ServiceCatalog & Brokers in OpenShift Container Platform 3.6

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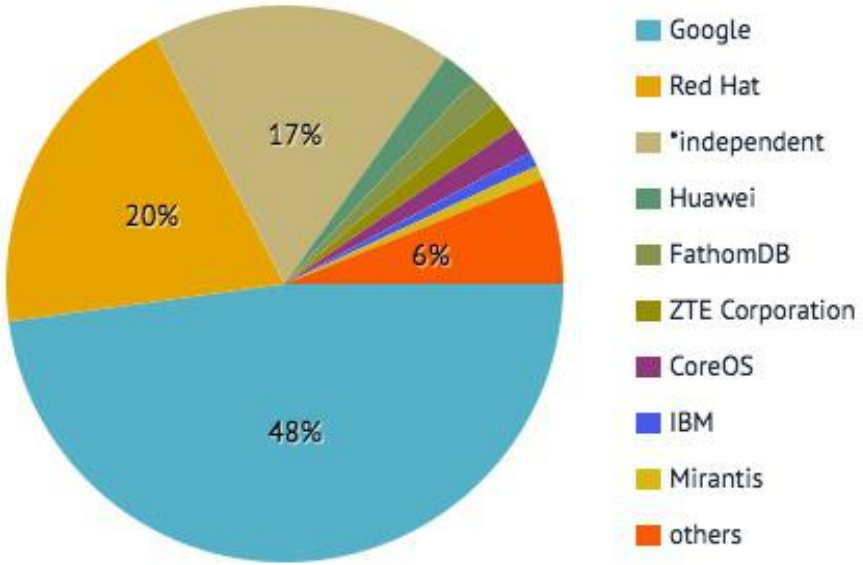
Agenda

- Open Service Broker API
- Service-Catalog
- Ansible/Template Service Broker
- Implement your own broker
- Demo
- Q&A

Redhat contribution to k8s

Contribution by companies



#	Company	Commits
1	Google	14868
2	Red Hat	6063
	*independent	5438
3	Huawei	651
4	FathomDB	575
5	ZTE Corporation	526
6	CoreOS	526
7	IBM	263
8	Mirantis	256
9	Zhejiang University	231

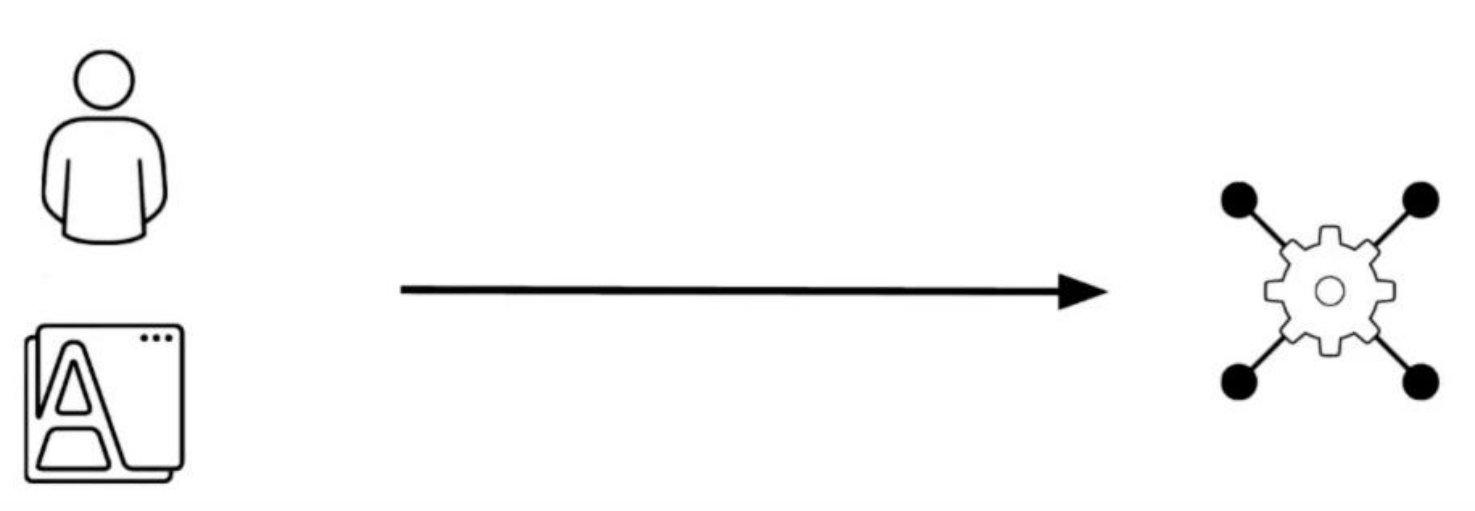
Showing 1 to 10 of 65 entries

First Previous 1 2 3 4 5 Next Last

OSB API & ServiceCatalog

Motivation ?

