Providing Services to Cloud Native Platforms with the OPEN SERVICE BROKER API™
Intro

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Outcomes
Outcomes

• Understand problems developers face today accessing services
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• Learn what the Open Service Broker API is and it’s history
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• Learn what the Open Service Broker API is and it’s history
• How to offer services to CF & K8s
• Future of the OSBAPI project
• Know how to get involved
What is the problem for developers?
Prod Creds

admin/admin
Prod Creation
admin/admin
FAIL
Often this takes **MONTHS**
SHADOW IT / DIY Platform
There must be a better way to catch a fly.
OPEN SERVICE BROKER API CONNECTS DEVELOPERS TO A GLOBAL ECOSYSTEM OF SERVICES
What is a service broker?

https://docs.cloudfoundry.org/services/api.html
What is a service broker?

- Provides a standardized API to externalize management of services from Cloud Application Platforms

https://docs.cloudfoundry.org/services/api.html
What is a service broker?

- Provides a standardized API to externalize management of services from Cloud Application Platforms
- Automates the lifecycle of a service including credential management

https://docs.cloudfoundry.org/services/api.html
API Endpoints

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API Endpoints

- `/v2/catalog` (GET)

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API Endpoints

• /v2/catalog (GET)
• /v2/service_instances/:id (PUT/PATCH/DELETE)

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API Endpoints

- `/v2/catalog` (GET)
- `/v2/service_instances/:id` (PUT/PATCH/DELETE)
- `/v2/service_instances/:id/service_bindings/:id` (PUT/DELETE)

https://docs.cloudfoundry.org/services/api.html
API Endpoints

• /v2/catalog (GET)
• /v2/service_instances/:id (PUT/PATCH/DELETE)
• /v2/service_instances/:id/service_bindings/:id (PUT/DELETE)
• /v2/service_instances/:id/last_operation (GET)

https://docs.cloudfoundry.org/services/api.html
Advertise a Service

Cloud Platform

Service Broker

Get catalog

Return services & plans

OPEN SERVICE BROKER API™
Create a Service

Cloud Platform -> Service Broker -> Service Instance

OPEN SERVICE BROKER API
Bind a Service

Cloud Platform

username: admin
password: secret

Service Binding

Service Instance
Using a Service

App running on platform

Service Binding Info

username:
password:

Service Instance

Service Broker

Pivotal
Cloud Foundry

Service Broker API v2
Cloud Foundry Members

Silver

acetti  ALTOROS  anynines  armakuni  Atos  BIARCA  Bloomberg

BNY MELLON  BOSCH  CA technologies  cloudsoft  CODENY  COMCAST  Dell

docker  dynatrace  ECS  ENGINEER BETTER  evoila  Fidelity

Fujitsu  Gemalto  grape up  hazelcast  Hewlett Packard Enterprise  Hitachi

Inspire the Next  Honeywell  Intel  JPMorgan Chase & Co.  mx  mendix

MIMACOM  MINIO  MoPaaS  National Information Society Agency  National Institute of Advanced Industrial Science and Technology  National Institute of Standards and Technology

orange  resilient scale  RBC  snyk  Stark & Wayne  Toshiba

Pivotal
OPEN SERVICE BROKER API™

= SELF SERVICE for developers
1. **Define and evolve** the Open Service Broker API as a specification, using a clear release process to support any downstream implementations
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2. Create a conformance test suite to verify both consumer and producer behaviors
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2. **Create** a conformance test suite to verify both consumer and producer behaviors

3. **Advocate** broad industry adoption in support of the end user community
“By standardizing the industry on the Open Service Broker API, we can build a foundation for an ecosystem that transcends a single community”

Abby Kearns
Executive Director - Cloud Foundry
OPEN SERVICE BROKER API PROJECT MANAGEMENT COMMITTEE (PMC)

Andres Garcia  
FUJITSU

Alex Ley  
PIVOTAL

Ville Aikas  
GOOGLE

Doug Davis  
IBM

Zach Robinson  
PIVOTAL / CFF CAPI PROJECT LEAD

Paul Morie  
RED HAT

Peter Eberlein  
SAP

Shannon Coen  
PIVOTAL / CHAIR & PROJECT LEAD
Open Service Broker API v2.12

Table of Contents

- API Overview
- Notations and Terminology
- Changes
  - Change Policy
  - Changes Since v2.11
- API Version Header
- Authentication
- Catalog Management
  - Adding a Broker to the Platform
- Synchronous and Asynchronous Operations
  - Synchronous Operations
  - Asynchronous Operations
Open Service Broker API v2.12

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service-catalog

Introduction

The service-catalog project is in incubation to bring integration with service brokers to the Kubernetes ecosystem via the Open Service Broker API. A service broker is an endpoint that manages a set of services. The end-goal of the service-catalog project is to provide a way for Kubernetes users to consume services from brokers and easily configure their applications to use those services.
Welcome to the Cloud Controller

Helpful Resources

- V3 API Docs
- V2 API Docs
- Continuous Integration Pipelines
Providing a service via OSBAPI
Service plans

https://docs.cloudfoundry.org/services/api.html
Service plans

• What does a user get?

https://docs.cloudfoundry.org/services/api.html
Service plans

• What does a user get?
• How much does it cost?

https://docs.cloudfoundry.org/services/api.html
Service plans

• What does a user get?
• How much does it cost?
• What extra inputs can users send?

https://docs.cloudfoundry.org/services/api.html
Types of services

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Types of services

• Vanilla Service Broker - Databases, APIs, etc!

