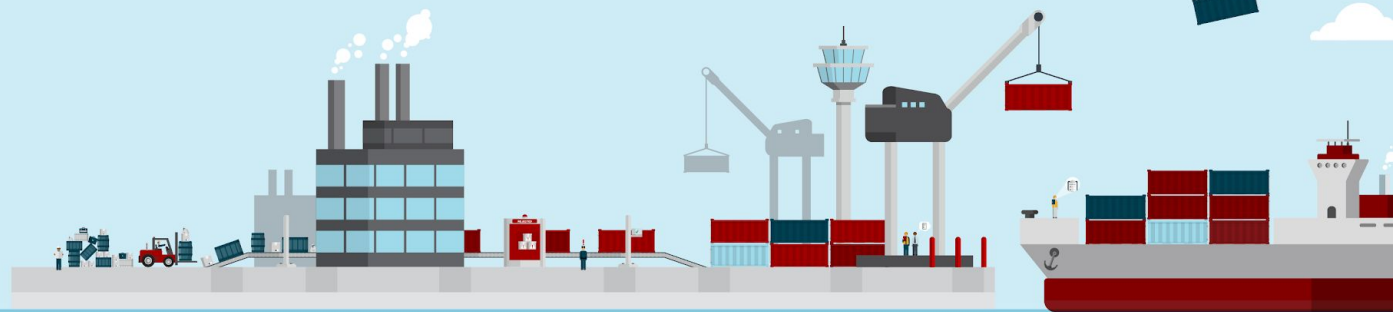




Openshift Service Broker and Catalog

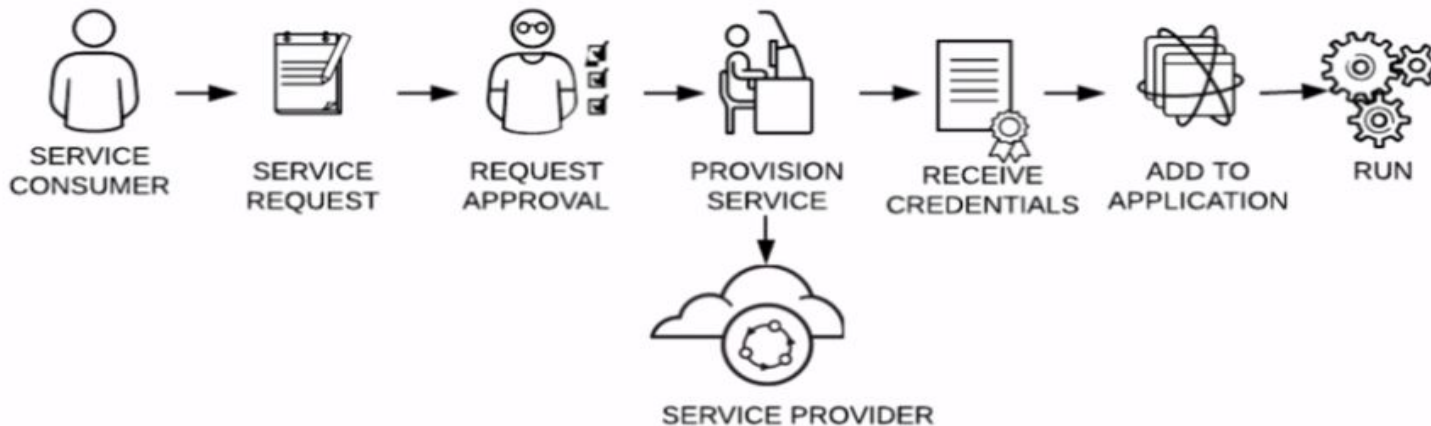


Mike Calizo
Senior TAM/Cloud Success Architect

SERVICE CATALOG & BROKER

WHY A SERVICE BROKER?

