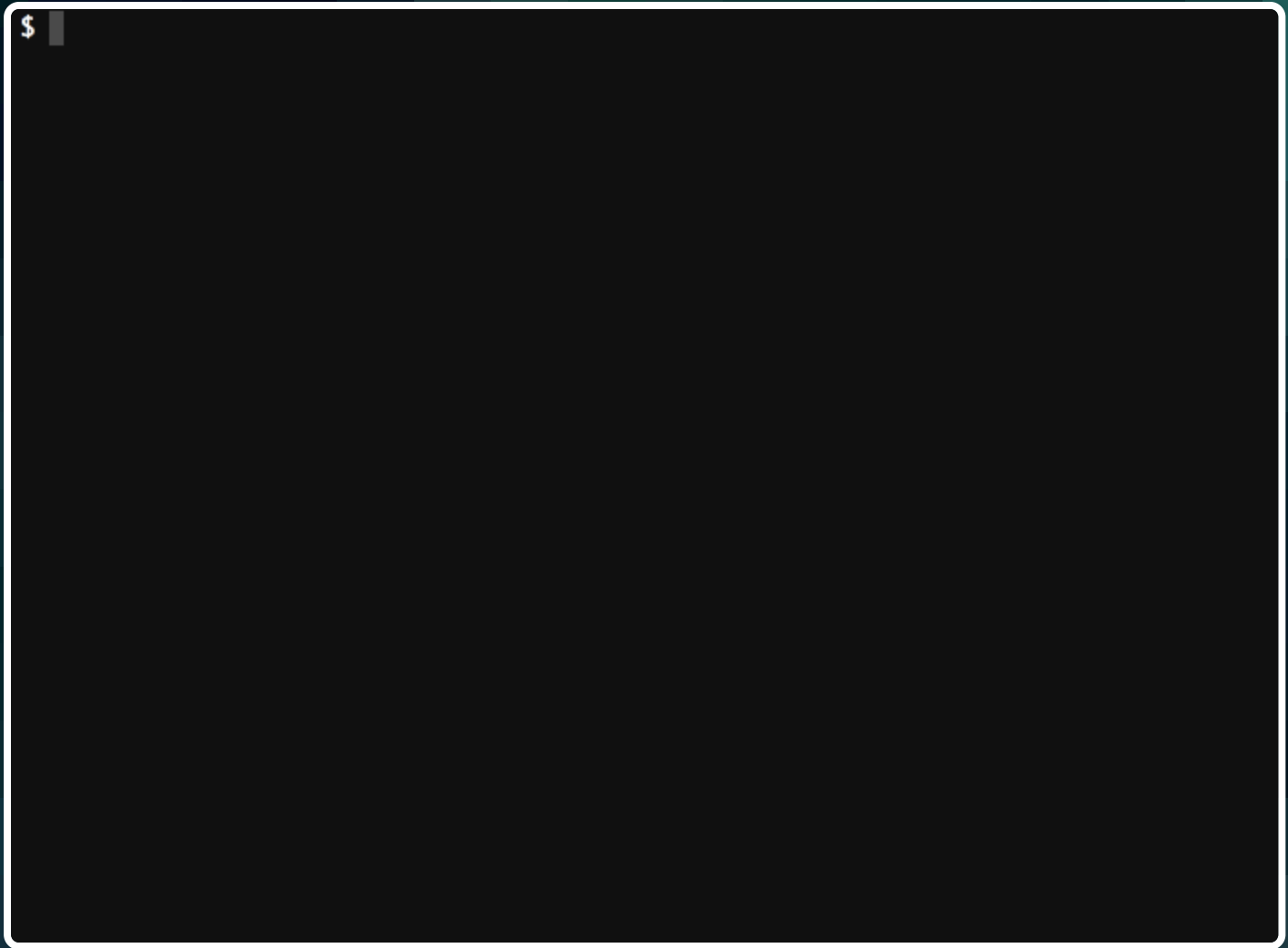
ERR_CONNECTION_REFUSED

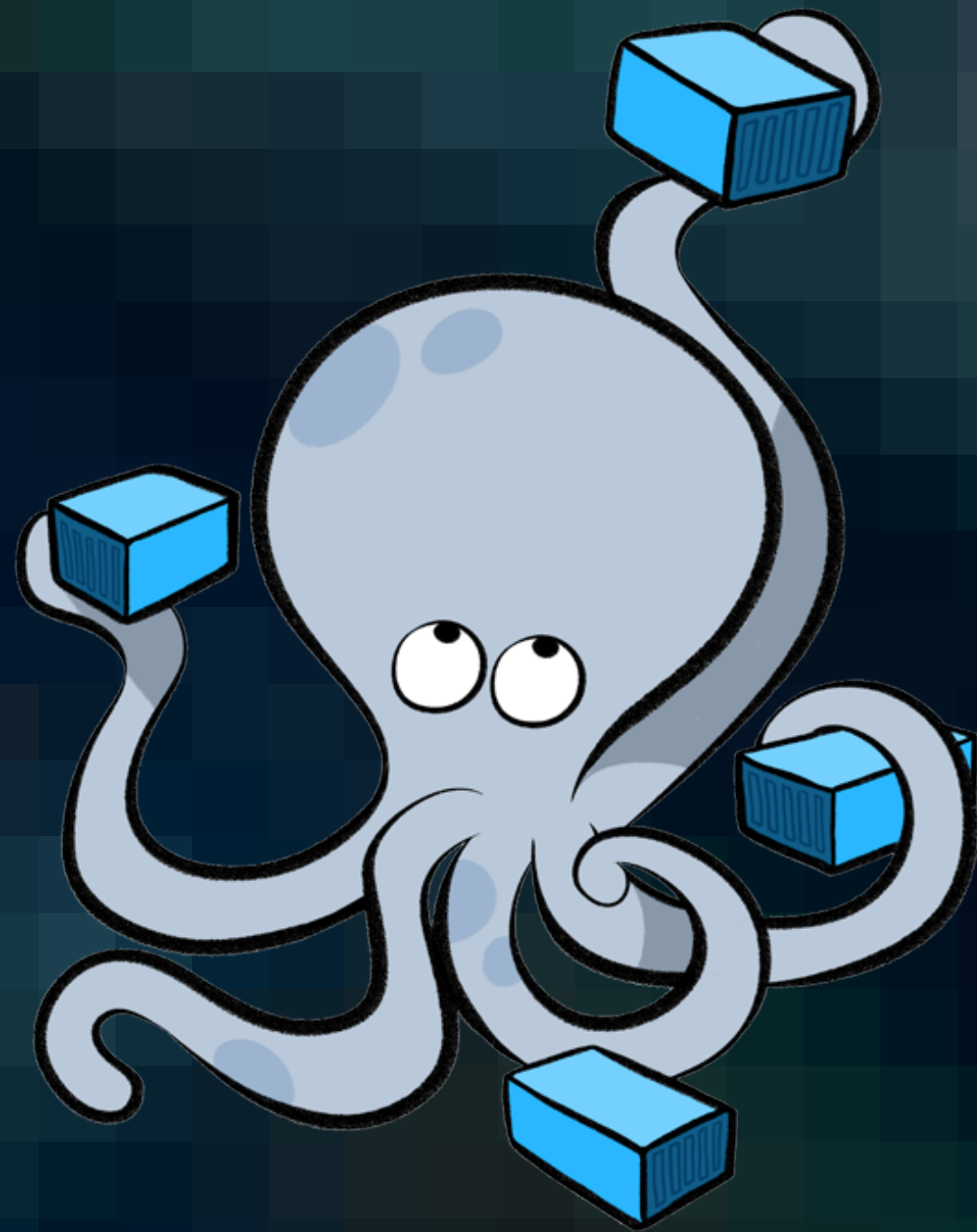
DETAILS

Reload



Fig



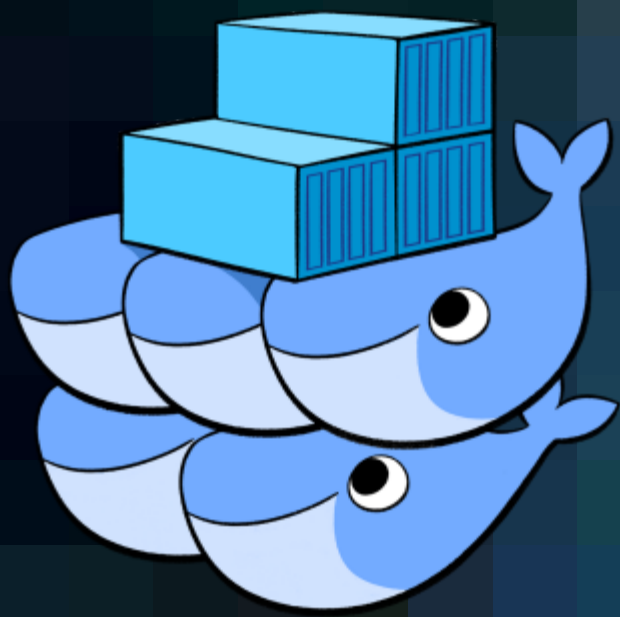


```
1 version: '3'
2 services:
3   redis:
4     image: redis:alpine
5   mysql:
6     image: mysql
7   mailcatcher:
8     image: schickling/mailcatcher
9   application:
10    image: dockerwest/php-pimcore:7.1
11    volumes:
12      - ../pimcore:/phpapp
13    links:
14      - mysql
15      - redis
16      - mailcatcher
17   nginx:
18     image: dockerwest/nginx-pimcore:stable
19     volumes:
20       - ../pimcore:/phpapp
21     links:
22       - application
```



TOPICS