Users and Applications need access to services and resources



Typical Workflow

END USER REQUESTS RESOURCES

Help desk ticket or process initiated

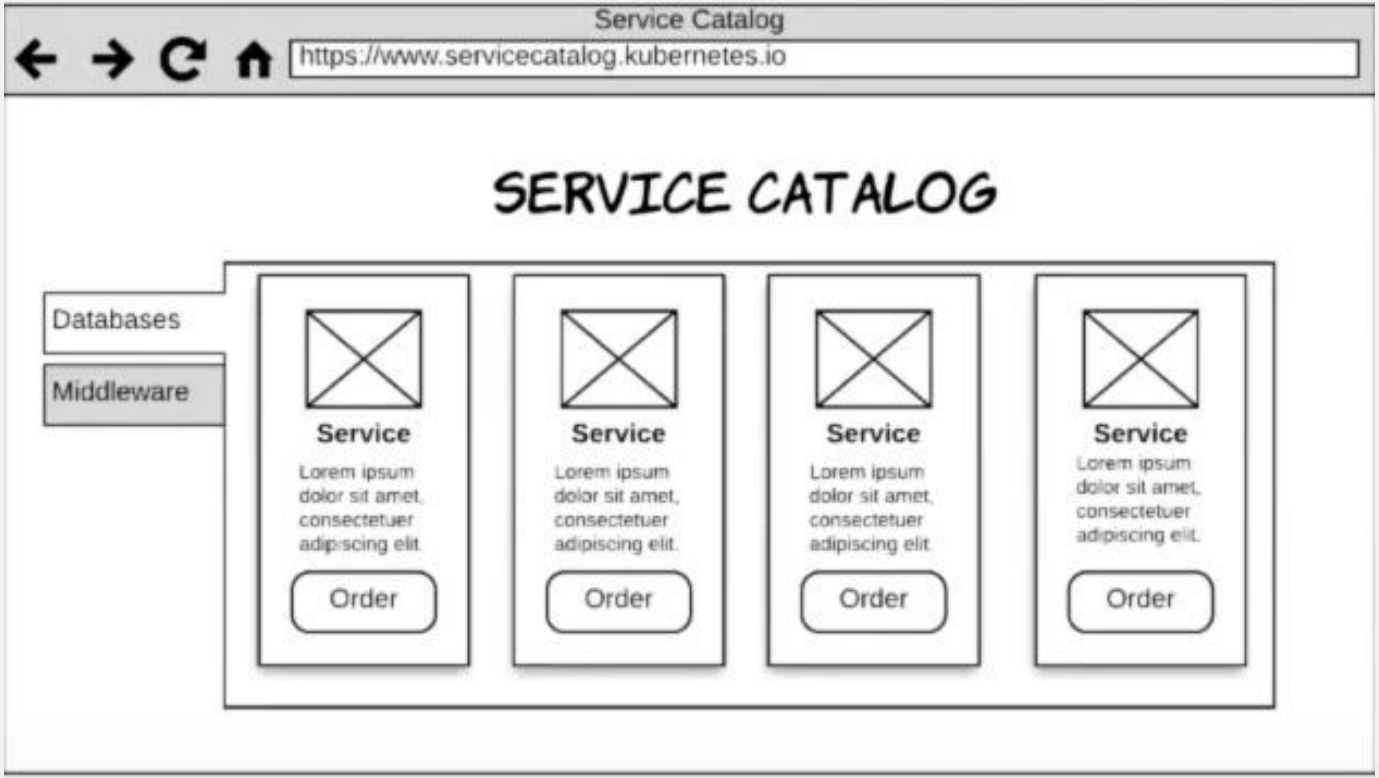
RESOURCES ALLOCATED

Resources provisioned based on the request

DETAILS PROVIDED TO END USER

Information on how to make use of the service (connection string, credentials)

A Centralized Location for Service



Open Service Broker API

Defines an HTTP interface between the services marketplace of a platform and service brokers (entries that provide a set of services)

