



Docker in production, look no hands !

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Solution Architect

dockercon 16

Agenda

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Why Docker ?
The two views

The Infra view

Our world
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Live demo

The App view

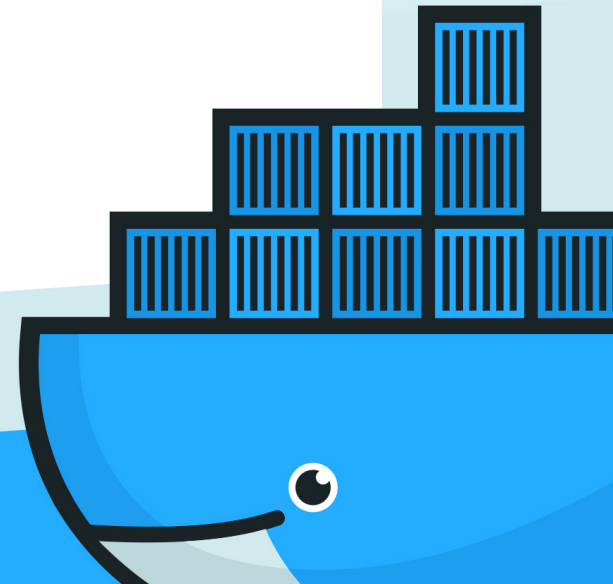
Our world
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About us

An insight into who
we are and what we
do

About me ...

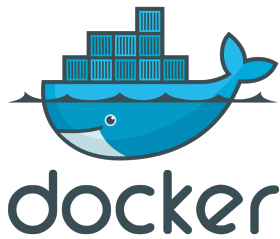
Scott is a solutions architect with 10 years' experience in the managed services and hosting space. He has an extensive experience in architecture. Rolling out systems and network solutions for national and multinational companies with a wide variety of technologies, including AWS, Puppet, Docker, Cisco, VMware, Microsoft and Linux. My design strengths are in cloud computing, automation and the security space.



About me ...



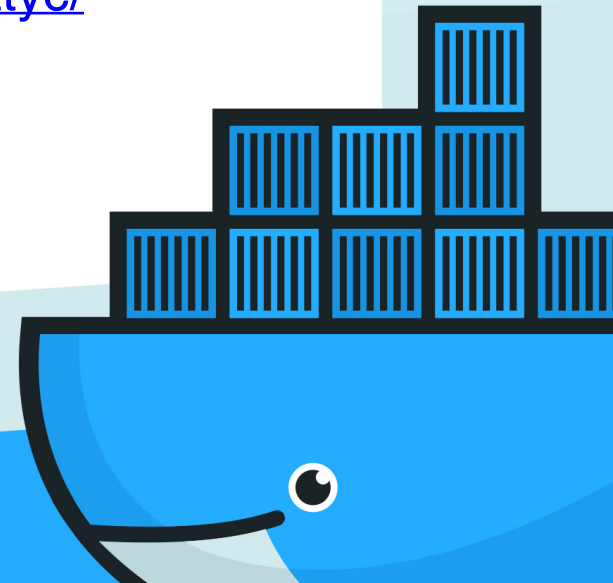
<https://github.com/scotty-c>



<https://hub.docker.com/u/scottyc/>



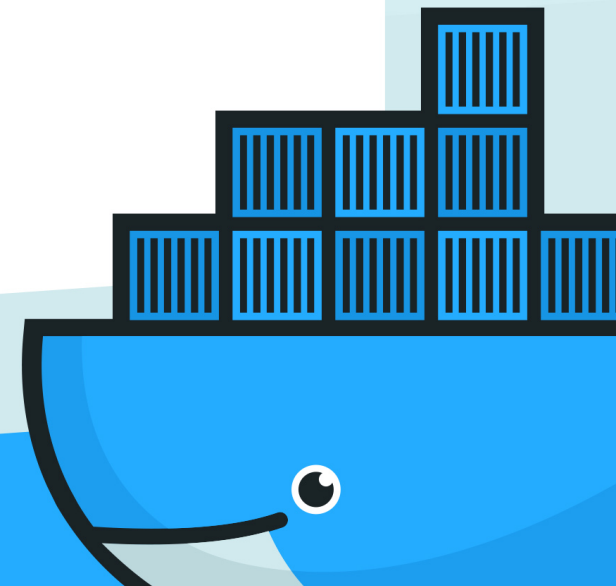
@scottcoult
n



Fun fact about me ...

