

A photograph of an NGINX trade show booth. The booth features a large green header with the NGINX logo. Below the header, a dark panel displays the slogan "flawless application delivery" and four icons representing different NGINX capabilities: Load Balancer, Content Cache, Streaming Media, and Monitoring & Management. Several people are gathered around the booth, some looking at laptops on a table. The background shows a large exhibition hall with other booths and people.

NGINX

flawless application delivery



Load Balancer



Content Cache



Streaming Media



Monitoring & Management

HTTP^wNGINX is changing

from web server to application accelerator

Het spijt me dat ik geen nederlands
spreken
Hallo, Bunnik!





Shannon Burns

decades of experience being a human

former software developer, current developer advocate
available for public embarrassment on twitter @karishannon





HOME

RESULTS

PHOTOS

Welcome to the Pacific GP Home Page

This web site brings you the latest information about Pacific Grand Prix.

You can get more information about the following items:

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wat.

I took this screenshot yesterday.

Fast
Intuitive

WHO



FOLIO

Reliable
Feature Rich

ABOUT

News! We're very excited to announce that Travis has been contracted full-time to work on his long-term project, the **Queenstown Heritage & Arts Festival**.

Ergo, I am now the sole proprietor of Poco People. If you don't know me, my name is Kelly Eijdenberg and I've worked full-time in the creative industries in Tasmania for over a decade.

I am a graphic designer with a passion for the arts, and community. I cut my teeth at studios such as See-Saw Illustration and Design, e.g. design and In Graphic Detail. I've also worked in communication and promotions at Volunteering Tasmania, the University

GET IN TOUCH

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Phone: 0407 167 356

COME & VISIT

**Studio 3, The Typewriter Factory
Level 3, 13-17 Castray Esplanade
Battery Point Tasmania 7004**



A dramatic landscape photograph of a volcanic eruption at night. A large, bright yellow and orange plume of smoke and ash rises from a mountain in the distance. In the foreground, a river of molten lava flows across a dark, rocky terrain. The sky is dark blue and purple, with a vibrant green aurora borealis visible in the upper left quadrant.

the internet is a volcano
disruptive and always changing

Overview

- extending NGINX with nginxScript
- supporting microservices
- adapting to HTTP 2

The background features a repeating pattern of NGINX robot cards. Each card is green with a white robot illustration. The robot has a dome-shaped head with a single eye, a rectangular body with a vent-like pattern, and two arms. In the top left corner of the card, the word 'XXXX' is written. In the top right corner, there is a small 'G' logo. Below the robot, there is a small icon bar containing a cloud, a pair of scissors, and a lock. At the bottom of the card, the word 'NGINX' is written in a white box. The cards are arranged in a staggered grid pattern.

a review of NGINX basics

which may get skipped...

the NGINX config file

```
user www-data;
worker_processes auto;
pid /run/nginx.pid;

events {
    worker_connections 768;
    # multi_accept on;
}

http {

    ##
    # Basic Settings
    ##

    sendfile on;
    tcp_nopush on;
    tcp_nodelay on;
    keepalive_timeout 65;
    types_hash_max_size 2048;
    # server_tokens off;

    # server_names_hash_bucket_size 64;
    # server_name_in_redirect off;

    include /etc/nginx/mime.types;
    default_type application/octet-stream;
```

- Controls how NGINX and its modules work
- Main configuration file is called nginx.conf
- Located at /etc/nginx

directives, blocks and contexts

simple directive

```
access_log /var/log/nginx/access.log;
```

block directive

```
location / {  
    include uwsgi_params;  
    uwsgi_pass unix:/home/uwsgi/de_mo/de_mo.sock;  
}
```

context

```
server {  
    listen 80;  
    server_name 107.170.238.41;  
  
    location / {  
        include uwsgi_params;  
        uwsgi_pass unix:/home/uwsgi/de_mo/de_mo.sock;  
    }  
}
```

- **Extend NGINX with
nginxScript**

A brown dog, possibly a Boxer, is sitting on a light-colored surface. The dog is wearing a pair of black-rimmed glasses and a blue patterned necktie. It is looking towards a silver laptop computer that is open in front of it. The dog's front paws are resting on the laptop's keyboard area. The background is a plain, light-colored wall.

teaching our web server to
speak browser



is this good or bad?

what is nginxScript?

