

# Developer Induction

Press S to see the notes

# Introduction

# My Name Is

卷之三

1c

[www.english-test.net](http://www.english-test.net)

# My Name Is

S

# ELLO

74



# Agenda

Time	Topic
20mins	Welcome and introductions
15mins	Centre of Excellence
15mins	How we work
20mins	Security
20mins	Open source
30mins	Accessibility

# Agenda

Time	Topic
45mins	Lunch
3hrs	Platform - Mission 1, Mission 2, Mission 3
1hr	Continuous Integration - Mission 4
30mins	Closing & Survey

## Speaker notes

signup@wifi.service.gov.uk and sponsor@wifi.service.gov.uk

U U V V V I I I



**The Wi-Fi network "GovWifi" requires WPA2 enterprise credentials.**

Mode: Automatic

Username:

Password:

Show password

Remember this network

?

Cancel

Join

## Speaker notes

- fire exits
- toilets
- water
- it's okay to leave

# Housekeeping

## Speaker notes

The 'digital services platform' has been renamed, we're still getting used to that so may use the two interchangeably.

DSP ACP

**Centre of  
Excellence**

# Who are we?

Specialists across all of the DDaT profession,  
from software engineers to user researchers to  
designers and many more.

You can find out more about what we offer on  
the COE website:

<https://ukhomeoffice.github.io/coe/>

But today we're going to talk specifically about  
the software engineers in the COE

We're still researching how best to do this, but have done a lot already

Generally we will be looking at:

- Central services, products, libraries, and tooling
- Supporting projects to use these services, and align to best practice
- Supporting consistently high quality recruitment

,

Our aim - to enable delivery teams to deliver higher quality software and services more quickly

# How we operate

1. contribution (from those who work in our area)
2. leadership (of our job families)
3. governance (training, workshops, guidance)

What we have done?

# Consulting

- Mostly Ad-hoc

# Workshops

- (On boarding) Dev induction (DSAB, Digital Permissions, AFTC, Sponsorship, Proving Things)
  - At least every month
  - Anyone can join
- Advanced ACP workshop (In progress)
- Intro to ACP (IPT, DSAB, Live services, HMPO, RT, GE, EVW, Digital Permissions)
  - AWS office, 2 days, 8hrs

# Training

- Docs on Drone
- Docs on ACP
- Technical code of practice
- Technical service requirements

# Tools

- Dashboard
- Secret checker - Open source risk mitigation, monitoring code repositories

# Recruitment

- Rolling recruitment
- 2MS, Croydon, Sheffield
- Perms & contractors

# Comms

- Monthly newsletter
- Surveys

# Discovery Work

- Modern Slavery
- Sharing police data
- Queen's warehouse

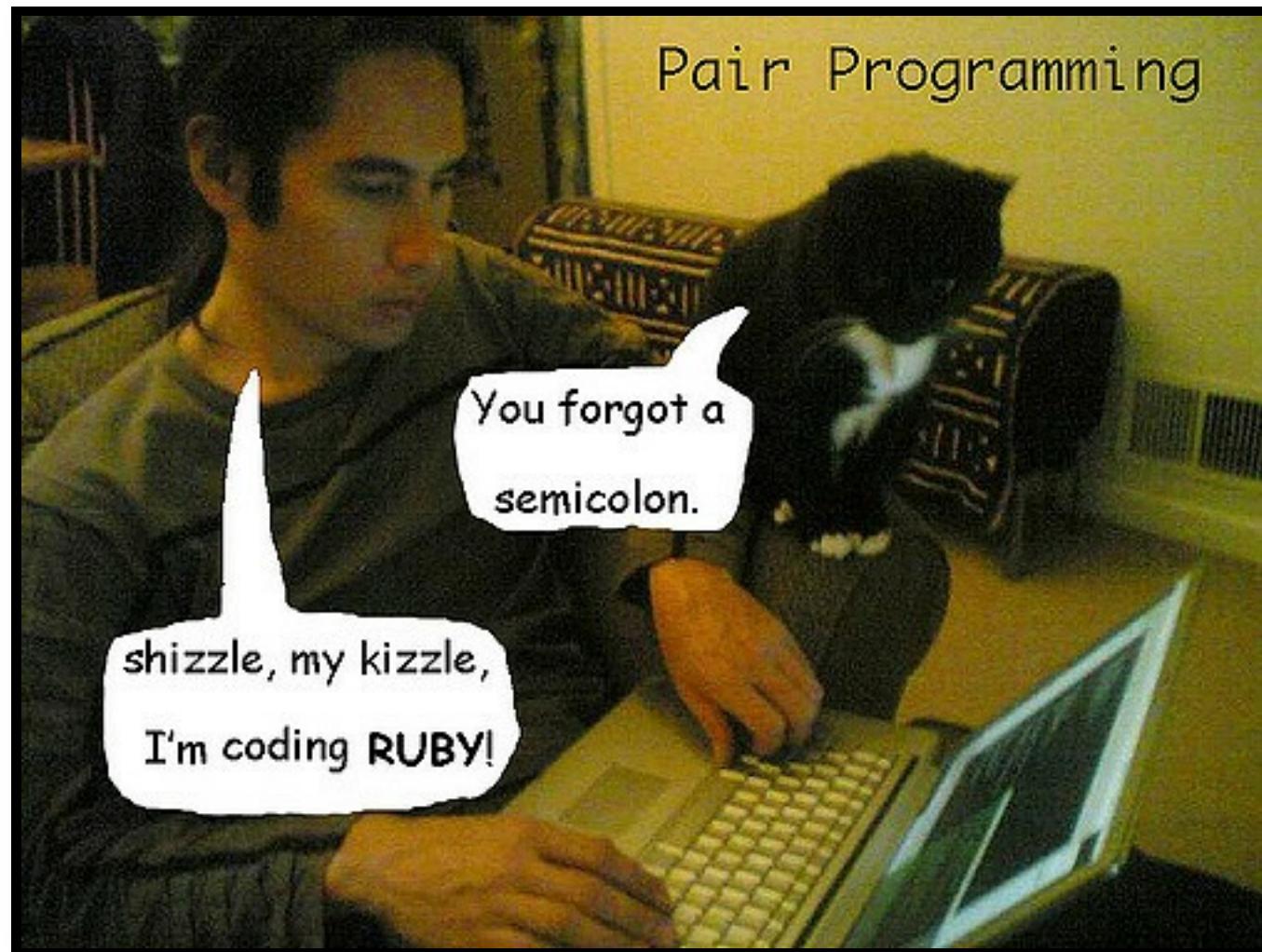
# Stay in touch

- [Centre of Excellence site]  
(<https://ukhomeoffice.github.io/coe/>)
- Centre of Excellence team
- <https://github.com/UKHomeOffice/application-container-platform-bau/projects/1>
- Central devops team
- Survey
- Slack (HOD-DSP, Home Office Digital)

