

Building a Pipeline for IBM App Connect workload with IBM Cloud Pak for Integration

Ulas Cubuk
Technical Offering Manager

Agenda

- ❑ Recap on Cloud Pak for Integration
- ❑ Key Objectives of DevOps
- ❑ Building and Deploying application integration workloads
- ❑ How do I deploy my workload with Cloud Pak for Integration?
- ❑ How can I deploy my workload with Cloud Pak for Integration via command line?
- ❑ Pipeline Demo
- ❑ Other community assets

IBM Cloud Pak for Integration: integrate *faster* with the most complete set of multi-style integration capabilities



API management

Unlock business data, apps & events as APIs



Application integration

Connect, map, transform & route data, apps & events



End-to-end security

Control access to vital resources wherever they are



Enterprise messaging

Deliver messages reliably with enterprise-grade messaging



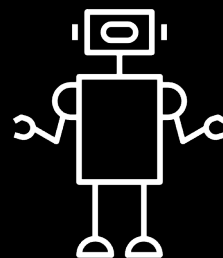
Event streaming

Deliver real-time Kafka event interaction



High speed data transfer

Drive fast & secure data transport across any cloud



RPA Connectivity

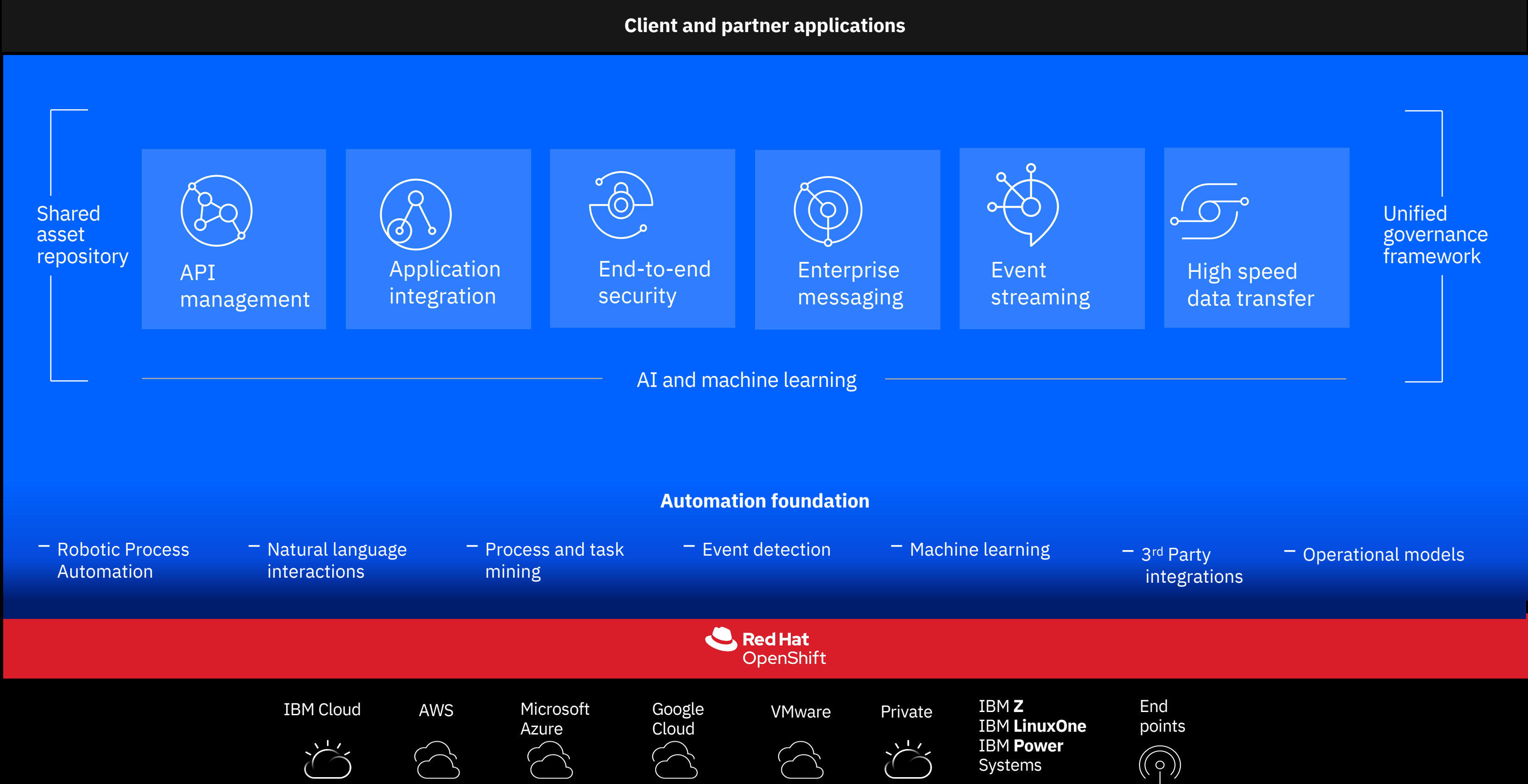
Extend integration reach to desktop apps