accessibly adding functionality

scripting in NGINX configuration

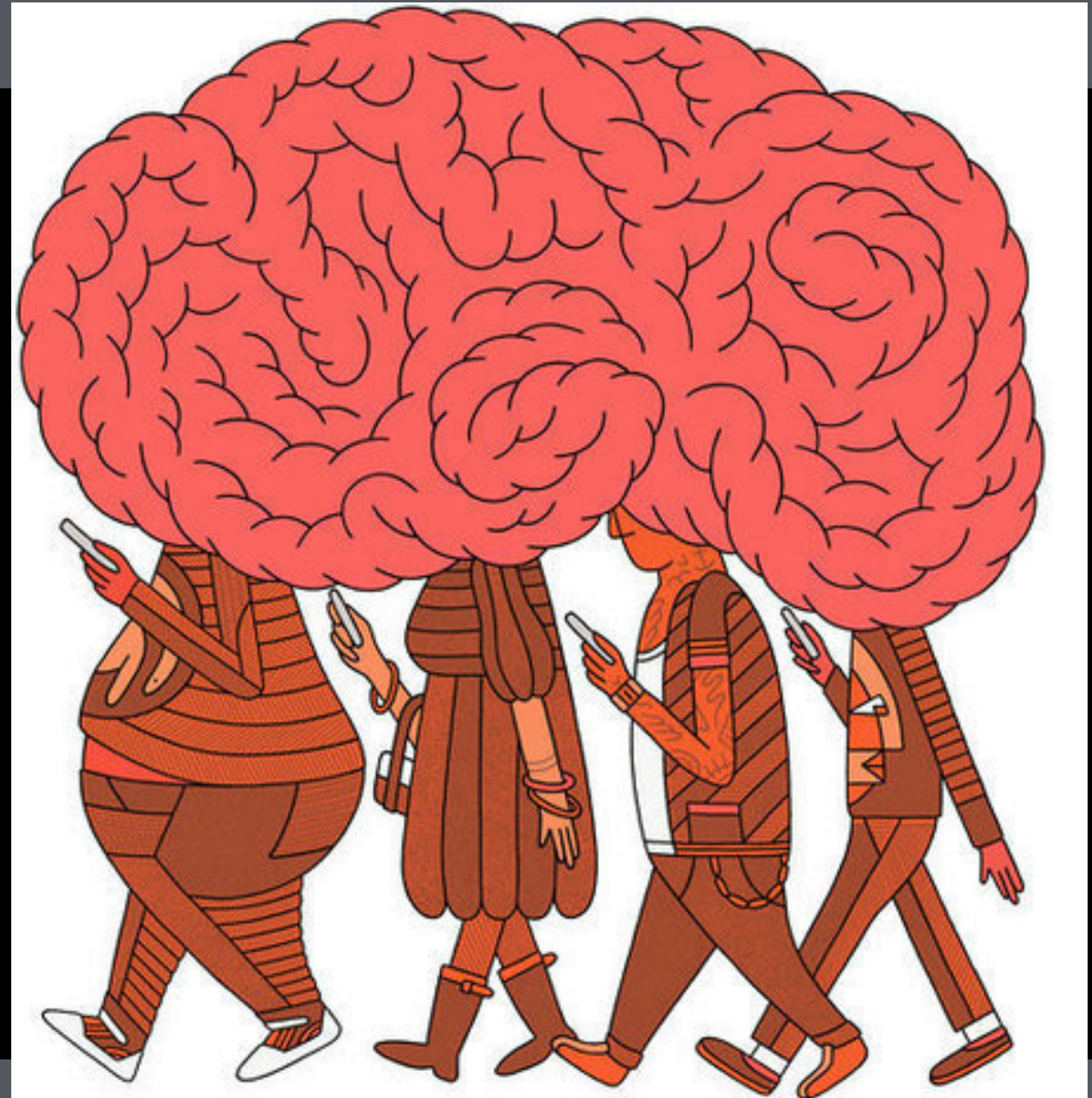
custom JavaScript runtime

- built for server, not browser
- disposable and lightweight
- pre-emptive

why is it useful?

because I said so...