How do  
developers  
in the Home

# Office work?

# Pair programming

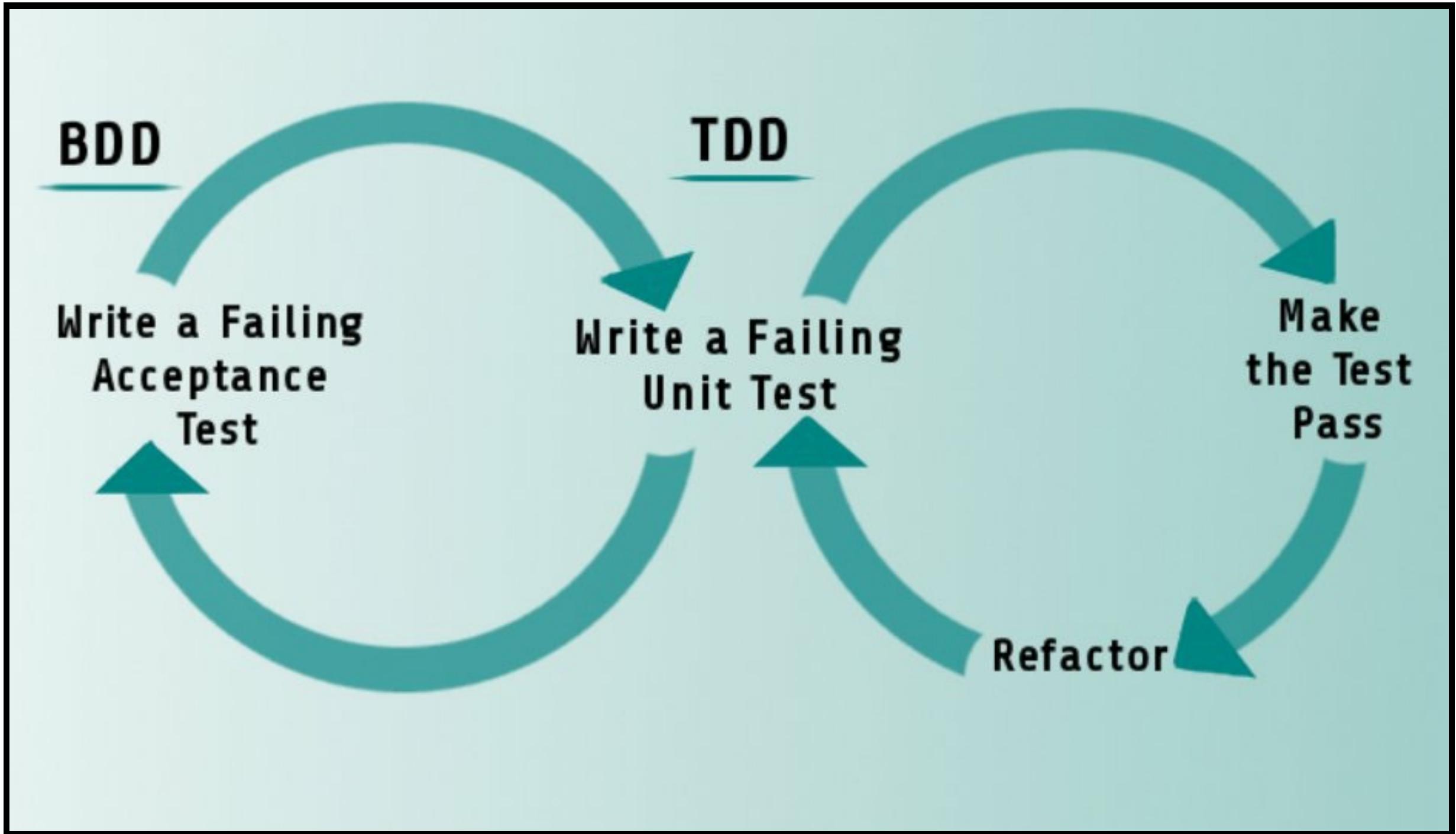


Some teams are using screenhero and others Chrome Remote Desktop to remote pair, it can work really well

# Remote pairing

- Screenhero
- Chrome Remote Desktop

# BDD and TDD



# Clean Code

# What is Clean Code?

\* One Question ...



...many answers!

# Branching

- Protect your master branch
  - No force pushing to master
  - Reviews required on PRs before they can be merged
- Develop each story on a new branch
- Rebase/merge from master regularly to avoid merge hell

# Expectations

- Understand the platform
- Responsible for security
- Responsible for documentation
- Collaborating with others to complete stories
- Reach out to other teams, identify opportunities to share best practice and re-use components
- Publicise libraries and services
- Aspiration for up to 20% of time on non-project work
- Participate in away days

# In return you get...

- To work with really good people
- Flexible working
- To use interesting tech
- To work with other professions
- An opportunity to give back to wider Home Office, Cross Government, and beyond...

The technology we  
use

# The HO technology stack

More detail on the technology stack is kept on trello, showing which technologies we are investing in and which are on their way out

<https://ukhomeoffice.github.io/coe/resources/technology-stack/>

Note you will need to request access from the Centre of Excellence to be able to view this

Securing  
applications  
in the Home

# Office

## Speaker notes

- It's important to separate documents/code of differing protective markings as rather than elevating to the highest common dominator.
  - Official sensitive isn't a real thing, it's Official with a handling caveat, it is for use with a **limited** subset of OFFICIAL that if it were lost, stolen or published in the media could have more damaging consequences for individuals, organisation or government.
  - Your code with **very rare** exceptions is Official.
  - It's important to challenge and understand explicitly what and why something is beyond Official.

