

SHIPPING CODE WITH DOKKU

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Jakarta, Indonesia
8 Mar 2014 / @shirkeydev



<http://bit.ly/dokku-2014-03>

Topics

- ★ **Assumptions** about me, about you, about scope
- ★ **Dokku Overview** describes Dokku and the toolset
- ★ **Dokku Applied** illustrates how Dokku can help you
- ★ **App Deploy** aka “throwing things over the wall”
- ★ **Dokku Walkthrough** hands-on with Dokku
- ★ **App Deploy Reloaded** with the help of Dokku
- ★ **Resources** to start now with Dokku

1

ASSUMPTIONS

★ **20 years tech experience**

- ✓ Network/Ops
- ✓ Development
- ✓ Project Mgmt

★ **8 years in Indonesia**

★ **4 weeks using Dokku!**



@bizowner



@sysadmin



@developer



mix and match -- maybe you are all three!

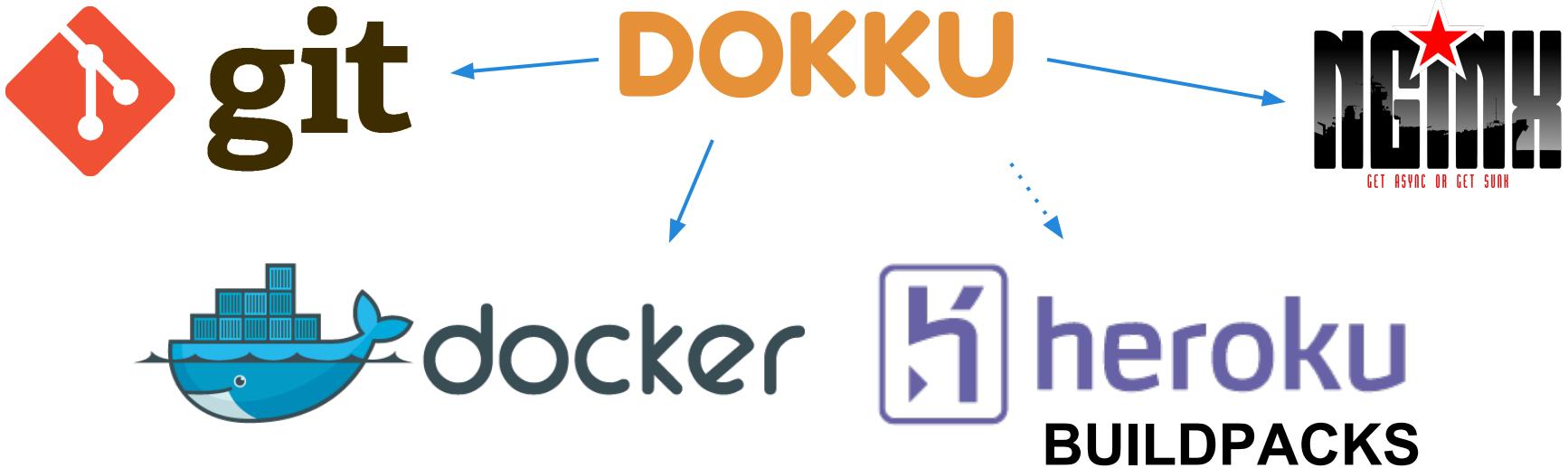
Scope

- ★ Dokku – not Docker itself
- ★ Quick walkthrough
- ★ Not a technical deep-dive
- ★ ... but walkthrough code will be available
- ★ Get you up-and-running with Dokku today

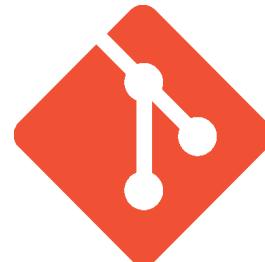
DOKKU OVERVIEW



@<you>



DOKKU: THE TOOLSET



git

“[A] version control system designed [for] speed and efficiency”

from <http://git-scm.com/>

- ★ distributed version control
- ★ integrates with your use case
- ★ widespread industry adoption
- ★ created by Linus Torvalds

Docker



CONTAINERS, CONTAINERS, CONTAINERS!

In the background, three shipping containers are visible. From left to right: an orange Hapag-Lloyd container, a white Maersk Sealand container, and a green Evergreen container.