API Methods:

- **Catalog** – *Return service offerings*
- **Provision** – *Create service*
- **Deprovision** – *Delete service*
- **Bind** – *Obtain credentials/coordinates for service*
- **Unbind** – *Revoke credentials for service*

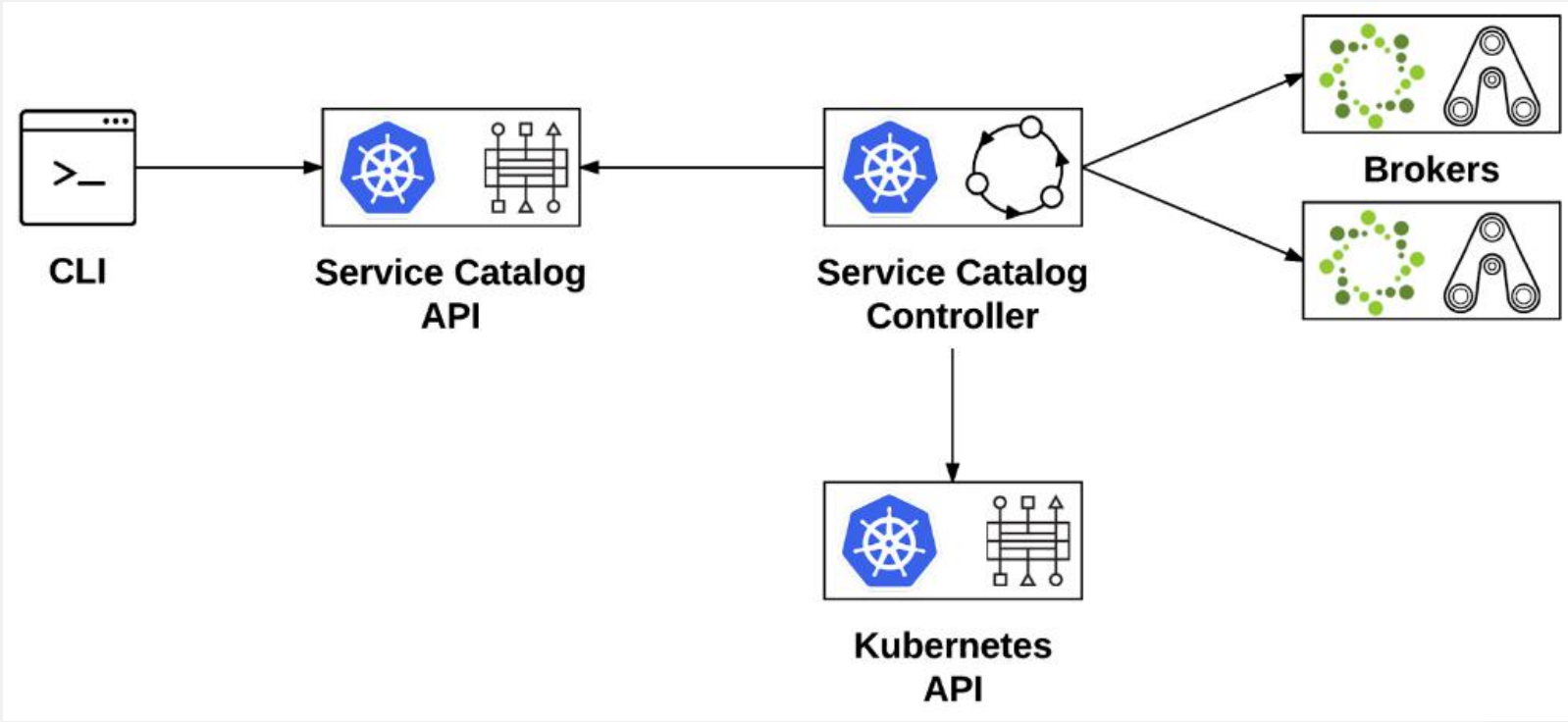
API Background:

- API working group formed in September 2016, officially announced December; successor to Cloud Foundry Service Broker API
- ***Service Broker*** is the component of the service that implements the Service Broker API, for which a platform's marketplace is a client
- Backed by numerous industry leaders including **Fujitsu, Google, IBM, Pivotal, Red Hat,** and **SAP**