Manual, Time consuming process

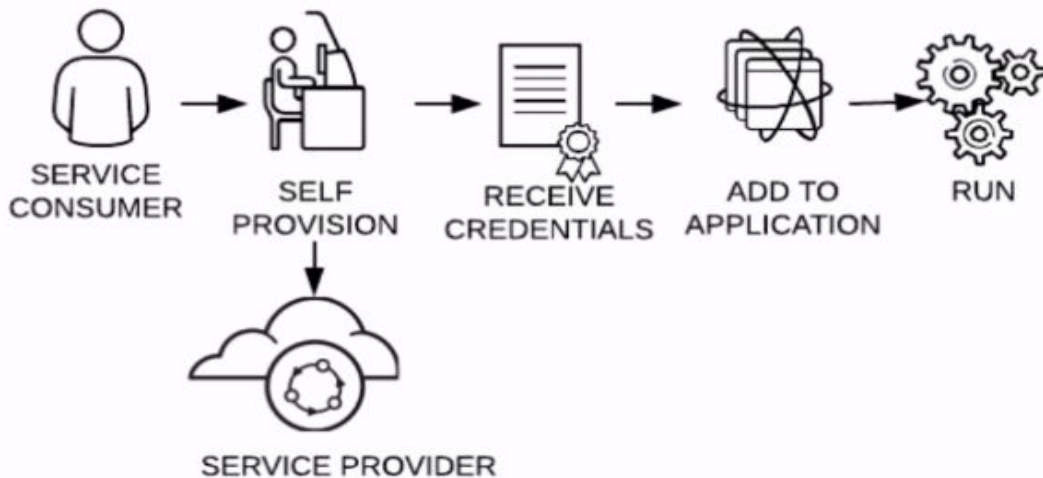


Manual, Time-consuming and Inconsistent

WHY A SERVICE BROKER?

Cloud Provider

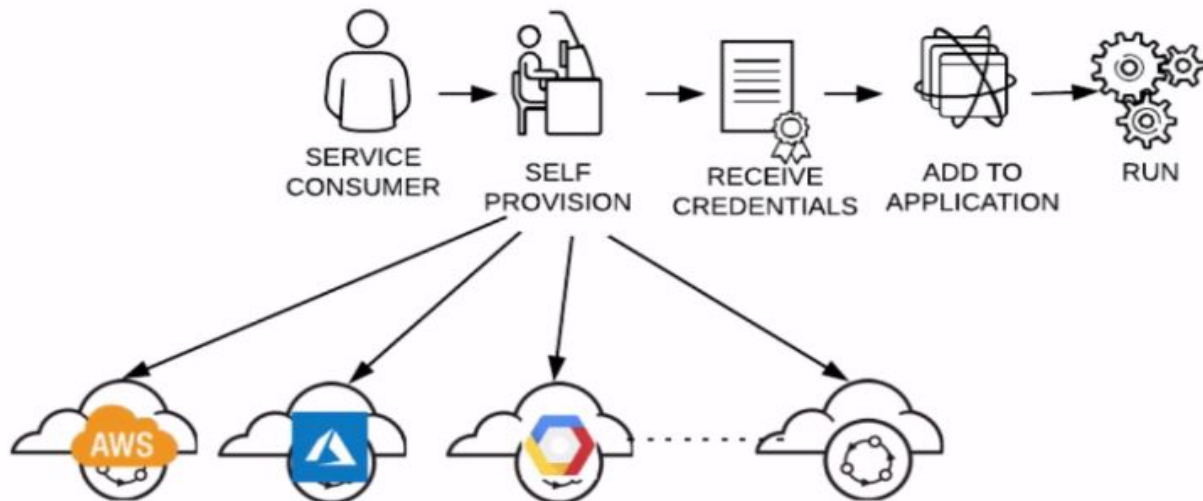
Semi-automated, Manual binding to the application



WHY A SERVICE BROKER?