Docker



CONTAINERS!

**NOT YET
PRODUCTION**

CONTAINERS!

Heroku



**“Cloud computing
designed and built
for developers”**

from <http://heroku.com>

- ★ Platform-as-a-Service (PaaS)
- ★ Free tier, optionally scales up to meet your demand
- ★ Easy deployment via git
- ★ Services (database, email, etc) all available in the same integrated platform
- ★ Limits to size and scale of the application on the free tier



**“nginx (engine x) is an
HTTP and reverse
proxy server...”**

from <http://nginx.org>

- ★ reverse proxy to apps
- ★ forwards requests by application name
- ★ custom config can be added without affecting Dokku

**“Docker powered
mini-Heroku. The
smallest PaaS
implementation
you've ever seen.”**
from <http://github.com/progrium/dokku>

- ★ 114 lines of Bash
- ★ Heroku conventions
- ★ Git for code deployment
- ★ Docker for virtualization, isolation
- ★ Plugins (Postgres, Redis, etc)
- ★ **Single server only** (see flynn.io)

“Docker powered
mini-Heroku
smallest
implementation
you've
from <http://>”

Bash
environments
(etc)
isolation

**NOT YET
PRODUCTION**

DOKKU APPLIED



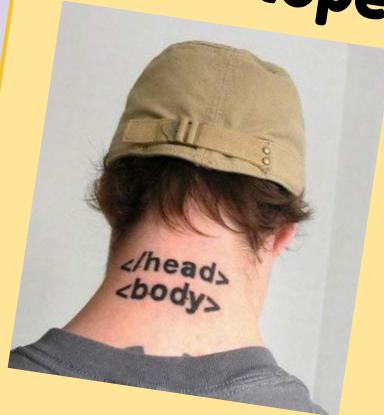
@bizowner



@sysadmin



@developer



@<you> + DOKKU = #PROFIT

“What can Dokku do for our bottom line?”

@bizowner



- ★ **increased efficiency**
 - ✓ sysadmins focus on production
- ★ **no vendor lock-in**
 - ✓ hosting internal or external
- ★ **implementation flexibility**
 - ✓ multiple codebase versions
 - ✓ language agnostic

“How does Dokku make my life easier?”

@sysadmin



- ★ **polyglot apps run side-by-side**
 - ✓ Ruby, Python, Node, etc
- ★ **consistent deployment**
 - ✓ configuration controlled by git repository
- ★ **Heroku interface, Docker core**
 - ✓ one base image
 - ✓ configurable buildsteps

“How will Dokku change my workflow?”

@developer



- ★ **build it your way**
 - ✓ Ruby, Python, Node, etc.

- ★ **deploy via git push**
 - ✓ source from any branch
 - ✓ choose one or more targets
 - example: dev, stage, uat

APP DEPLOY



LIFE BEFORE DOKKU





조선체육후원기금
THE KOREA SPORTS FUND



조선의 체육

체육소식

조선체육후원기금

기금활동소식

대화실

조선아 달리라

조선을 사랑하는 마음.

체육을 사랑하는 마음.

우리는 당신들의
후원의힘을 존중합니다

령도자와 체육

조선의 체육

▶ 채D(2012)년 경기 대회

▶ 채D(2012)년 경기 대회

런던올림픽에서 4개의 금메달 쟁취!



APPROVED!

- ▶ 유관기관 013년
- ▶ 유관 013년



후원하시려면...



