THE DEVELOPER'S CONFERENCE

Desenvolvimento e Automação na Plataforma Cloud Foundry

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Quem Somos

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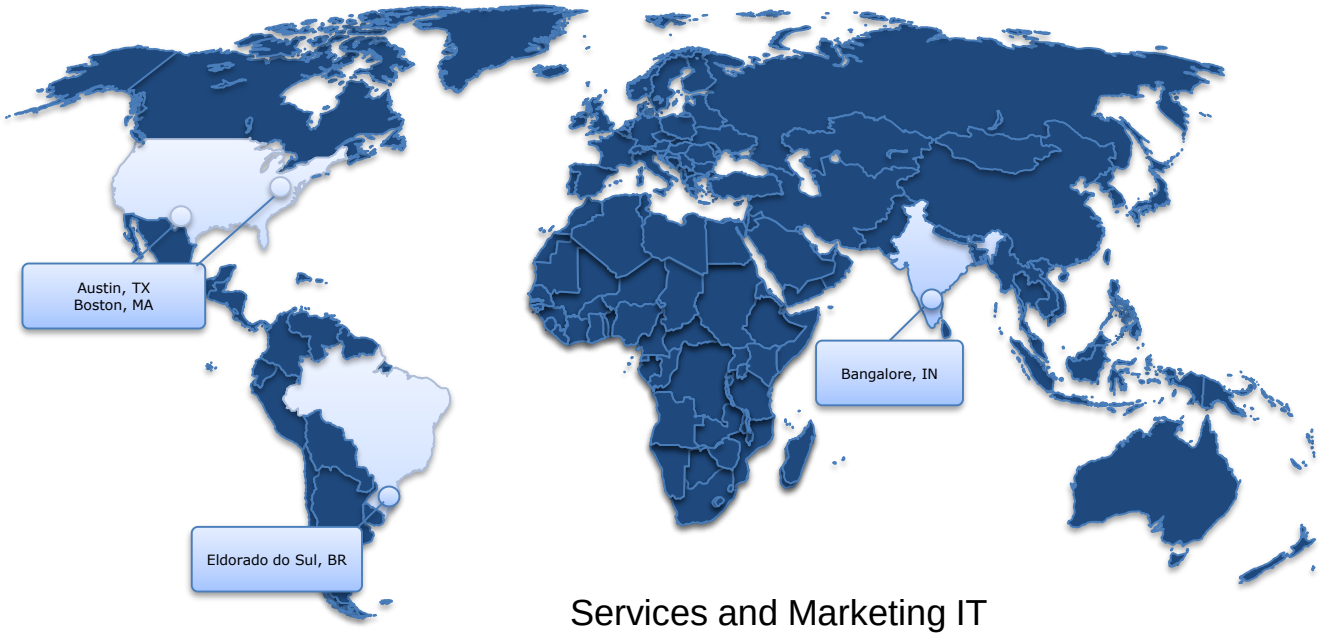

Services and Marketing IT

Quem Somos

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Cloud Foundry

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- Existe a 7 anos
- Open source cloud deployment environment
- Container-based
- Code-centric
- Multi-cloud deployment (On-premises, AWS, Azure...)
- Opções de provedores CF privados (Pivotal, IBM...)
- É a opção de muitas companhias para adoção de cloud em sua própria infraestrutura