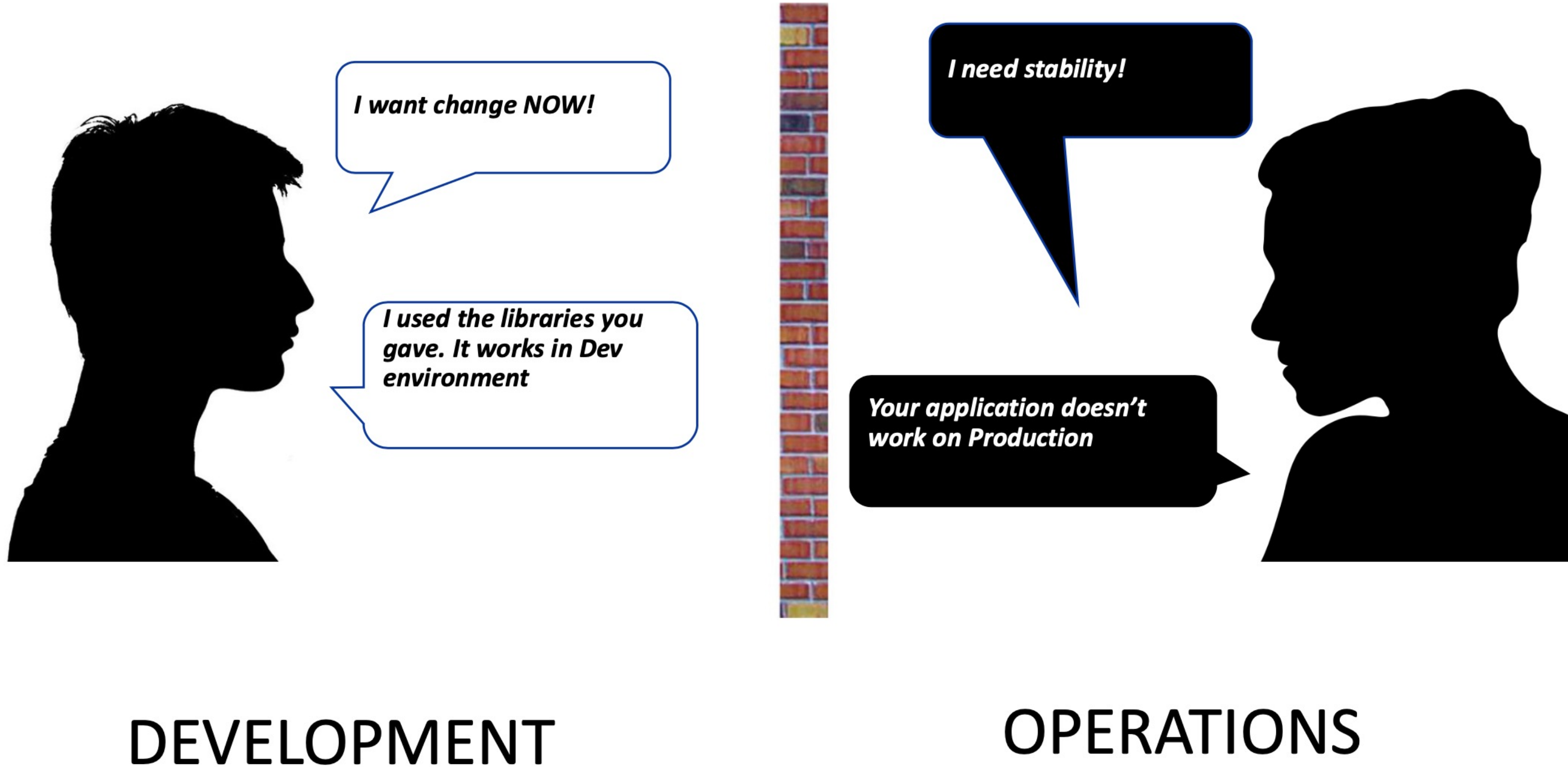
Integration Process Mining

Analyze and optimize integration processes

IBM Cloud Pak for Integration

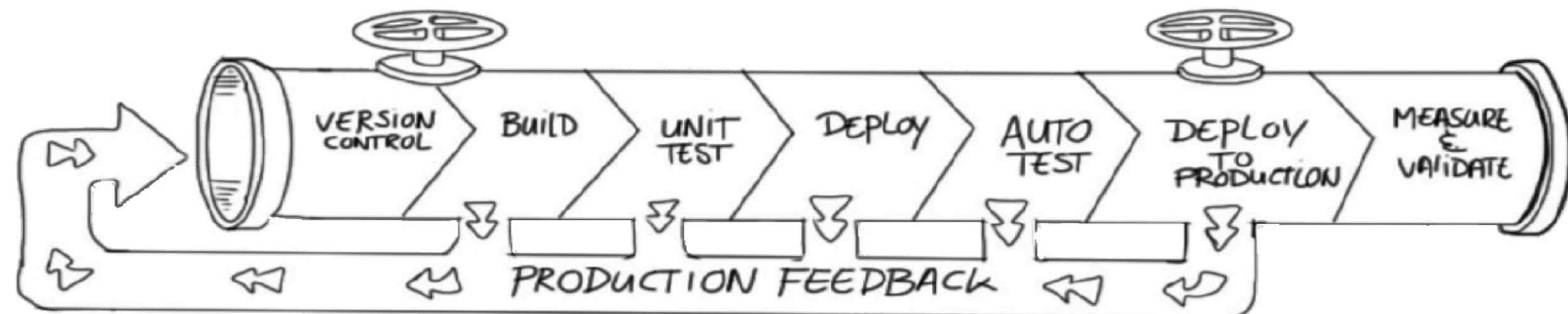


Why DevOps?



Key Objectives of a DevOps pipeline

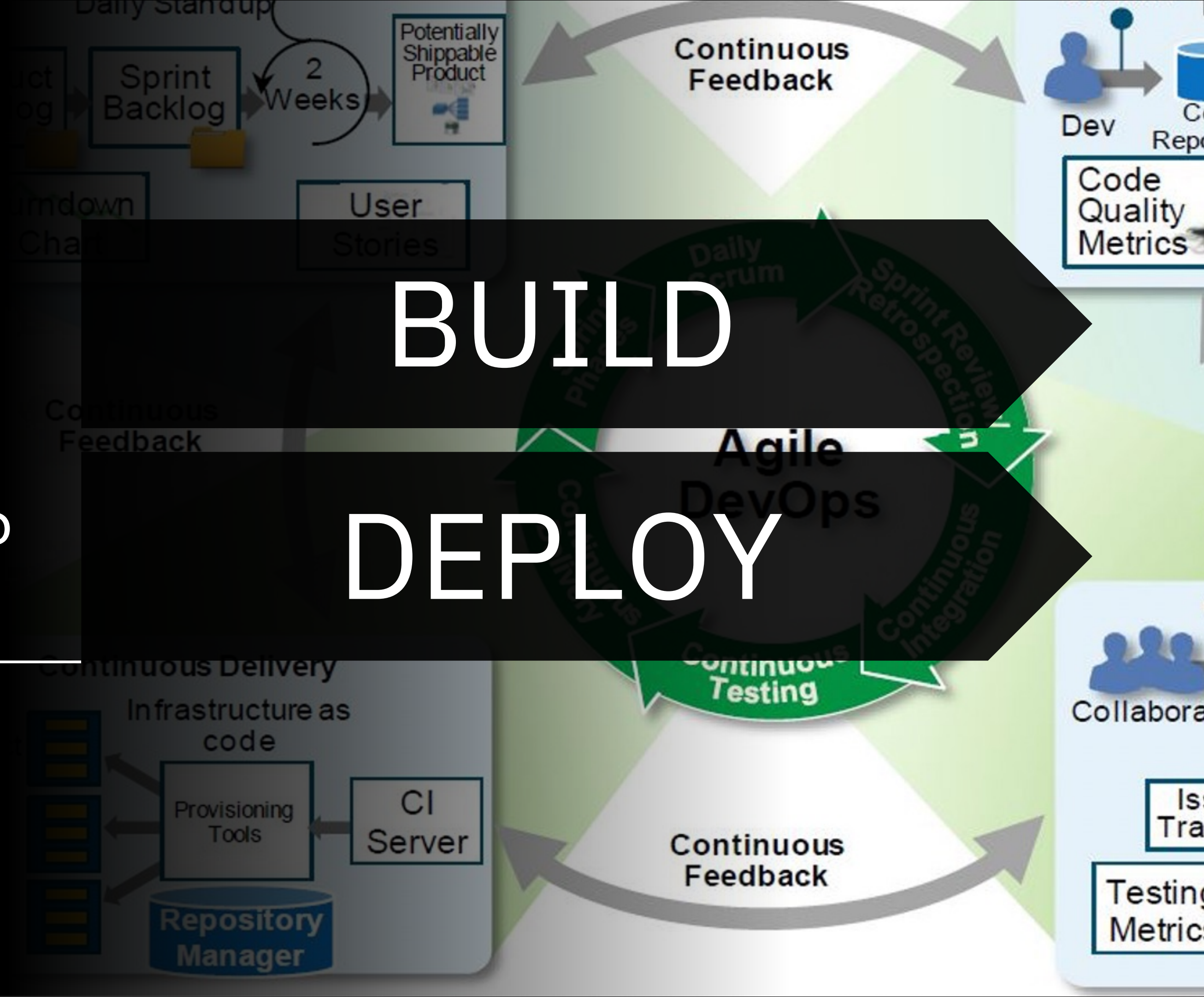
- ✓ *Everything is under version control, including the environment. Infrastructure as code.*
- ✓ *Developers ‘safely’ integrate and test as they go – more frequently*
- ✓ *Good automated test coverage + control over manual ‘what if’ tests.*
- ✓ *The delivery of artefacts to environments are automated with a focus on quality.*
- ✓ *The artifacts created progress rapidly into production ‘safely’.*
- ✓ *The system running in production is exactly the same as the system that is tested.*