- Everything is broken
- Control Traffic
- Application Extension
- AOP/ Microservices



nginxScript module

dynamic js snippets in NGINX

- Key Directives:
 - js_set
 - js_run

```
js_set $msg "  
    var m = 'Hello '  
    m += 'world!';  
    m;  
";
```

```
location /hello {  
    js_run "  
        var res;  
        res = $r.response;  
  
        res.contentType = 'text/plain';  
        res.status = 200;  
        res.sendHeader();  
  
        res.send( 'Hello, world!' );  
        res.finish();  
    "  
}
```


nginxScript Request Object

- \$r - access and modify the request

```
js_set $summary "  
    var a, s, h;  
  
    s = 'Request summary\n\n';  
  
    s += 'Method: ' + $r.method + '\n';  
    s += 'HTTP version: ' + $r.httpVersion + '\n';  
    s += 'Host: ' + $r.headers.host + '\n';  
    s += 'Remote Address: ' + $r.remoteAddress + '\n';  
    s += 'URI: ' + $r.uri + '\n';  
  
    s += 'Headers:\n';  
    for (h in $r.headers) {  
        s += '  header "' + h + '" is "' + $r.headers[h] + '"\n';  
    }  
  
    s += 'Args:\n';  
    for (a in $r.args) {  
        s += '  arg "' + a + '" is "' + $r.args[a] + '"\n';  
    }  
  
    s;  
";
```

nginxScript Response Object

- `$r.response` - generate a response during variable evaluation or content generation:

```
js_run "  
    var res;  
    res = $r.response;  
  
    res.contentType = 'text/plain';  
    res.status = 200;  
    res.sendHeader();  
  
    res.send( 'Hello, world!' );  
    res.finish();  
";
```

installing nginxScript

```
# Obtain the Latest source for NGINX from http://nginx.org/en/download.html
$ wget http://nginx.org/download/nginx-1.9.4.tar.gz
$ tar -xzvf nginx-1.9.4.tar.gz

# Obtain the development sources for nginxScript
$ hg clone http://hg.nginx.org/njs

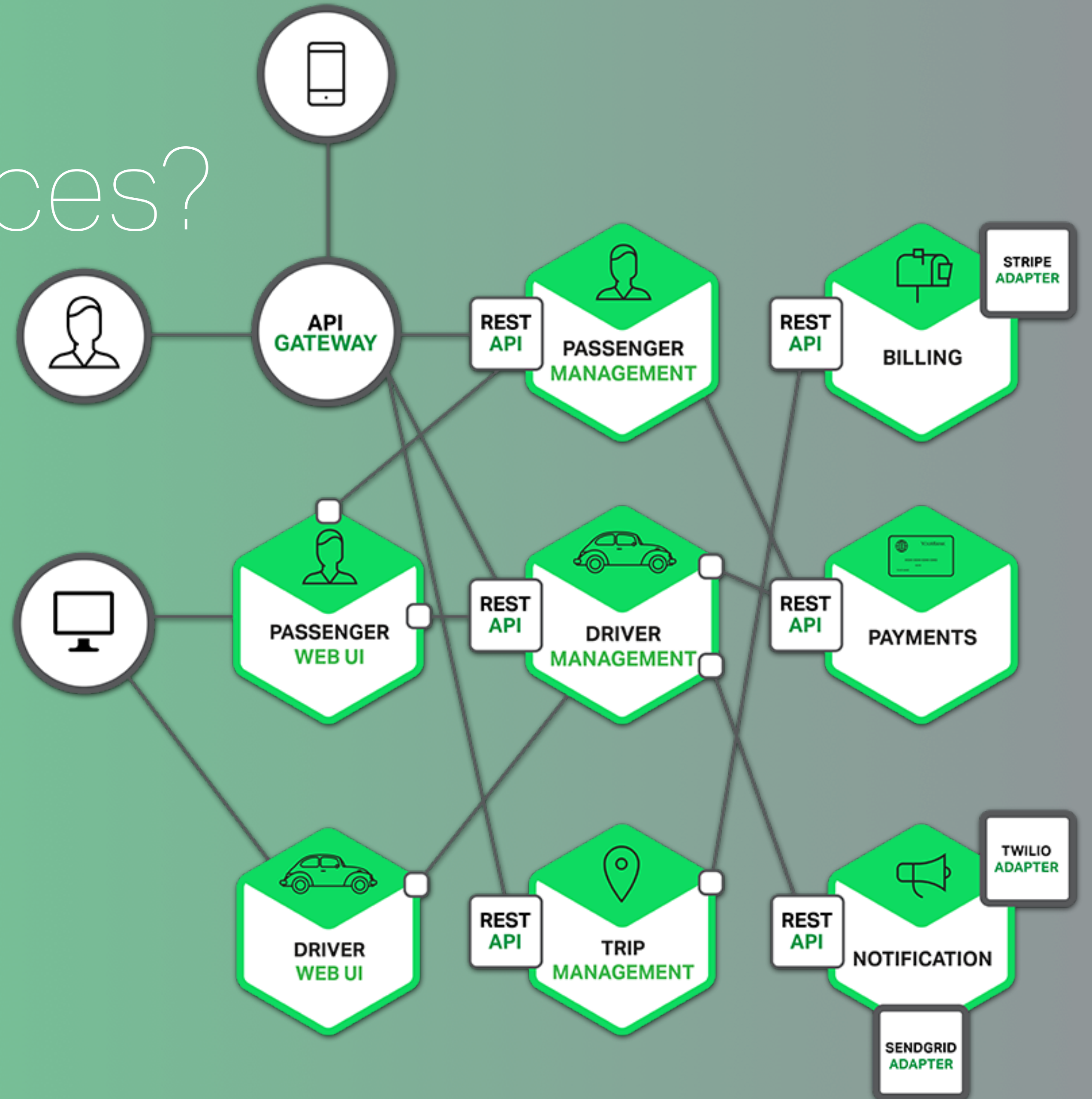
# Build and install NGINX
$ cd nginx-1.9.4
$ ./configure --add-module=../njs/nginx --prefix=/your/installation/directory
$ make
$ make install
```

