

# Red Hat OpenShift 1001: What is Red Hat OpenShift and Why Does it Matter?

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**Bradston Henry**

Senior Developer, Developer Advocate | IBM North America Team

Workshop Materials Repo Link:

**<http://ibm.biz/Red-Hat-OpenShift-1001-Repo-BradstonDev>**

# About Me:

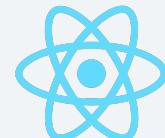
## Bradston Henry

### 7+ Years of Development and Industry Experience

- Mobile: iOS, React Native
- Web: React, JS/HTML/CSS
- Cloud: IBM Cloud, OpenShift, AWS
- Game Dev: Unity3D, Unreal(just a little)

### Hobbies

- Game Development
  - Itch.io, GMTK 2021, Android
- Podcasting
  - Super Agile Bros (Spotify, Stitcher, Google Podcasts, SoundCloud)
- Gaming
  - Currently Playing: Apex, Rocket League, Pokémon Unite, Spelunky 2, Overcooked: All You Can Eat
- Breakdancing/Bboying (Retired)
- MMA (Mixed Martial Arts)



# Agenda

- Red Hat OpenShift Overview
- Why You Should Care
- Architectural Overview
- RHOS Demo
- What's Next

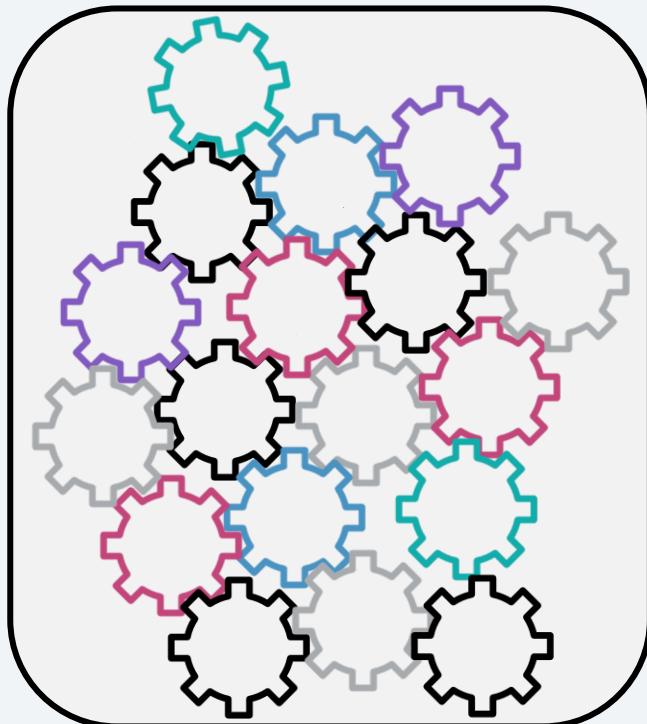
# Red Hat OpenShift Overview

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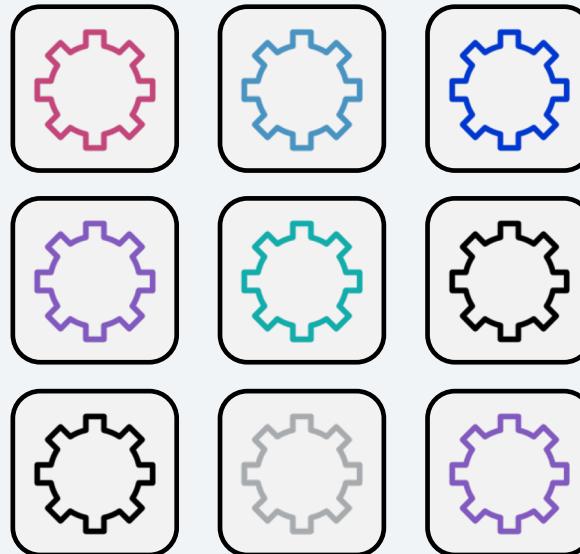
## Monolithic Architecture