Service-Catalog Project

- The Kubernetes Service-Catalog project is in Kubernetes incubation
- It is intended to bring integration with Service Brokers to the Kubernetes ecosystem via the Open Service Broker API
- https://github.com/kubernetes-incubator/service-catalog

Service-Catalog Core Architecture



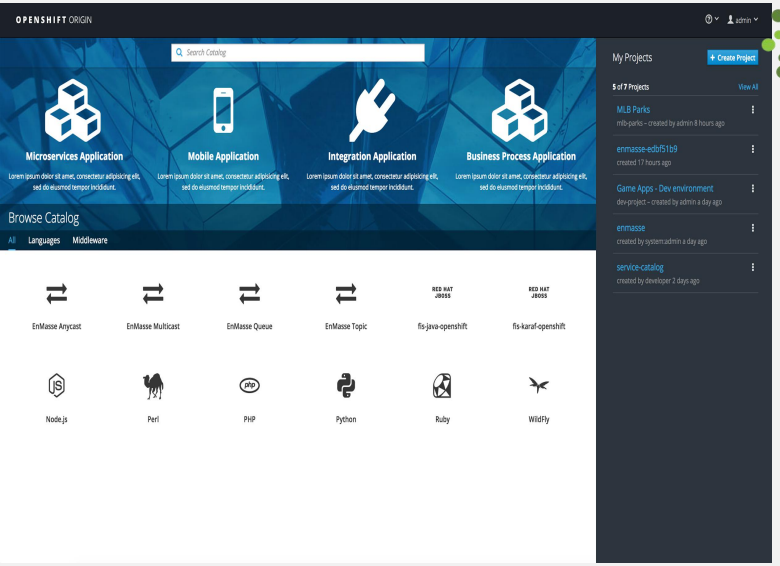
Service-Catalog key resources

- Broker
- ServiceClass
- Instance
- Binding

Note: those resources have been renamed in latest community

Brokers In OpenShift

Service Brokers



OPENSHIFT SERVICE CATALOG
(TECH PREVIEW)

OPEN SERVICE BROKER API™

OpenShift Template Broker → OPENSHIFT → OpenShift Templates

Ansible Service Broker → ANSIBLE → Ansible Playbook Bundles

Cloud Service Broker → PUBLIC CLOUD → Public Cloud Services

Other Service Brokers → OTHER COMPATIBLE SERVICES → Other Services

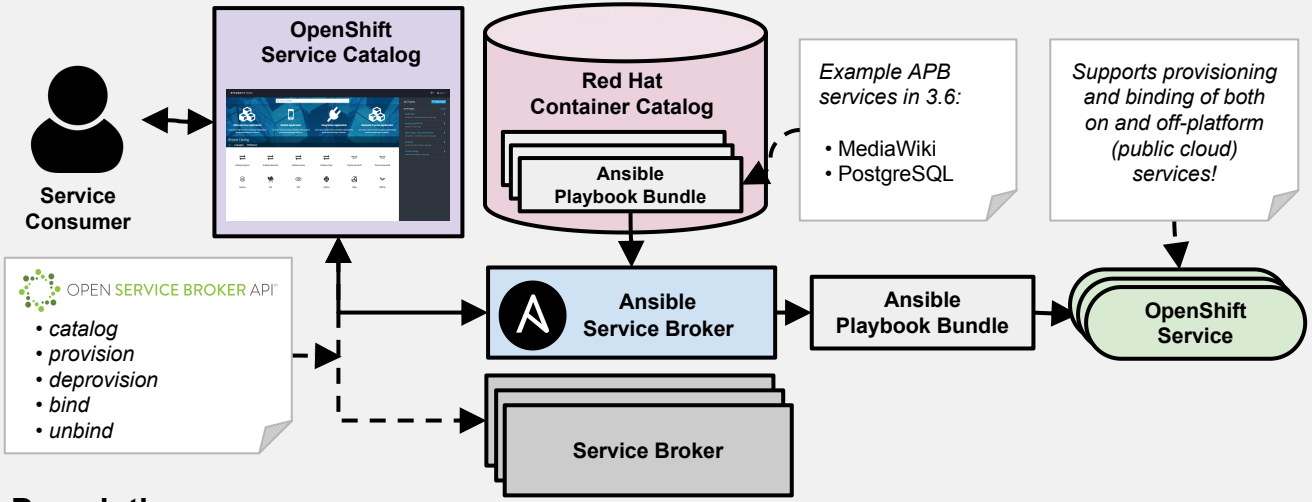
Template Service Broker (TSB)

- This broker presents OpenShift templates as Service Catalog services

Ansible Service Broker (ASB)

- An implementation of the OSB API that manages applications defined by Ansible Playbook Bundle
- https://github.com/openshift/ansible-service-broker
- https://github.com/ansibleplaybookbundle/ansible-playbook-bundle

Ansible Service Broker (ASB)



How it Works:
Service Catalog and ASB must be configured during OpenShift installation. Once enabled, APB services can be deployed right from Service Catalog UI.

