



opentext™

Cloud Foundry

An introduction and overview

October 3, 2018 | Bill Kidwell and Chris Wells

Introduction

- Why cloud foundry?
- What does it do for me?
- Where can I learn more?



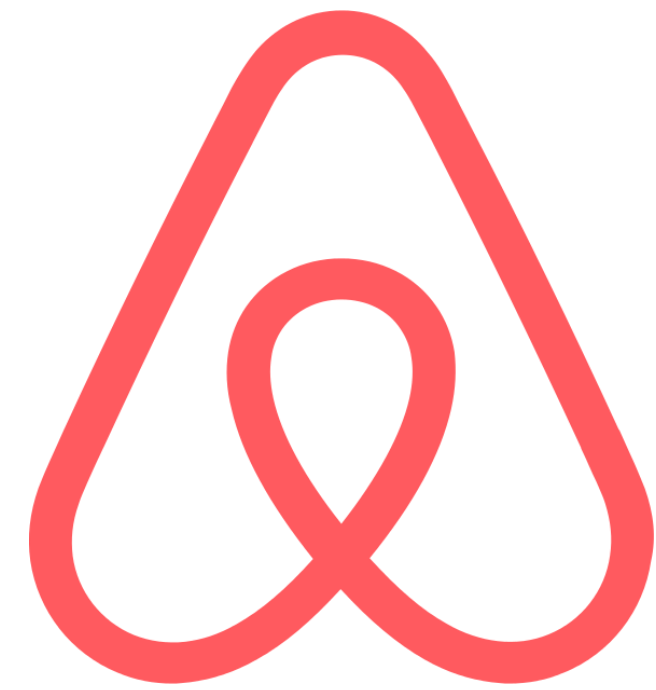
CLOUD **FOUNDRY**

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amazon

The Amazon logo consists of the word "amazon" in a bold, lowercase, sans-serif font. Below the text is a curved orange arrow that starts under the letter 'a' and ends under the letter 'z', pointing to the right.

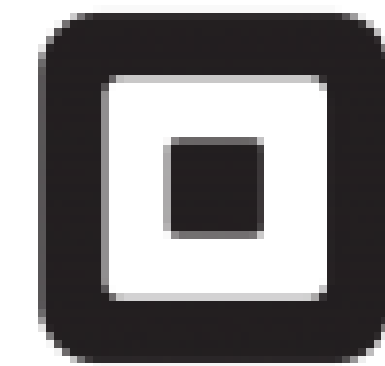
NETFLIX



airbnb



UBER



Square

Uber for Pet Stores?

- Your million dollar idea?
- It's your turn to disrupt business as we know it.



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“ *petgo delivers animals
when I can't get them
myself*

-- A crazy cat lady



* with apologies to Pet co.

Key Objectives

- Mobile first
- High availability
- Scale with demand
- Need it fast
 - Limited market window
- Lean team of engineers
 - Do more with less
 - Tight market
 - Keep a minimum overhead



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So You Pounce...



- Amazon Web Services
- AWS Lambda and API Gateway
- S3 Document storage
- DynamoDB (NoSQL db)

We Have A Problem...

- Amazon is now launching a drone-delivered pet service
- Investors are not happy that they are paying AWS, and thus the competition!
- We need to change cloud providers!



Welcome to Vendor Lock-in!

- Layers to isolate you from vendor specific APIs
 - But, we were moving fast!
- Options
 - Add the layering
 - Re-write portions of the app
 - Timelines just got tighter
- But, does this really happen?