cisco Google IBM Microsoft Pivotal SAP SUSE

Pivotal Cloud Foundry

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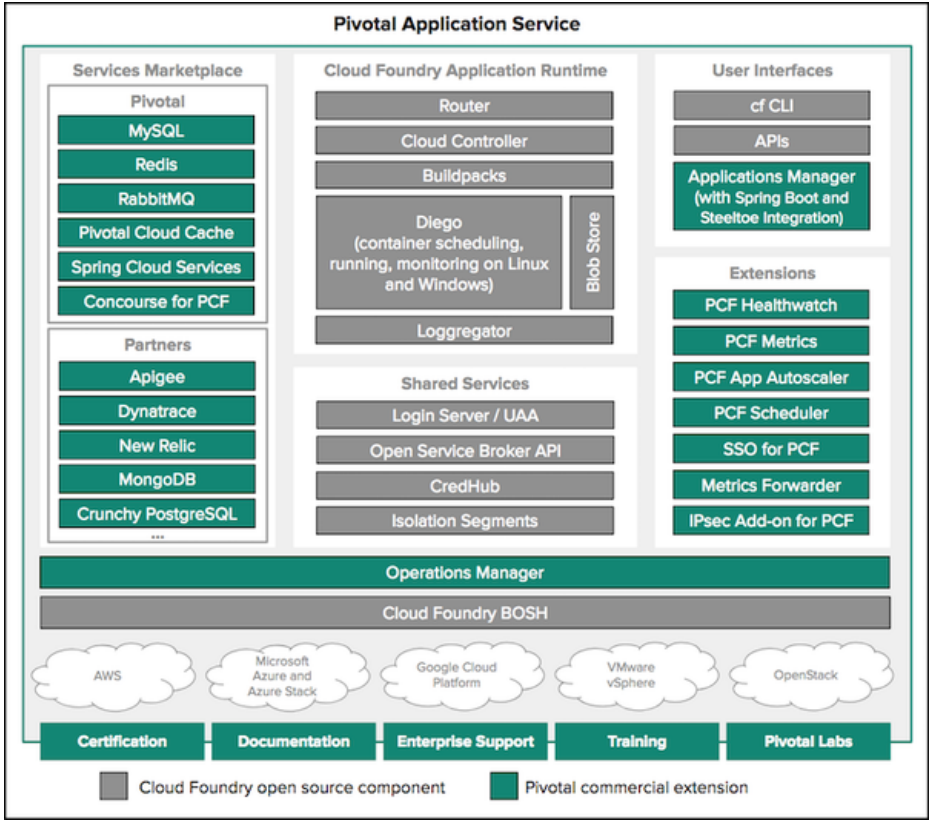
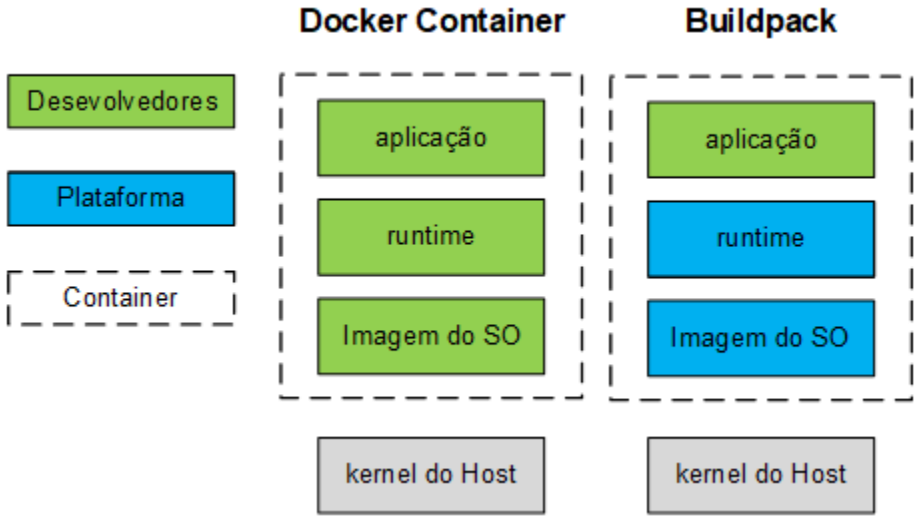
- Container-based
- Code-centric
- Marketplace