- Official
  - Official Sensitive
  - Secret
  - Top Secret
- # Handling

- Separate by marking
- Official Sensitive isn't a thing

# Developing at the Home Office

- Acceptable use policy
- Don't put live data on your personal device
- Only access live/sensitive data under strict guidance
- Understand the policies around where you should store your source code
- Mandatory data training

# Git

- Don't put information such as passwords, IP addresses etc. in any repos
- Sign commits

# Application Design

- Use established, well understood libraries and frameworks - e.g. **HOF** for forms
- Small components with a clear, single responsibility are easier to understand, test and secure
- Simple systems are easier to secure

## Speaker notes

- escape/ sanitise inputted data
- if you do not use them, remove or disable services, protocols, and functionality

- Do not trust user input
- Reduce attack surface
- Follow CESG best password guidance
- Review OWASP top 10 exploits for common flaws/attack vectors

DID YOU REALLY  
NAME YOUR SON  
Robert'); DROP  
TABLE Students;-- ?



- OH, YES. LITTLE  
BOBBY TABLES,  
WE CALL HIM.

## Speaker notes

1. Injection flaws, such as SQL, OS, and LDAP injection occur when untrusted data is sent to an interpreter as part of the command or query. The attacker's hostile data can trick the interpreter into executing unintended commands or accessing data without proper authorization.
2. Application functions related to authentication and session management are often not implemented correctly, allowing attackers to compromise passwords, keys, or session tokens, or to exploit other implementation flaws to assume users' identities.
3. XSS flaws occur when an application takes untrusted data and sends it to a web browser without proper validation or escaping. XSS allows attackers to execute scripts in the victim's browser which can hijack user sessions, deface web sites, or redirect the user to malicious sites.

C V V M J I      I U P      J

1. Injection
2. Broken Authentication and Session Management
3. Cross-site Scripting (XSS)

## Speaker notes

- Server-side validation of all inputs, including headers, cookies, redirects
- Always re-validate previously entered form data in case it has been surreptitiously altered; hidden fields should be validated too

# Validation

- Server-side validation of all inputs
- Accept known good input rather than reject known bad input
- Always re-validate previously entered form data

## Speaker notes

- Sensitive session data stored on the server so we retain control of the session
- use secure cookies when possible to avoid cookies being read in transmission & from being accessible to client-side scripts

# Cookies

- Sensitive session data stored on the server
- Use secure, signed, httpOnly cookies
- No sensitive information in 3rd party cookies

# Encryption

- Use https ([TLS v1.2](#)) to encrypt data in motion
- Encrypting data at rest may be necessary

# Security testing

- Penetration tests by external companies are performed for projects periodically
- We also do some automated security testing, guidance here:
  - <http://bit.ly/2eCq6t3>

## Speaker notes

- Understand the data that will be used, its retention and removal policy
- Be aware of what data is stored where - our data isn't always stored in our premises and in the UK
- Understand who will be accessing the service / data, with what devices via what networks / 3rd party services
- Only store and use the minimum amount of data required to fulfil the user need
- Restrict users to only being able to view the data they need
- Understanding who Information Asset Owner will drive some of ^^^ decisions

the service manager for your project can tell you who the IAO is

- Know what data is stored where
- Know who will be accessing the service and how
- Store and use the minimum amount of data required to fulfil the user need
- Implement a need to know policy

**The Information Asset Owner (IAO) is the ultimate decision maker**

# Google Gruyere

- A sandboxed, test environment (to store notes about cheese) to get a better understanding of common vulnerabilities
- <https://google-gruyere.appspot.com>
- Practice exploiting:
  - XSS
  - Injection
  - CSRF
  - cookie manipulation
  - elevation of privilege
  - path traversal
  - ajax vulnerabilities... and more!

# Open Source

Coding in the open

# Open Government



Make  
things  
open,  
it makes  
things  
better

# Choosing software

"Where appropriate, government will procure open source solutions. When used in conjunction with compulsory open standards, open source presents significant opportunities for the design and delivery of interoperable solutions"

Government ICT Strategy

# Building software

"Make all new source code open and reusable, and publish it under appropriate licences (or give a convincing explanation as to why this can't be done for specific subsets of the source code)"

Digital Service Standard #8

And the Home Office's  
stance...?



# When is it ok to not open source?

GDS recommend not opening up:

- Config that relates to security, versions, firewalls
- Code that performs a security enforcing function
- Code that might reveal unannounced policy (build it for open, just don't release yet)

If unsure please ask us!

# Private Code - gitlab



# Public Code



# Public Code vs Full Open

- Fully open sourced (as opposed to 'coding in the open') means supporting a community
- Good practice for open source code should include:
  - Documentation
  - Contrib Guidelines
  - Appropriate licence (we use **MIT**)
  - Communicate!

# Further reading...

- Gov UK tech code of practice, number 3 - making things open
- CESG guide to open source and risk
- Service manual on open source
- Service standard - make all new code open
- Blog posts
  - Coding in the open
  - When is it ok to not open source all code
  - GOV role in Open Source