Cloud Provider

Provisioning process different for each service provider and inconsistent





OPEN **SERVICE BROKER** API™

A multi-vendor project to
standardize how services
are consumed on
cloud-native platforms
across service providers

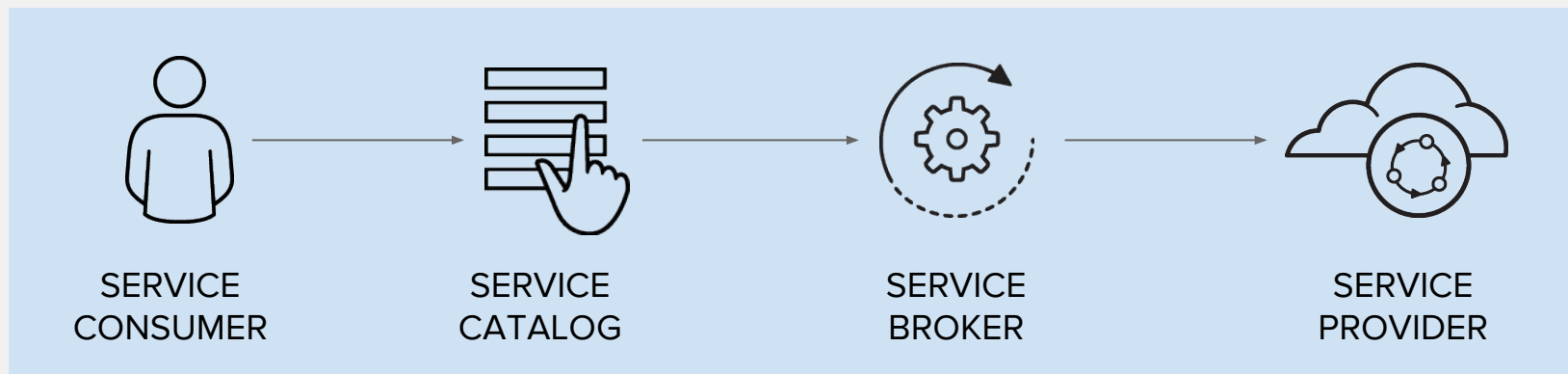


Open Service Broker API

- Successor to Cloud Foundry Service Broker API
- Existing ecosystem provided along with API
- Open Service Broker API home:
 - <https://www.openservicebrokerapi.org>
- Specification:
 - <https://github.com/openservicebrokerapi/servicebroker>



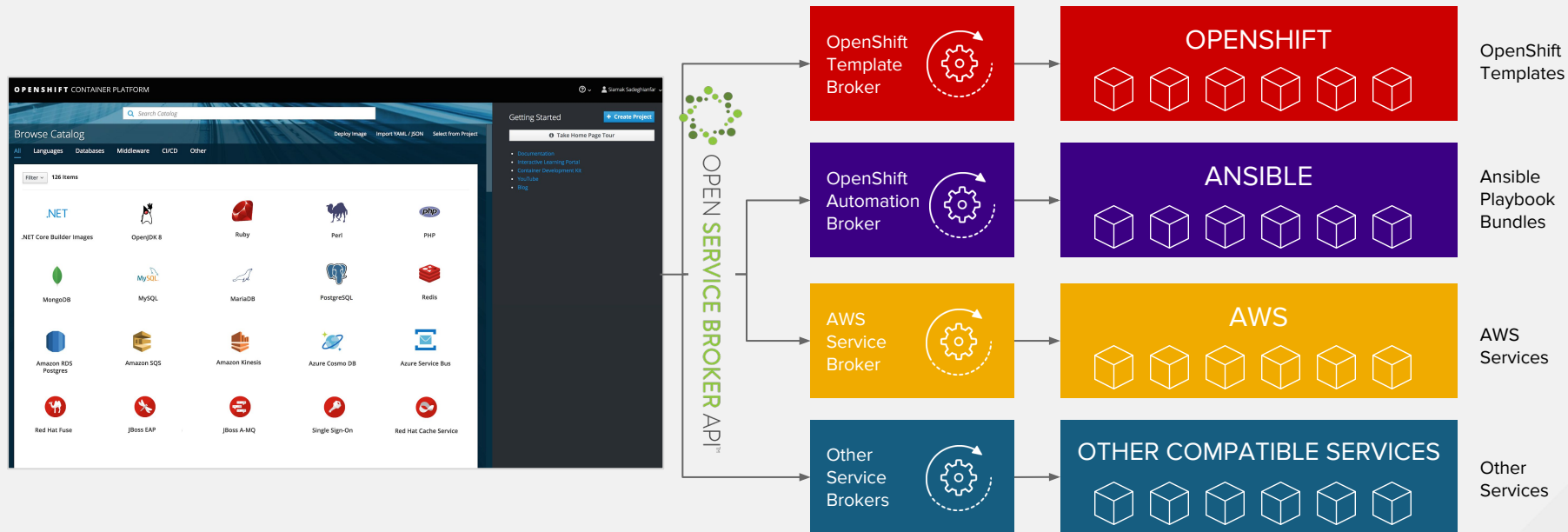
WHAT IS A SERVICE BROKER?