Description:

- Implementation of Open Service Broker API that enables users to leverage Ansible for provisioning and managing of services via the Service Catalog on OpenShift
- Standardized approach for delivering “simple” to “complex” multi-container OpenShift services via Ansible
- Works in conjunction with Ansible Playbook Bundles (APB), which is a lightweight meta container comprised of a few named playbooks for each Open Service Broker API operations

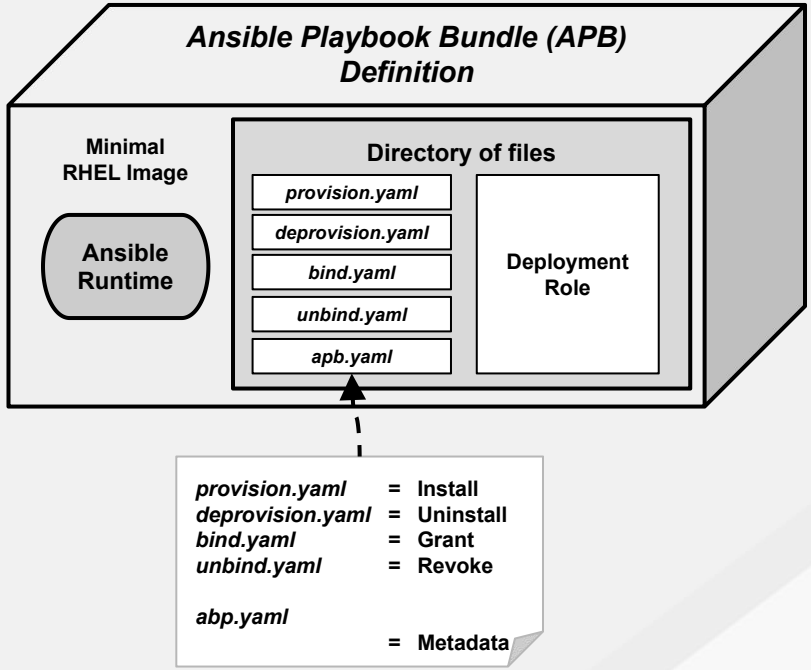
Ansible Playbook Bundles (APB)

Description:

- Short-lived, lightweight container image consisting of:
  - Simple directory structure with named “action” playbooks
  - Metadata consisting of:
    - required/optional parameters
    - dependencies (provision vs bind)
  - Ansible runtime environment
- Leverages existing investment in Ansible Playbooks & Roles
- Developer tooling available for guided approach
- Easily modified or extended
- Example APB services included with 3.6:
  - MediaWiki, PostgreSQL

How it Works:

- When a user orders an application from the Service Catalog, the Ansible Service Broker will download the associated APB image from the registry and run it. Once the named operation has been performed on the service, the ABP image will then terminate.