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Cloud Foundry Foundation

Platinum



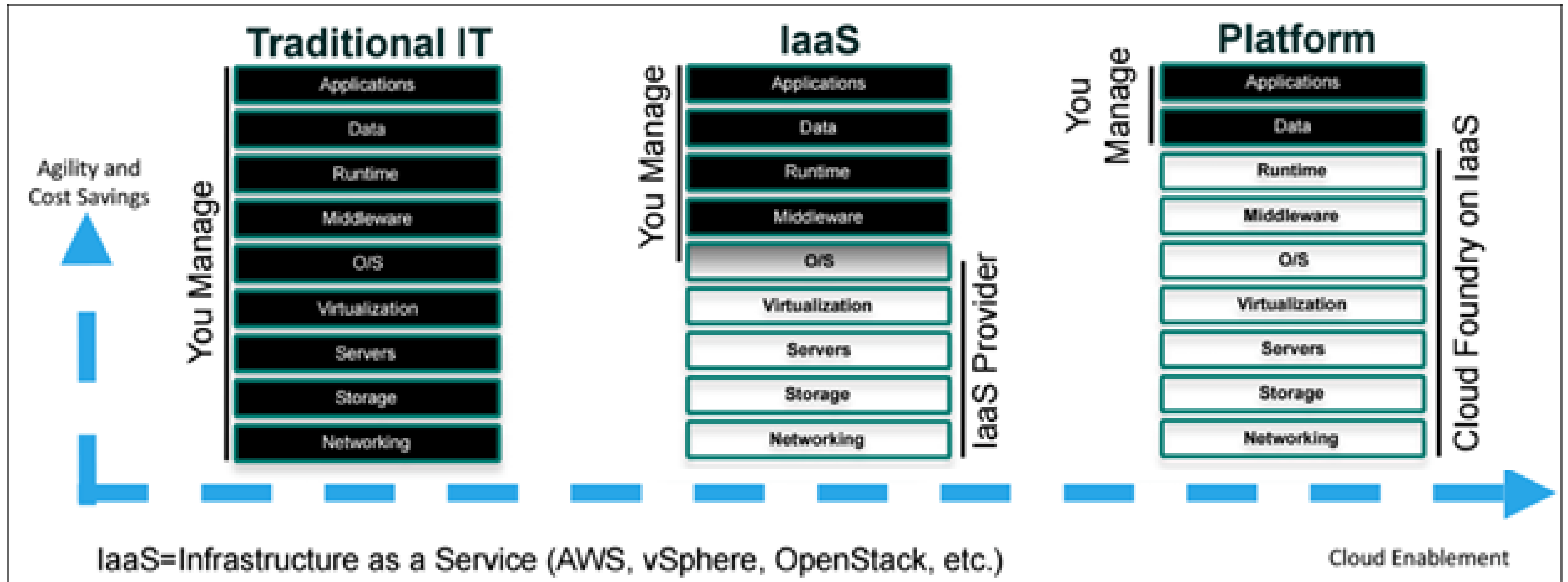
Gold



Silver



IT is Evolving



<https://docs.cloudfoundry.org/concepts/overview.html>

Demo – Pushing an Application to Cloud Foundry

push - Cloud Foundry CLI Reference Guide

English

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NAME

push - Push a new app or sync changes to an existing app

USAGE

```
cf push APP_NAME [-b BUILDPACK_NAME] [-c COMMAND] [-f MANIFEST_PATH | --no-manifest] [--no-start] [-i NUM_INSTANCES] [-k DISK] [-m MEMORY] [-p PATH] [-s STACK] [-t HEALTH_TIMEOUT] [-u (process | port | http)] [--no-route | --random-route | --hostname HOST | --no-hostname] [-d DOMAIN] [--route-path ROUTE_PATH] [--var KEY=VALUE]... [--vars-file VARS_FILE_PATH]...
```

```
cf push APP_NAME --docker-image [REGISTRY_HOST:PORT/]IMAGE[:TAG] [--docker-username USERNAME] [-c COMMAND] [-f MANIFEST_PATH | --no-manifest] [--no-start] [-i NUM_INSTANCES] [-k DISK] [-m MEMORY] [-t HEALTH_TIMEOUT] [-u (process | port | http)] [--no-route | --random-route | --hostname HOST | --no-hostname] [-d DOMAIN] [--route-path ROUTE_PATH] [--var KEY=VALUE]... [--vars-file VARS_FILE_PATH]...
```

```
cf push APP_NAME --droplet DROPLET_PATH [-c COMMAND] [-f MANIFEST_PATH | --no-manifest] [--no-start] [-i NUM_INSTANCES] [-k DISK] [-m MEMORY] [-t HEALTH_TIMEOUT] [-u (process | port | http)] [--no-route | --random-route | --hostname HOST | --no-hostname] [-d DOMAIN] [--route-path ROUTE_PATH] [--var KEY=VALUE]... [--vars-file VARS_FILE_PATH]...
```

```
cf push -f MANIFEST_WITH_MULTIPLE_APPS_PATH [APP_NAME] [--no-start]
```