Automated, Standard and Consistent

Term	Description
Service broker	<ul style="list-style-type: none">• Manages set of capabilities (services)
Catalog	<ul style="list-style-type: none">• Listing of services provided by particular broker endpoint• Marketplace/catalog contains services from one or more brokers
Service	<ul style="list-style-type: none">• Capability managed by service broker• Example: Database as a Service
Plan	<ul style="list-style-type: none">• Specific offering of service• Examples: Free tier, Medium tier (\$5.99/mo), Pro tier (\$9.99/mo)

OPENSHIFT SERVICE CATALOG



OPENSHIFT SERVICE CATALOG

SERVICE BROKER CONCEPTS

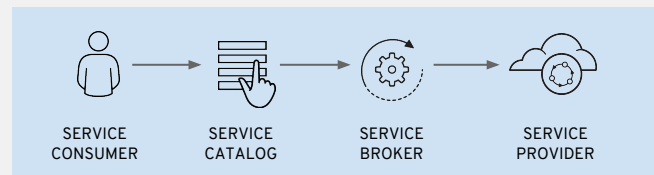
SERVICE: an offering that can be used by an app e.g. database

PLAN: a specific flavor of a service e.g. Gold Tier

SERVICE INSTANCE: an instance of the offering

PROVISION: creating a service instance

BIND: associate a service instance and its credentials to an app



HOW TO ADD A SERVICE BROKER

- Deploy service broker on or off OpenShift
- Register the broker referring to the deployed broker

```
apiVersion: servicecatalog.k8s.io/v1alpha1
kind: Broker
metadata:
  name: asb-broker
spec:
  url: https://asb-1338-ansible-service-broker.10.2.2.15.nip.io
```

- Register the broker services by creating ServiceClass resources (the service broker might automatically perform this step)

TEMPLATE SERVICE BROKER

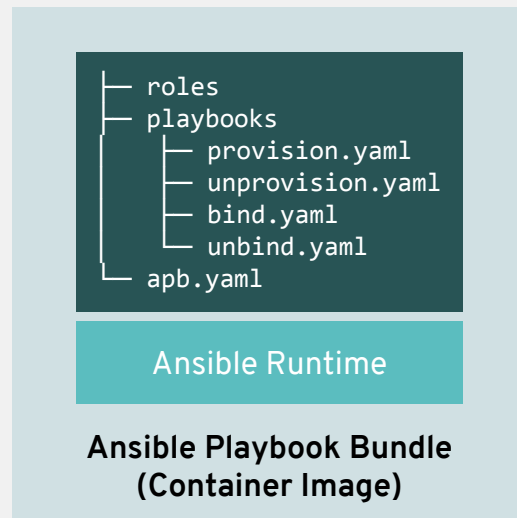
- Exposes Templates and Instant Apps in the Service Catalog
- Pulled from openshift namespace by default
- Multiple namespaces can be configured for template discovery

