Docker on VDS

Aurelijus Banelis

Aurelijus Banelis

Software developer

aurelijus.banelis.lt

aurelijus@banelis.lt

.NET

Auginte

Docker on VDS

You will learn

The docker

Why it is good

Why it is bad

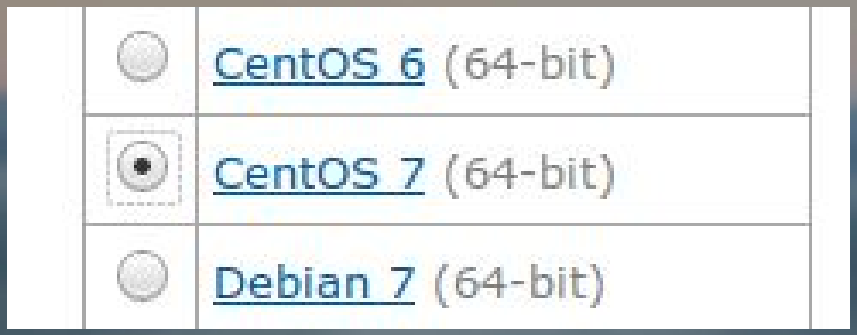
The docker

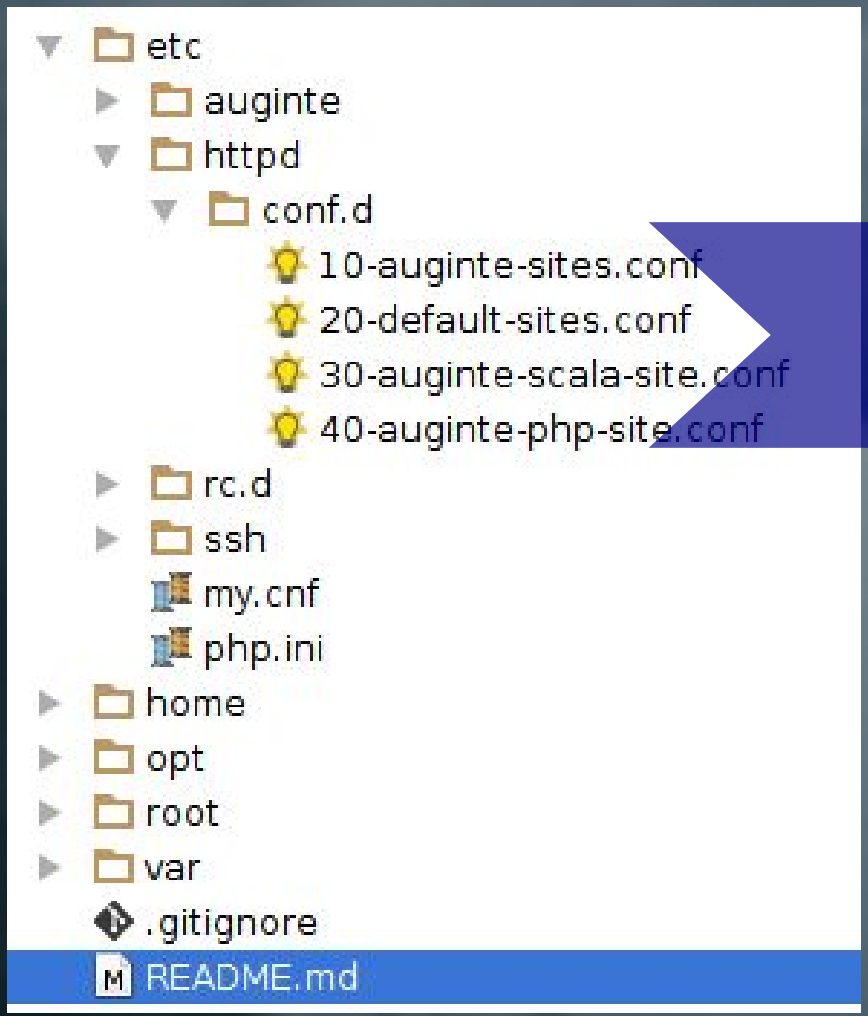
Why it is good

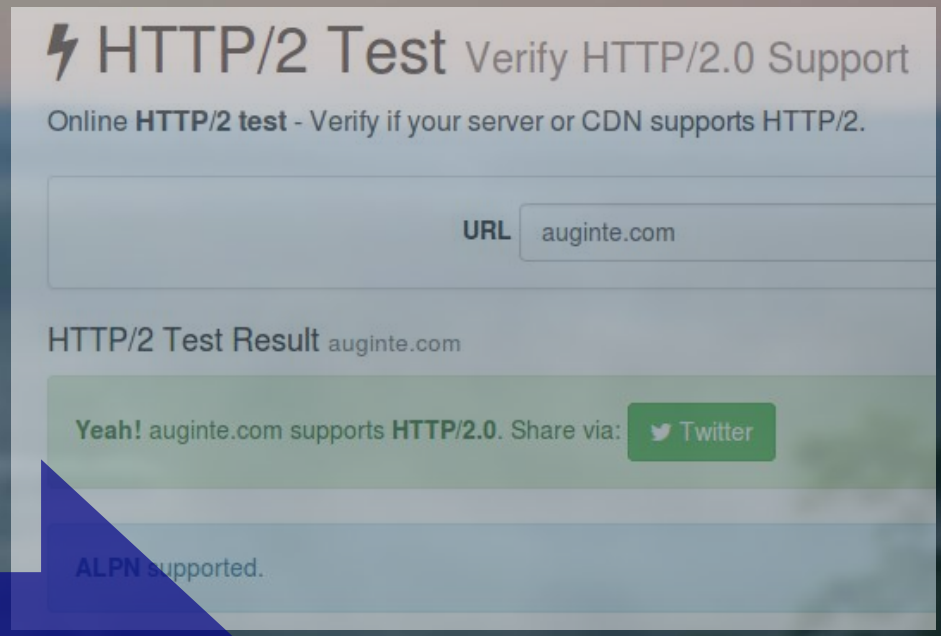
Why it is bad

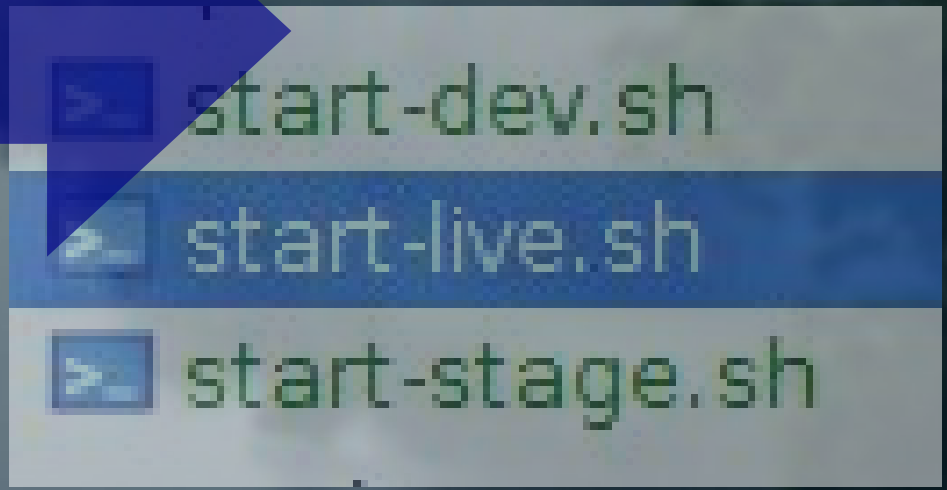
Why docker?