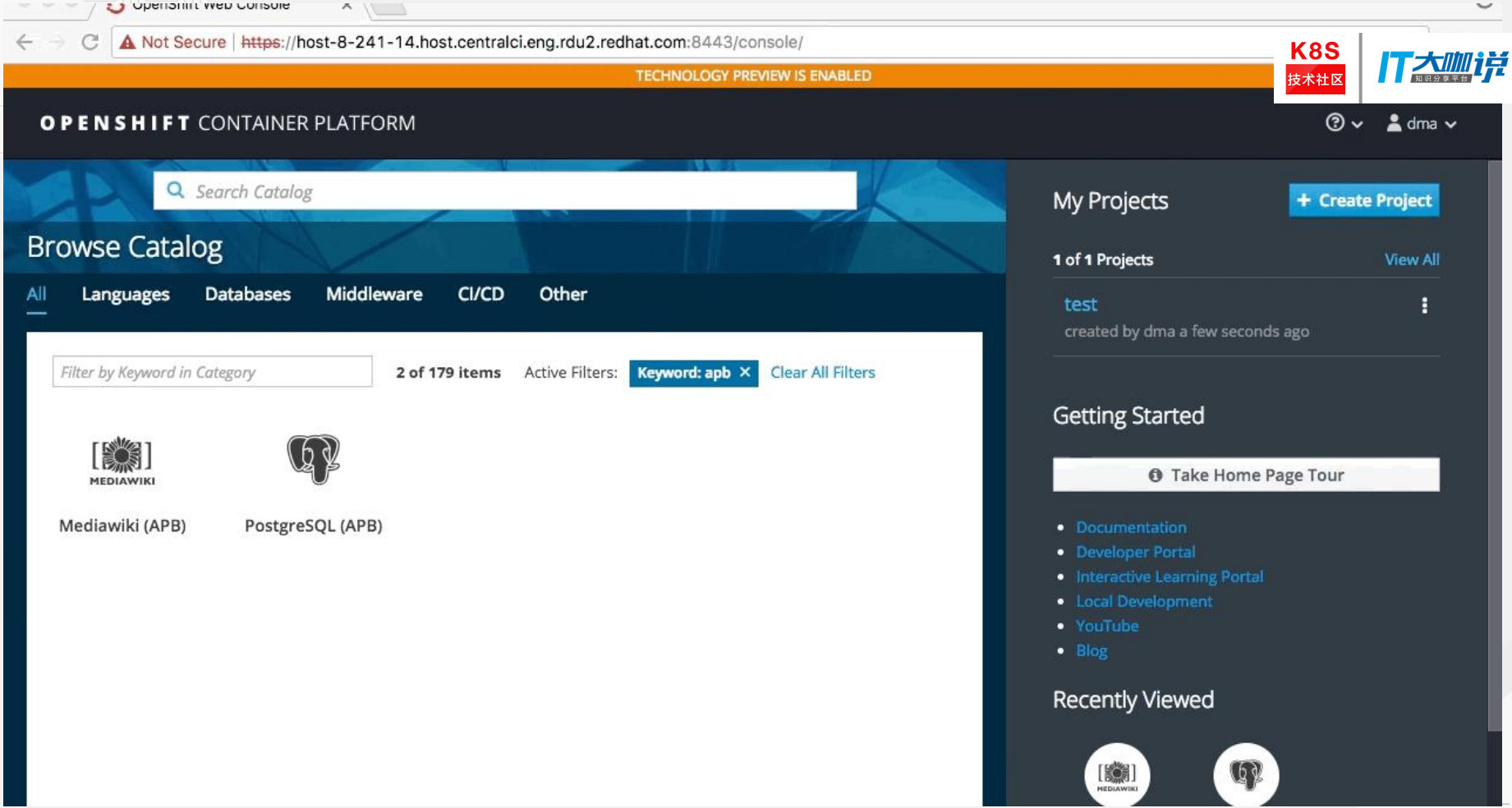