OPENSIFT ANSIBLE BROKER

- Use Ansible on OpenShift
 - Deploy containerized applications
 - Provision external services (e.g. Oracle database)
 - Provision cloud services (e.g. AWS RDS)
 - Orchestrate multi-service solutions
 - Conditional logic for control on deployments (e.g. database is initialized)
- Leverage existing Ansible playbooks
- Anything you can do with Ansible, you can do with OAB

ANSIBLE PLAYBOOK BUNDLES (APB)

- Lightweight application definition
- Packaged as a container image
- Embedded Ansible runtime
- Metadata for parameters
- Named playbooks for actions
- Leverage existing Ansible playbooks
- Registry is queried to discover APBs



Self-Service / UX



Feature(s): OpenShift Ansible Broker

What's New for 3.9:

- **New upstream community website:** [Automation Broker](#)
 - Downstream will still be called 'OpenShift Ansible Broker' with main focus on APB 'Service Bundles' (application definition)
 - Community contributed application repo: <https://github.com/ansibleplaybookbundle>
- **Support for running the broker behind an HTTP proxy in a restricted network environment**
 - Documentation: <https://github.com/openshift/ansible-service-broker/blob/master/docs/proxy.md>
 - Video: <https://www.youtube.com/watch?v=-Fdfz1RqI94>
- **Plan or parameter updating of PostgreSQL, MariaDB, and MySQL APB-based services will preserve data**
 - Update logic in the APB that handles preserving data; useful for cases where you want to move between a service plan with ephemeral storage to a different service plan utilizing a PV
 - Video: <https://www.youtube.com/watch?v=kslVbbQCZ8s&t=220s>
- **Now Official add-on for MiniShift**
 - Documentation: <https://github.com/minishift/minishift-addons/tree/master/add-ons/ansible-service-broker>
 - Video: <https://www.youtube.com/watch?v=6QSJ0yt1lx8>
- **Network isolation support for multi-tenant environments**
 - For joining networks that are isolated to allow APBs to talk to the resulting pods it creates over the network
- **[Experimental] Async bind support in Broker**
 - Used to allow binds that need more time to execute than the 60 seconds response time defined in the OSB API spec.
 - Async bind will spawn a binding job and return the job token immediately; the catalog will use the last_operation to monitor the state of the running job until either successful completion or a failure.