Wanted new technologies on my old Virtual Dedicated Server

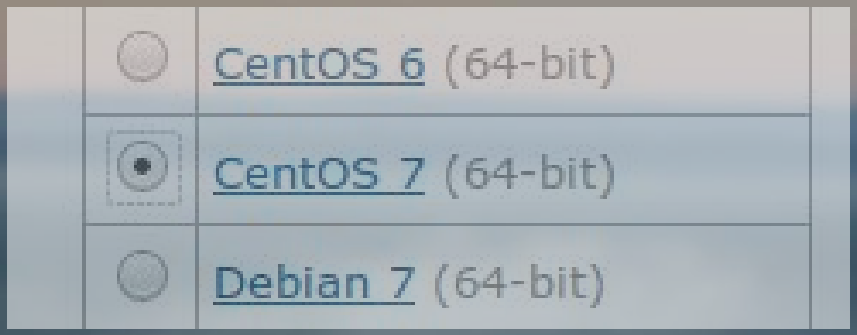

CentOS 6 (64-bit)
CentOS 7 (64-bit)
Debian 7 (64-bit)

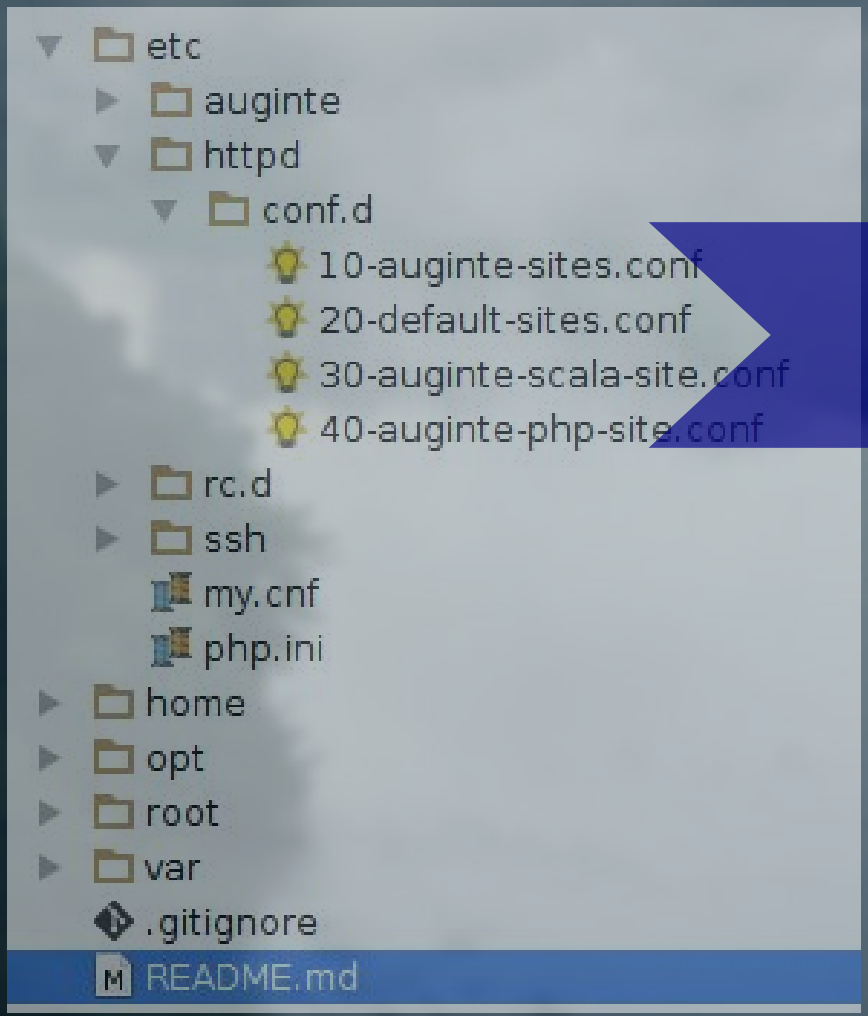

etc
auginte
httpd
conf.d
10-auginte-sites.conf
20-default-sites.conf
30-auginte-scala-site.conf
40-auginte-php-site.conf
rc.d
ssh
my.cnf
php.ini
home
opt
root
var
.gitignore
README.md


HTTP/2 Test Verify HTTP/2.0 Support
Online HTTP/2 test - Verify if your server or CDN supports HTTP/2.
URL auginte.com
HTTP/2 Test Result auginte.com
Yeah! auginte.com supports HTTP/2.0. Share via: Twitter
ALPN supported.