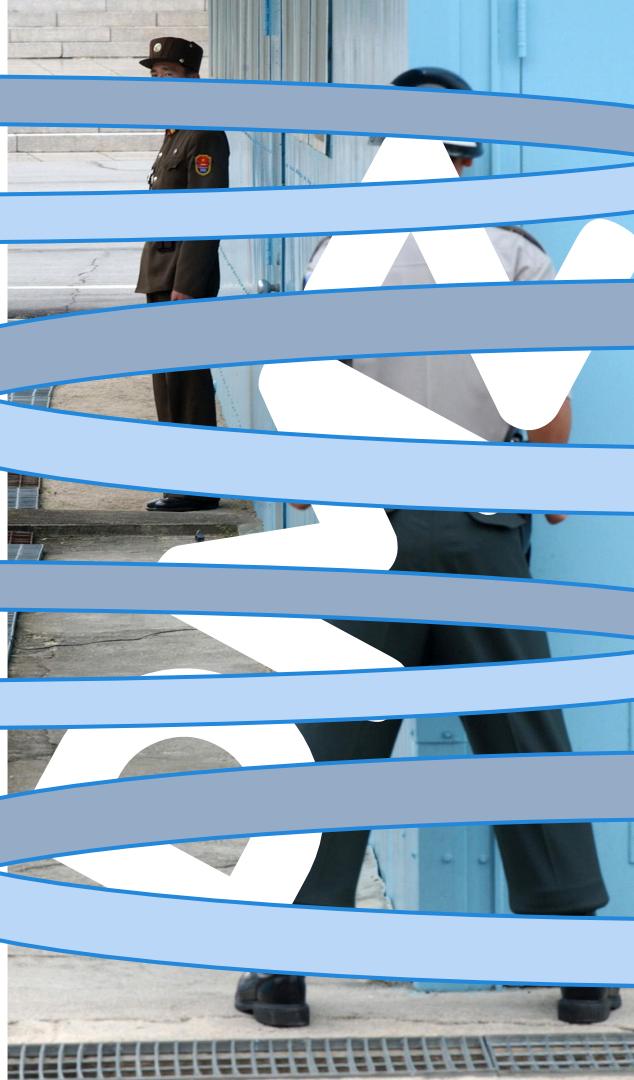
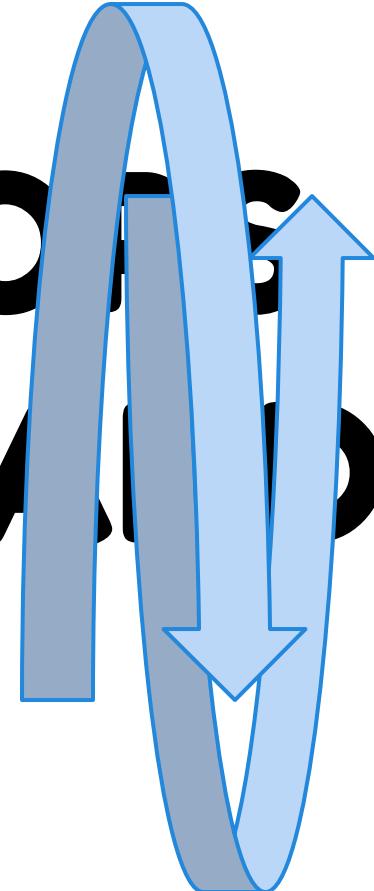
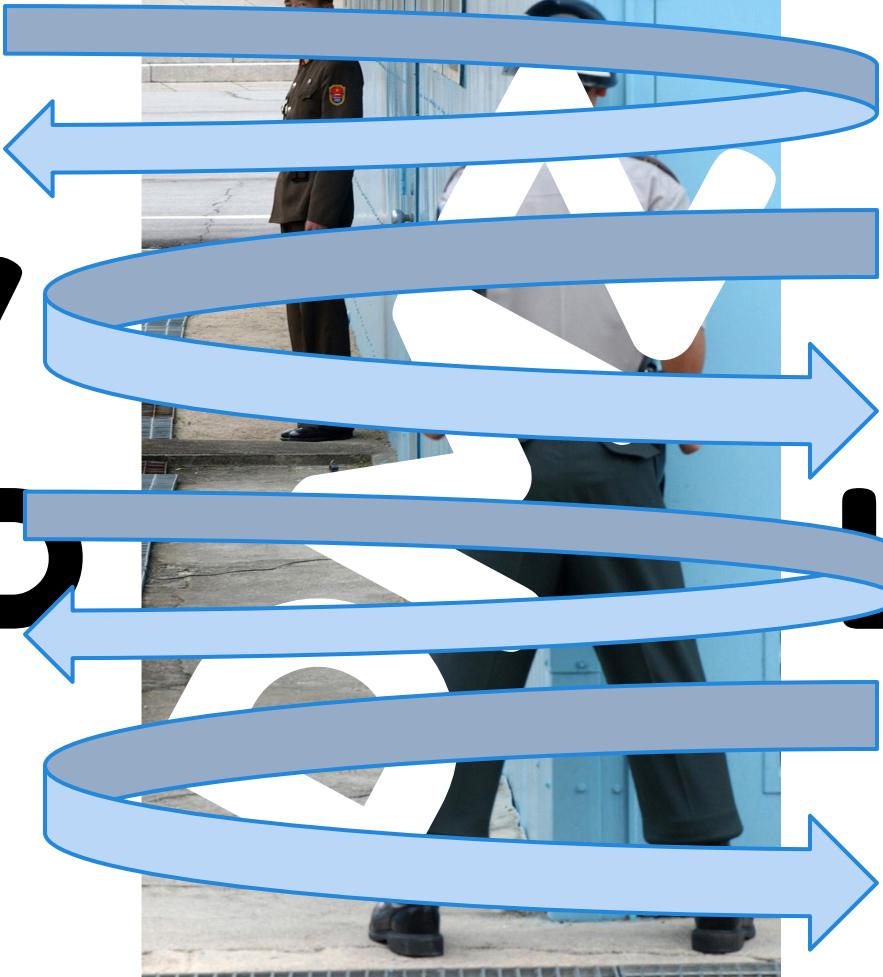
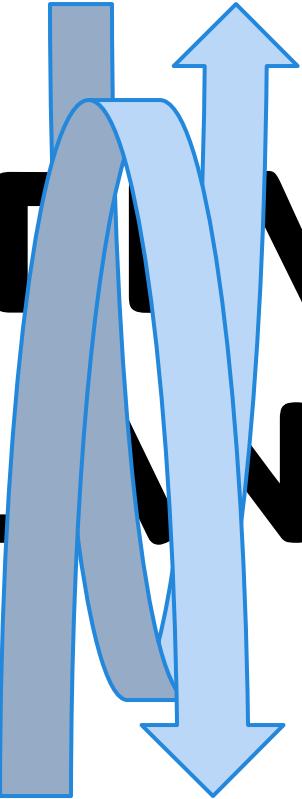
works on
my
machine

