



KubeCon



CloudNativeCon

Europe 2018

# Skip the Anxiety Attack

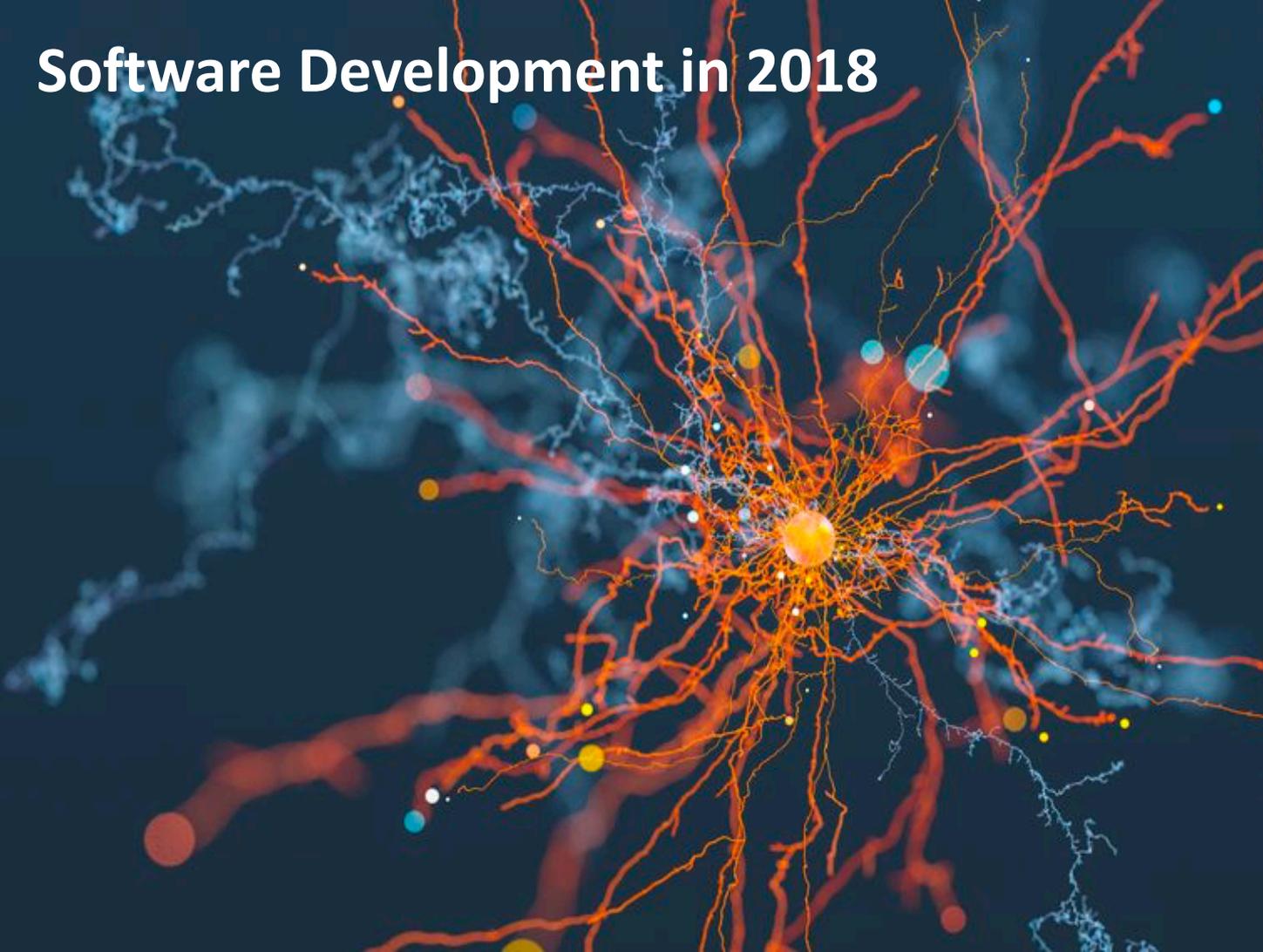
## Build Secure Apps with Kubernetes

Jason McGee

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# Software Development in 2018

An abstract visualization of software development trends in 2018. The image features a central, bright yellow-orange sphere from which numerous thin, branching lines radiate outwards, resembling a neural network or a complex data structure. The lines are primarily orange and red, with some blue and yellow lines interspersed. The background is a dark blue gradient. The overall effect is one of dynamic, interconnected growth.