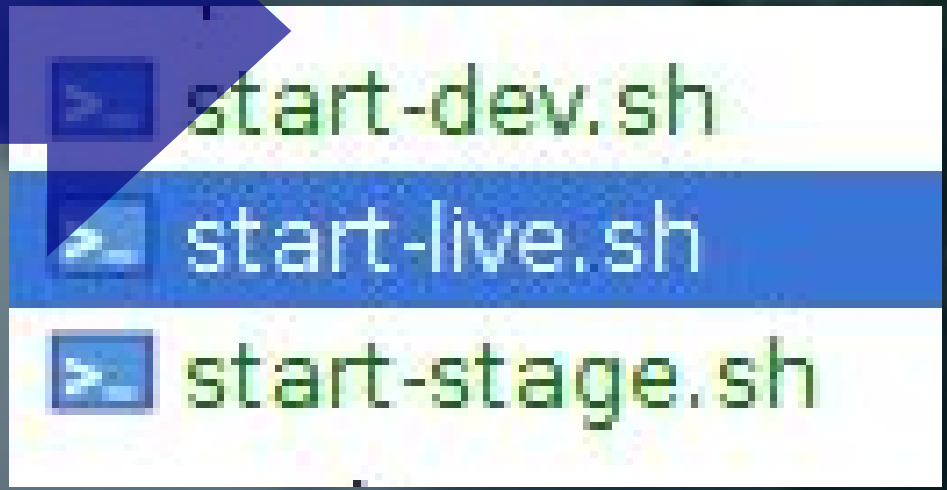

start-dev.sh
start-live.sh
start-stage.sh

php
Or
MySQL


CentOS 6 (64-bit)
CentOS 7 (64-bit)
Debian 7 (64-bit)


etc
auginte
httpd
conf.d
10-auginte-sites.conf
20-default-sites.conf
30-auginte-scala-site.conf
40-auginte-php-site.conf
rc.d
ssh
my.cnf
php.ini
home
opt
root
var
.gitignore
README.md

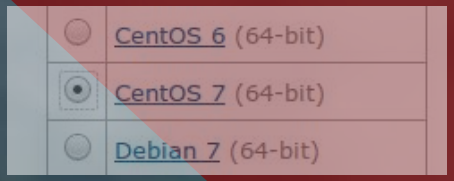
HTTP/2 Test Verify HTTP/2.0 Support
Online HTTP/2 test - Verify if your server or CDN supports HTTP/2.
URL auginte.com
HTTP/2 Test Result auginte.com
Yeah! auginte.com supports HTTP/2.0. Share via: Twitter
ALPN supported.