find documentation at <https://www.nginx.com/resources/wiki/nginxScript/>

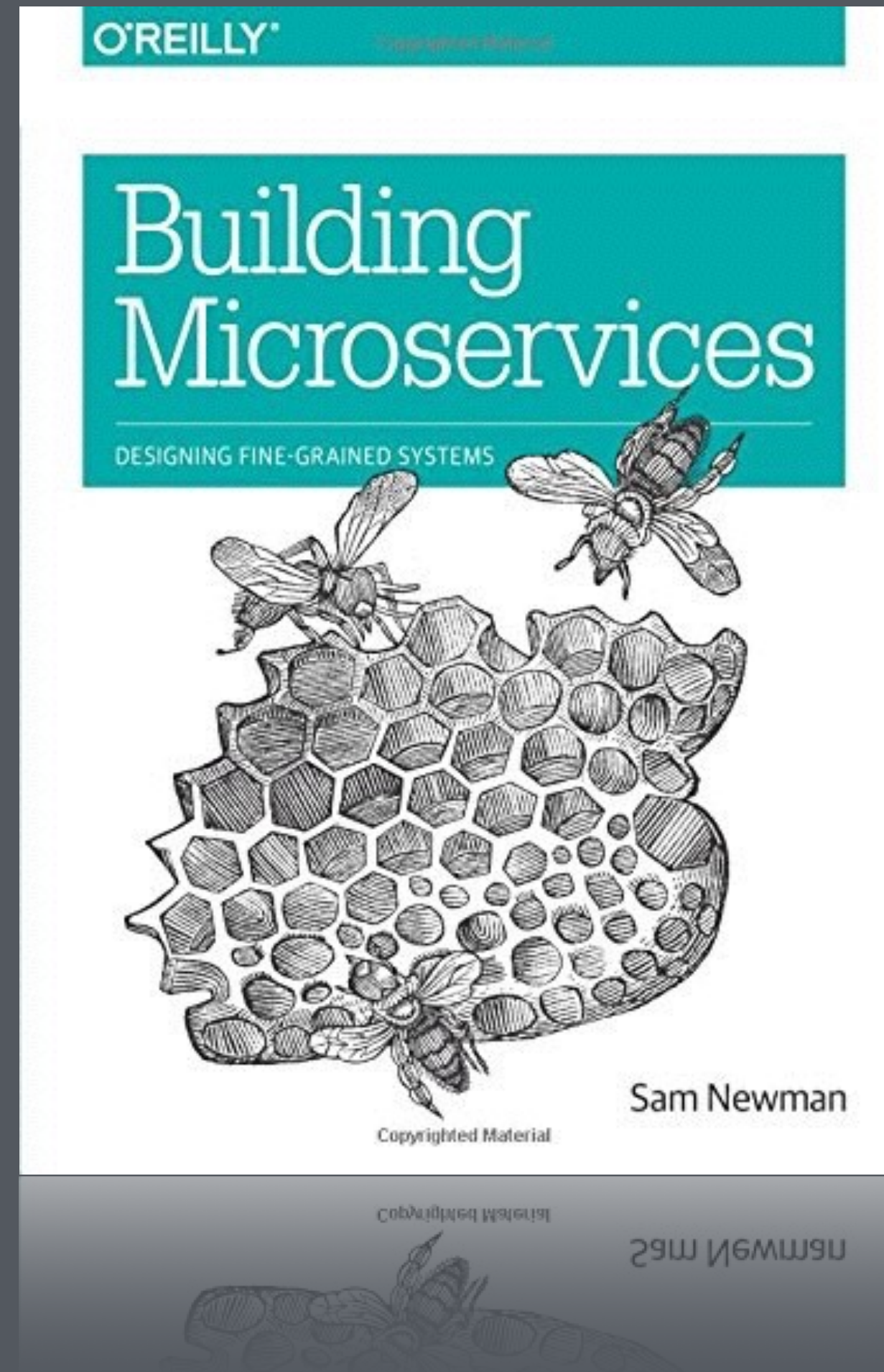