Tightly Coupled – Changes are Systemic

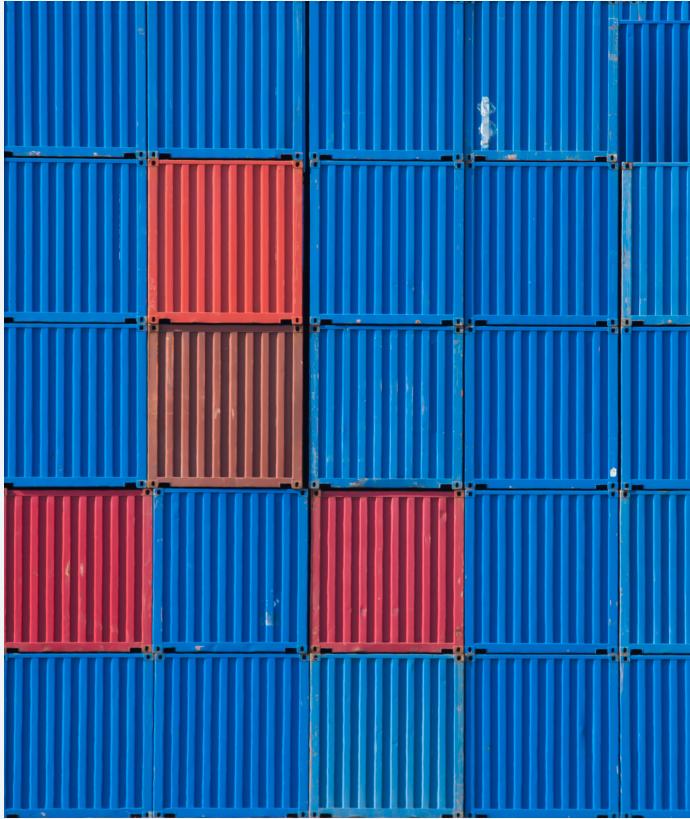
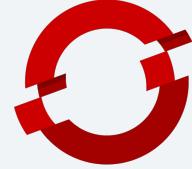


## Microservice Architecture

Loosely Coupled – Changes Less Impactful



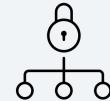
# Red Hat OpenShift Overview



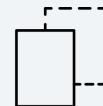
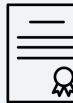
## Containerization

- A standard way to package an application and all its dependencies so that it can be moved between environments and run without changes
- Containers work by isolating the differences between applications inside the container so that everything outside the container can be standardized

# Red Hat OpenShift Overview



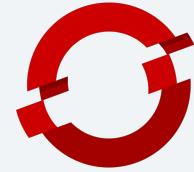
- **Containerization Orchestration Platform:** RHOS is a consistent container application platform and Certified Container Ecosystem. Allows teams to have a standardized platform for deploying, managing and monitoring their applications.
- **Built on Kubernetes:** Kubernetes is the container orchestration industry standard. OpenShift is trusted enterprise Kubernetes and Red Hat is the leading Kubernetes contributor since day 1. Allows Service Discovery and automatic load balancing using services.
- **Continuous Monitoring:** Built-in self-analyzing metrics and aggregated logging tools for application monitoring. Also, allows for automatic applications scaling based on demand using tools like Ansible.