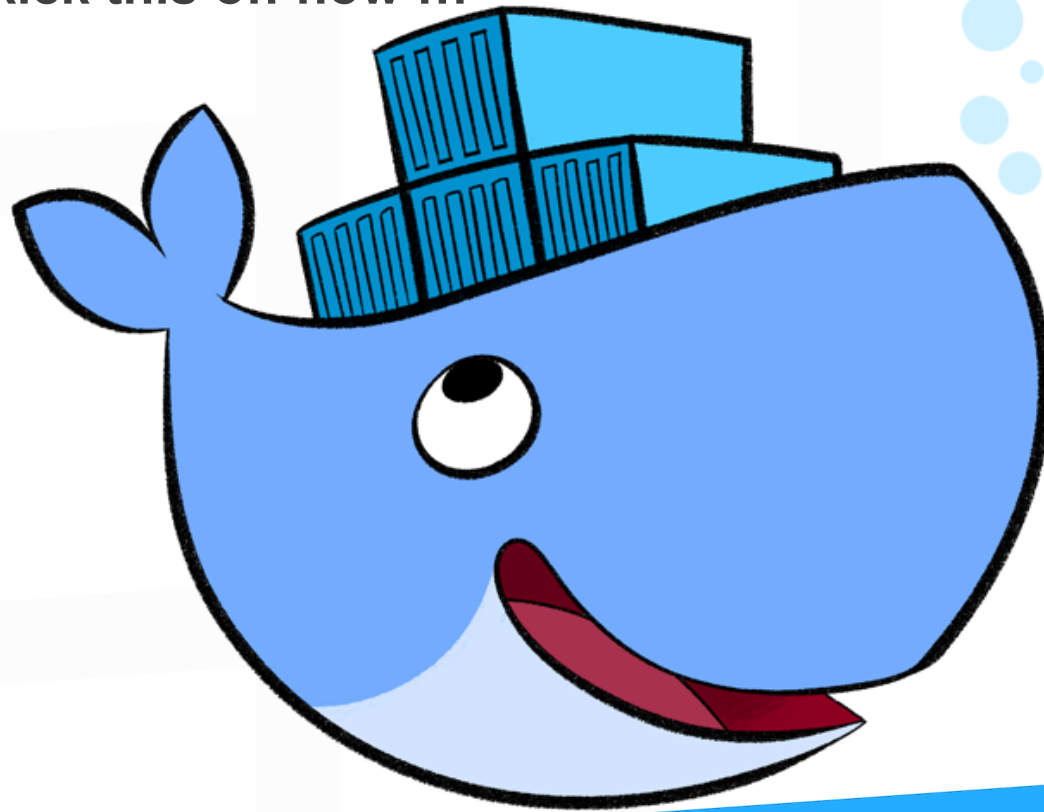


This movie pretty much shaped my life to where I am today



Live demo

We are going to kick this off now !!!



Healthdirect

www.healthdirect.gov.au

Healthdirect Australia helps Australians manage their health by providing access to health and related services, information, advice and triage, 24 hours a day, seven days a week via telephone and online resources. Healthdirect Australia's services support Australians to take the most appropriate steps for their health issue, including self-care, seeing a GP or presenting at an emergency department, and help them to find the closest local service that is open when they need it.

The services we provide

The list of web applications that we deliver to the Australian public are .

- www.healthdirect.gov.au
- www.pregnancybirthbaby.org.au
- www.mindhealthconnect.org.au
- www.healthdirect.gov.au/national-health-services-directory
- www.myagedcare.gov.au
- www.carergateway.gov.au

Why Docker ?