- **Supporting microservices**
build and scale independently

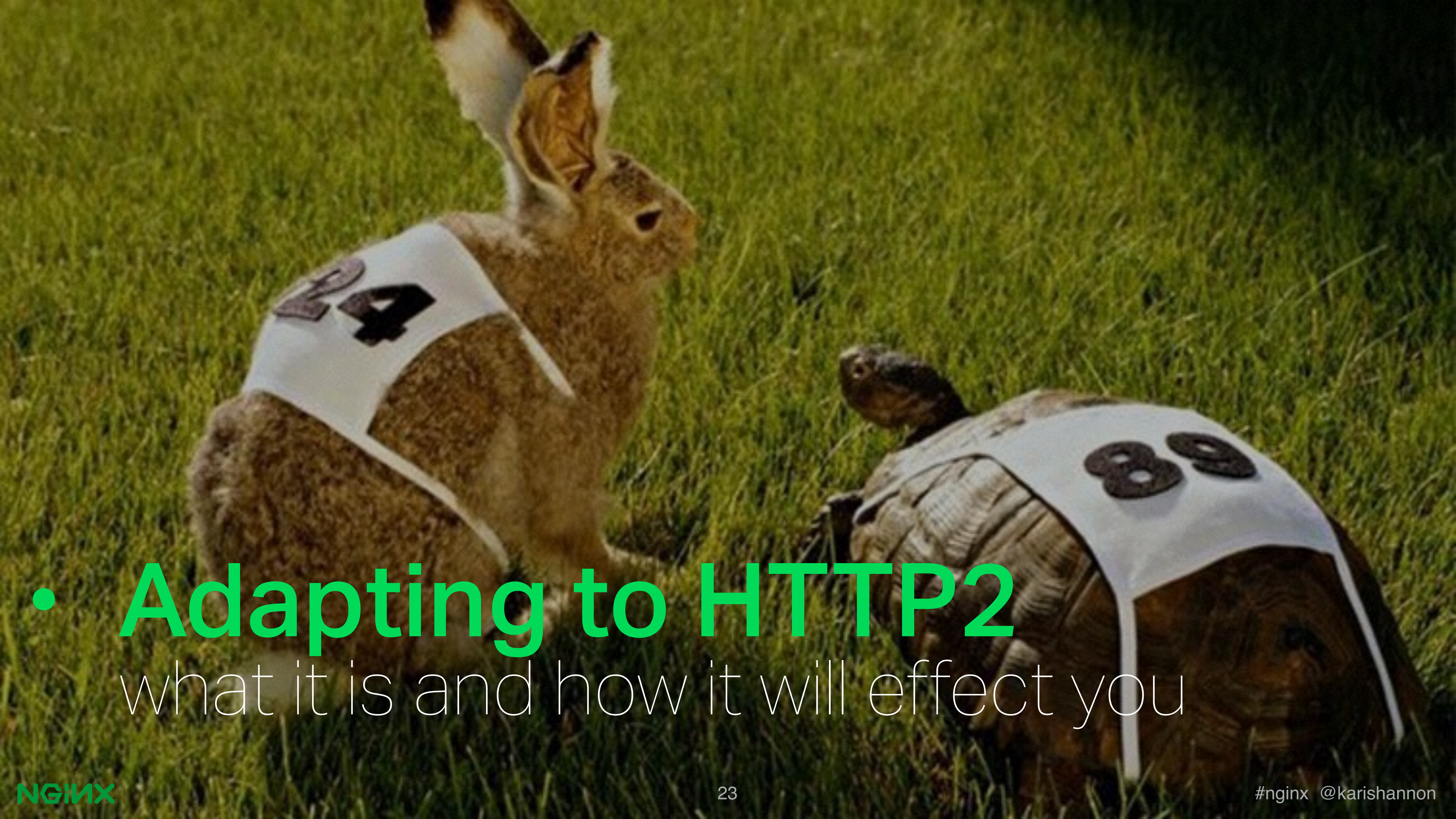
how does NGINX support microservices?