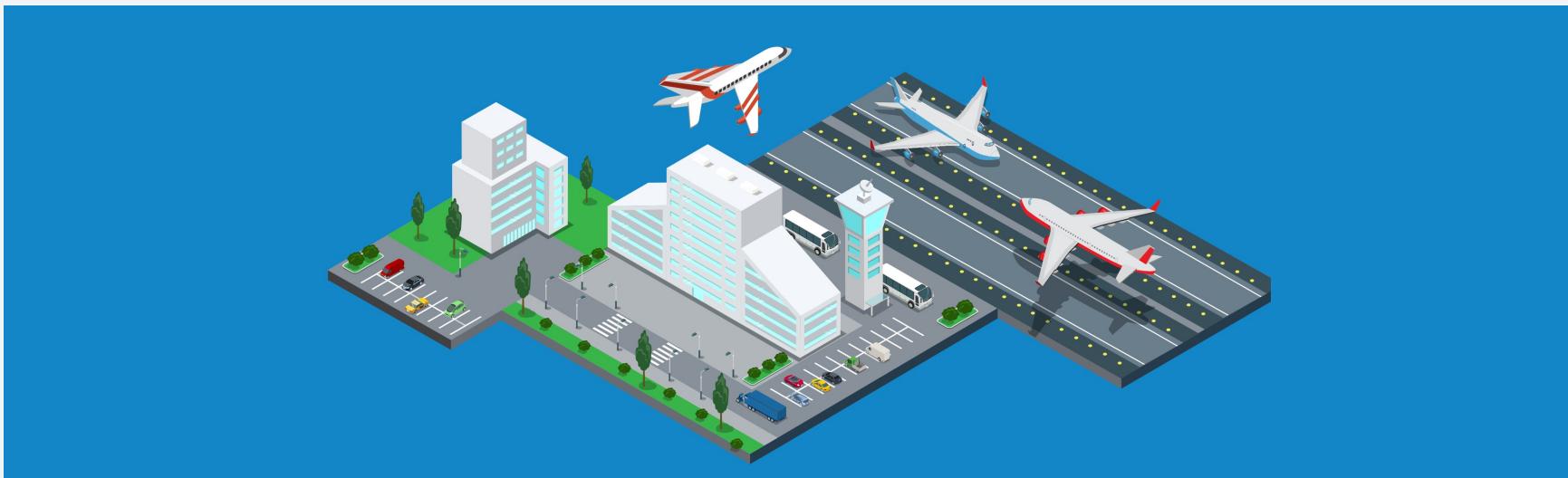
- **Hybrid/Multi-Cloud Solution:** Allows teams to host services and applications in various clouds while maintaining necessary connections using secrets and configuration management
- **Self-Healing:** Uses user defined health checks to restart and reschedule containers if some form of failure occurs
- **Unified UI:** A standardized user-interface allows teams to easily manage, monitor, and deploy applications in any supported web browser
- **Integrated Developer Workflow:** RHOS's Container Registry and CI/CD Pipelines allow developers to focus on development while RHOS manages deployments.

Learn More about Red Hat OpenShift [Here](#)

# Air Traffic Controller of Applications



- **Without RHOS:** Teams are responsible for manually managing all service deployments, communications with no standardized approach for operations. Hybrid Cloud deployments of applications complicates this even further.
- **With RHOS:** A centralized and standardized hub for deploying, managing, monitoring applications. Even with complex Hybrid/Multi-cloud solutions, RHOS acts as the hub from managing all applications and services.



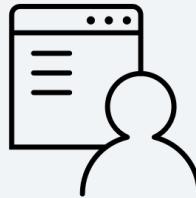
# Why You Should Care

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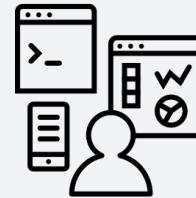
## Development and Operations



**Dev**



**Ops**



- **Code**
- **Libraries**
- **Configuration**
- **Server runtime**
- **OS**

- **Logging**
- **Remote access**
- **Network configuration**
- **Monitoring**

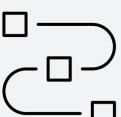
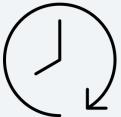
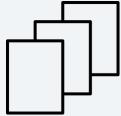
### Separation of concerns

RHOS separates and bridges the Dev and Ops in DevOps

- Dev focuses on the application environment
- Ops focuses on the deployment environment