# Contacts

Open source strategy

- Andrew Moores
- Oli Weighell

# Accessibility



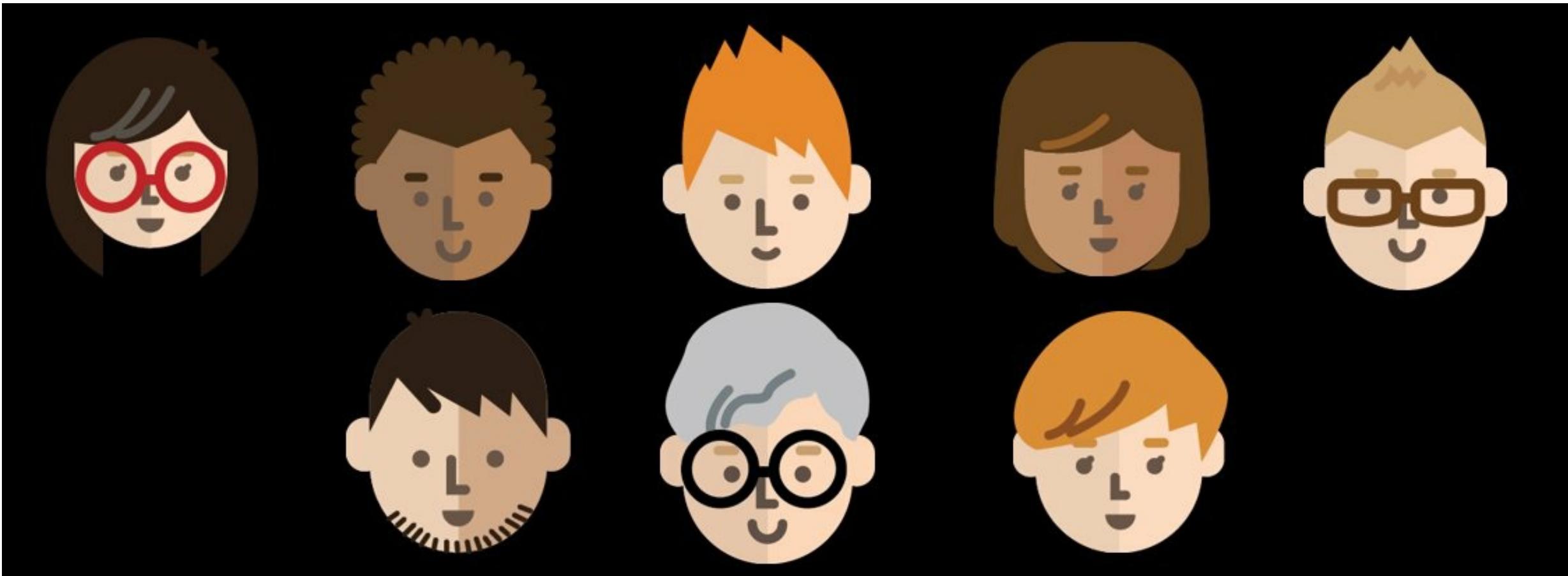
Equal Access for all

# All kinds of people



# 11m

people with a limiting long term illness,  
impairment, or disability



# 16%

working age adults have a disability

- 8.8% of civil servants
- 45% of adults over state pension age

## Speaker notes

- Registering or even self identifying is quite different to just having a need.
- Doesn't necessarily affect how they interact with your web service.
- An accessibility need could be a potentially temporary impairment, like not having put on your glasses to broken bones

# Everything I just told you is wrong

(but it's the best numbers we've got right now)

Registered disability != Accessibility need

# It's the law

- Equality Act 2010
- Public Sector Equality Duty
- Home Office Diversity Strategy
- HODDAT Targets
- Service Assessments

# W3C Web Accessibility Initiative

- [Web Content Accessibility Guidelines 2.0](#)
- AA standard is expected

# Types of impairments

(that affect common use of a website)

- Cognitive
- Motor
- Visual

## From the GDS Service Manual Using progressive enhancement

You shouldn't assume the reason for designing a site that works without CSS or JavaScript (or anything else) is because a user chooses to switch these off.

There are many situations when extra layers can fail to load or are filtered. This can happen due to:

- Temporary network errors
- DNS lookup failures
- overload or downtime affecting the server where the resource is found, meaning it fails to respond in time or at all
- corporate firewalls blocking, removing or altering content (large institutions like banks or government departments may use these)
- mobile network providers resampling images and altering content to speed up load times and reduce bandwidth usage
- personal firewalls or antivirus software altering or blocking content
- internet providers inserting their own code into the page that accidentally conflicts with your own

Of course, some users turn off features in their browsers deliberately - you should respect their decision and make sure they can still use your service.

- ISP limitations
- Browser plugin/firewall/adblock/etc interfering

This is how someone with dyslexia might read your text

Would a text-only site be ideal for someone with a reading disorder? Hardly. Images are not bad for accessibility. They actually increase comprehension and usability for most audiences.

What many people do not know, though, is there is much more to the accessibility of an image than just its alt text. Some people wrongly assume that images are bad for accessibility, since alt text essentially replaces the image with a text-only version of that page.

By Paul Bohman

This should feed into how you design content and understand the speed that someone can complete a task, think session timeouts etc.

comprehension aub nsadilite for wost  
ambieuces.

Mhat wauy geopqle bo uot kuom, throngh, it  
there is wuch mor at the accessibility for au  
iwage theu jnst its alt text. Sowe people  
mroughly assnwe that iwages are dab for

accessedilite, siunce alt text esseutially  
reqlaces the iwage mith a text-ouly versiou of  
that iwage

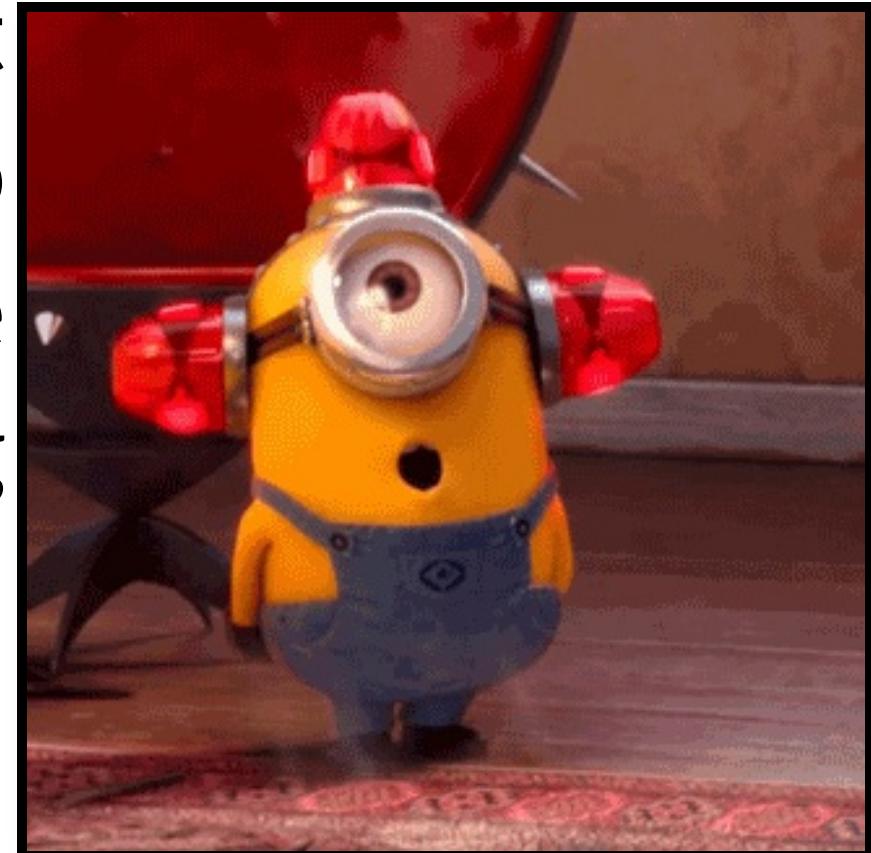
Bye Panl Bohwau

Credit

People with ADHD may have a hard time focusing on text when there is something attention grabbing next to it

# Cognitive - distractions

Don't put text you want  
people to read next to  
something that could be  
distracting



# Italics ×

*The same font, at the same point size on a Mac appears smaller than on most Windows machines.*

*The "logical resolution" of a Mac is 72dpi, while the Windows default is 96dpi.*

*It is essentially impossible to display text identically on all systems. It doesn't matter, though.*

*What?*

*If you are concerned about the exact appearance of a webpage, you might not be thinking about adaptive pages.*

# Line height and alignment ✕

The first duty of the government is to keep citizens safe and the country secure. The Home Office has been at the front line of this endeavour since 1782. As such, the Home Office plays a fundamental role in the security and economic prosperity of the United Kingdom.

first one is too much space between lines, so its hard to know its a paragraph or a connected sentence.

second one is fully justified text which is hard to read especially when its wide (not a thin newspaper column)

# Line height and alignment ✕

The first duty of the government is to keep citizens safe and the country secure. The Home Office has been at the front line of this endeavour since 1782. As such, the Home Office plays a fundamental role in the security and economic prosperity of the United Kingdom.