Want the book?



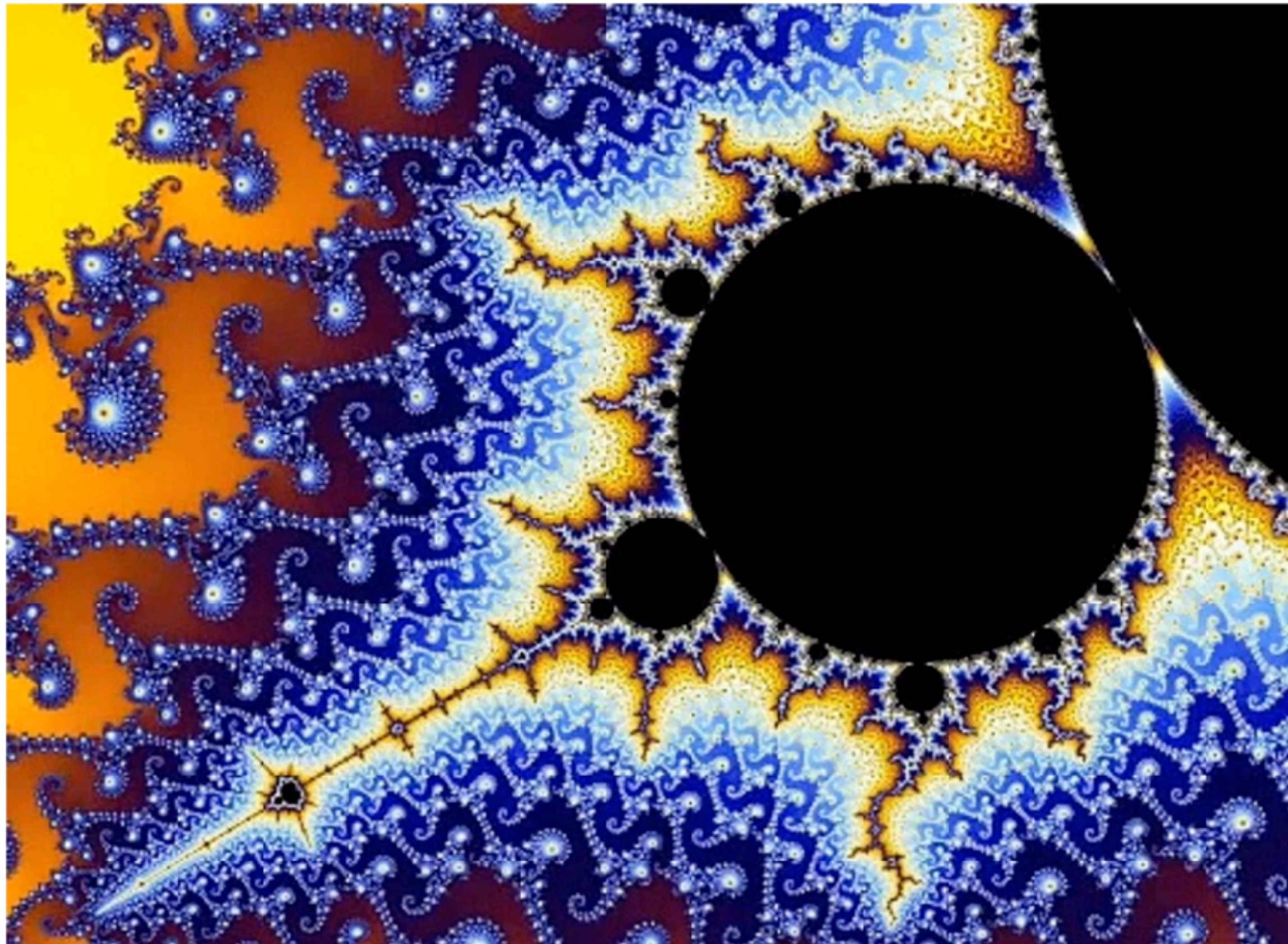
www.nginx.com/resources/ebook/oreilly-building-microservices/