# Why You Should Care

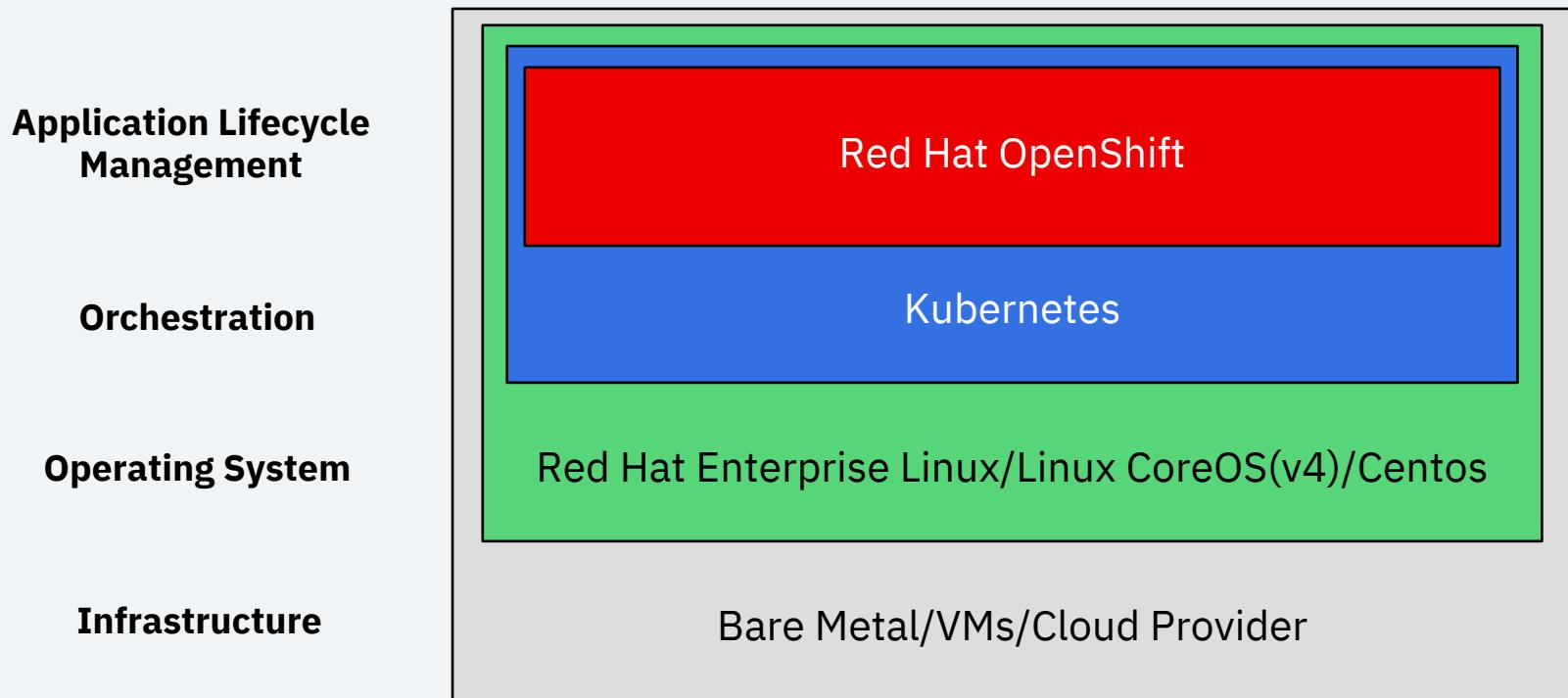
## Industry Needs and Expectations



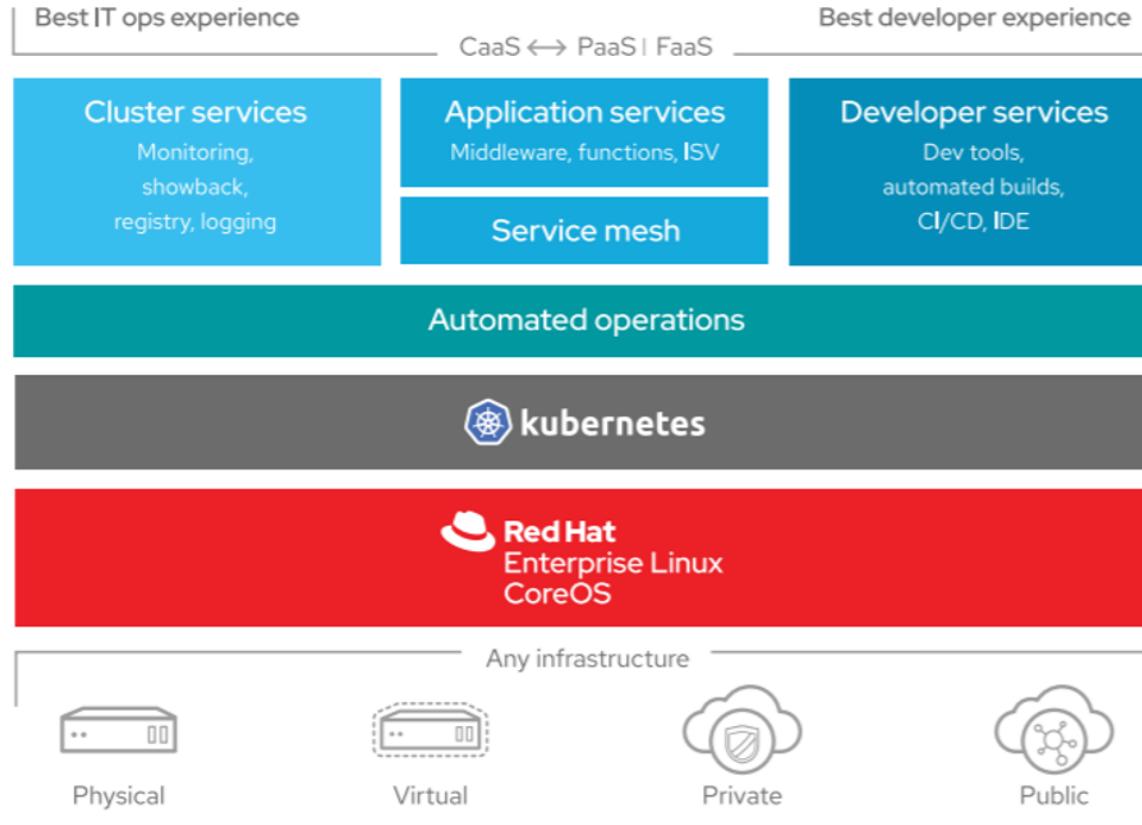
- **Consistency:** Companies expect that new deployments of applications, services, and updates to existing applications are repeatable and standardized. As companies augment teams and hire new employees to meet changing demands, they want to know that systems in place that team members can easily plug into.
- **Efficiency:** Speed-to-market is of huge importance to companies. With RHOS, companies are more equipped than ever to develop, deploy, and monitor applications seamlessly. Even with applications that use services that span across multiple clouds, teams can manage connections and service credentials in one place, saving tons of time and effort.