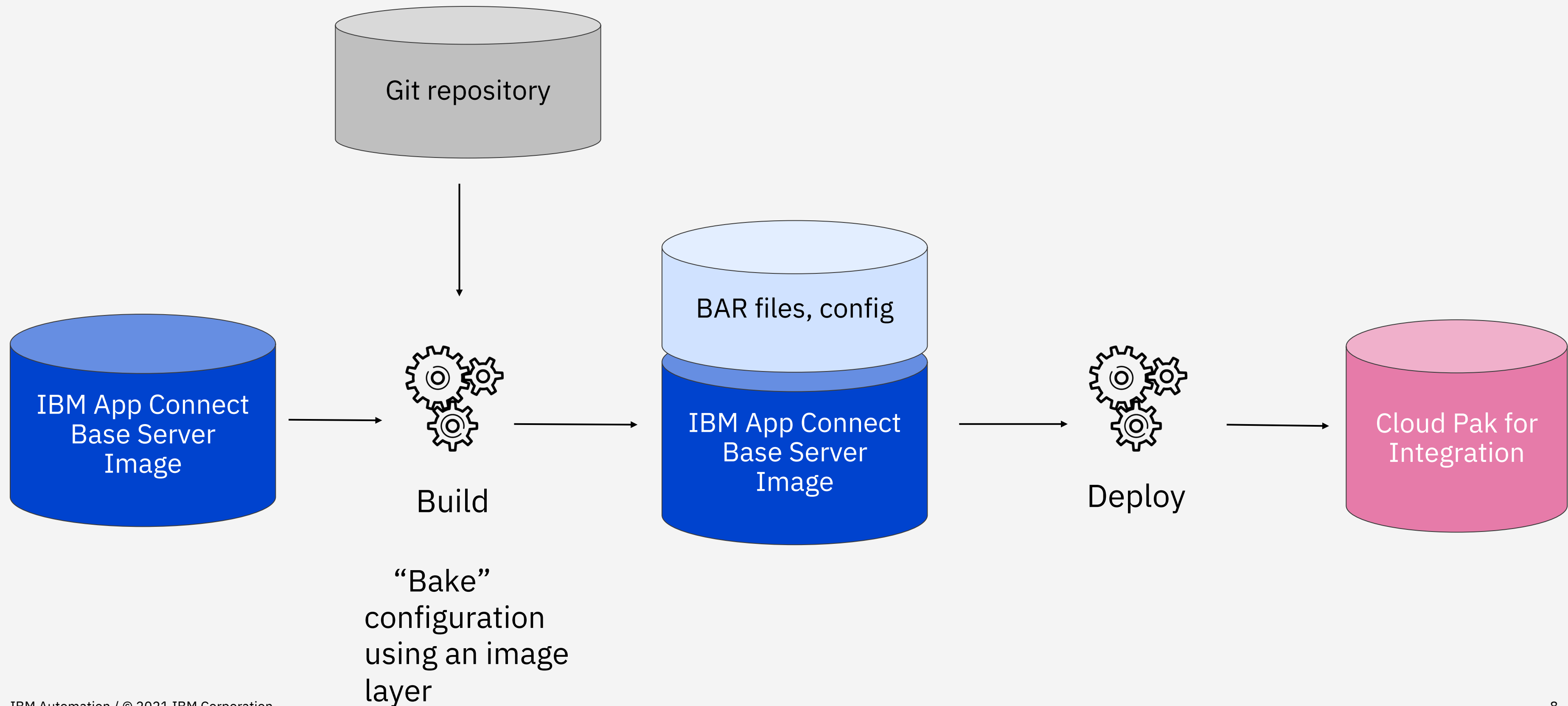
What are the essential steps of any DevOps cycle?

BUILD


DEPLOY



Build and Deploy App Connect workload with CP4I



“Baking” App Connect Images is not that hard ...







Pull requests

Issues

Marketplace

Explore



 IBM / **cp4i-deployment-samples**

Watch 11

Star 9

Fork 37

<> Code

! Issues

🔗 Pull requests 2

📁 ZenHub

▶ Actions

📄 Projects

📖 Wiki

🛡 Security


📈 Insights

🔗 main ▾



cp4i-deployment-samples / [DrivewayDentDeletion](#) / [Operators](#) / [Dockerfiles](#) / **ACE-API.Dockerfile**

Go to file

⋮

 **hrizvi1** changes to the dockerfile




Latest commit e672fd7 on 7 Oct 2020 [History](#)

👤 2 contributors  

3 lines (3 sloc) | 193 Bytes

Raw

Blame



1 FROM cp.icr.io/cp/appc/ace-server-prod@sha256:

2 ENV MQCERTLABL=aceclient

3 COPY DrivewayDemo.bar /home/aceuser/initial-co

Raw

Blame

3 lines (3 sloc) | 193 Bytes

1 FROM cp.icr.io/cp/appc/ace-server-prod@sha256:dd3c1e8d204b37775b792fc25a0bad4daba4fa3

2 ENV MQCERTLABL=aceclient

3 COPY DrivewayDemo.bar /home/aceuser/initial-config/bars/

How do I deploy my workload with Cloud Pak for Integration?

Install and update App Connect with Operators

An 'AppStore'-like experience



Easy to deploy and manage

OpenShift Container Platform

Administrator

Home

Overview

Projects

Search

Explore

Events

Operators

OperatorHub

Installed Operators

Workloads

Networking

Storage

Project: cp4i

OperatorHub

Discover Operators from the Kubernetes community and Red Hat partners, curated by Red Hat. You can purchase commercial software through [Red Hat Marketplace](#). You can also purchase commercial software through [IBM Marketplace](#). After installation, the Operator capabilities will appear in the [Developer Catalog](#) providing a self-service experience.