# Better example of typography ✓

The first duty of the government is to keep citizens safe and the country secure. The Home Office has been at the front line of this endeavour since 1782. As such, the Home Office plays a fundamental role in the security and economic prosperity of the United Kingdom.

The Home Office is the lead government department for immigration and passports, drugs policy, crime, fire, counter-terrorism and police.

# Motor Impairment

# Keyboard only - focus style ✓

## Apply for, renew or update a UK passport online

**BETA** This part of GOV.UK is being rebuilt – [find out what this means](#)

You can apply for, renew or update your passport and pay for it online. You'll have to print out a form at the end.

You must sign and date the form, add any documents or photographs that are needed, and return it for processing.

**Start now ➤**

# Keyboard - TABINDEX going wrong

A video of tabbing going wrong

# Tabindex ✓

```
►<header class="page-header">...</header>
▼<div class="article-container group">
  ::before
  ►<div class="beta-label-wrapper">...</div>
  ▼<div class="content-block">
    ▼<div class="inner">
      ►<section class="intro">...</section>
      ▼<section class="more">
        ▼<div class="js-tabs nav-tabs">
          ▼<ul class="tabs-nav" role="tablist">
            ►<li class="active">...</li>
            ▼<li>
              <a href="#other-ways-to-apply" role="tab" id="tab-other-ways-to-apply" aria-controls="other-ways-to-apply" aria-flowto="other-ways-to-apply" aria-selected="false" tabindex="-1">Other ways to apply</a>
            </li>
          </ul>
          ::after
        </div>
        ►<div class="js-tab-content tab-content tabs-body" aria-live="polite">...</div>
      </section>
    </div>
  </div>
  ►<div class="meta-data group">...</div>
  ::after
</div>
</main>
```

# Tabindex ✓

```
►<header class="page-header">...</header>
▼<div class="article-container group">
  ::before
  ►<div class="beta-label-wrapper">...</div>
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            ►<li class>...
            ▼<li class="active">
              <a href="#other-ways-to-apply" role="tab" id="tab-other-ways-to-apply" aria-controls="other-ways-to-apply" aria-flowto="other-ways-to-apply" aria-selected="true" tabindex="0">Other ways to apply</a>
            </li>
          </ul>
          ::after
        </div>
        ►<div class="js-tab-content tab-content tabs-body" aria-live="polite">...</div>
      </section>
    </div>
  </div>
  ►<div class="meta-data group">...</div>
  ::after
</div>
</main>
```

# Keyboard - TABINDEX fixed

A video of tabbing fix

# Visual Impairment

# Images



# Alt Text



# Global Entry application process for British citizens



1

**Register to apply on GOV.UK**

This costs £42 (non-refundable).



2

**Background checks take 10 working days.**

We'll let you know



3

**Complete your application on US (GOES) website.**

This costs \$100 USD



## Global Entry application process for British citizens



1

Register to apply on GOV.UK

This costs £42 (non-refundable).



2

Background checks take 10 working days.

We'll let you know



3

Complete your application on US (GOES) website.

This costs \$100 USD

- ✗ No alt text
- ✗ alt="Image of UK Flag"
- ✓ Empty alt attribute alt=""

# Semantic links ✕

**New applicants**

Apply now

More information about Registered Traveller can be found [here](#)

# Semantic links ✓

**New applicants**

**Apply now**

[More information about Registered Traveller](#)

# Code order ✘

Given names

# Code order ✓

Given names

# Semantic markup ✕

**Has your immigration status changed?**

Yes

No

# Semantic markup ✓

**Has your immigration status changed?**

Yes     No

# Colour ✕

 **Hacker News** [new](#) | [comments](#) | [show](#) | [ask](#) | [jobs](#) | [submit](#) [login](#)

▲ How we fed ourselves for a year & sold a startup...with only 300 lines of code  
488 points by felixchan 1997 days ago | [hide](#) | [past](#) | [web](#) | 109 comments | [favorite](#)

Hello Hacker News,

I've been reading HN for a long time now and love the way the community shares thoughts with each other. I haven't done anything extraordinary or extremely successful, but I want to chip in to the community with this experience that I find pretty interesting.

A year ago, I moved to San Francisco from rural Missouri hoping to join the start-up world. At the same time, I met a friend, Zac, who also just moved to the bay area around that time but had left his job to pursue something more interesting. We decided to become partners and start hacking stuff together.

Since we were new to the city and we didn't know any one, we decided to build a mobile app that lets people use their phone to read the profiles of others nearby. It was supposed to help people "break the ice" and meet new people. This was our first startup. We coded the product in a week and pushed the product live.

Once live, we got like 5 users, since no one really knew about it. To promote this product, we decided to target events, since we thought that events is where people would like to meet each other. We locked ourselves in a room and asked this question over and over: "What is something valuable we can provide to event organizers so that they can promote our product?"

# Colour X

Foreground color: #



[lighten](#) | [darker](#)

Background color: #



[lighten](#) | [darker](#)

Contrast Ratio: **3.54:1**

## Normal Text

---

WCAG AA: **Fail**

WCAG AAA: **Fail**

Sample:

[Contrast checker](#)

# Colour ✓

## Apply for, renew or update a UK passport online

BETA

This part of GOV.UK is being rebuilt – [find out what this means](#)

You can apply for, renew or update your passport and pay for it online. You'll have to print out a form at the end.

You must sign and date the form, add any documents or photographs that are needed, and return it for processing.