**More Rapid**

**More Distributed**

**More Dynamic**

# What can I worry about later?

**Scalability**

**Stability**

**Security**

**How do you stay  
Focused?**



# Keys to Developer Productivity

Native CI/CD

Flexible infrastructure

Security built-in

Portability



# Kubernetes for Developers



- Intelligent scheduling
- Self-healing
- Horizontal scaling
- Service discovery & load balancing
- Automated rollouts & rollbacks
- Secret & configuration management

# Kubernetes as a Service

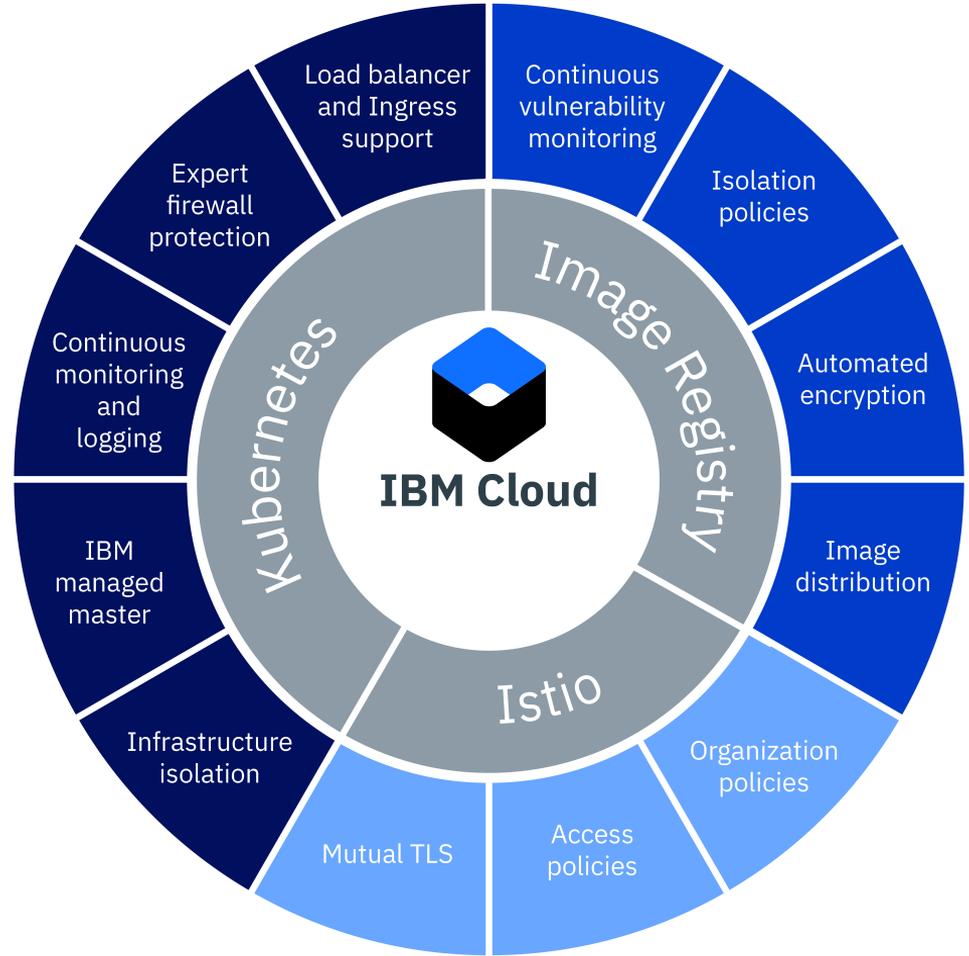


**IBM Cloud  
Container Service**

**IBM Cloud** manages  
Kubernetes for  
enterprises:

- K8s master
- IaaS
- Health monitoring
- Node recovery
- Operational components
- Global Deployment

# Secure to the core



# Track vulnerabilities



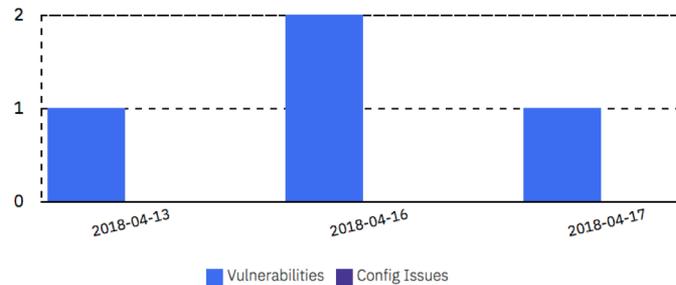
## Compute

### Images with vulnerabilities

4 Images with vulnerabilities

5 Images with config issues

### Images with Vulnerabilities and Config Issues in the last 7 days



# Control what gets deployed

Registry: Private Repositories / old\_mysql / Security report for old\_mysql:latest

## Security report for old\_mysql:latest

**Overview**

 **Do Not Deploy**       **62 Vulnerabilities**       **5 Configuration Issues**

### Vulnerabilities

Vulnerability Advisor checks your images for known vulnerabilities based on official community maintained lists.