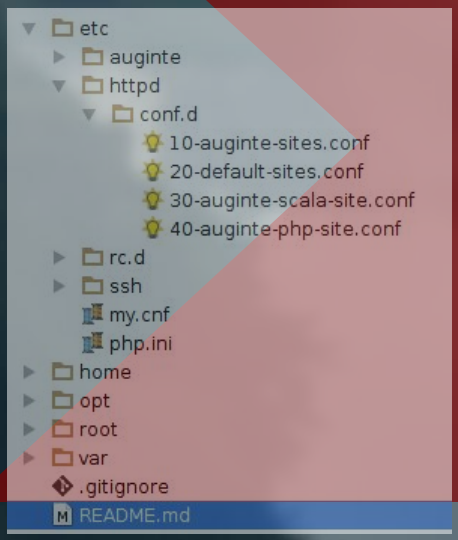

start-dev.sh
start-live.sh
start-stage.sh

php
Or
MySQL

Markdown documentation

Very smart bash script

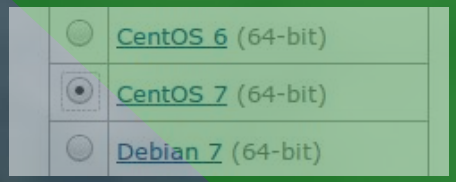


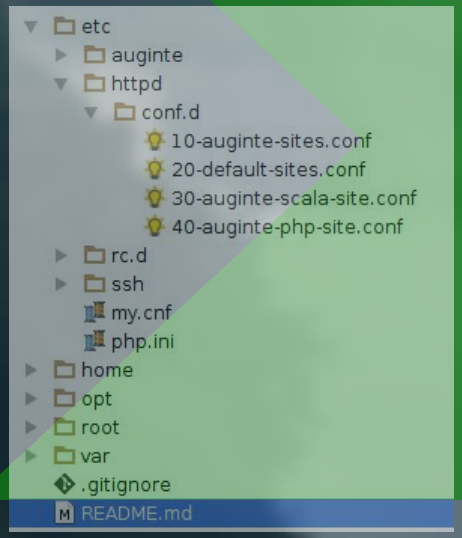


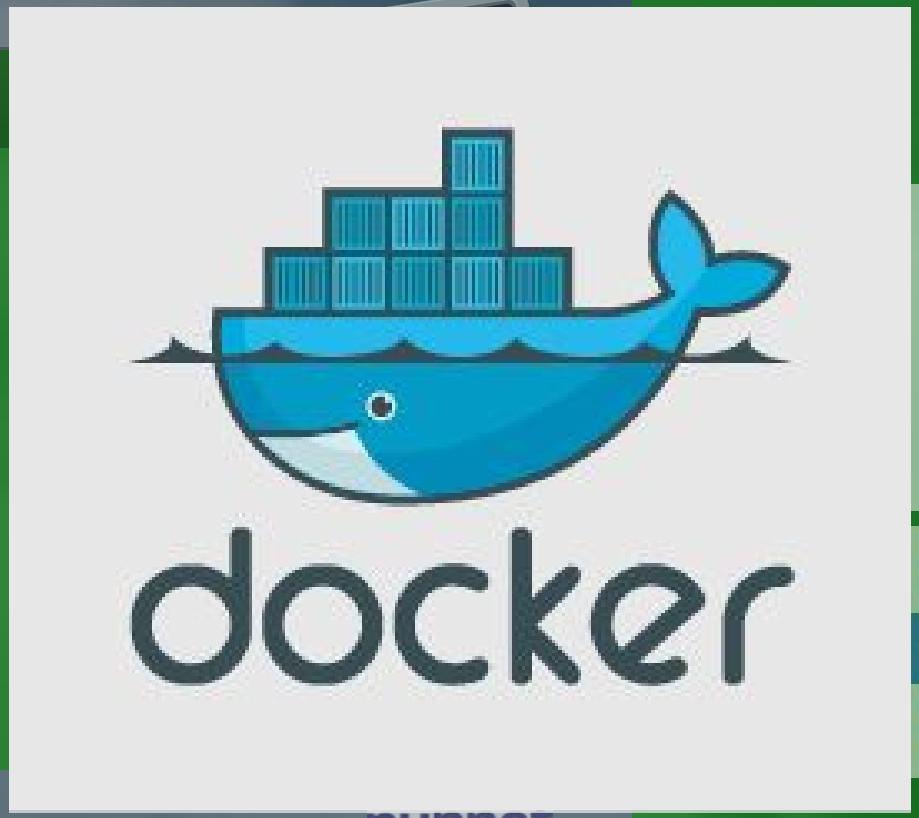
Provision with puppet

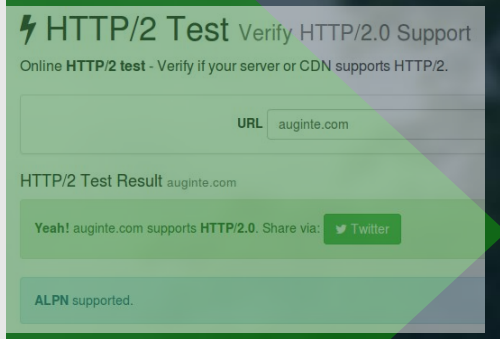
Provision with saltstack

Markdown documentation









Provision with saltstack

What is docker?

User-friendly containerization tools

What is docker?

Source: https://www.docker.com/

What is docker?

Source: https://www.docker.com/

Containers...

What is docker?

What is docker?

```
PHP Fatal error:  Cannot use 'String' as class name
as it is reserved
```

What is docker?

```
PHP Fatal error:  Cannot use 'String' as class name
as it is reserved
```

```
docker run -v "$PWD":"/src" -w "/src" \
  php:5.6 bash -c "make build"
```

*

Docker on VDS

What about production?