ALIAS

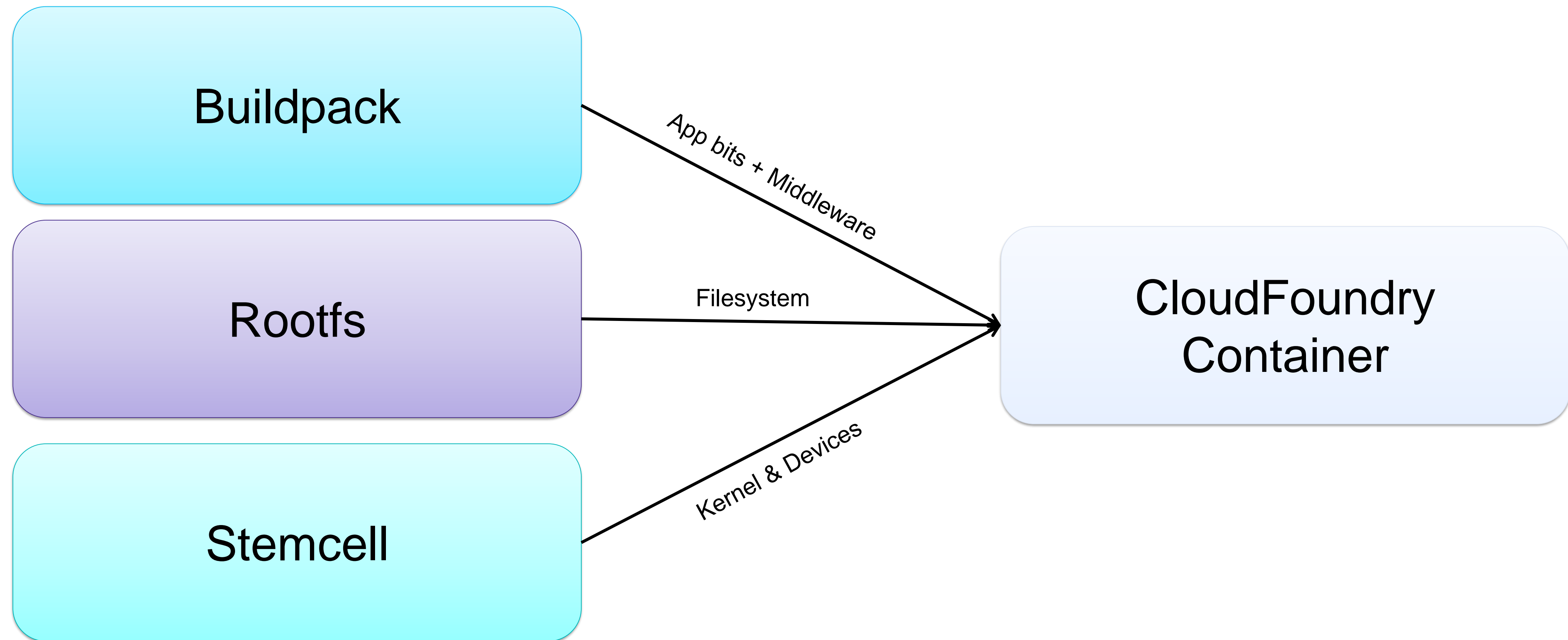
p

OPTIONS

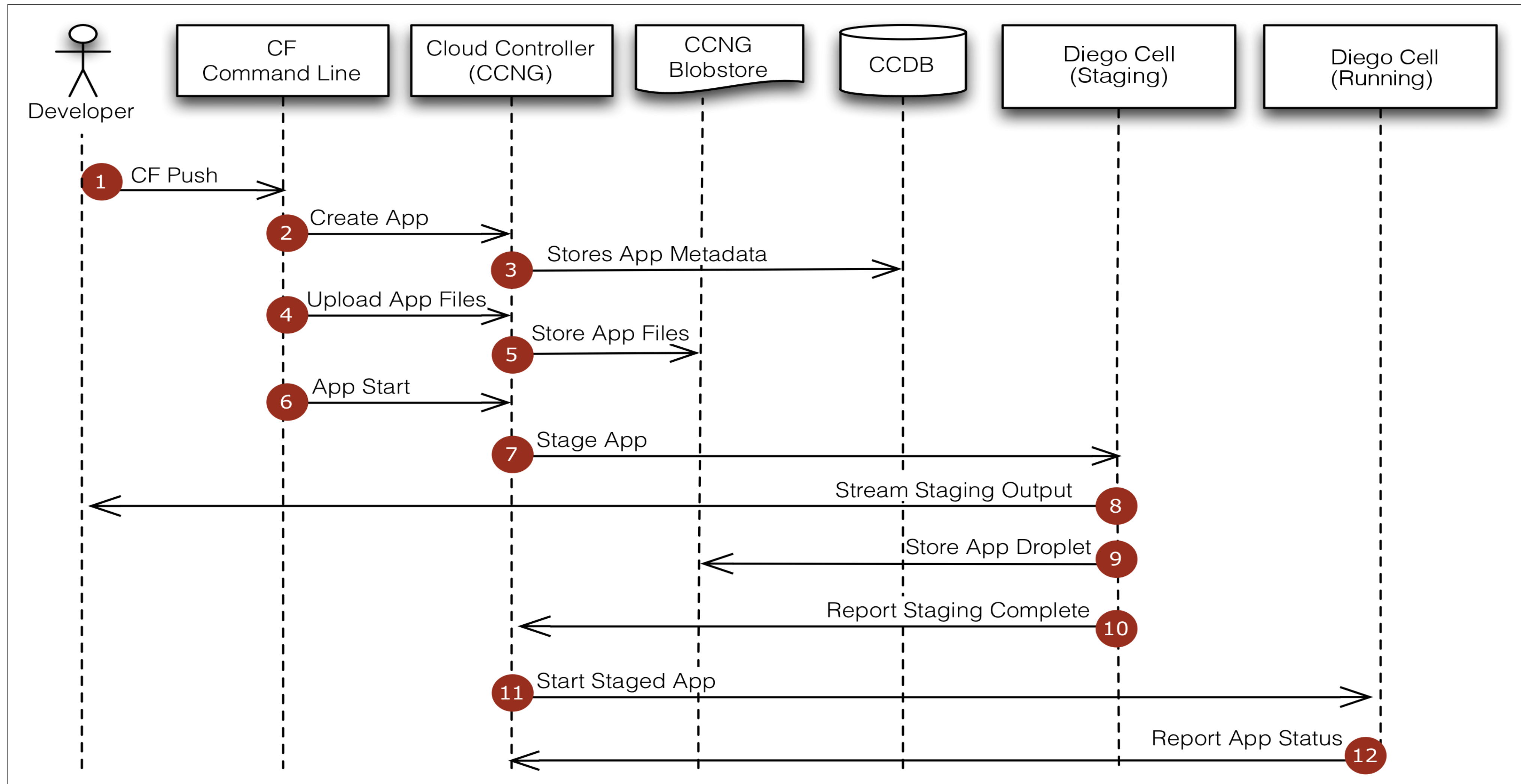
-b

Custom buildpack by name (e.g. my-buildpack) or Git URL (e.g. <https://github.com/cloudfoundry/java-buildpack.git>) or Git URL with a branch or tag (e.g. <https://github.com/cloudfoundry/java-buildpack.git#v3.3.0> for v3.3.0 tag). To use built-in buildpacks only, specify **default** or **null**

What is Cloud Foundry Doing for Me?