- our requirements
- some history
- **docker swarm**
- demo time



CONCEPTS

- node
- stack
- service
- task

SETTING UP YOUR OWN SWARM

- manager
- worker
- other?

CHOOSE OUR BASE

MORE TRADITIONAL DISTRIBUTIONS



MORE ADVANCED OR SPECIFIC DISTRIBUTIONS



SETUP A SWARM

Chosen base distribution:



SYSTEM

```
$ apk add --update --no-cache docker  
$ rc-update add docker default
```

CERTIFICATES

communication between client and server will be encrypted

CLIENT CONFIG

to communicate with our server(s) we have to setup some environment variables

```
export DOCKER_HOST=tcp://192.168.250.31:2375
export DOCKER_CERT_PATH=$(pwd)/client-cert
export DOCKER_TLS_VERIFY=1
```

SETUP THE SWARM

```
# docker swarm init \  
  --advertise-addr=[internal server ip]  
# docker swarm join-token \  
  -q worker  
# docker swarm join \  
  --token [worker token] \  
  [internal master server ip]
```

SIMPLE CHECK SWARM STATUS

```
$ docker node ls  
$ docker service ls
```

DOCKER SERVICE

create/manage a single service within a swarm

DOCKER STACK

create/manage an application stack within a swarm

DEPLOYING A SIMPLE STATELESS APPLICATION

CHALLENGES ENCOUNTERED

- create stateless images
- create swarm configuration
- registry? self hosted? docker hub?
- what if I want to add more applications

