Microsoft Open Source Roadshow

November 2017 | Simon Waight

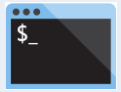
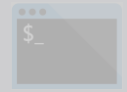
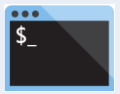
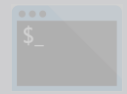
About you…

What would you like to get out of today?

About me… Simon Waight

- Microsoft MVP for Azure from Sydney
- Day job: Cloud Architect @ Kloud
- 20 years industry experience
- Run the Sydney Azure User Group (our next Meetup on 29 November!)
- Blog: https://blog.siliconvalve.com/
- Tweet me @simonwaight

Overview of the day

Morning	Afternoon
Open Source and Azure Application hosting options 	Continuous Deployment (CD): BYO or App Service 
Lab: Deploying solutions to Azure 	Lab: Setting up CD in Azure 
Morning tea	Afternoon tea
Red Hat – OpenShift on Azure	Chef – Compliance Checks on Azure
Open Source Datastores on Azure. 	Containers on Azure 
Lab: Open Source Datastores 	Lab: using Containers on Azure 
Lunch	Wrap up / lab tear down.

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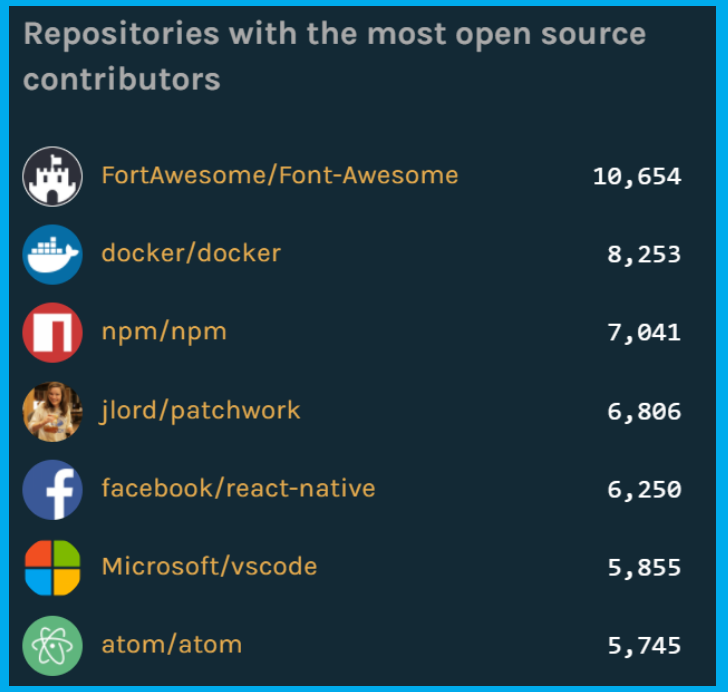
A question before we start...

Who is the biggest Open Source organisation on Github?



Source: Github Octoverse 2016 - https://octoverse.github.com/

Microsoft Open Source Roadshow

1.0 | Application hosting

Overview

- Look at the options you have to host and manage your solutions.
- Show how you can bring your own app or build a cloud-native one.
- Brief introduction to key principles when building and hosting applications for Azure.

Azure - any developer, any app

- Build, package and deploy your solutions with the languages and tools you are most productive with.


```
npm install azure
```

```
pip --pre azure
```

maven packages – microsoft.azure

```
gem install azure
```


```
{
    "require":
      {
"microsoft/windowsazure":"^0.5"
      }
}
```