All Items

IBM

AI/Machine Learning

Application Runtime

Big Data

Cloud Provider

Database

Developer Tools

Integration & Delivery

Logging & Tracing

Monitoring

Networking

Community

Event Streams Topic

provided by IBM

An operator for the life cycle management of Topics on Event Streams for IBM Cloud

Custom

IBM API Connect

provided by IBM

IBM® API Connect is a complete,...

Installed

Custom

IBM App Connect

provided by IBM

The tool for easily connecting...

Installed

App Connect Operators – resource types


Simplified, consistent Kubernetes native configuration



Easy to deploy and manage

- ✓ When you install the App Connect Operator, the App Connect components are provided as APIs that can be used to create instances.
- ✓ The Operator for Apache CouchDB, IBM Common Service Operator, and Operand Deployment Lifecycle Manager are also automatically installed as dependencies.

Installed Operators > Operator Details



IBM App Connect
1.0.5 provided by IBM

Actions

DetailsYAMLSubscriptionEventsAll InstancesIntegration Server ConfigurationApp Connect DashboardApp Connect Designer Authoring

IC

Integration Server Configuration

Documentation For additional details regarding install parameters check: <http://ibm.biz/aceconfig>. License By installing this product you accept the license terms <http://ibm.biz/acelicense>.

Create Instance

IS

App Connect Integration Server

Documentation For additional details regarding install parameters check: <http://ibm.biz/aceintsrvrop>. License By installing this product you accept the license terms <http://ibm.biz/acelicense>.

Create Instance

DC

App Connect Dashboard

Documentation For additional details regarding install parameters check: <http://ibm.biz/acedashbdop>. License By installing this product you accept the license terms <http://ibm.biz/acelicense>.

Create Instance

SS

App Connect Switch Server

Documentation For additional details regarding install parameters check: <http://ibm.biz/aceswitchsrvop>. License By installing this product you accept the license terms <http://ibm.biz/acelicense>.

Create Instance

DA

App Connect Designer Authoring

Documentation For additional details regarding install parameters check: <http://ibm.biz/acedesignerop>. License By installing this product you accept the license terms <http://ibm.biz/acelicense>.

Create Instance

Provider
IBM

Created At
Oct 30, 4:06 pm

Links
App Connect Knowledge Center
<https://ibm.biz/ACEv11ContainerDocs>
App Connect Dashboard documentation
<http://ibm.biz/acedashbdop>
App Connect Integration Server documentation
<http://ibm.biz/aceintsrvrop>
App Connect Designer Authoring documentation
<http://ibm.biz/acedesignerop>
App Connect SwitchServer documentation
<http://ibm.biz/aceswitchsrvop>
App Connect Configuration documentation
<http://ibm.biz/aceconfig>

Maintainers
IBM

Description

Introduction

IBM® App Connect is a market-leading lightweight enterprise integration engine that offers a fast, simple way for systems and applications to communicate with each other. As a result, it can help you achieve business value, reduce IT complexity, and save money. IBM App Connect supports a range of integration choices, skills, and interfaces to optimize the value of existing technology investments.

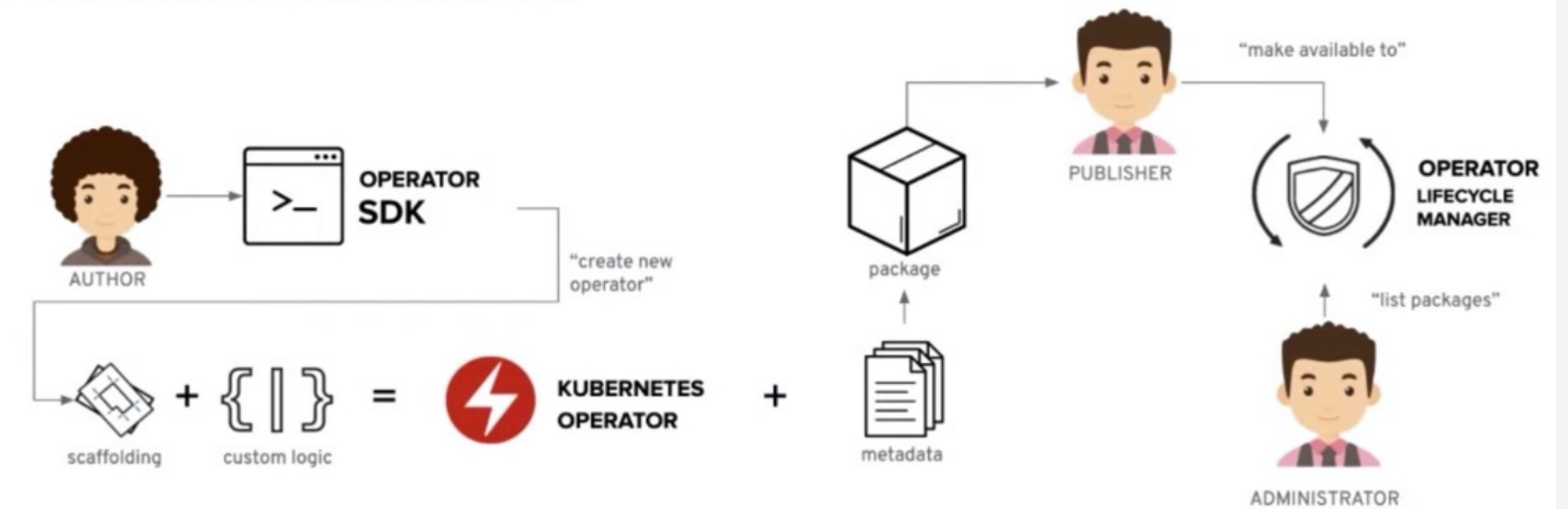
Key Benefits of App Connect Operators

Easy to access – Images are distributed through the IBM Entitled Registry.

Easy to install – You can install IBM App Connect operator directly from OpenShift Operator Hub Catalog supporting air-gap(disconnected) install.

Easy to manage – Integration resources acting just like the built-in, native Kubernetes objects

OPERATOR PUBLISHING



Secure (yet easy to configure) – Integration containers will run under default OpenShift “restricted” security configuration

Easy to update – Updates and patches delivered automatically.

App Connect Dashboard

Hosts production workloads and supports storage and management of BAR files.



Easy to deploy and manage

IBM Cloud Pak for Integration | App Connect Dashboard | cp4i | ace-dashboard-demo

Welcome back to IBM App Connect

Show more

Integrations (4)

4 started

Servers (4)

4 started

Create a server

Select a BAR file to create an integration server.

Learn more

Discover how to do more with App Connect in our documentation.