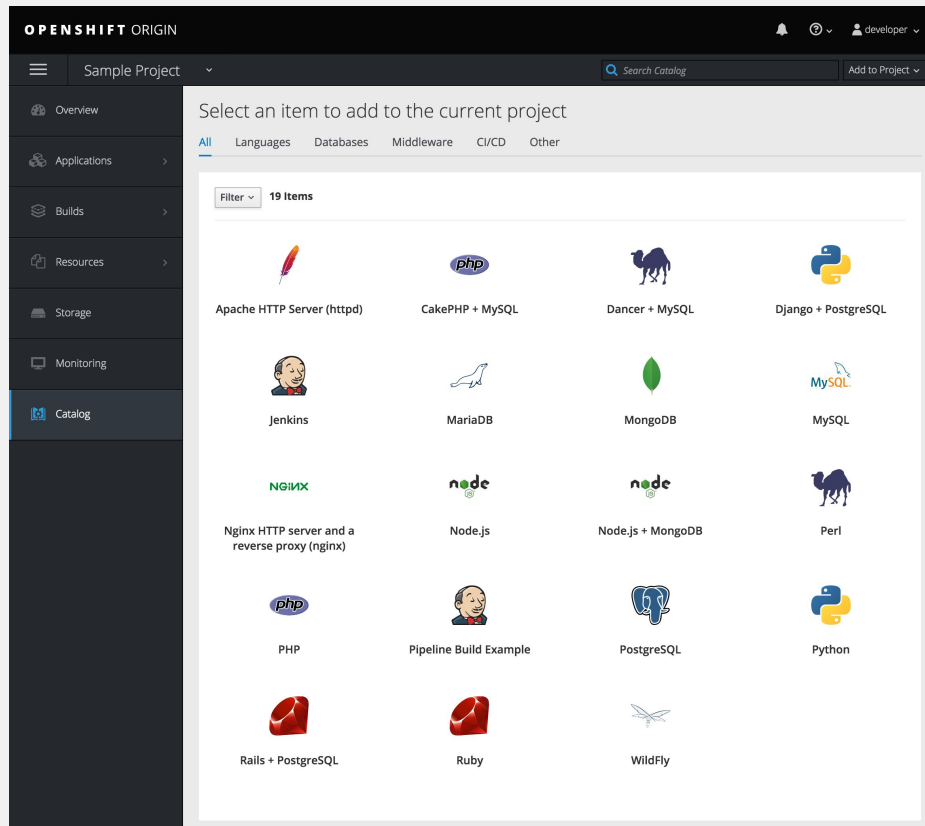
Self-Service / UX

Feature(s): Catalog from within project view

Description: Quickly get to the catalog from within a project

How it Works:

- “Catalog” item in left navigation



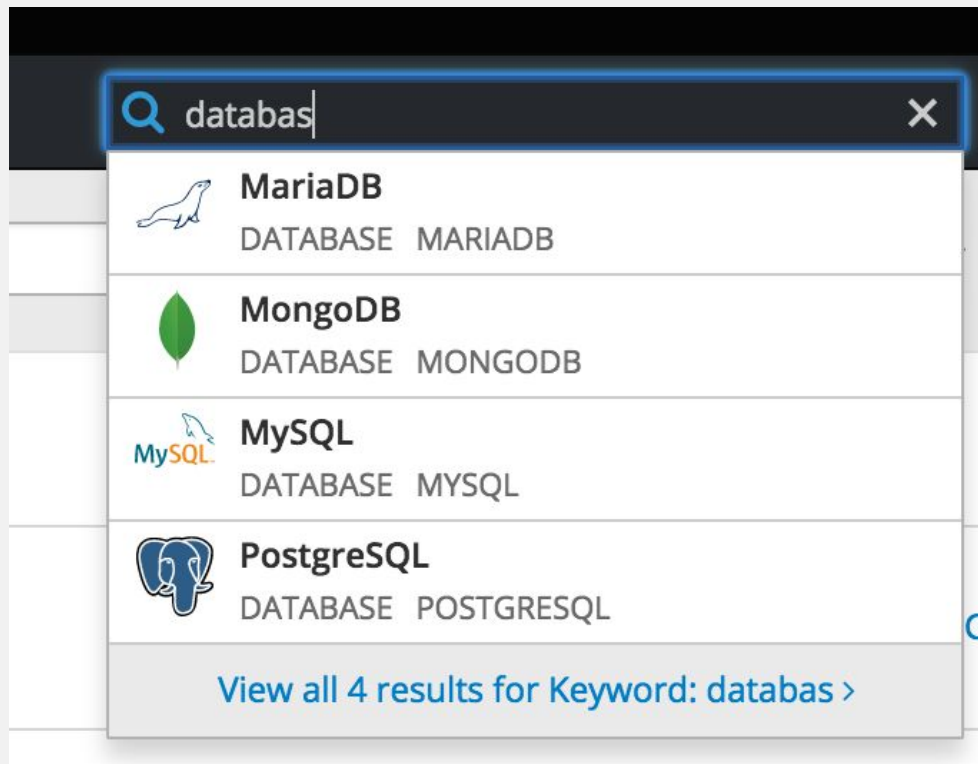
Self-Service / UX

Feature(s): Quick search catalog from within project view

Description: Need to quickly find services

How it Works:

- Type in your search criteria
- Get minimal service icon



Self-Service / UX

Feature(s): Select preferred home page

Description: Power users may want to jump straight certain pages after login

How it Works:

- Access the menu from account dropdown
- Pick any of: Catalog Home, All projects, Specific project
- Logout and then back in
- Enjoy!