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- Vanilla Service Broker - Databases, APIs, etc!
- Route Services - Security, API Management

https://docs.cloudfoundry.org/services/api.html
Types of services

• Vanilla Service Broker - Databases, APIs, etc!
• Route Services - Security, API Management
• Volume Services - Specialist Disk & Storage

https://docs.cloudfoundry.org/services/api.html
Providing a service

https://docs.cloudfoundry.org/services/api.html
Providing a service

- Implement a service broker that conforms to the Service Broker API v2 Specification

https://docs.cloudfoundry.org/services/api.html
Providing a service

- Implement a service broker that conforms to the Service Broker API v2 Specification
- Simple interface for developers

[https://docs.cloudfoundry.org/services/api.html](https://docs.cloudfoundry.org/services/api.html)
Providing a service

• Implement a service broker that conforms to the Service Broker API v2 Specification
• Simple interface for developers
• Choose synchronous or async provisioning

https://docs.cloudfoundry.org/services/api.html
Partner with public platforms
Partner with public platforms

- Cloud Platforms that will support OSBAPI
Partner with public platforms

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Partner with public platforms

- Cloud Platforms that will support OSBAPI
Partner with public platforms

• Cloud Platforms that will support OSB API

- Kubernetes
- IBM Bluemix
- Pivotal CF
Partner with public platforms

- Cloud Platforms that will support OSBAPI

- OpenShift
- Kubernetes
- IBM Bluemix
- Pivotal CF
Marketplace

Get started with our free marketplace services. Upgrade select plans to gain access to premium service plans.

Search the Marketplace

Services

- **3scale API Management**
  API Management Platform

- **App Autoscaler**
  Scales bound applications in response to load (beta)

- **BlazeMeter**
  Performance Testing Platform

- **Cedexis Openmix**
  Openmix Global Cloud and Data Center Load Balancer

- **Cedexis Radar**
  Free Website and Mobile App Performance Reports

- **CloudAMQP**
  Managed HA RabbitMQ servers in the cloud

- **ClearDB MySQL Database**
  Highly available MySQL for your Apps.
Memcached Cloud
Enterprise-Class Memcached for Developers

ABOUT THIS SERVICE
A fully-managed cloud service for hosting and running your Memcached dataset in a highly-available and scalable manner, with predictable and stable top performance. It offers true high-availability with data persistence, in-memory replication and instant auto-failover.

30mb free

100mb
$14.00/MONTH

250mb
$24.00/MONTH

500mb
$39.00/MONTH

SELECT THIS PLAN
YOU
DEMO
A LOOK INTO THE FUTURE!
Enhanced Services
User Experiences
Client-side validation of configuration parameters

- Parameters can be validated in Web UIs, CLIs and core Cloud Foundry components

Less error handling in brokers (so less code)

- Common JSON Schema validation libraries can quickly check if a given JSON object is valid and provide human readable error messages to return to the platform.

Less reliance on documentation

- You can help guide application developers through configuration, rather than relying on them to read and understand your service documentation.
"plans": [{
  "schemas": {
    "service_instance": {
      "create": <parameters>,
      "update": <parameters>,
    },
    "service_binding": {
      "create": <parameters>
    }
  }
}]

http://json-schema.org/draft-04
New & Enhanced Endpoints
New & Enhanced Endpoints

- GET endpoints for Service Instances & Bindings
New & Enhanced Endpoints

• GET endpoints for Service Instances & Bindings
• Asynchronous Binding
New & Enhanced Endpoints

- GET endpoints for Service Instances & Bindings
- Asynchronous Binding
- Update Binding
New & Enhanced Endpoints

• GET endpoints for Service Instances & Bindings
• Asynchronous Binding
• Update Binding
• Service Broker Actions
Improved Authorization & Authentication
More Platforms & Services
Brokered Hybrid Workloads
Cloud Foundry

Istio Control Plane

Kubernetes

K8s App

Istio Service Broker

Exposé service and allow network traffic

Cloud Foundry

CF App
Cloud Foundry

Kubernetes

Istio Service Broker

Expose service and allow network traffic

Istio Control Plane

Kubernetes

Cloud Foundry

K8s App

CF App
How can I get involved with the OSBAPI community?
Build a Service Broker

Spring Cloud Service Broker Framework
https://github.com/spring-cloud/spring-cloud-cloudfoundry-service-broker

BrokerAPI: Golang Service Broker Framework
https://github.com/pivotal-cf/brokerapi

On-Demand Services SDK
https://github.com/pivotal-cf/on-demand-service-broker-release
Come and share your expertise and add your use cases!

Weekly call: https://github.com/openservicebrokerapi/servicebroker/wiki/Weekly-Call
Slack: http://slack.openservicebrokerapi.org
Google Group: https://groups.google.com/forum/#!forum/open-service-broker-api
Feature Discussion: https://github.com/openservicebrokerapi/servicebroker/issues
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<td>valkas-google</td>
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Questions?

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