Deployment journey via App Connect Dashboard



Easy to deploy and manage

1 Select your integration type

[Back to Dashboard](#)

Create an App Connect Integration Server

For more help with instance creation check the [readme](#)

Back

Next

- ☒ Type
- ☐ Integrations
- ☐ Configuration
- ☐ Server

Select the type of integration you would like to run

Toolkit integration		Designer integration	
Deploy an integration that was created with App Connect Toolkit that uses multiple replicas to increase resilience and availability		Deploy an integration that was authored in App Connect Designer, or created as a hybrid by using both Designer and the toolkit that uses multiple replicas to increase resilience and availability	
VPCs	CPU	VPCs	CPU
3	3	9	9
Memory	Storage	Memory	Storage
3 GB	0GB	6 GB	0GB

Whether authored in Designer or Toolkit, they all use the same integration server.

Deployment journey via App Connect Dashboard



Easy to deploy and manage

2 Select your BAR file

IBM Cloud Pak for Integration

App Connect Dashboard

cp4i | ace-dashboard-demo

[Back to Dashboard](#)

Create an App Connect Integration Server

For more help with instance creation check the [readme](#)

☒ Type

☒ Integrations

☐ Configuration

☐ Server

Provide a BAR file to deploy to the server

Drag and drop a BAR file or click to upload

or use an existing BAR file:

Tickets_StormIncWeatherAPI

Back

Next

Deployment journey via App Connect Dashboard



Easy to deploy and manage

3 Select your configuration



Kubernetes uses Secrets and Config Maps to manage environment-type configurations

[so does App Connect](#)

IBM Cloud Pak for Integration

App Connect Dashboard

cp4i | ace-dashboard-demo

Back to Dashboard

Create an App Connect Integration Server

For more help with instance creation check the [readme](#)

Type

Integrations

Configuration

Server

Select configurations to apply to the integration server

ace-designer-demo-designer-acc

Accounts

Create configuration


How do I manage configurations?

Configuration

Name	Type
ace-designer-de	Accounts
ace-designer-de	REST Admin SSL files
ace-designer-de	server.conf.yaml
ace-designer-de	setdbparms.txt
carrepair-is-adm	Truststore
	Truststore certificate
classifyimages-is-adminssl	REST Admin
incidentsummary-is-adminssl	REST Admin
ticketsstormincweather-is-adminssl	REST Admin
ace-designer-demo-designer-ks	Keystore
ace-designer-demo-designer-pp	Policy projec

App Connect is re-engineered to use file (and hence secret/map) based overrides in server.config.yaml or many more...

Create configuration

 Configuration content contains secrets!
You won't be able to retrieve the content of this configuration after it's created, so you might want to copy and save the content of the Code view for future use.

Type

Accounts

Name

Description (optional)

Accounts ⓘ

Form

Code

Account details

Application

Confluence

Account name

Cancel

Create

App Connect connectors use configurations to store credentials, targets etc

Deployment journey via App Connect Dashboard

4

Configuration your integration server

IBM Cloud Pak for Integration

App Connect Dashboard

cp4i | ace-dashboard-demo

Type

Integrations

Configuration

Server

Common settings

YAML editor

Advanced settings

Off

Details

Version

Details

Name

storminsurance

Name of the integration server

Designer flows mode (optional)

local

Enable Designer flows with only local connectors or all (local and cloud-managed) connectors; see <https://ibm.biz/acdeploydesignerflow-ace>

Replicas (optional)

1

The number of replica pods to run

The type of transport used by the integration endpoint (optional)

https

Enable Operations Dashboard tracing (optional)

Off

Enable tracing for use with the IBM Cloud Pak for Integration Operations Dashboard

Version

Channel or version (optional)

11.0.0

11.0.0

11.0.0.10-r1

11.0.0.10-r2

11.0.0.9

11.0.0.10-r1

Deployment journey via App Connect Dashboard

✓ **DONE!** Integration server is created for you
and with all the necessary Kubernetes resources

The screenshot displays the IBM App Connect Dashboard interface. The top navigation bar includes 'IBM Cloud Pak for Integration', 'App Connect Dashboard', and 'cp4i | ace-dashboa'. The main content area is titled 'Servers' and shows a list of servers. The 'classifyimages' server is highlighted, showing its details and resources. A callout box provides deployment details for the 'classifyimages-is' deployment, including the number of pods (3) and the update strategy (RollingUpdate). A text box summarizes the deployment benefits.

Servers

Contents

Search

carrepair
Server
3/3 replicas
Started

classifyimages
Server
3/3 replicas
Started

classifyimages Ready

Details YAML Resources

ClusterRole 0 ClusterRoleBinding 0 Configuration 0 Cp4iServicesBind 0
OperandRequest 0 Role 1 RoleBinding 1 Route 2 Secret 3 Ser 2 Ser

Select all filters

Name ↑	Kind	Status ↑
RT classifyimages-http	Route	Created
RT classifyimages-https	Route	Created
D classifyimages-is	Deployment	Created
NP classifyimages-is	NetworkPolicy	Created

Deployment Details

classifyimages-is

Details YAML Replica Sets Pods Environment Events

3 pods

Name
classifyimages-is

Update Strategy
RollingUpdate

Namespace
NS cp4i

Max Unavailable
25% of 3 pods

Oct 14, 5:11 pm

- + Individual flows can be scaled on their own
- + Isolated integration flows deployed in separate containers.
- + Deploy 'live' with no downtime and run multiple versions at once

Update your BAR files on a rolling basis

- ✓ replace an existing BAR file with an updated file of the same name.
- ✓ any integration servers that are using that BAR file are restarted on a rolling basis to ensure that at least one replica is always running.



Make changes quickly



Scalability and resilience

IBM Cloud Pak for Integration

App Connect Dashboard

cp4i | ace-dashboard-demo

Dashboard / BAR files

BAR files

BAR files

BAR files

Search

Search

Name	Deployed to
IncidentSummary	incidentsum
classifyImagesV4	classifyimag
Car_Insurance_Cognitive_API_Lab	carrepair
Tickets_StormIncWeatherAPI	ticketsstormincweather

Update BAR: IncidentSummary.bar

Provide the updated BAR

Drag and drop or select a file

Drag and drop a BAR file or click to upload

The following integration servers (all replicas) will be restarted:
incidentsummary