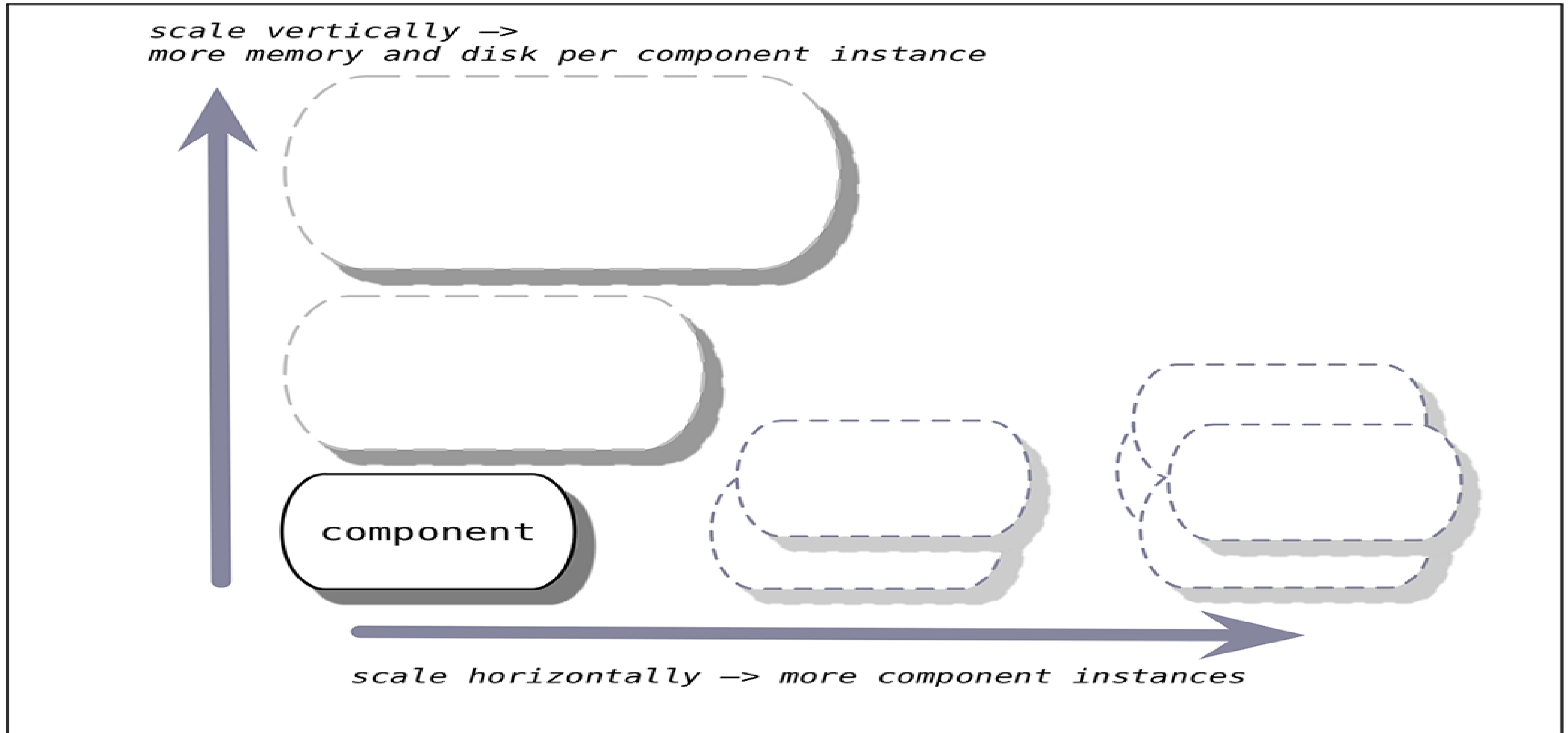


A More Complete Depiction



<https://docs.cloudfoundry.org/concepts/how-applications-are-staged.html>

Scaling Your Application



<https://docs.cloudfoundry.org/concepts/high-availability.html>

Demo: Scaling An Application

scale - Cloud Foundry CLI Reference Guide

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NAME

scale - Change or view the instance count, disk space limit, and memory limit for an app

USAGE

```
cf scale APP_NAME [-i INSTANCES] [-k DISK] [-m MEMORY] [-f]
```

OPTIONS

-f

Force restart of app without prompt

-i

Number of instances

-k

Disk limit (e.g. 256M, 1024M, 1G)