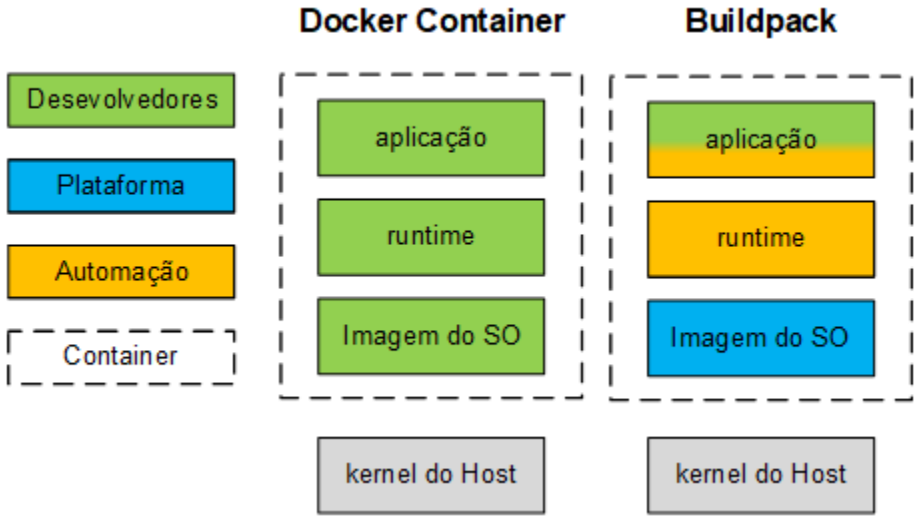


Buildpacks vs Containers



- Provê frameworks + runtime
- 20+ buildpacks disponíveis Java, PHP, Node, .Net, Ruby, Python, Static Content, Custom ...

Buildpacks vs Containers



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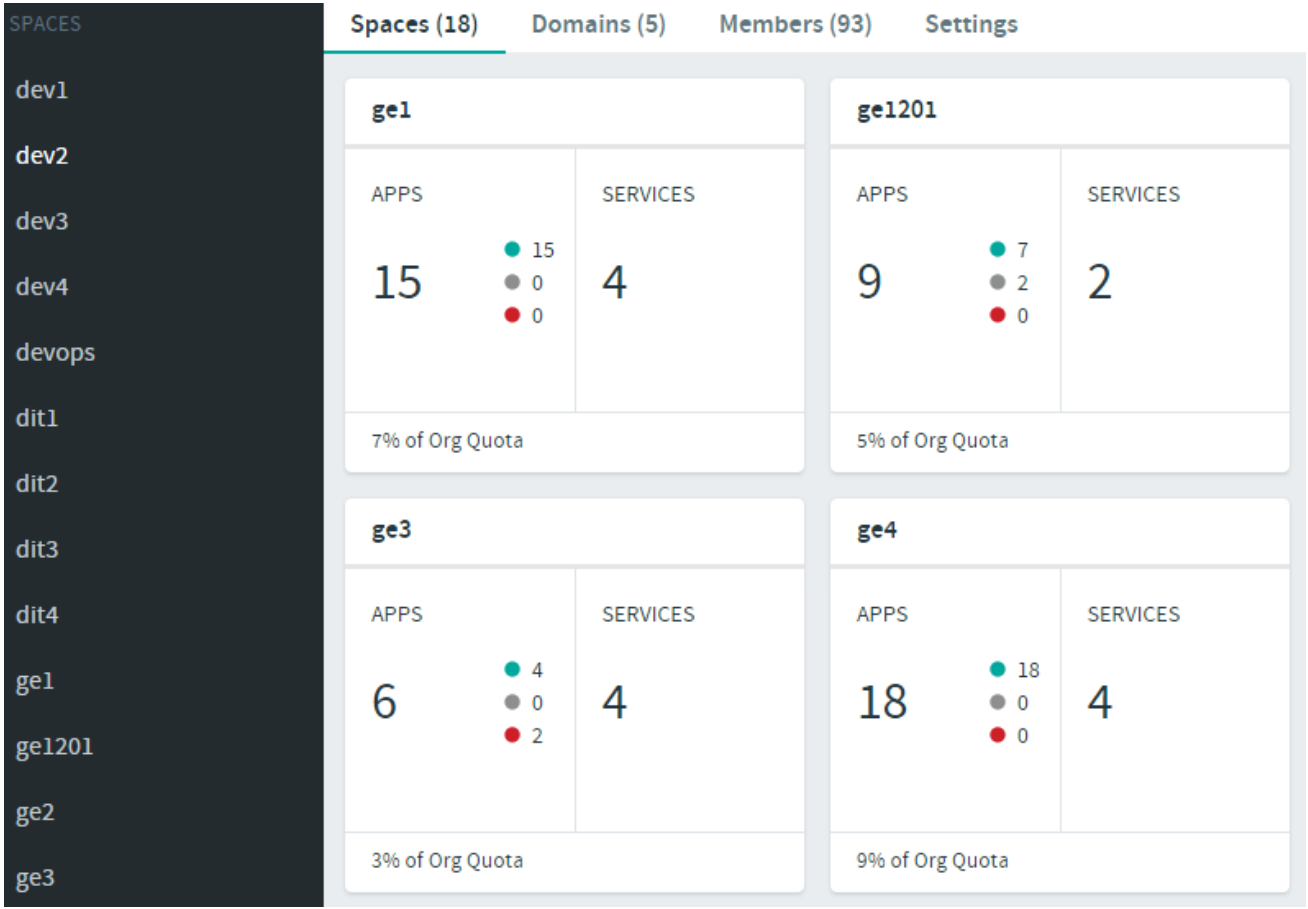
Pivotal Cloud Foundry - Spaces