works on
my
machine

DEV  **OPSLAND**



L
I
N
D
A



A massive, dense crowd of performers, primarily young women, dressed in vibrant purple sequined uniforms with matching red pom-poms. They are performing a synchronized routine, likely a cheerleading or dance performance. The sheer number of performers creates a repetitive, tessellated pattern across the frame.

LAUNCH
DAY



DEPLOY!

Exception

Exception

Traceback (most recent call last)

```
File "/home/.virtualenvs/nginx-test/lib/python2.7/site-packages/flask/app.py", line 1518, in __call__
    return self.wsgi_app(environ, start_response)

File "/home/.virtualenvs/nginx-test/lib/python2.7/site-packages/flask/app.py", line 1506, in wsgi_app
    response = self.make_response(self.handle_exception(e))

File "/home/.virtualenvs/nginx-test/lib/python2.7/site-packages/flask/app.py", line 1504, in wsgi_app
    response = self.full_dispatch_request()

File "/home/.virtualenvs/nginx-test/lib/python2.7/site-packages/flask/app.py", line 1264, in full_dispatch_request
    rv = self.handle_user_exception(e)

File "/home/.virtualenvs/nginx-test/lib/python2.7/site-packages/flask/app.py", line 1262, in full_dispatch_request
    rv = self.dispatch_request()

File "/home/.virtualenvs/nginx-test/lib/python2.7/site-packages/flask/app.py", line 1248, in dispatch_request
    return self.view_functions[rule.endpoint](**req.view_args)

File "/home/dev/nginx_test/__init__.py", line 7, in index
```



#FAIL

so how do we get
from here...



to here?