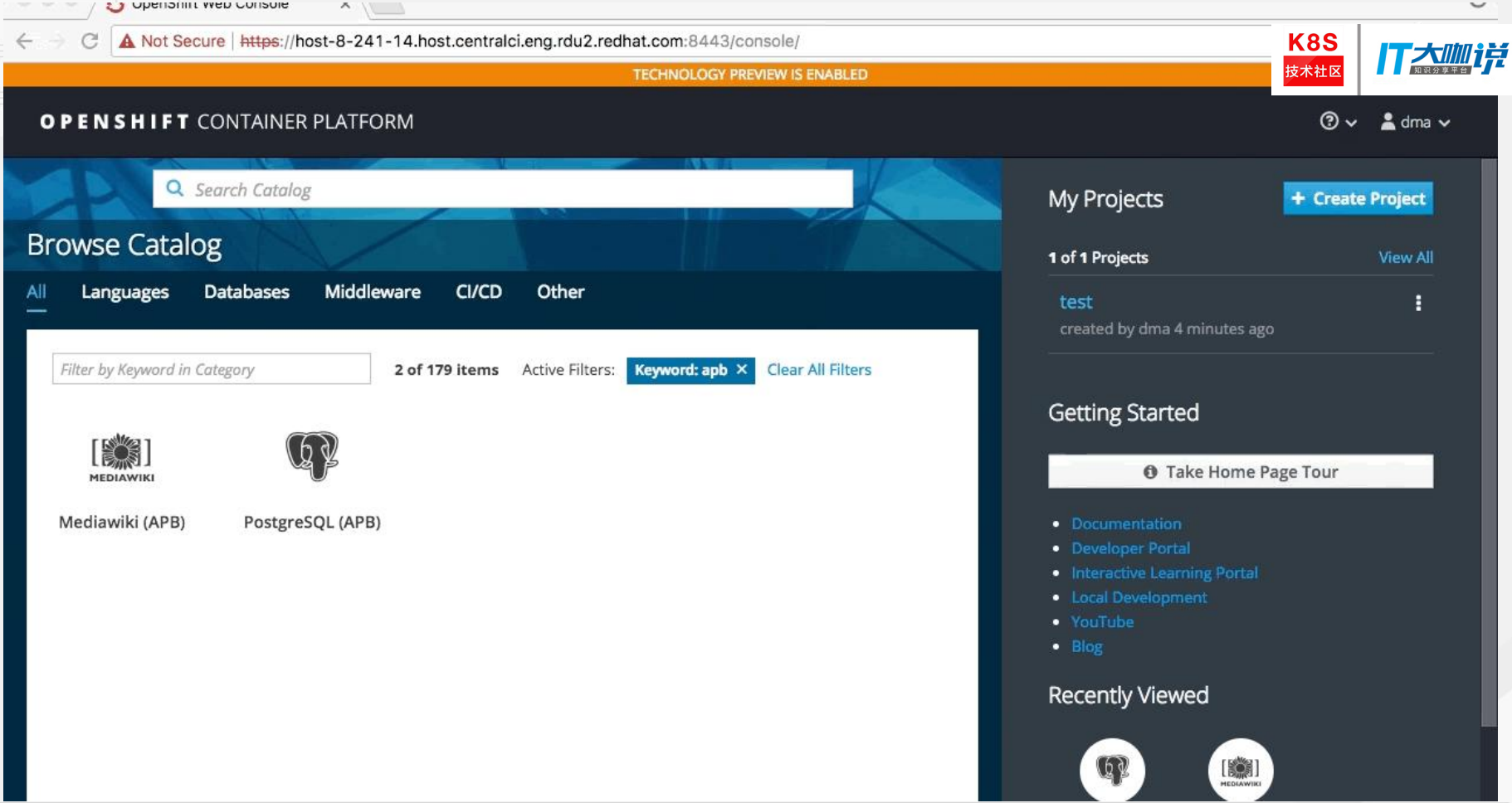
Implement your own Broker ?