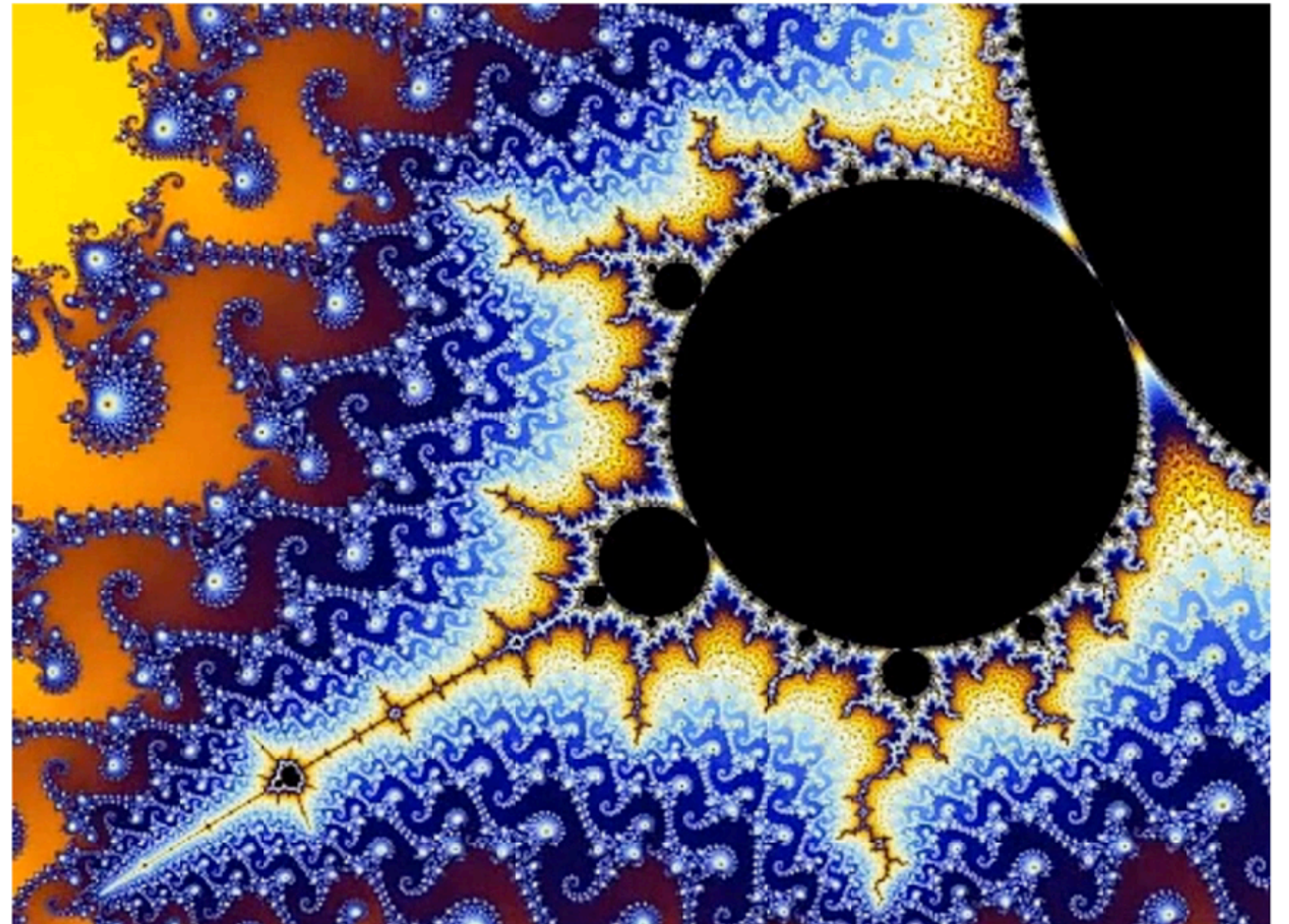
- **Adapting to HTTP2**
what it is and how it will effect you

NGINX server

HTTPS



HTTP2



binary + multiplexed

There are only 10 types
of people in the world:

Those who understand binary
and those who don't.

Authentication Required

This slide requires a username and password.