What problems did we have that needed to be solved

The problems that we faced before Docker.

- **Broken CD/CI proces**
- **Long term around time on infrastructure requests**
- **Multiple teams involved in deployments to Production**
- **Infra development team spending more then 75% making development changes**

The two views

To deliver a solution we needed to look at both the infrastructure and apps

So we have two types of development teams. Their focuses are extremely different. Both needed to work together to deliver the end to end solution. Together they would deliver

- **Custom container images**
- **A highly available internal container ecosystem**
- **Adhere to all regulatory and security mandates**

The infra view

How containers have changed the world ... from the view of the infra dev team

Our world

The view of the world from an infra dev

The role of an infrastructure dev involves developing applications in Ruby or Golang that supports the deployment of AWS resources. To configure the AWS resources we use Puppet. Everything must be automated with code. Our team moto's are:

- **Everything needs to be automated. No exceptions**
- **Containers first !!!**
- **No unit tests no builds**

The teams responsibilities

The view of the world from an infra dev

The infra dev's are responsible for the following:

- All AWS resources
- The container eco system
- Service discovery
- Docker networking
- The Puppet environment
- Deployment of all infra via code
- The CD/CI process and pipelines
- The persistence of data

The tools we use

The main tools we use are:

- **Puppet**
- **Docker (Engine, UCP, Compose & DTR)**
- **Jenkins**
- **Elastic (The ELK stack)**
- **Terraform**
- **Consul**
- **Flocker**

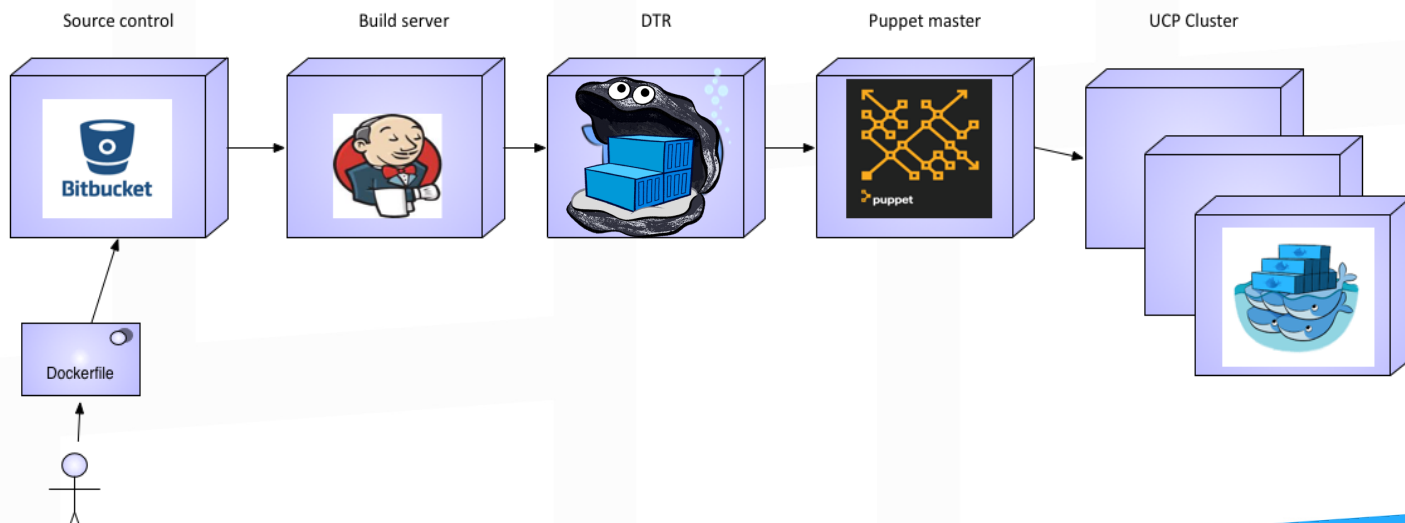
What is migrated to Docker

We have migrated the following tools to Docker.