WHAT IF I WANT MORE APPLICATIONS

Enter traefik



traefik





I LIKE VISUAL REPRESENTATION



filter containers

● manager-1

manager

2.939G RAM

x86_64/linux

● traefik_traefik

image : traefik:roquefort-alpine@sha256:74fbae08e0d263e4252147d981a6a4

tag : roquefort-alpine@sha256:2b09

updated : 25/1 16:33

74fbae08e0d263e4252147d981a6a4

state : running

● mon_node-exporter

image : swarmprom-node-exporter:latest@sha256:ee424a4176023

tag : latest@sha256:ee424a4176023

cmd : -collector.textfile.directory=/etc

updated : 25/1 16:30

eaf0d971089c5c1e6a1ab14619e9b7

state : running

● mon_dockerd-exporter

image : caddy:latest@sha256:44541c

tag : latest@sha256:44541cfac66f4

updated : 25/1 16:30

44541cfac66f4

● manager-2

manager

2.939G RAM

x86_64/linux

● mon_alertmanager

image : swarmprom-alertmanager:latest@sha256:87d739d568129

tag : latest@sha256:87d739d568129

cmd : -config.file=/etc/alertmanager

updated : 25/1 16:32

107216e5317d3bdd6c8d08fc6f9ffb9

state : running

● mon_prometheus

image : swarmprom-prometheus:latest@sha256:5928441c29403

tag : latest@sha256:5928441c29403

cmd : -config.file=/etc/prometheus/c

updated : 25/1 16:33

cf7b344ced52dd7be28b92b4eaa284

state : running

● mon_node-exporter

image : swarmprom-node-exporter:latest@sha256:ee424a4176023