Possible on some VDS, but mine used bad kernel

One line to run

docker-compose up

If docker is installed

*Docker-compose is a docker wrapper, written in Python. There was less problems installing it, than docker itself

Install from .deb
on Ubuntu 14.04

Old distribution?

Install from .deb
on Ubuntu 14.04

Old distribution?

Newest kernel

OpenVZ

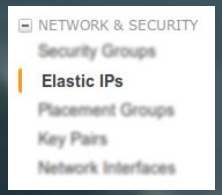
Your Linux kernel version 2.6.32-042stab113.12 can be unstable running docker.

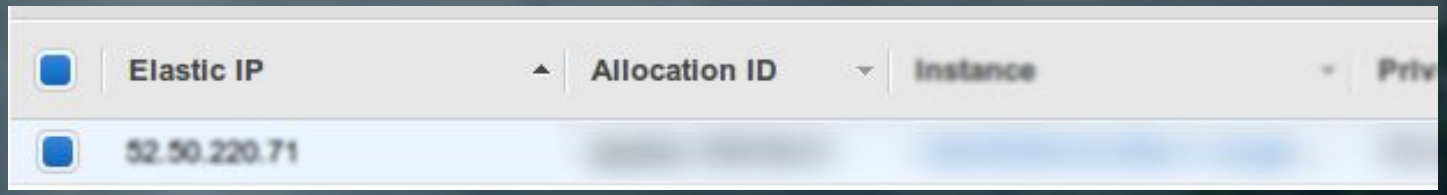
Please upgrade your kernel to 3.10.0.

http://forumas.dedikuoti.lt/showthread.php?t=602

Ended up on AWS

Ended up on AWS





Stable HDD

Static IP

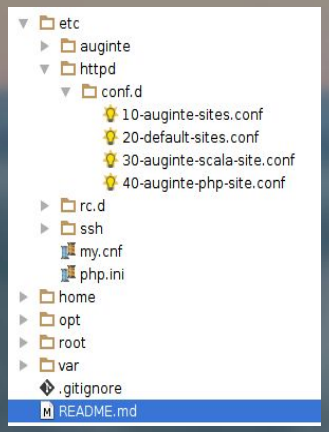
Similar price

t2.nano

1-YEAR TERM					
Payment Option	Upfront	Monthly*	Effective Hourly**	Savings over On-Demand	On-Demand Hourly
No Upfront	$0	$3.65	$0.005	29%	$0.007 per Hour
Partial Upfront	$28	$1.17	$0.005	31%	
All Upfront	$41	$0.00	$0.005	33%	

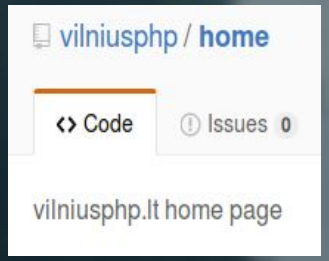
3-YEAR TERM					
Payment Option	Upfront	Monthly*	Effective Hourly**	Savings over On-Demand	On-Demand Hourly
Partial Upfront	$49	$1.10	$0.003	51%	$0.007 per Hour
All Upfront	$83	$0.00	$0.003	54%	