Azure REST APIs

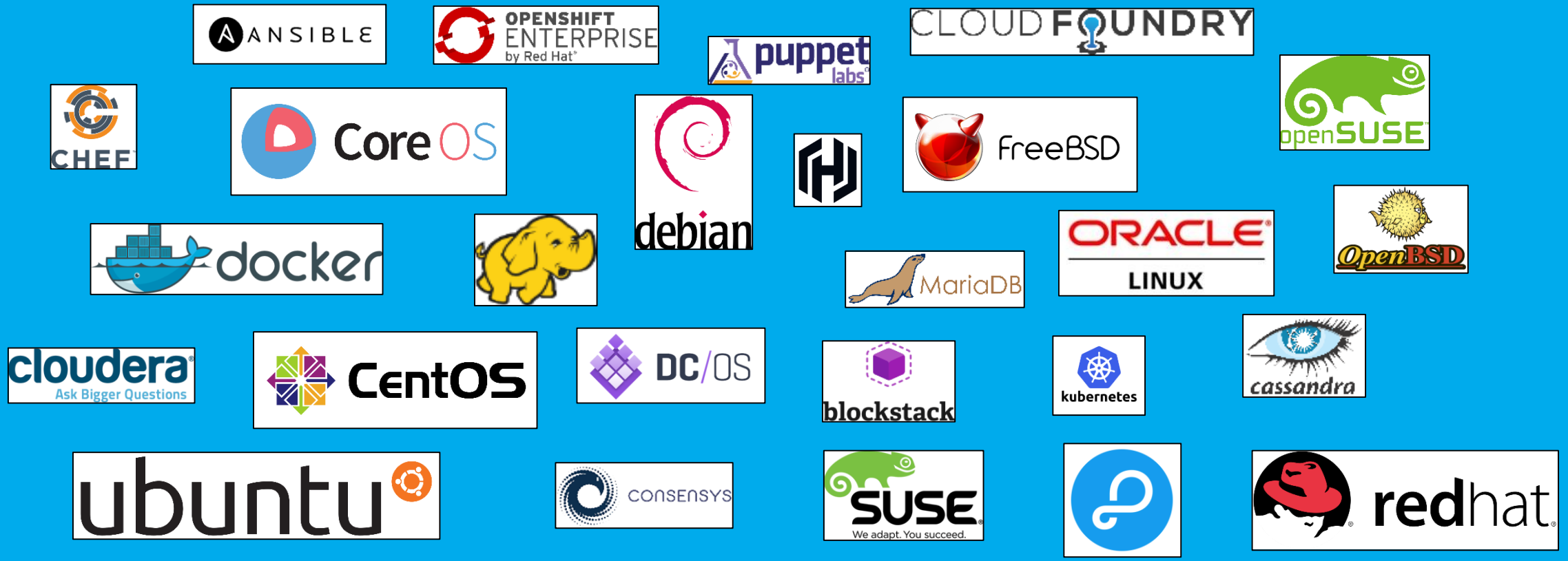
Maybe you are asking…

So, wait, I need to use Azure SDKs in my application just so it can run on Azure?!

NO!

Azure - any platform

- Run your solutions on your platform of choice.



Azure – DevOps your way

- Manage your solutions your way using one or more of:
- X-Plat CLI (v2) – Python-based
- Cloud Shell
- Roll your own with Azure Management SDKs for
  - Java,
  - Python,
  - Go,
  - Ruby.
- Call Azure REST APIs in any code that supports REST!

Hosting options for your apps

- IaaS: you manage from the OS up
  - Virtual Machines – Linux or BSD
- PaaS: manage your application and its configuration
  - App Service:
    - Web, API and Mobile Apps
    - Web App for Containers (App Service on Linux)
    - Functions
  - Containers
    - Azure Container Services, Registry and Instances
  - Service Fabric.

App Service – Web, API and Mobile Apps

- Windows-based Platform-as-a-Service that means you don’t manage servers!
- Supports Node.js, PHP, Java, Python and .Net Core in addition to the .Net Framework
- Continuous Deployment available from multiple sources, not just in Azure or Visual Studio Team Services
- Lots of useful features built-in such as slots, A/B testing and auto-scale.

Web Apps for Containers

- Provides a Linux-based hosting platform with common features of Windows-based Web App Service
- Utilises Docker containers to deliver app hosting platforms (frameworks) with Apache web server.

Functions

- “Serverless” hosting that leverages the App Service Webjobs environment
- The Functions team does all their work on Github. Bug tracking and in-development features right in the open!
- Official language support: Node.js, F#, C# (.Net and .Net Core) and Java (preview)
- Other languages coming*: Python, PHP, .Net Core
- Cross-platform developer tools also available.
- You can even run Functions on-prem if you want!

Azure Container Service

- "Big brother" of App Service on Linux
- Brings power of Docker and an orchestrator together in a single deployment definition enabled by the Azure Container Service Engine
- Select an orchestrator from DC/OS, Kubernetes or Docker Swarm
- We'll come back to ACS this afternoon when we deep dive on Containers in Azure.

Azure Container Instances

- "Containers in a single command"
- Pull images from Docker Hub or Azure Container Registry
- Tight billing model – per-second, per-CPU, per-GB
- Manage using Kubernetes Connector
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Service Fabric

- A distributed system platform designed to run scalable and reliable microservices
- Underpins some core Azure services such as Azure SQL Database and Event Hubs, along with Skype for Business in Office 365
- Runs Linux or Windows nodes and can host any language workload
- Preview available of hosting Container-based workloads
- Runs anywhere.

Azure fundamentals

Azure hosting fundamentals

- Availability and auto-scale models
  - Two models: Regional and Availability Zones (preview).
  - Availability Sets, Azure Load Balancing, App Gateway and Traffic Manager.
  - App Service Scaling, VM Scale Sets (VMSS)
- Backup and restore
  - Backup Vault (IaaS)
  - App Service Backup.

Azure hosting fundamentals

- Capacity Considerations
  - Default Core allocation
  - PaaS services typically don't have an 'off' state.
  - Free tier is nice, but be aware of limitations.
- Deployments
  - Azure Resource Manager (ARM) – XPlat CLI.
  - Hashicorp Terraform.
  - App Service Slots.
  - Azure DevTest Labs.
- Security
  - Network Security Groups
  - Azure Security Center and DDoS protection.
  - App Service Environments (ASEs).

1.0 | LAB

https://github.com/sjwaight/OpenSourceRoadLabs/