tag : latest@sha256:ee424a4176023

ee424a4176023

● node-1

worker

1.465G RAM

x86_64/linux

● simple-sample_application

image : swarm-sample-php:latest@sha256:fc7327238a9670

tag : latest@sha256:fc7327238a9670

updated : 25/1 16:35

1b64c2e9ff301582c03fb8aab3d7f54

state : running

● mon_node-exporter

image : swarmprom-node-exporter:latest@sha256:ee424a4176023

tag : latest@sha256:ee424a4176023

cmd : -collector.textfile.directory=/etc

updated : 25/1 16:30

22c60bf74deb6508cda0a158b1707c

state : running

● simple-sample_nginx

image : swarm-sample-nginx:latest@sha256:bdb1b3e49f5bd

tag : latest@sha256:bdb1b3e49f5bd

updated : 25/1 16:35

bdb1b3e49f5bd

● node-2

worker

1.465G RAM

x86_64/linux

● mon_node-exporter

image : swarmprom-node-exporter:latest@sha256:ee424a4176023

tag : latest@sha256:ee424a4176023

cmd : -collector.textfile.directory=/etc

updated : 25/1 16:30

6284268cc63f4afb83c98b5396bc573

state : running

● mon_cadvisor

image : cadvisor:latest@sha256:9e347affc725ef

tag : latest@sha256:9e347affc725ef

cmd : -logtostderr,-docker_only

updated : 25/1 16:30

d197c24dbeba5aace5ed353d1d507

state : running

● simple-sample_application

image : swarm-sample-php:latest@sha256:fc7327238a9670

tag : latest@sha256:fc7327238a9670

fc7327238a9670

**DEPLOYING PIMCORE, THERE IS STATE, A
DATABASE, ...**