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- Spaces
  - Organização lógica

Um simples deploy de aplicação

Fonte: https://recordnotfound.com/cli-cloudfoundry-5265

Automação e PCF

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Muito simples... Então, por que automatizar?

- 130+ desenvolvedores em 3+ localidades
- 21+ ambientes
- 30+ aplicações
  - 300 builds por dia
  - 100 artefatos testados e publicados por dia

Automação e PCF

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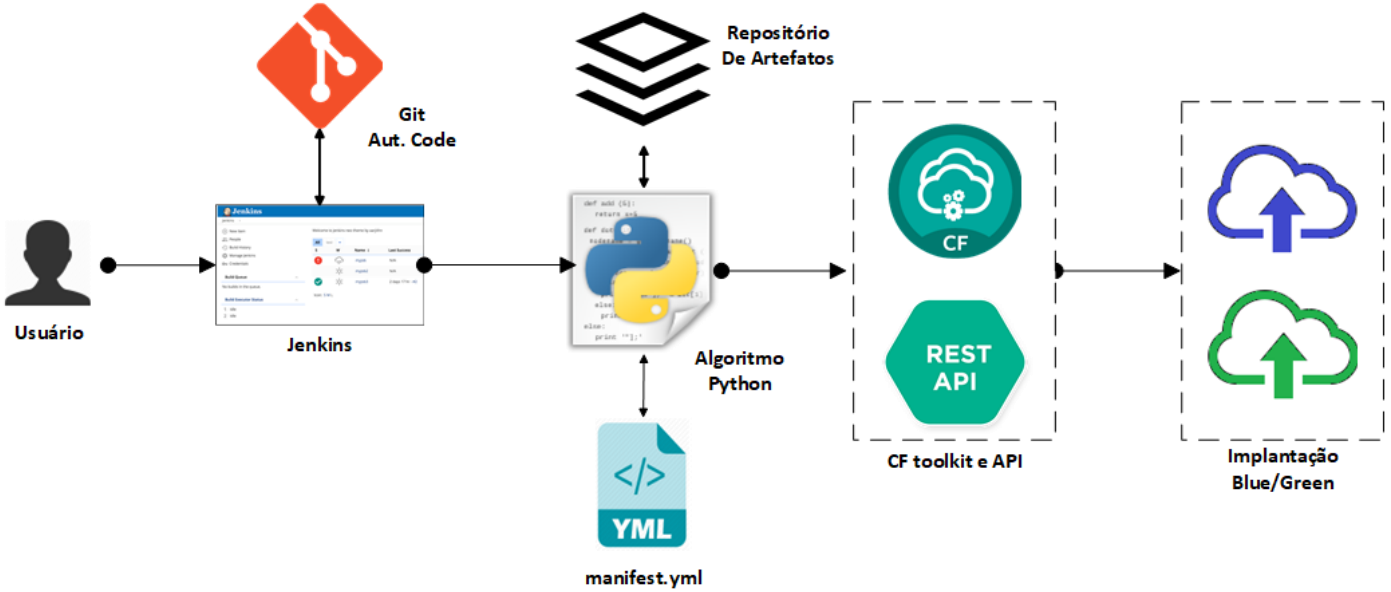

- CF toolkit, CF REST API, Python, OptParser, Jenkins...