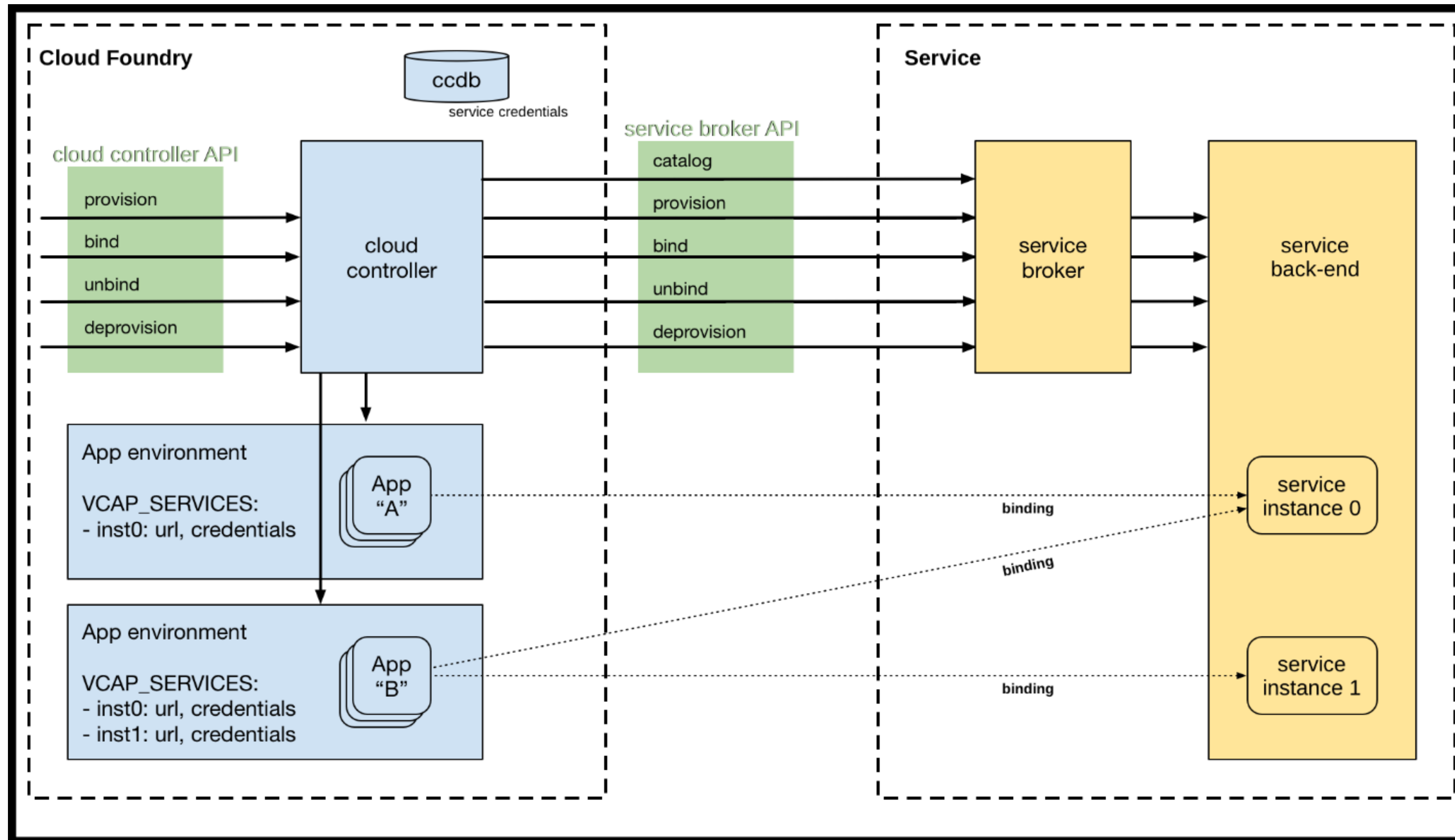
-m

Memory limit (e.g. 256M, 1024M, 1G)

SEE ALSO

`push`

Services and Service Brokers



<https://docs.cloudfoundry.org/services/overview.html>

Demo: Binding to a Service

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NAME

bind-service - Bind a service instance to an app

USAGE

```
cf bind-service APP_NAME SERVICE_INSTANCE [-c PARAMETERS_AS_JSON] [--binding-name BINDING_NAME]
```

Optionally provide service-specific configuration parameters in a valid JSON object in-line:

```
cf bind-service APP_NAME SERVICE_INSTANCE -c '{"name":"value","name":"value"}
```

Optionally provide a file containing service-specific configuration parameters in a valid JSON object. The path to the parameters file can be an absolute or relative path to a file.

```
cf bind-service APP_NAME SERVICE_INSTANCE -c PATH_TO_FILE
```

Example of valid JSON object: { "permissions": "read-only" } Optionally provide a binding name for the association between an app and a service instance:

```
cf bind-service APP_NAME SERVICE_INSTANCE --binding-name BINDING_NAME
```

EXAMPLES

Linux/Mac:

```
cf bind-service myapp mydb -c '{"permissions":"read-only"}
```

Windows Command Line:


```
cf bind-service myapp mydb -c "{\"permissions\":\"read-only\"}"
```

Windows PowerShell:

```
cf bind-service myapp mydb -c '{"permissions":"read-only"}
```