Cancel

Update

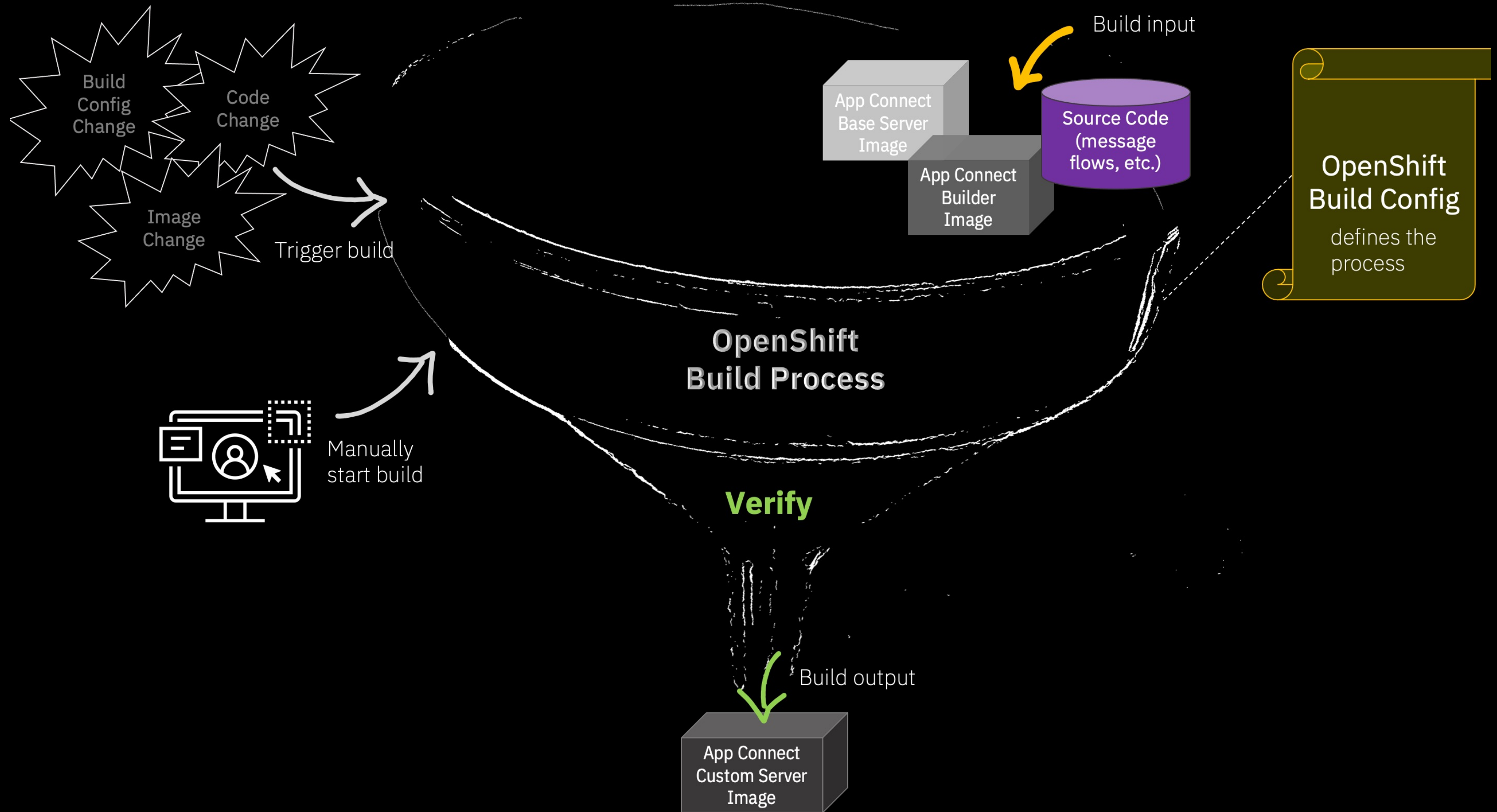
Import BAR

Update BAR...

Delete BAR...

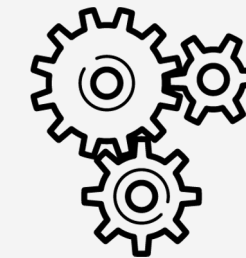
How can I deploy my
workload with Cloud Pak
for Integration via
command line?

OpenShift Build Approach



```
apiVersion: build.openshift.io/v1
kind: BuildConfig
metadata:
  name: acebuildconfig
spec:
  source:
    git:
      uri: "https://mycompany.com/ace/amazing-
config"
  strategy:
    type: Docker
    dockerStrategy:
      from:
        kind: "DockerImage"
        name: "cp.icr.io/cp/appc/ace-server-
prod@sha256:04bc376391a00ff1923d9122f93911b0f8e9
700c7dda132f24676e383c0283cc"
      pullSecret:
        name: ibm-entitlement-key
  output:
    to:
      kind: ImageStreamTag
      name: 'my-amazing-custom-ace-image:latest-
amd64'
```

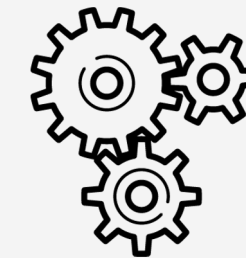
Build the image on OpenShift



```
$ oc apply -f acebuildconfig.yaml
$ oc start-build acebuildconfig
```

```
apiVersion: appconnect.ibm.com/v1beta1
kind: IntegrationServer
metadata:
  name: my-amazing-integration-server
spec:
  version: 11.0.0
  pod:
    containers:
      runtime:
        image: image-registry.openshift-image-
registry.svc:5000/my-project/my-amazing-custom-
ace-image:latest-amd64.
        license:
          accept: true
          license: L-APEH-BSVCHU
          use: CloudPakForIntegrationNonProduction
        barURL: ''
        designerFlowsOperationMode: disabled
        service:
          endpointType: http
    useCommonServices: false
  replicas: 1
```