OPENSHIFT ORIGIN ⓘ developer ▾

My Projects Sort by Display Name ▾ 1 2 [+ Create Project](#)

Ben's Top Secret Project ben - created by developer 16 minutes ago	Ben's top secret project to make us huge profits next year.	⋮
My Project myproject - created by developer 7 hours ago	Initial developer project	⋮
Nodejs + MongoDB dev node - created by developer 20 minutes ago	A short description of what this project is for and how it will function.	⋮
Robb H. javascript development robb - created by developer 14 minutes ago	Short term development environment while he's getting up to speed on current UI team dev	⋮
Ruby on Rails example application ruby - created by developer 19 minutes ago	Developer template for Ruby on Rails project.	⋮
Test Integration enironment test - created by developer 19 minutes ago		⋮
Zfoo project zproject - created by developer 7 minutes ago		⋮

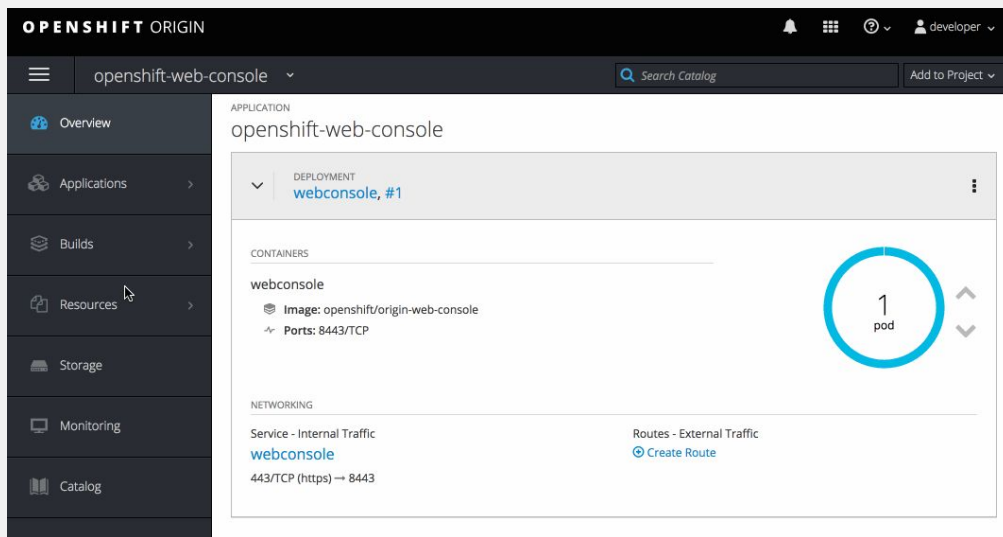
Self-Service / UX

Feature(s): Console as separate pod

Description: Separate web console out of API server

How it Works:

- Web console packaged as a container image
- Deployed as a pod
- Configuration can be made via ConfigMap and auto-detects changes



Self-Service / UX

Feature(s): StatefulSets out of tech preview

Description: Removed tech preview label

How it Works:

- Same capability as tech preview feature in 3.7

The screenshot displays the OpenShift Origin web console. The top navigation bar shows 'My Project' and a search bar. The left sidebar contains navigation icons. The main content area is titled 'world' and shows the configuration for a StatefulSet. A circular progress indicator shows '2 pods'. Below this, the 'Containers' section lists the configuration for the 'world' container. The 'Volumes' section shows the configuration for 'volume1'. The 'Pods' section displays a table with the status of the pods.