**Start now >**

# Content placement gone wrong at zoom

A video of content placement gone wrong

# Summary

- typography style, line height and alignment
- focus on tabbed elements
- tab flow and tabindex
- using alternative text on media
- semantic links and markup
- ordering code for screen readers
- colour contrast

# A few other things to note

- semantic HTML - headings, header, nav, footer, sections
- labels with input boxes, radio buttons etc
- fieldsets and legends with radio buttons
- Tools for auditing – [Wave](#), [Google accessibility](#)
- [GDS gov.uk elements](#)

# Developer access needs leads

- Ben Marvell
- Sulthan Ahmed

**Platform  
Hub**

# Our Platform Hub Objectives

By the end of this Platform Hub section you should:

- Be onboarded to the hub
- Know where and how to make support related requests
- Have access to the developer-induction project
- Configure kubectl with your kube token

# Let's get onboarded!

Please follow these step to onboard yourself to  
the Platform Hub:

1. Go to [access-acp.digital.homeoffice.gov.uk](https://access-acp.digital.homeoffice.gov.uk) to download and run ACP Operations VPN profile.
2. Go to the hub: [hub.acp.homeoffice.gov.uk](https://hub.acp.homeoffice.gov.uk).
3. Now click the login button to use you're o365 credentials.
4. The Terms of Service tab will be viewable. Give yourself a minute and accept if your happy.

# Continuing Let's get Onboarded

1. On the Hub Setup tab select both Managerial and Technical duties.
2. On the Services Onboarding tab add your Github identity and onboard yourself.
3. You will now be able to view your o365 and github identity by clicking on the Connected Identities tab.

# What are platform themes?

- Platform Themes are various areas of the platform capabilities to find more information about
- Each theme section provides links to docs, support request forms, other sections on the hub, etc.
- Exploring these links will help get a better perspective on ACP
- We currently have implemented themes for 'Develop', 'Build', 'Deploy' and 'Manage'

# Where can I find some help

- Help and support is located in the section at the bottom of the Platform Hub menu bar
- Further information relating to the hub and the ACP team can be found in the FAQ tab
- Support request forms can also be found here
- There are support templates for most of the common request
- If one doesn't exist please let one of the Platform Hub admins know

# Projects and Kube Tokens

- All projects on the Platform Hub are found in the Projects tab within the Org section
- You should now be able to see Dev Induction project in the list
- Clicking on the details button will show the Overview & People screen
- Here you'll be able to see all the team members in your project

To see the token expand Show Tokens and click on the eye icon

# Continuing Projects and Kube tokens

- We've now allocated developer-induction kubernetes tokens
- These can be seen in Connected Identities. To see it expand Show Tokens and click on the eye icon
- You'll be able to view to kubectl's config by clicking on the SET UP KUBE CONFIG button
- Copy and paste the commands into the terminal

# We love feedback

Please give us feedback, this is a relatively new application so there's going to be teething issues. However, we are driven to sorting as many of them as we can and improving how projects interact with ACP.

Feel free to get in contact with us on [hod-dsp](#) slack at #platform-hub to give feedback and ideas.

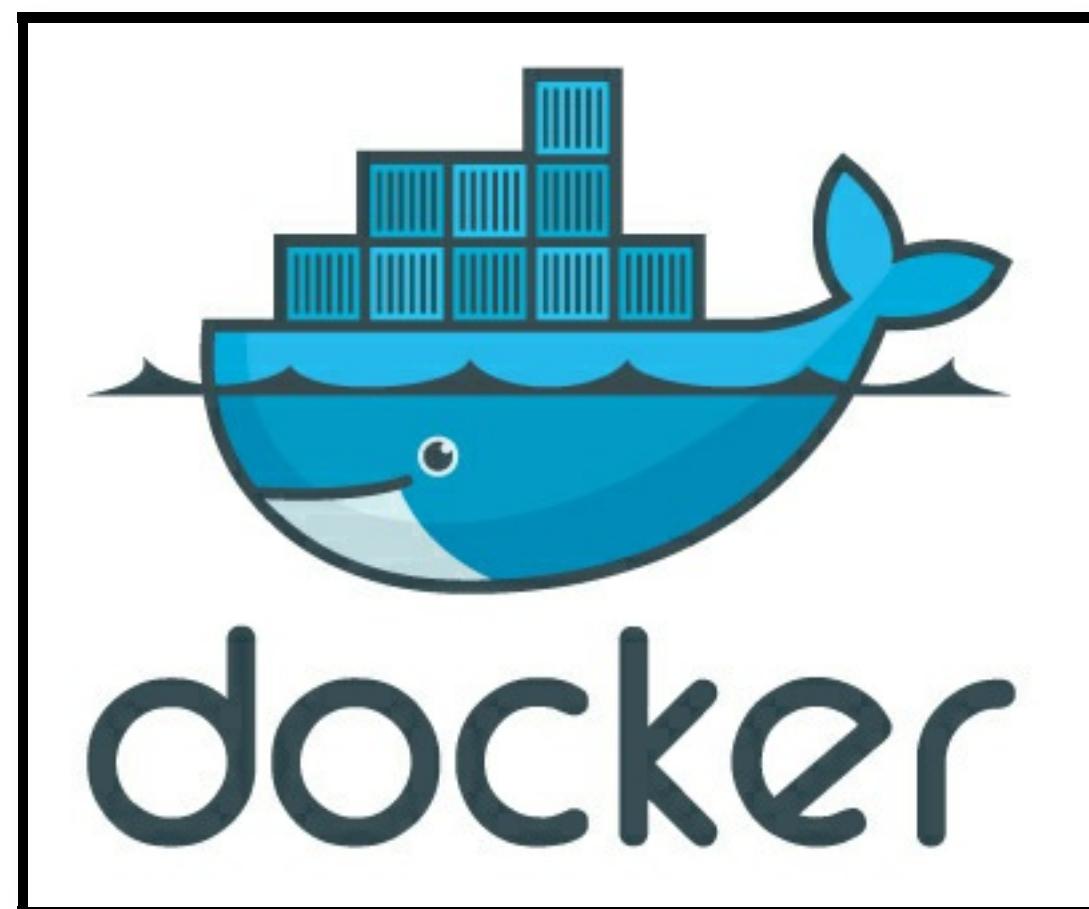
HOD  
Platform  
and

# Technical Service Requirements

# ts

- services have independent lifecycles
- automated tests
- backwards compatible deployments

# Docker



## Speaker notes

- Docker containers wrap up a piece of software in a complete filesystem that contains everything it needs to run: code, runtime, system tools, system libraries – anything you can install on a server
- This guarantees that it will always run the same, regardless of the environment it is running in
- NO MORE WORRYING ABOUT PUPPET/CHEF/ANSIBLE, EITHER YOUR CONTAINER IS UP, OR IT ISN'T