https://aws.amazon.com/



The docker

Why it is good

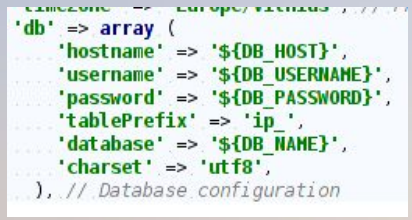


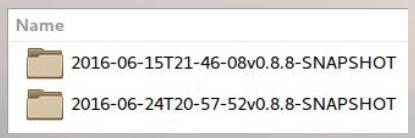
Why it is bad

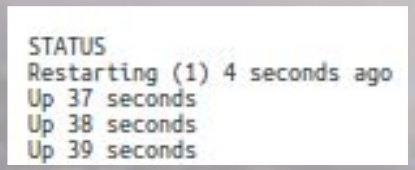
The docker

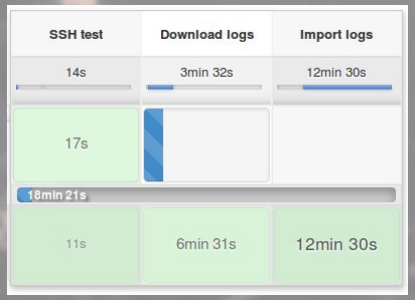
Why it is good

Why it is bad



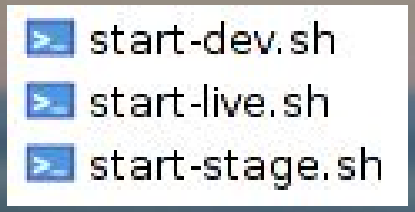




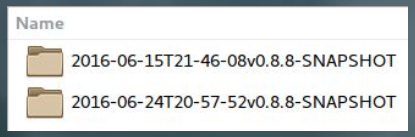


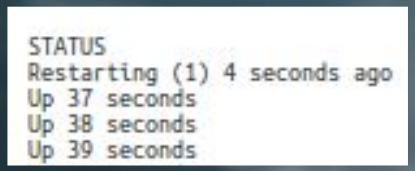
DEMO

- One line to run/stop. Same on different environments
- Generate config from environment variables
- Auto-restart and output logs
- Mounting volumes instead of symlinks
- Include version into logs
- Advanced development environment (compiling, jenkins, log analysis)
- Read only file systems

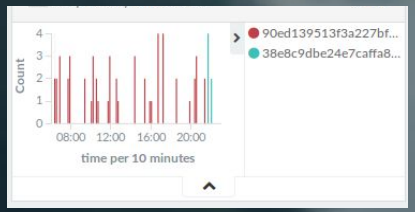


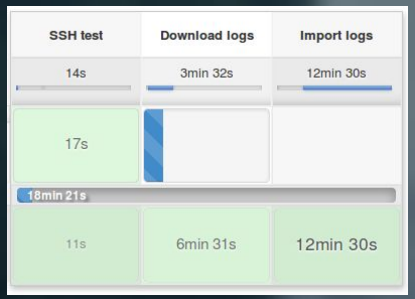
```
'db' => array (
    'hostname' => '${DB_HOST}',
    'username' => '${DB_USERNAME}',
    'password' => '${DB_PASSWORD}',
    'tablePrefix' => 'ip_',
    'database' => '${DB_NAME}',
    'charset' => 'utf8',
  ), // Database configuration
```





```
STATUS
Restarting (1) 4 seconds ago
Up 37 seconds
Up 38 seconds
Up 39 seconds
```





The docker

Why it is good

Why it is bad

The docker

Why it is good

Why it is bad

Another layer to debug

```
environment:
 - NGINX_HOST=foobar.com
 - NGINX_PORT=80
command: /bin/bash -c "envsubst < /etc/nginx/conf.d/mysite.template > /etc/
```

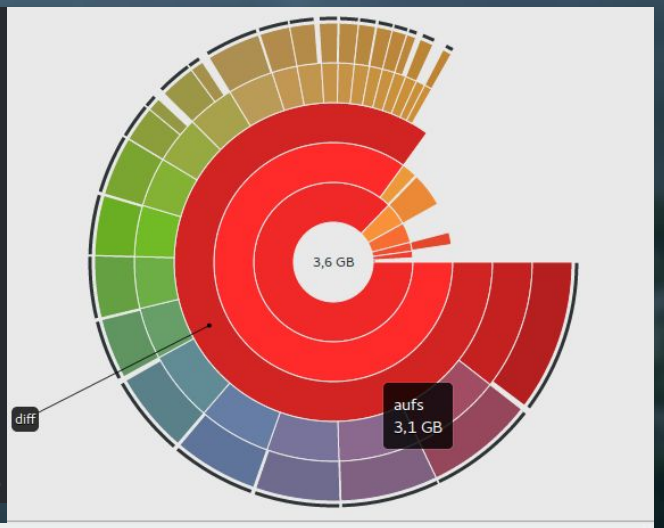
1/1 AnnotationException in AnnotationException.php line 193:

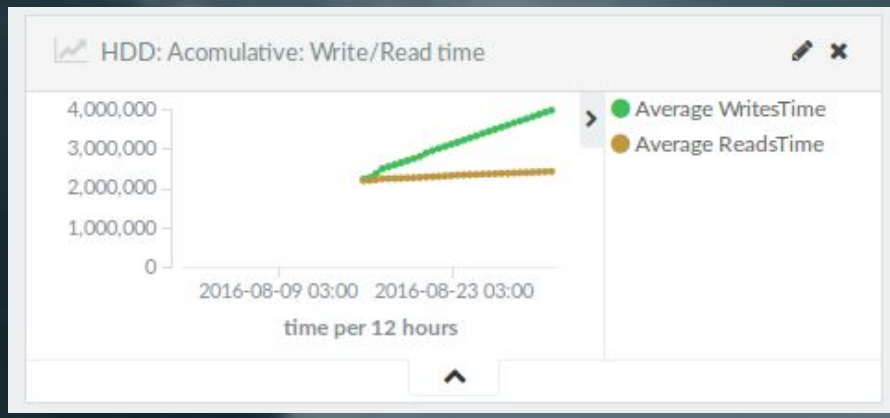
You have to enable opcache.load_comments=1 or zend_optimizerplus.load_comments=1.

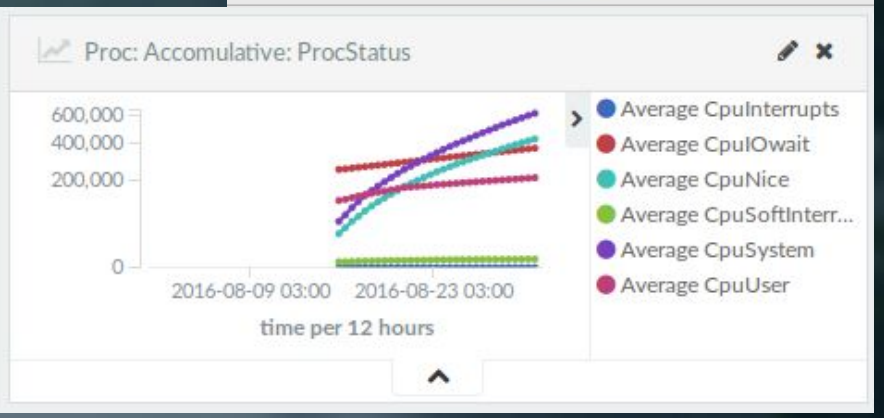
- envsubst and nginx $fastcgi_path_info
- Digging the cause of the error
- Mysql just not starting (started working after version update)

- Slow “docker ps” when low of memory

Needs tooling around







- Cache everything
- Most fast metrics are accumulative

Reliability

```
Exited (0) 9 minutes ago
Up 6 seconds                    9000/tcp
Exited (1) 43 seconds ago       2345/tcp, 0.0.0.0:32771->80/tcp
Exited (0) About a minute ago
```

- Linux vs Mac/Win native
- Orientdb repository renamed, old versions removed from docker hub

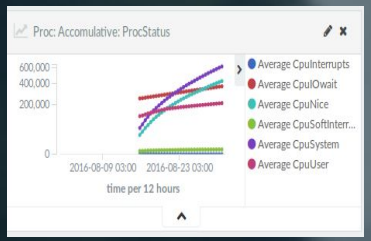
- Kernel panics
- Docker hub connection problems
- Security: Running 3rd party software with root
- Community split

The docker

Why it is good

1/1 AnnotationException in Anno

You have to enable opcache.l




```
Exited (0) 9 minutes ago
Up 6 seconds
Exited (1) 43 seconds ago
Exited (0) About a minute
```

Why it is bad

Docker on VDS

That’s it. Questions?

Slides on server working on Docker: https://aurelijus.banelis.lt/prezentations/docker-on-vds/Docker-on-VDS-v3.pdf
Video: https://youtu.be/dIgaQ4mgFYg
Feedback: https://goo.gl/forms/nbkrmdxVk5YhjsPE2