DOKKU WALKTHROUGH



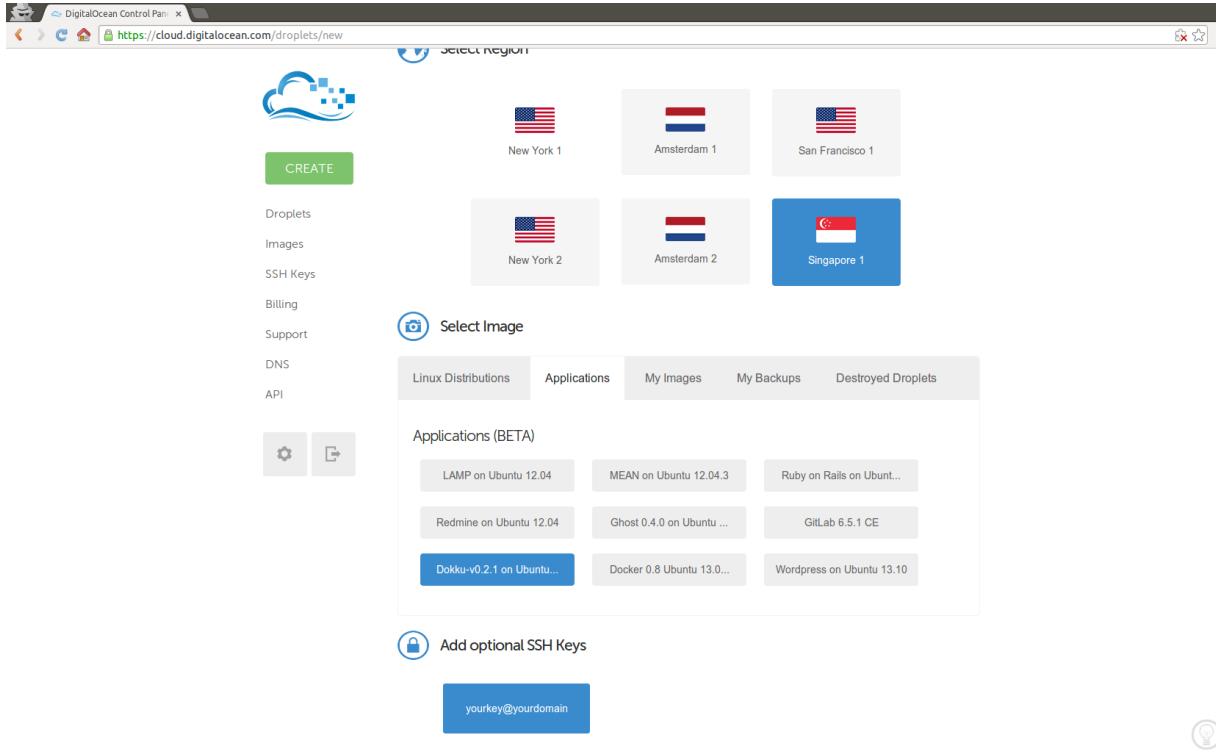


KEEP
CALM
AND
DEPLOY
OFTEN

DOKKU
AUTOMATES
SHIPMENTS
OF YOUR CODE
VIA DOCKER

Dokku server setup - Option 1

Option 1: Spin up a Dokku instance on DigitalOcean



Dokku server setup - Option 2

Option 2: Take the scenic route

Ubuntu 12.04/12.10/13.04 (13.10 not supported), run*:

```
$ wget -qO- http://goo.gl/mUoUcq | sudo DOKKU_TAG=v0.2.2 bash
```

Watch @ [Shelr.tv](#)



Debian 7 (Wheezy), run* (as root):

```
$ wget -O- http://goo.gl/Sa3ndL | bash
```

```
$ wget -qO- http://goo.gl/mUoUcq | sudo DOKKU_TAG=v0.2.2 bash
```

* No warranties, no liability

<http://bit.ly/dokku-2014-03-shelr-install-dokku-server>

Dokku client setup/push

Create apps with git remote, deploy with git push

Add developer's public key to dokku@<DOKKU_SERVER>

```
$ cat ~/.ssh/id_rsa.pub | ssh root@<DOKKU_SERVER> "sudo  
sshcommand acl-add dokku <NICKNAME>"
```

For each local repo, add <DOKKU_SERVER>:<APP_NAME> target

```
$ git remote add dokku dokku@<DOKKU_SERVER>:<APP_NAME>
```

Deploy from a local branch

```
$ git push dokku master # can be master, new-feature, etc.
```

Watch @ [Shelr.tv](#)



[http://bit.ly/dokku-2014-03-
shelr-dokku-client-push](http://bit.ly/dokku-2014-03-shelr-dokku-client-push)