Deploy the image on OpenShift

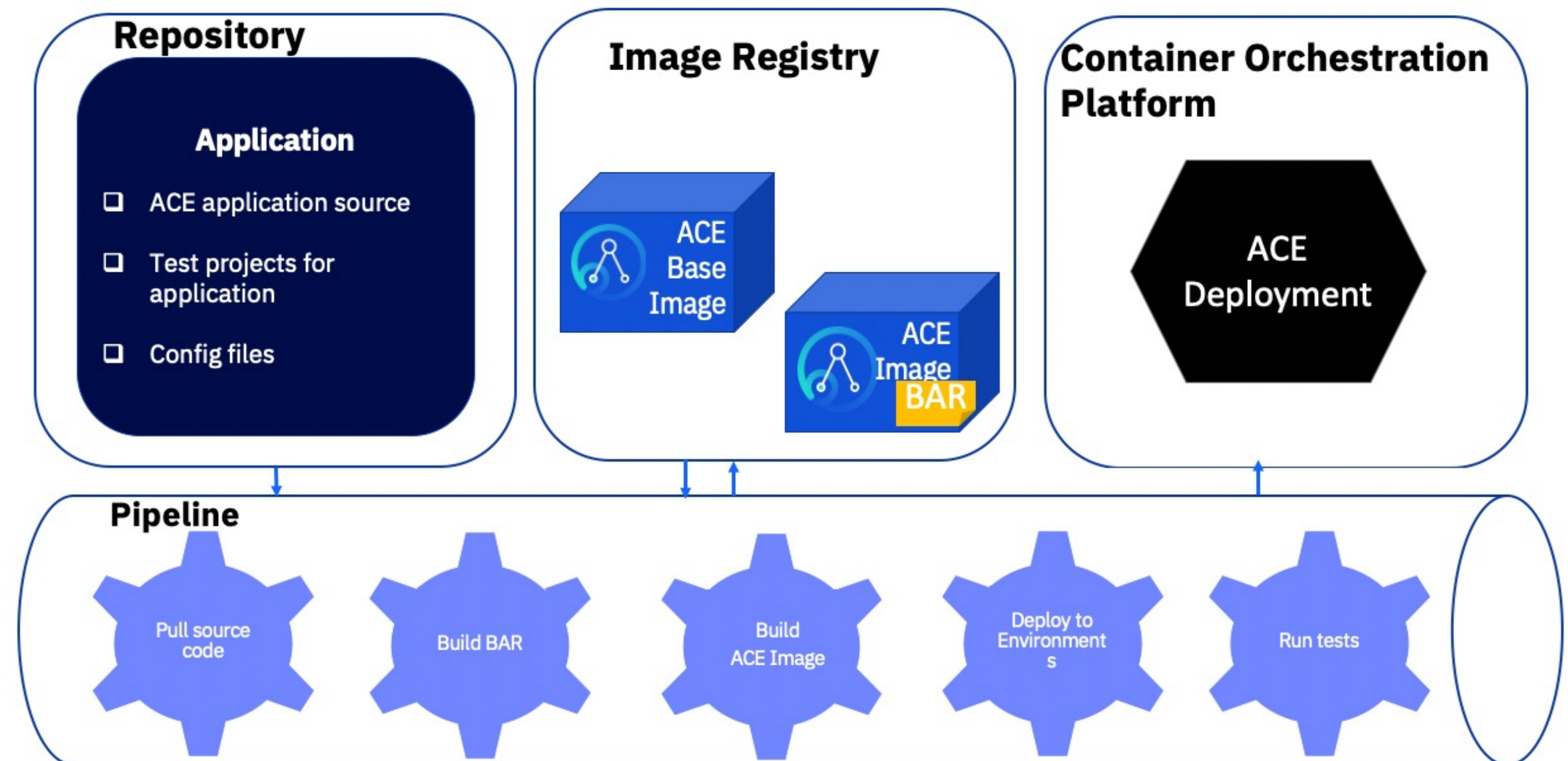


```
$ oc apply -f myamazingintegserver.yaml
```

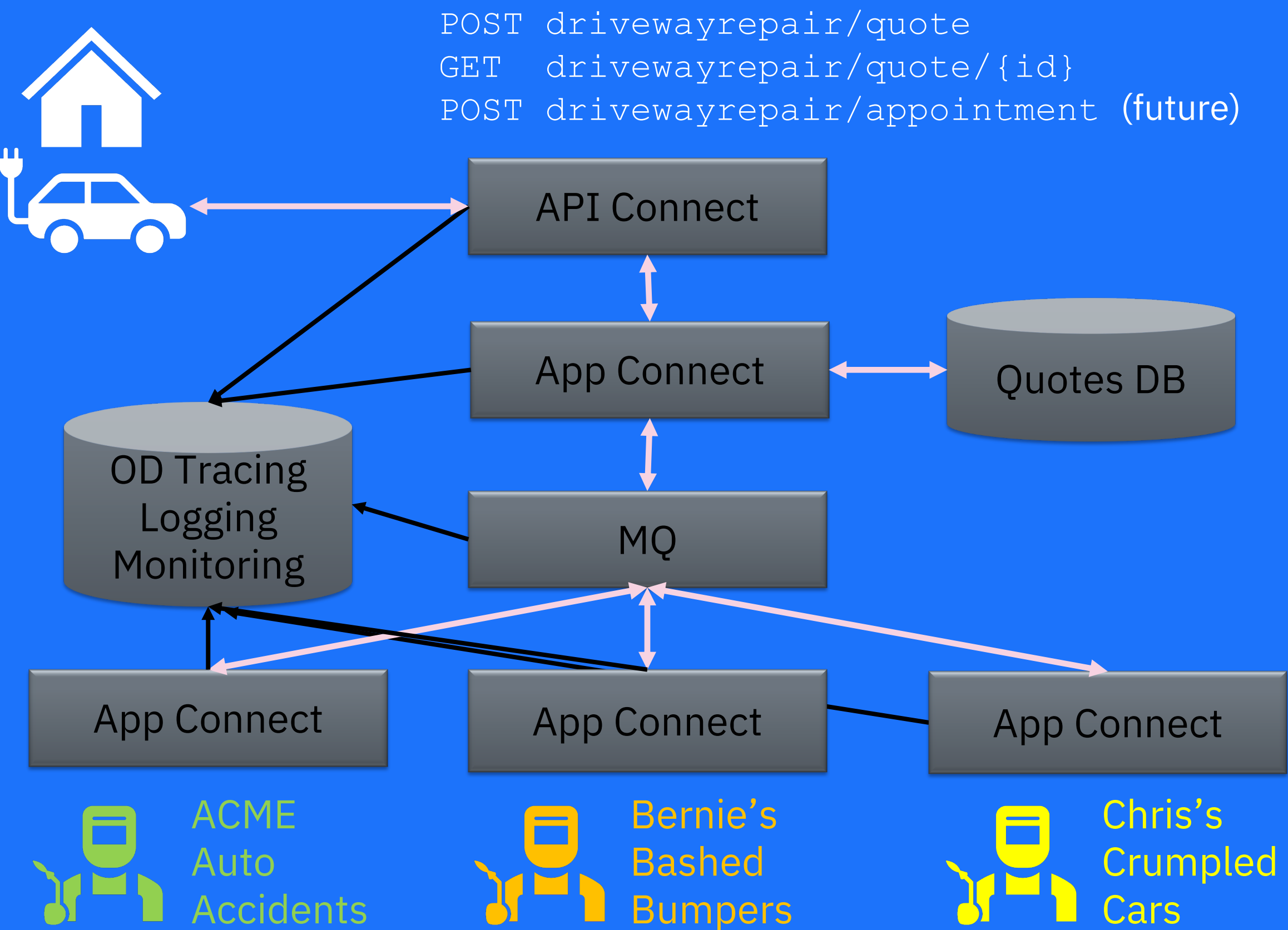
How about CI/CD pipeline to deploy integration solutions

Technology-agnostic approach focused on common CI/CD patterns via flexible operational tools

- ✓ Rapid integration development with built-in Test and Debug of API assembly
- ✓ Automated API testing and monitoring designed for developers and teams
- ✓ Integrate into CI/CD for automation using Jenkins , Tekton or similar technologies
- ✓ Rich dashboards & test reports to provide granular insights and easy diagnosis of any errors



What about Deploying Something more Complex?



↔ API / Calls

→ Tracing Data

“Scatter gather pattern”


Or “Compare the Market/Meerkat”
Insurance style:




Or Booking flight/hotels– any
kind of online competitive
marketplace.

DEMO

Please follow
our
Community
pages and
public GitHub
repositories

 Community ▾


Search 

Integration Topic groups ▾ User groups Events ▾ Participate ▾ Resources ▾


IBM Integration Community

Come for answers. Stay for best practices. All we're missing is you.