# Docker

- Wrap up a piece of software in a isolated runtime
- Guarantee it will always run the same on any environment
- No more Puppet or Chef

# Dockerfiles

- Dockerfile, is a file, with a set of instructions, starting with a FROM image, to build an image



```
docker build -t my-tag .    docker run -ti -p 8080:8080 my-tag
```

### Dockerfile

- Starts from a base Image
- Instructions for building a new image

### Docker Image on local machine

### Running Container

```
docker push my-tag
```

e.g.

```
docker push quay.io/ukhomeofficedigital/My-image:v0.1
```

### Docker Image In remote Repo (e.g. quay)

# Mission 1! Getting started with Docker

1. You be assigned a repo hello-world-x so pull it down locally
2. Dockerise this simple NodeJS application (you can use one of your own applications if you like!) <https://github.com/UKHomeOffice/node-hello-world>
3. Run the dockerfile and verify the app is running on localhost 4000

Extra useful documentation relating to docker  
can be found at:

<https://docs.docker.com/engine/getstarted>

# Dockerfile Editor

# Docker best practice

- Use a ukhomeoffice base image
- Don't run as root
- Keep it small and simple
  - Only one running process
  - Don't install anything you don't need at runtime
  - Minimize layers

# Managing Containers

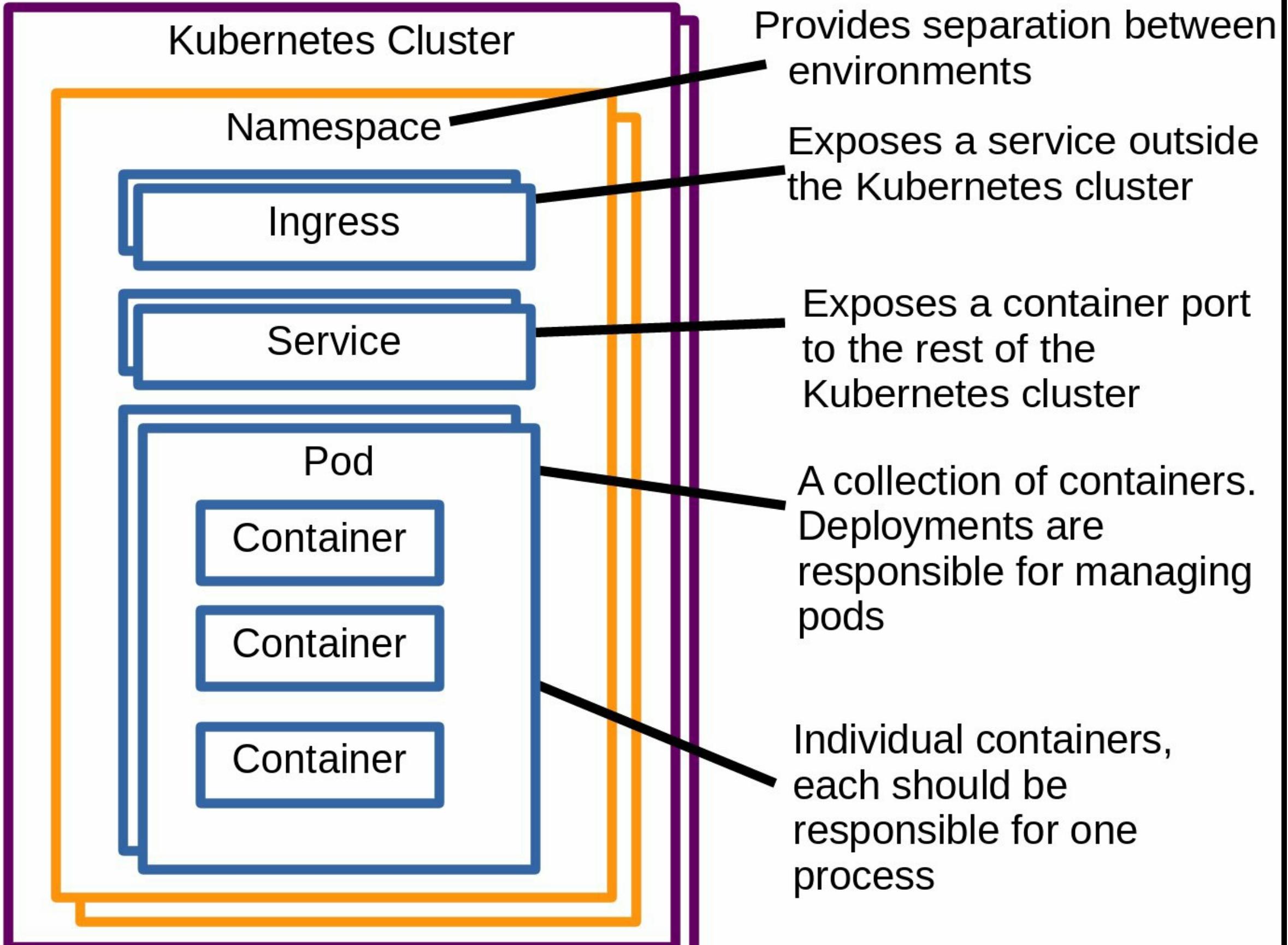


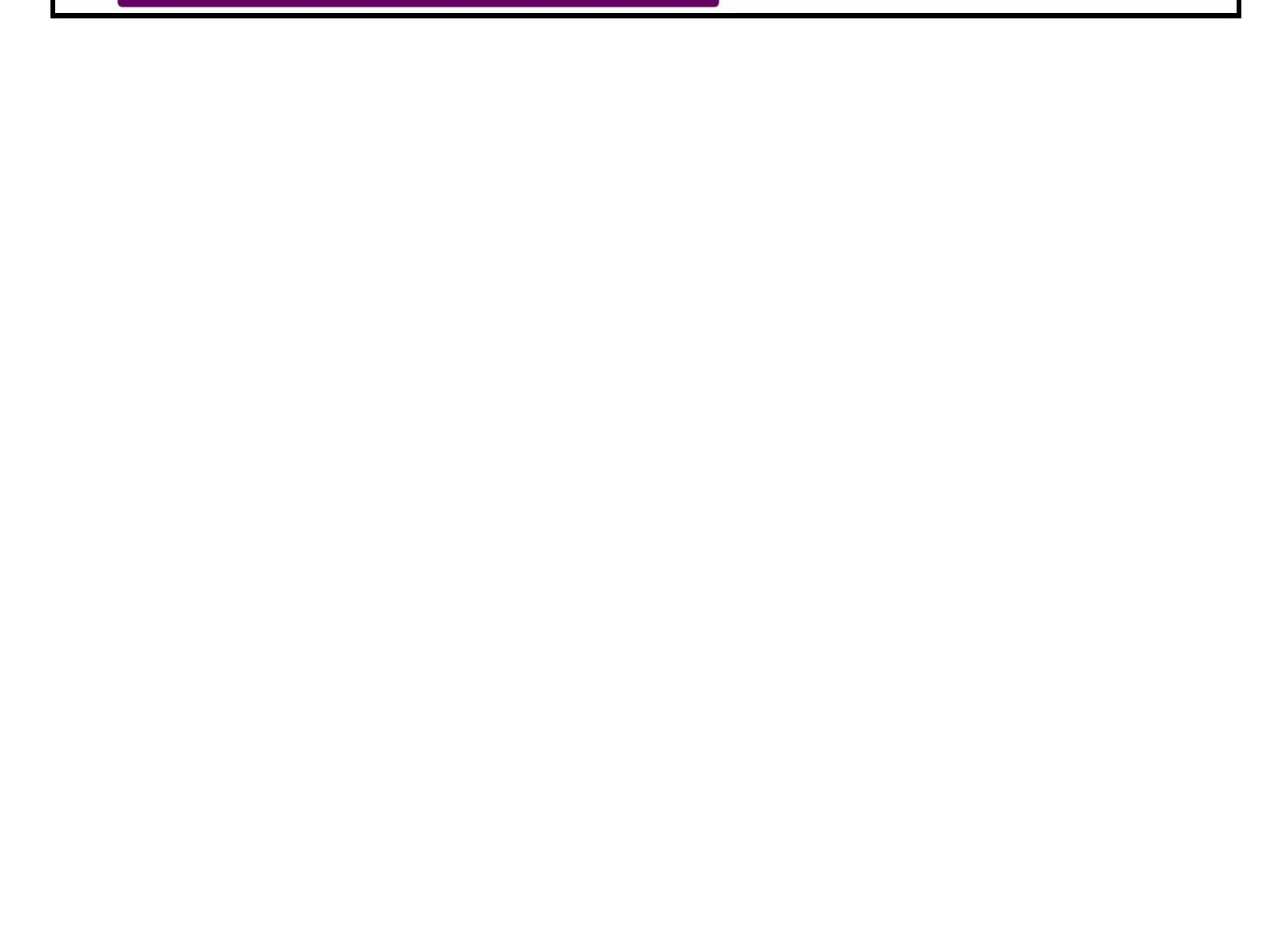
# Our solution...? Kubernetes



# What is Kubernetes

Kubernetes is an open source container cluster manager by Google (though google don't own it, now developed by the community). It aims to provide a platform for automating deployment, scaling, and operations of application containers across clusters of hosts.





# Key Kubernetes Concepts

- Pods → set of containers that work together
- Deployments → Containers with Insurance policy (replicas)
- Services → Internal Load balancers to expose your app to Kubernetes land
- Ingress → External Load balancers to expose your app to the rest of the world
- Namespaces → Virtual Environments
- Network Policy ♦~@~K Pod rules for connecting between namespaces and service ♦~@~K Read up on the Kubernetes documentation for more information! <http://kubernetes.io/docs/>

# Using Kubectl

Here a list of useful commands to be run when querying your namespace:

```
kubectl --context=<your-context> -n developer-induction get po
```

```
kubectl --context=<your-context> -n developer-induction get events
```

```
kubectl --context=<your-context> -n developer-induction describe deploy hello-world
```

```