Dokku commands

run commands directly on server

```
$ ssh root@<DOKKU_SERVER>
```

```
root@<dokku_server>$ dokku <command>
```

or run via ssh tty

```
$ ssh -t dokku <command>
```

pro-tip: no command, no result

```
$ dokku
```

```
$
```

display help

```
$ dokku help
```

display stdout of web app

```
$ dokku logs <app>
```

set env vars for the web app

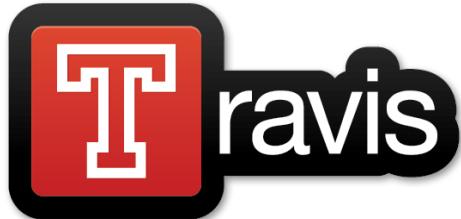
```
$ dokku config:set <app> <env_var> <value>
```

delete web app container

```
$ dokku delete <app>
```

Dokku + Continuous Integration

**DOKKU + YOUR CI TOOL =
CONTINUOUS DELIVERY**



Deploy via Docker images

commit app to private Docker repository via Docker

\$ docker commit <APP_HASH> app_<VERSION>

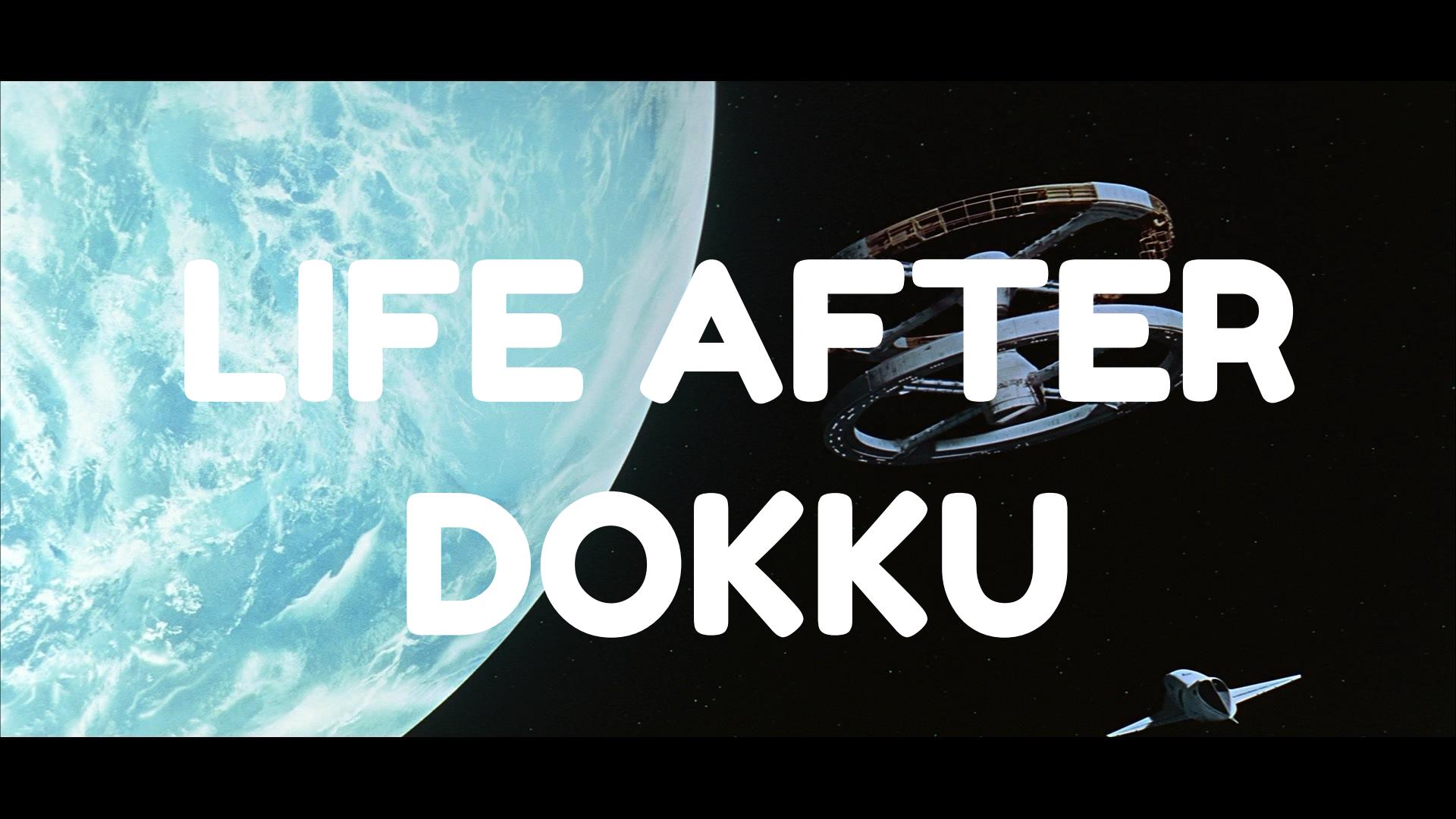
deploy on production servers/cloud

\$ docker run <PRIVATE_REPO>

to create your own private repo, see: <https://blog.codecentric.de/en/2014/02/docker-registry-run-private-docker-image-repository/>