User Name:

Password:



encryption everywhere



Apopt HTTP/2



Shannon Burns
@karishannon

"It's not a tin foil hat- You can get tortured and killed for what you like (on the web)." -
[@torgo](#) #FOWA #realtalk

RETWEET

1



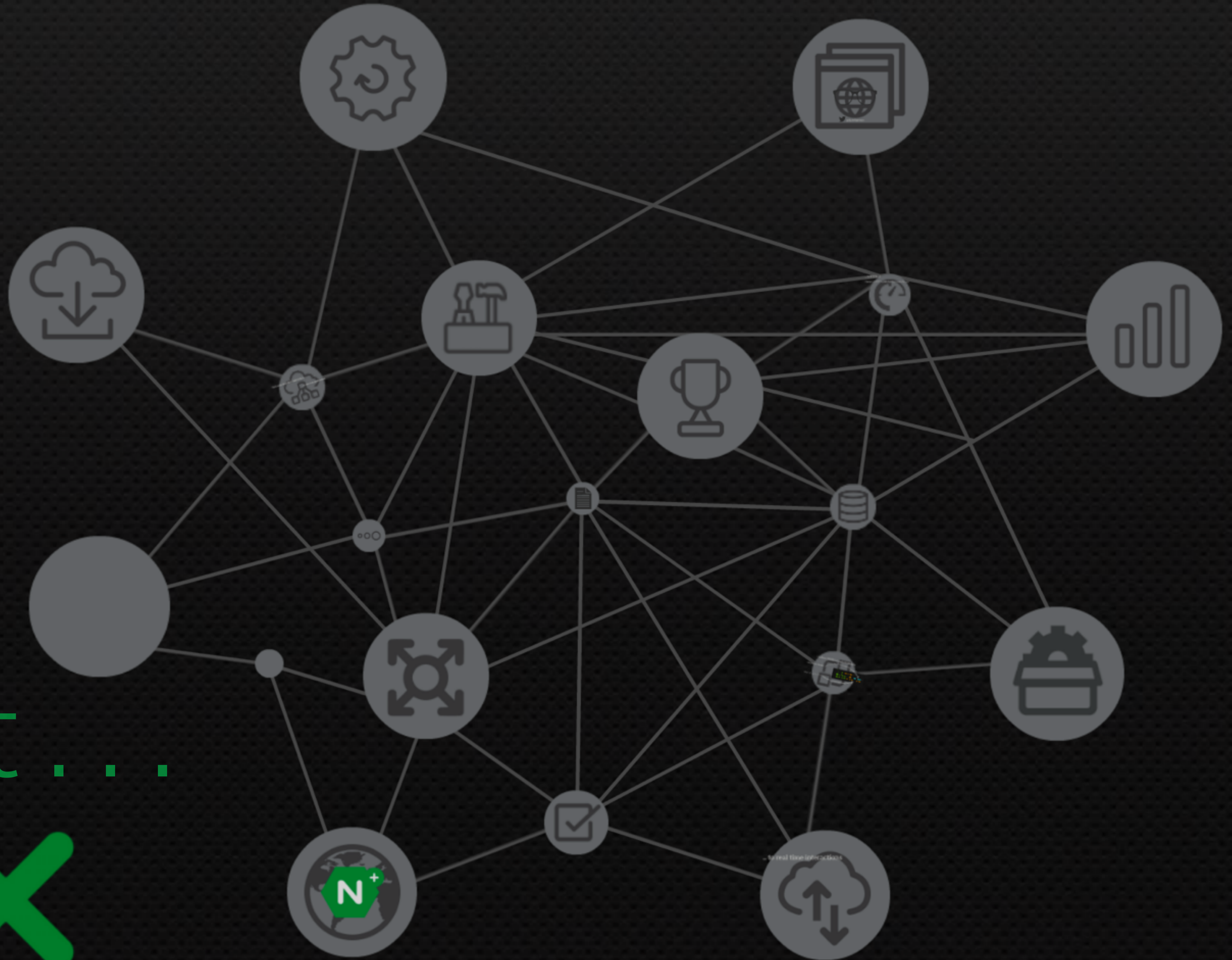
8:34 AM - 7 Oct 2015



why encrypt everything?

what about . . .

NGINX



configure NGINX for HTTP 2

use the http v2 module

- **Not built by default:**
 - `with-http_v2_module`
- **still experimental**

example configuration:

```
server {  
    listen 443 ssl http2;  
  
    ssl_certificate server.crt;  
    ssl_certificate_key server.key;  
}
```



hacks that no longer help

- domain sharding
- data concatenation
- inlining
- image spriting
- monitor CDN*

Summary

A photograph of a brown rabbit sitting on green grass. The rabbit is wearing a white collar with a black number '14' on it. The background is a soft-focus green field.

- scripted web server with nginxScript
- supported microservices
 - adapted to HTTP 2

THANK YOU FOR YOUR ATTENTION



**PLEASE CLAP AND DO NOT MAKE TOUGH
QUESTIONS**

memegenerator.net

Dank je wel
feedback or Ideas?

tweet or email
shannon@nginx.com

#nginx @karishannon