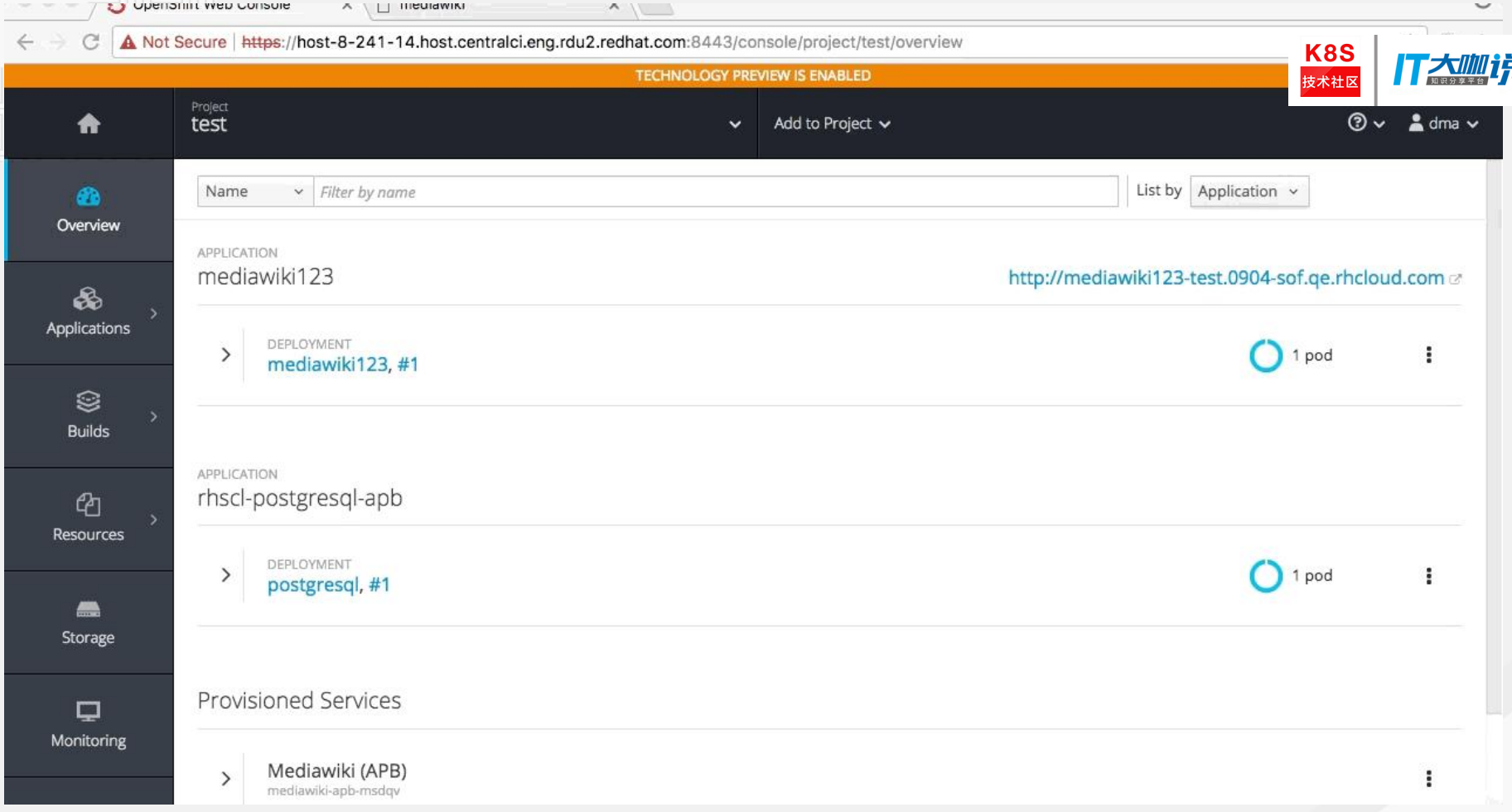
- https://github.com/openshift/open-service-broker-sdk

Demo

```
[root@host-8-241-14 ~]# oc get no
NAME                                          STATUS                     AGE       VERSION
host-8-241-14.host.centralci.eng.rdu2.redhat.com   Ready,SchedulingDisabled   13h       v1.6.1+5115d708d7
host-8-241-71.host.centralci.eng.rdu2.redhat.com   Ready                      13h       v1.6.1+5115d708d7
[root@host-8-241-14 ~]# oc get ns
NAME                              STATUS    AGE
default                           Active    13h
kube-public                       Active    13h
kube-service-catalog              Active    13h
kube-system                       Active    13h
logging                           Active    13h
management-infra                  Active    13h
openshift                         Active    13h
openshift-ansible-service-broker  Active    13h
openshift-infra                   Active    13h
[root@host-8-241-14 ~]#
```




Not Secure | https://host-8-241-14.host.centralci.eng.rdu2.redhat.com:8443/console/
TECHNOLOGY PREVIEW IS ENABLED
OPENSHIFT CONTAINER PLATFORM
dma
Search Catalog
Browse Catalog
All
Languages
Databases
Middleware
CI/CD
Other
Filter by Keyword in Category
2 of 179 items
Active Filters:
Keyword: apb
Clear All Filters
MEDIAWIKI
Mediawiki (APB)
PostgreSQL (APB)
My Projects
+ Create Project
1 of 1 Projects
View All
test
created by dma 4 minutes ago
Getting Started
Take Home Page Tour
Documentation
Developer Portal
Interactive Learning Portal
Local Development
YouTube
Blog
Recently Viewed


OpenShift Web Console
mediawiki
Not Secure | https://host-8-241-14.host.centralci.eng.rdu2.redhat.com:8443/console/project/test/overview
TECHNOLOGY PREVIEW IS ENABLED
Project
test
Add to Project
dma
Overview
Applications
Builds
Resources
Storage
Monitoring
Name
Filter by name
List by
Application
APPLICATION
mediawiki123
http://mediawiki123-test.0904-sof.qe.rhcloud.com
DEPLOYMENT
mediawiki123, #1
1 pod
APPLICATION
rhscl-postgresql-apb
DEPLOYMENT
postgresql, #1
1 pod
Provisioned Services
Mediawiki (APB)
mediawiki-apb-msdqv

K8S 技术社区 IT大咖说 知识分享平台

Thank you !
Q & A

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