APP DEPLOY RELOADED





LIFE AFTER DOKKU



RE-LAUNCH
DAY

ALL QUIET
ON THE
OPS FRONT





DEPLOY!



조선체육후원기금
THE KOREA SPORTS FUND



조선의 체육 체육소식 조선체육후원기금 기금활동소식 대화실

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- ▶ 경기대회
- ▶ 경기대회
- ▶ 경기대회
- ▶ 경기대회

련계주소

전화: ksf@star-co.net.kp

팩스: 850-2-381 4410

전화: 850-2-18111 Ext. 6141



장하다 안금애, 엄윤철, 김은국, 김정심



2016년 브라질
올림픽을 향하여

체육 소식

- ▶ 우수한 성과를 거둔 체육인들에게 표창장을 수여했습니다.



후원하시려면...



#PROFIT

RESOURCES



Try It, Learn It

Try It

1. Install Dokku on your own servers, or
2. Spin up an instance from DigitalOcean

Learn It

Dokku Home

github.com/progrum/dokku

Digital Ocean Tutorial

<http://bit.ly/dokku-2014-03-ref>

Google

<http://lmgtfy.com/?q=Dokku>

Presentation Links

- ★ <http://bit.ly/dokku-2014-03> (this presentation)
- ★ <http://bit.ly/dokku-2014-03-shelr> (shell recording)
- ★ <http://bit.ly/dokku-2014-03-src> (source code)
- ★ <http://bit.ly/dokku-2014-03-links> (all links)

Credits

- Heroku logo: <https://d1lpkba4w1baqt.cloudfront.net/heroku-logo-light-300x100.png>
- Git logo: <http://git-scm.com/images/logos/downloads/Git-Logo-2Color.png>
- Docker logo: https://www.dotcloud.com/static/img_2012/docker_logo.png
- Cloudbees logo: <http://kohsuke.org/wp-content/uploads/2011/03/CloudBees-Logo.png>
- Nginx logo: <http://wiki.nginx.org/images/8/83/Nginx-logo.svg>
- Kim Jong Il at computer: <http://kimjongunlookingatthings.tumblr.com/image/46612145368>
- Psy Screen caps:
 - http://s12.photobucket.com/user/jcwc84/media/PSY-GANGNAMSTYLEM_Vmp4_snapshot_0108_20110903_170334-1.jpg.html
- Kim Jong Il clapping: http://media.zenfs.com/en_us/News/Reuters/2014-02-10T164111Z_1452424685_GM1EA2B014301_RTRMADP_3_KOREA-NORTH.JPG
- 2001 Space Odyssey:
 - Dawn of Man: <http://www.flavinscorner.com/2001bone.jpg>
 - Cut scene: <http://www.muenster.org/filmwerkstatt/filmfestivals/15/english/match-cut.jpg>
- N. Korean Mass Games: https://upload.wikimedia.org/wikipedia/commons/1/1b/Arirang_Mass_Games,_Pyongyang,_North_Korea-1.jpg
- N. Korean Mass Games: https://farm9.staticflickr.com/8054/8110300895_0075042080_o.jpg
- Korean DMZ: [https://upload.wikimedia.org/wikipedia/commons/7/72/A_South_Korean_soldier_\(right\)_stands.guard.at.Pan_Mun_Jom.in.Korea's.Demilitarized_Zone.Sept.020912-F-IZ313-223.jpg](https://upload.wikimedia.org/wikipedia/commons/7/72/A_South_Korean_soldier_(right)_stands.guard.at.Pan_Mun_Jom.in.Korea's.Demilitarized_Zone.Sept.020912-F-IZ313-223.jpg)
- Korean DMZ https://upload.wikimedia.org/wikipedia/commons/e/ed/Panmunjeom_DMZ.png

THANK
YOU!