- **Efficacy:** With RHOS's focus on containerization, environmental deployment factors almost become null-and-void. Development teams and companies can be more assured that what they see in testing environments, production environments or any other environment will reflect exactly what they expect. Also, RHOS's self-healing and automatic scaling mechanisms ensure that applications are always able to meet demand and is always operating as expected.

# Red Hat Open Shift Architecture

# OpenShift Architecture Diagram

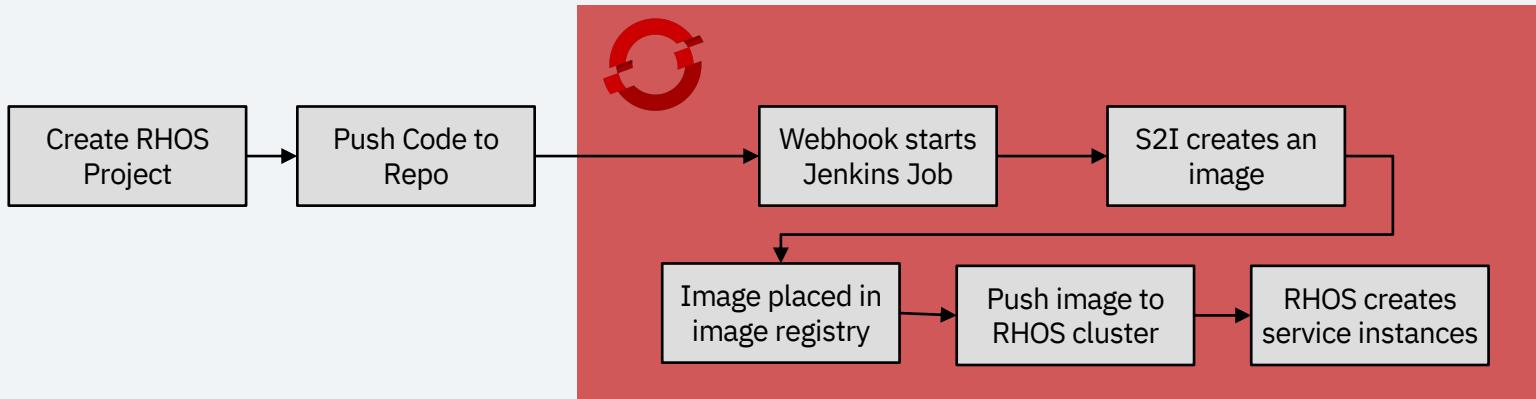
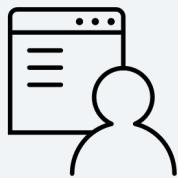