Join / sign up

This Community ▾  Search for your favorite topic

App Connect

 View Only

Group Home

Discussion 927

Library 365

Blogs 42



Events 1


Members 1.9K

Welcome to the community group for discussion, blogging, and other community resources about IBM App Connect, IBM Integration Bus, and their industry packs, including App Connect as part of IBM Cloud Pak for Integration, on IBM Cloud, IBM App Connect Enterprise software and certified container, and more.


For discussion and community resources for IBM App Connect as part of the IBM Cloud Paks for Integration, see also [the IBM Cloud Paks for Integration community group](#).


For general IBM Cloud Integration news, visit [the IBM Cloud Integration global community group](#).


 Search or jump to...  Pull requests Issues Marketplace Explore





Open Technologies for Integration


 <http://ot4i.github.io>

 Repositories 154

 Packages

 People 12

 Projects

 Find a repository...

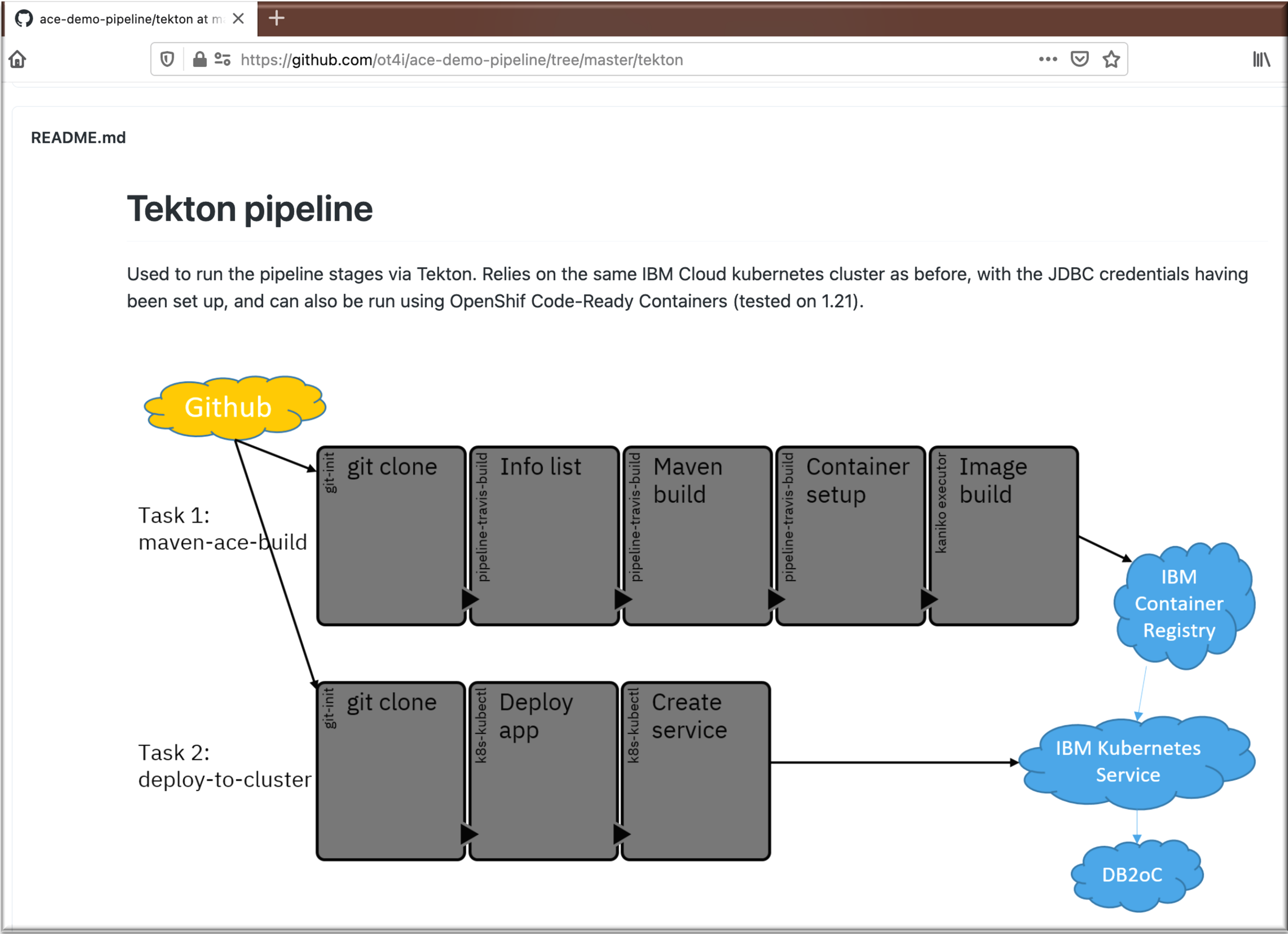
Type ▾

Language ▾

Sort ▾

29

A vanilla Tekton pipeline



[Learn more](#)

More examples?

...

Create your integration application on OpenShift using Jenkins pipeline

Looking to explore Red Hat OpenShift streamlined CI/CD workflows to run your ACE container natively on Red Hat OpenShift? In this post we show how...

→ [Continue reading](#)

IBM ACE v11 Continuous Integration-Maven-Jenkins

How to build an ACE v11 (App Connect Enterprise v11) project and deploy the bar file to target the Integration Server using Maven and Jenkins.

→ [Continue reading](#)

IIB (v9 & v10) Continuous Integration-Maven-Jenkins

In this article I will explain how to build an IIB (IBM Integration Bus v9 & v10) project and deploy the bar file to target...

→ [Continue reading](#)

Creating a custom integration node setup on a virtual machine using Chef - IBM Integration

Learn how to build a virtual machine that has a custom integration node setup, using

Integration Development to Micro Services Principles on OpenShift – Part 3

Introduction Modern platforms, DevOps tooling and agile approaches have accelerated the rate at which organizations can bring new applications and business function to bare. At...

→ [Continue reading](#)

Integration Development to Micro Services Principles on OpenShift – Part 2

Introduction Modern platforms, DevOps tooling and agile approaches have accelerated the rate at which organizations can bring new applications and business function to bare. At...

→ [Continue reading](#)

Integration Development to Micro Services Principles on OpenShift – Part 1

Introduction Modern platforms, DevOps tooling and agile approaches have accelerated the rate at which organizations can bring new applications and business function to bare. At...

→ [Continue reading](#)

An approach to build DevOps pipeline for ACE on Cloud Pak for Integration

We had published a recipe in developerWorks to automate the build and deployment of ACE projects on Cloud Pak for Integration. In this blog, we...

→ [Continue reading](#)

IBM Integration Bus & Chef - Video Tutorial - IBM Integration

This video tutorial shows how to install IBM Integration Bus, and then create and configure

Thank you

Ulas Cubuk
Technical Offering Manager
—
ucubuk3@uk.ibm.com

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