Stateful Sets > world

world

app world name world

Details Environment Metrics Events

Status: Active
Replicas: 2 replicas

2 pods

Template

Containers

world

- Image: aosqe/hello-openshift
- Ports: 8080/TCP (web)
- Mount: volume1 → /var/lib/volume-test read-write
- Memory: 256 MiB limit

Volumes

volume1

Type: empty dir (temporary directory destroyed with the pod)
Medium: node's default

Pods

Name	Status	Containers Ready	Container Restarts	Age
world-1	Running	1/1	0	a few seconds
world-0	Running	1/1	0	a few seconds

There are no annotations on this resource.

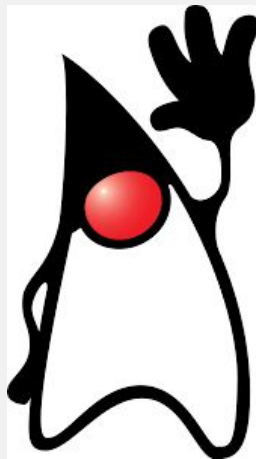
DevExp / Builds

Feature(s): Jenkins memory usage improvements

Description: Jenkins worker pods often consume too much or too little memory

How it Works:

- Startup script intelligently looks at pod limits
- JVM env vars appropriately set to ensure limits are respected for spawned JVMs



OpenShift Roadmap

OpenShift Container Platform 3.10 (June)

- Kubernetes 1.10 and CRI-O option
- Smart Pruning
- Istio (Dev Preview)
- oc client for developers
- Golden Image Tooling and TLS bootstrapping
- Windows Server Containers (Dev Preview))
- Prometheus Metrics and Alerts (Tech Preview)
- S3 Svc Broker

OpenShift Online & Dedicated

- Dedicated self-service: RBAC, templates, LB, egress
- Dedicated encrypted storage, multi-AZ, Azure beta

OpenShift Container Platform 3.12 (Dec/Jan)

- Kubernetes 1.12 and CRI-O default
- Converged Platform
- Full Stack Automated Installer
 - AWS, RHEL, Azure, OSP
- Over the Air Updates
- RHCC integrated experience
- Windows Containers GA
- Easy/Trackable Evaluations
- Red Hat CoreOS Container Linux with Ignition Automations
- Cluster Registry
- HPA metrics from Prometheus

OpenShift Online & Dedicated

- Cluster Operator driven installs
- Self-Service Dedicated User Experience

Q2 CY2018

Q3 CY2018

Q4 CY2018

Q1 CY2019

OpenShift Container Platform 3.11 (Sept)

- Kubernetes 1.11 and CRI-O default
- Infra monitoring ,alerting with SRE intelligence, Node Problem Detector
- Etcd, Prometheus, and Vault Operators - Tech preview
- Operator Certification Program and JBoss Fuse Operator
- Autoscaler for AWS and P-SAP features
- Metering and Chargeback (Tech Preview)
- HPA Custom Metric
- Tech preview of ALM
- New web console for developers and cluster admins
- Ansible Galaxy ASB support
- CNV (Tech Preview)
- OVN (Tech Preview for Windows)
- FIPS and other Security PAGs

OpenShift Online & Dedicated

- OpenShift Online automated updates for OS
- Chargeback for OpenShift Online Starter

OpenShift Container Platform 3.13 (March)

- Kubernetes 1.13 and CRI-O default
- Full Stack Automation
 - GCP, VMware
- Istio GA
- Mobile 5.x
- Serverless (Tech Preview)
- RHCC for non-container content
- Integrated Quay (Tech Preview)
- Idling Controller
- Federated Ingress and Workload Policy
- OVN GA
- Che (Tech Preview)

OpenShift Online & Dedicated

- OpenShift.io on Dedicated (Tech Preview)



Questions?