ADDITIONAL CHALLENGES

- prepare your database
- how to handle/store state
- handle scheduled jobs

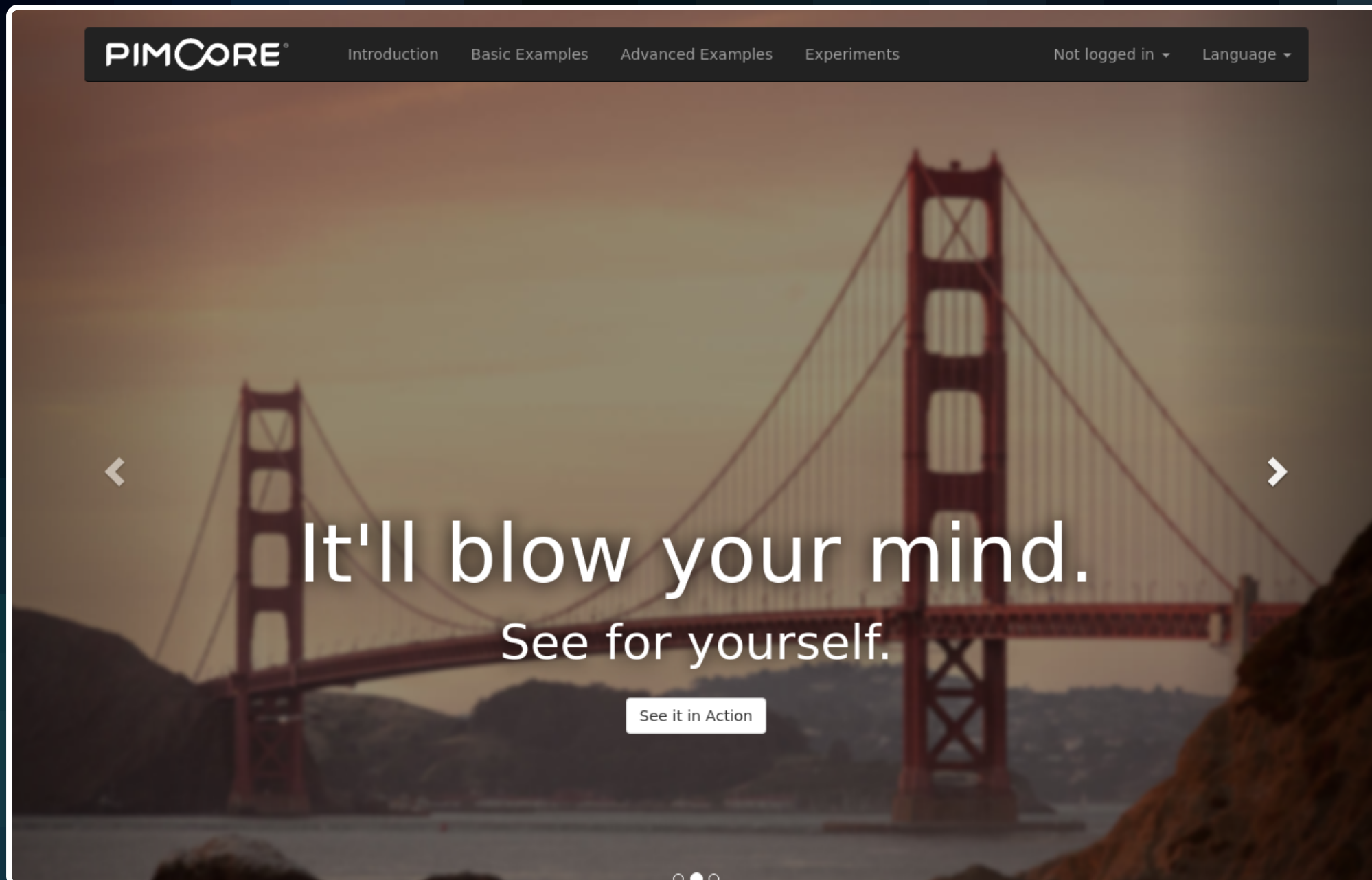
ARE WE STILL MISSING SOMETHING

- central logging
- metrics / alerting

TOPICS

- our requirements
- some history
- docker swarm
- **demo time**

PIMCORE 5



MAGENTO 2



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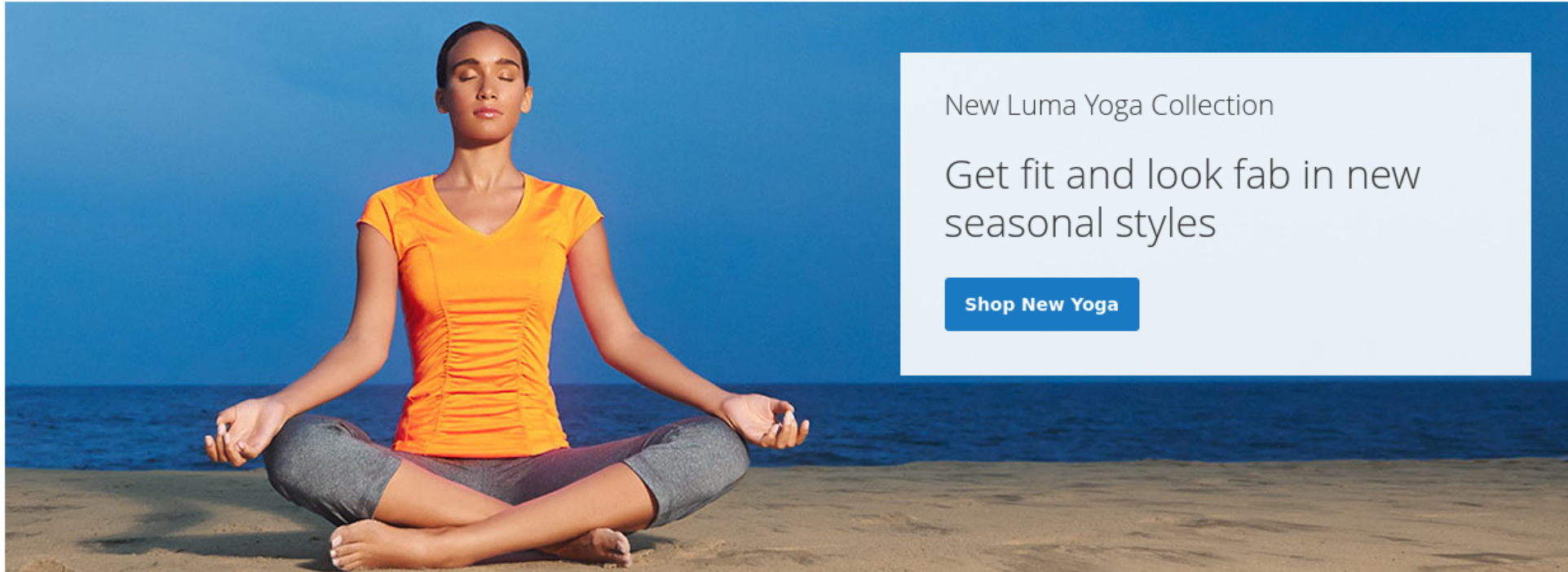
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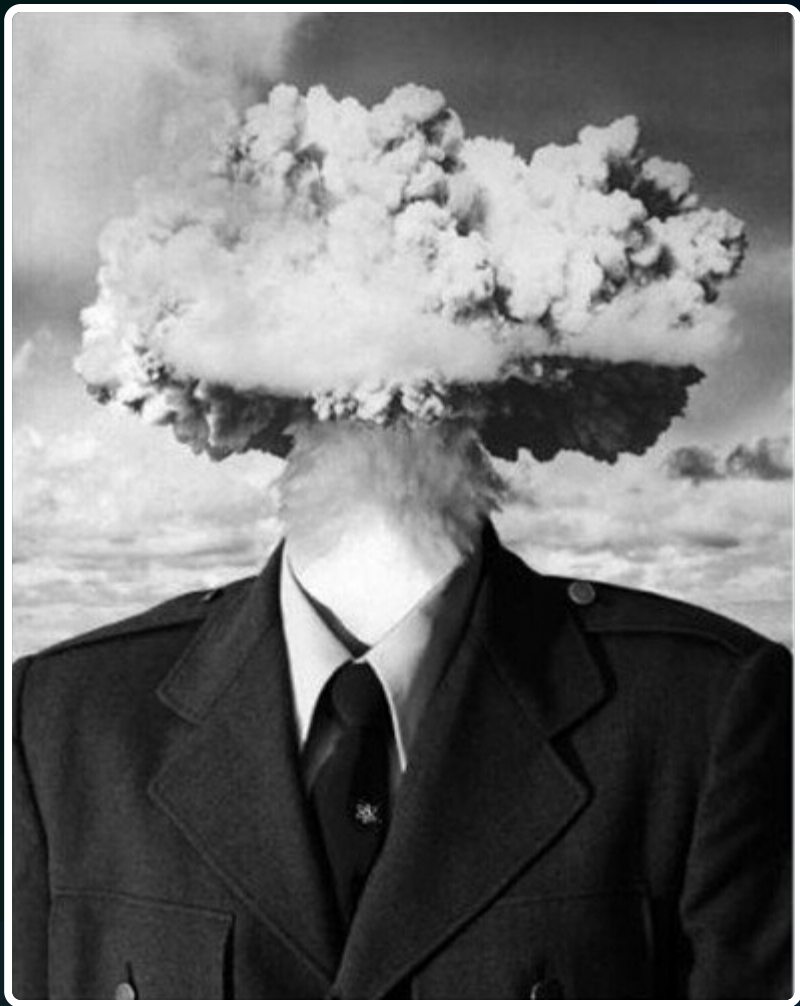


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SUMMARIZED

- we can run php applications
- we can see where what is running
- we have some monitoring and alerting
- we have central logging



QUESTIONS?

<https://joind.in/talk/05b5d>

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DevOps / developer @ Studio Emma

PHP-WVL / Docker West / Arch Linux Trusted User



THANKS.

<https://joind.in/talk/05b5d>

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IMAGE CREDITS

- <https://blenderartists.org/forum/showthread.php?343877-Fish-Swarm>
- <https://giphy.com/search/oh-noo>
- <https://giphy.com/search/panic>
- <http://www.fig.sh/>
- <https://giphy.com/search/better>
- <https://traefik.io/>
- <https://giphy.com/search/really>
- <https://giphy.com/search/done>