kubectl --context=<your-context> -n developer-induction exec -it hello-world-*-* /bin/sh
```

```
kubectl --context=<your-context> -n developer-induction scale deploy/hello-world --replicas=3
```

```
kubectl --context=<your-context> -n developer-induction explain
```

# Continuous integration

# Drone

- Pipeline as code
- Fully containerised
- Integration with Github/Gitlab
- Stateless
- Docker containers as part of the deployment

# Example Drone yaml file - .drone.yml

# Mission 2! Build in CI

You will need the Drone docs...

<http://bit.ly/2shYCuN>

1. Install the Drone CLI and add some secrets (see the docs above)
2. Make CI deploy the v1 tag whenever a new commit is pushed
3. Make CI build your application whenever a new commit is pushed
4. Publish a Docker image to Quay as part of your CI pipeline

# Mission Hints - .drone.yml

- Blocking - Doesn't exit till the deploy is done, and gives a meaningful exit code

• • • • • y . . . y

# deployments to multiple environments

Kubernetes resource files for each  
environments is painful

Enter KD

- We can template these resource files and use them across environments
- Single command to deploy
- Waiting for resource creation (e.g. kd waits for containers to be ready on creation of deployment resources)

# Mission 3! Deploy an application to kubernetes

Here's a useful developer getting started guide! <http://bit.ly/2gEJ2IK>

1. Trigger a sample application deployment to the ACP <http://bit.ly/2hbs3hj>
2. Verify that the deployment was successful
3. Delete everything you have deployed!

Mission 4! Use a  
secret in your  
deployed application

1. Create a kubernetes secret, making sure to template out the secret value in your secret yaml <http://bit.ly/2h2CizD>
2. Update your deployment to load in your secret as an environment variable called **MYSUPERSECRET** Tutorial follows on from link above

# Some more tools worth knowing about

- Nginx with Naxsi - standard image for HO  
(<https://github.com/UKHomeOffice/docker-nginx-proxy>)
- Standard base images (<http://bit.ly/2fW70fh>)
- Keycloak
  - Keycloak central service  
(<http://keycloak.digital.homeoffice.gov.uk/>)
  - keycloak-proxy docker image  
(<https://github.com/gambol99/keycloak-proxy/>)

# Even more tools worth knowing about!

- Sysdig monitoring
  - <https://sysdig.digital.homeoffice.gov.uk/>
  - Training: <https://sysdig.teachable.com/p/sysdig-101>
- Kibana logging (ELK)
  - <https://kibana.acp.homeoffice.gov.uk/>

# Thanks!

Pull requests welcome

Please complete the survey here:

<http://www.homeofficesurveys.homeoffice.gov.uk>

## Stay in touch

- Email us
- Slack us