Where to learn more

<https://pivotal.io/platform>



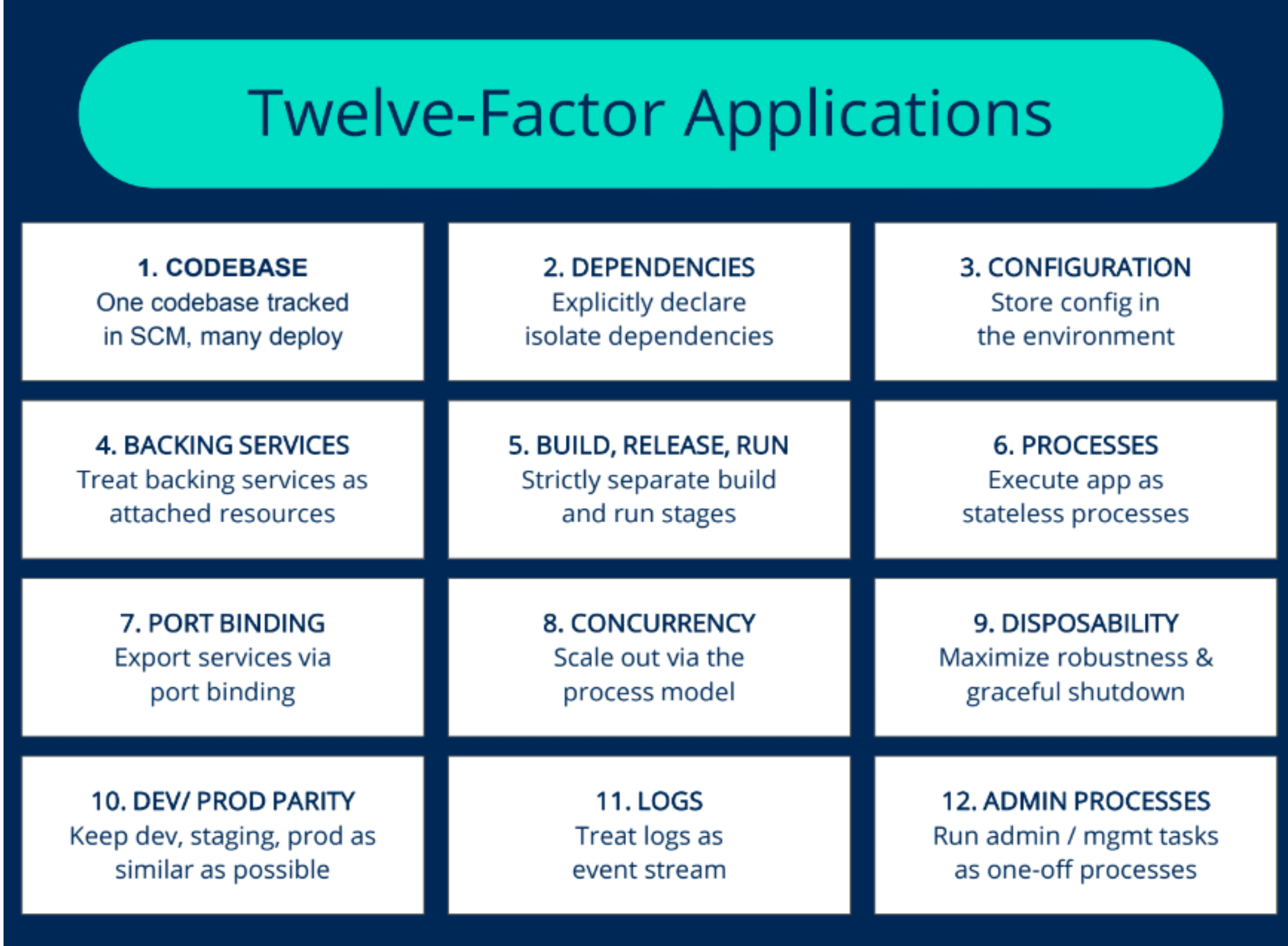
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<https://12factor.net>



Twelve-Factor Applications

1. CODEBASE One codebase tracked in SCM, many deploy	2. DEPENDENCIES Explicitly declare isolate dependencies	3. CONFIGURATION Store config in the environment
4. BACKING SERVICES Treat backing services as attached resources	5. BUILD, RELEASE, RUN Strictly separate build and run stages	6. PROCESSES Execute app as stateless processes
7. PORT BINDING Export services via port binding	8. CONCURRENCY Scale out via the process model	9. DISPOSABILITY Maximize robustness & graceful shutdown
10. DEV/ PROD PARITY Keep dev, staging, prod as similar as possible	11. LOGS Treat logs as event stream	12. ADMIN PROCESSES Run admin / mgmt tasks as one-off processes

Image from: <https://medium.com/easyread/today-i-learned-series-twelve-factor-app-af28b0d3fd45>

What Did We Learn?

- Why Cloud Foundry is important
- What problems CF solves
- Deploying an application
- Scaling an application
- How to bind additional services



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Thank you



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Resumes welcome



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