Search

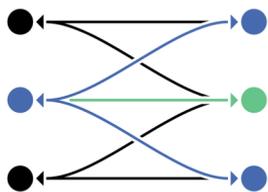
Vulnerability ID	Policy Status	Affected Packages	How to Resolve
> CVE-2016-2834	● Active	nss-util, nss-sysinit, and 2 more...	Upgrade 4 packages
> CVE-2016-8635	● Active	nss-util, nss-sysinit, and 2 more...	Upgrade 4 packages
> CVE-2016-5285	● Active	nss-util, nss-sysinit, and 2 more...	Upgrade 4 packages
> CVE-2017-5461	● Active	nss-util, nss-sysinit, and 2 more...	Upgrade 4 packages
> CVE-2016-1762	● Active	libxml2, libxml2-python	Upgrade 2 packages
> CVE-2016-1833	● Active	libxml2, libxml2-python	Upgrade 2 packages



# Trust that hosts aren't tampered with using Intel TXT/TPM

<input type="checkbox"/>	<input type="checkbox"/>	kube-wdc07-crf030479c185644b2 bf6e6e6f24b75c77-w6	● Ready	10.190.116.66	169.61.98.34	1.9.3_1502	
<b>Machine Type</b>				<b>Public VLAN</b>	<b>Private VLAN</b>	<b>Hardware isolation</b>	<b>Trusted</b>
		mb1c.16x64.encrypted - 16 CPUs, 64 GB RAM		2207447	2207449	Dedicated	True
<input type="checkbox"/>	<input type="checkbox"/>	kube-wdc07-crf030479c185644b2 bf6e6e6f24b75c77-w7	● Ready	10.190.116.85	169.61.98.35	1.9.3_1502	
<b>Machine Type</b>				<b>Public VLAN</b>	<b>Private VLAN</b>	<b>Hardware isolation</b>	<b>Trusted</b>
		mb1c.16x64.encrypted - 16 CPUs, 64 GB RAM		2207447	2207449	Dedicated	True

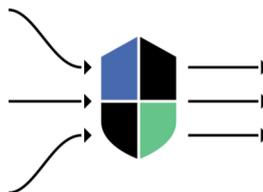
# Istio.io



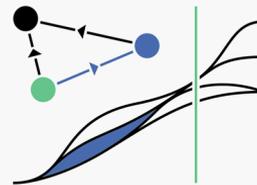
Intelligent  
routing  
& load  
balancing



Resilience  
across  
languages  
& platforms



Fleet-  
wide policy  
enforcement



In-depth  
telemetry  
& reporting

## Istio founding members



## Istio community partners

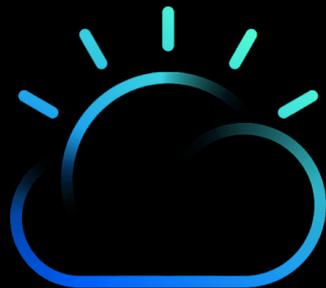


Pivotal



Microsoft





**IBM Cloud**

Public Cloud



**IBM Cloud**  
Container Service

Private Cloud

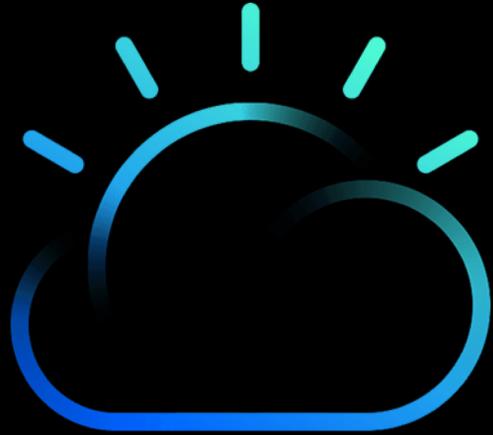


**IBM Cloud Private**

Get coding.

We'll manage  
the rest.

[ibm.biz/ModCloud](https://ibm.biz/ModCloud)



**IBM Cloud**



# Thank you

—

Jason McGee

IBM Fellow

VP and CTO, IBM Cloud Platform

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