# OpenShift Architecture Diagram

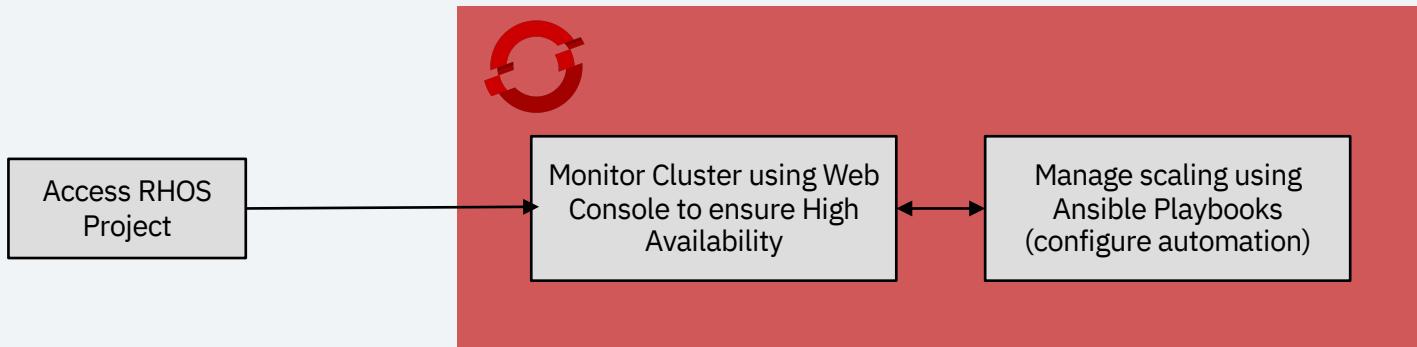
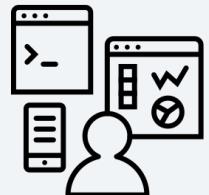


# OpenShift Lifecycle Management Example

## Developers



## Operations



# Red Hat OpenShift Demo

# Continued Learning...

## Next Webinar in RHOS 1000 Series:

**Red Hat OpenShift 1002: Containers and How to Use Them** ([Register Here](#))

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## Additional Learning Resources

**What is OpenShift?** ([Youtube](#))

**Introduction to Red Hat OpenShift Container Platform** ([Youtube](#))

**Red Hat OpenShift 101: Learn about Enterprise Kubernetes** ([Crowdcast](#))

**Red Hat OpenShift 101 continued: Hybrid Cloud with Kubernetes, Logging and Databases** ([Crowdcast](#))

**Level Up your Skills: Get Your “Build on Kubernetes” Badge** ([Crowdcast](#)) with David Nugent([@drnugent](#))

**IBM Open Labs (Red Hat OpenShift on IBM Cloud)** ([Website](#))

# Thank you for attending.

(Please Take Survey 😊)

Bradston Henry

Senior Developer, Developer Advocate

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Twitter: [@bradstondev](#)

Youtube: [Bradston Henry](#)

Dev.to Blog: [@bradstondev](#)