- **Jenkins**
- **Terraform**
- **Consul**
- **Elastic (Full stack)**
- **Puppet build environment**

Deploying applications

The infra team deploys Docker applications through the following flow



Live demo

This is what we are going to build

- **Configure a UCP controller**
- **Configure two UCP nodes**
- **Automate all configurations for the cluster**
- **Sets the Docker daemon on each node to use the cluster API**
- **Set up a private Docker network**
- **Deploy a Jenkins server**
- **Use Interlock as a proxy for Jenkins**

The app view

How containers have changed the world ... from the view of the app dev team

Our world

The view of the world from an app dev

The application dev is a developer in the traditional sense. Their focus is building applications to help the Australian public receive the best online healthcare possible. Their needs are:

- **To have a platform to develop on that replicates production**
- **The platform and deployment process should be agnostic to the application**
- **All deployments must be automated**

The teams responsibilities

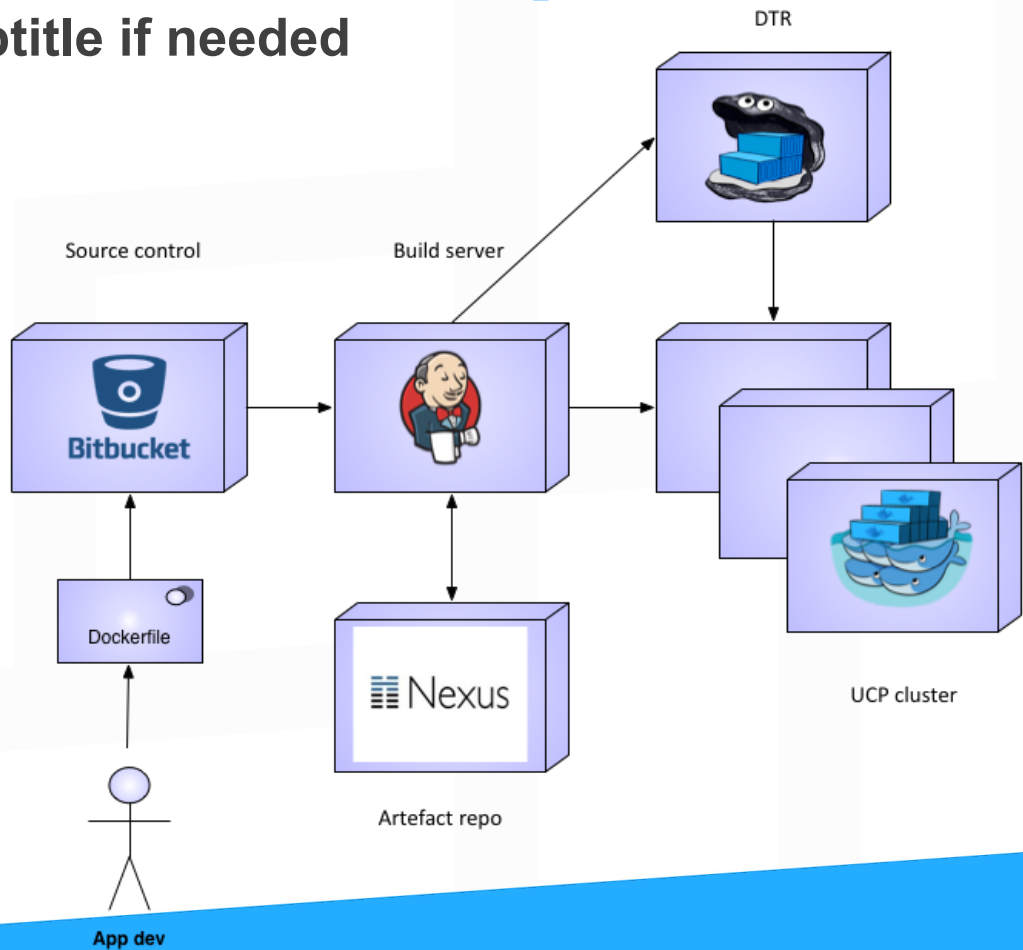
The view of the world from an app dev

To develop the applications that are visible to the Australian public. The technologies they are responsible for are:

- **Front end**
- **Middleware**
- **Data tier**

The teams responsibilities

Slide subtitle if needed



Live demo

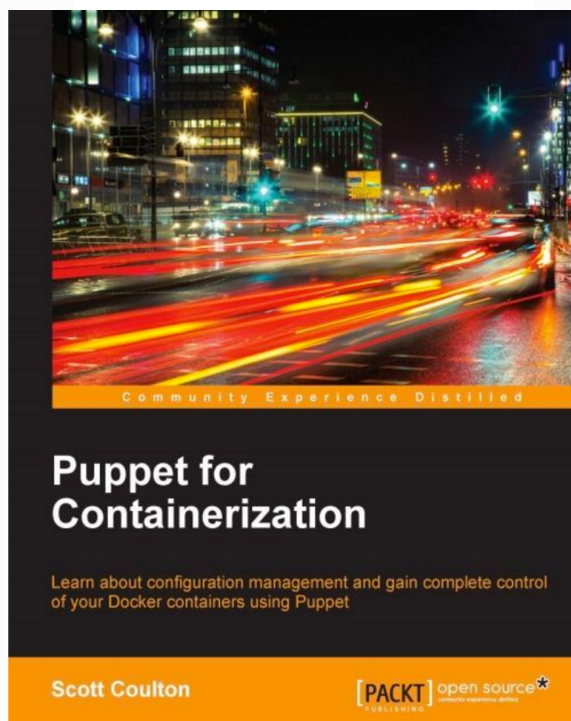
This is what we are going to build

- Login to our Jenkins container
- Deploy a web app to the UCP cluster
- Register the web app with Interlock

Do you want to learn more ?

Grab a copy of my book

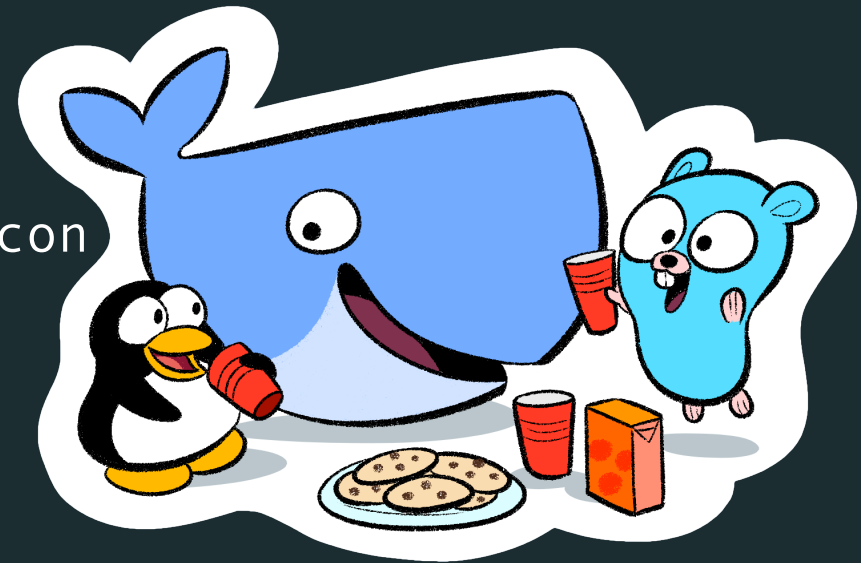
<https://www.amazon.com/Puppet-Containerization-Scott-Coulton-ebook/dp/B01CGKAJG6>



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Get the code !!!

<https://github.com/scottyc/ucp-dockercon>



Disclaimer : This is not HealthDirect
production code.

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Thank you!