Automação e PCF

- Usuário utiliza um Job Jenkins para dar início a implantaçao do artefato

Automação e PCF

- Algoritmo é iniciado realizando o download do artefato armazenado no repositório

Console Output

```
########################################
### Stating python deployment automation ###
########################################
+ /sbil/ci/jenkins-slave/workspace/deployment-cf/deploy-module/cf-deploy-module.py
--cf-domain ausvdc02.pcf.dell.com --cf-api-url api.sausvdc02.pcf.dell.com --cf-
username ******** --cf-password '********' --cf-balancer ausvdc02.pcf.dell.com --
app-name sbil-ae-maintenance-dev1 --app-module sbil-ae-maintenance-ng --app-org
SvcsIT-AnEorg --app-space dev1 --app-profile dev1 --app-version 2.12.3-
201811301255 --app-auth security-oauth2 --app-instances 2 --app-disk 1G --app-
memory 1G --show-logs false --blue-green true --no-route false --no-start false --
bind-configserver true --bind-ssoservice false --bind-messagebroker true --
workspace /sbil/ci/jenkins-slave/workspace/deployment-cf/deploy-module --verbose




####################################
### Downloading app from artifactory ###
####################################
wget -nv -P /sbil/ci/jenkins-slave/workspace/deployment-cf/deploy-module
http://ausdlbilci2.us.dell.com:8081/artifactory/main-
repo/com/dell/services/bil//sbil-ae-maintenance-ng/2.12.3/sbil-ae-maintenance-ng-
2.12.3-201811301255.jar
```

Automação e PCF

- O tipo de aplicação e o ambiente de implantação são identificados.
- É inicializada a composição e escrita do arquivo **manifest.yml**

Console Output

```
#######################################
### Generating APP + ENV manifest.yml ###
#######################################
applications:
- buildpack: dicf_java_buildpack_4_offline_latest
  disk_quota: 1G
  env:
    JAVA_OPTS: ' -Dspring.boot.admin.client.url=https://services-sba-
dev.ausvdc02.pcf.dell.com
      -Dspring.boot.admin.client.instance.name=sbil-ae-maintenance-dev1 -
Dspring.boot.admin.client.instance.management-url=https://sbil-ae-maintenance-
dev1.ausvdc02.pcf.dell.com
      -Dspring.boot.admin.client.instance.health-url=https://sbil-ae-maintenance-
dev1.ausvdc02.pcf.dell.com/health
      -Dspring.boot.admin.client.instance.service-url=https://sbil-ae-maintenance-
dev1.ausvdc02.pcf.dell.com
      -Dmanagement.endpoints.web.exposure.include:* -
Dspring.profiles.active=dev1,security-oauth2
      -Dinfo.version=2.12.3-201811301255'
    SPRING_PROFILES_ACTIVE: dev1,security-oauth2
    TZ: CST
  instances: 1
  memory: 1G
  name: sbil-ae-maintenance-dev1
  no-route: false
  path: sbil-ae-maintenance-ng-2.12.3-201811301255.jar
  services:
  - sbil-config-server
  - sbil-message-broker
```

Automação e PCF

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- Conectando a API PCF
- Diferentes API's de acordo com o ambiente escolhido

Console Output

```
#############################################################
### Executing login on PCF for SvcsIT-AnEorg org and dev1 space ###
#############################################################
/sbil/ci/bin/pcf/cf login -a api.sausvdc02.pcf.dell.com -u ******** -p ******** -o
SvcsIT-AnEorg -s dev1
API endpoint: api.sausvdc02.pcf.dell.com
Authenticating...
OK
```

Running	sbil-ae-maintenance-dev1	1	1 GB	an hour ago	https://sbil-ae-maintenance-dev1.ausv…
Stopped	sbil-ae-maintenance-dev1-old	1	1 GB	2 months ago	no bound route

Automação e PCF

- Processo de implantação **Blue**/**Green** é iniciado
- Nova versão começa a ser implantada enquanto versão anterior permanece rodando

Console Output

```
####################################
### Starting Blue-Green Deployment ###
####################################
/sbil/ci/bin/pcf/cf bgd sbil-ae-maintenance-dev1 -f /sbil/ci/jenkins-
slave/workspace/deployment-cf/deploy-module/manifest.yml -smoke-test
/sbil/ci/jenkins-slave/workspace/deployment-cf/deploy-module/smoketest.sh 2>&1
Using manifest file /sbil/ci/jenkins-slave/workspace/deployment-cf/deploy-
module/manifest.yml

Creating app sbil-ae-maintenance-dev1-new in org SvcsIT-AnEOrg / space dev1 as
********...
OK

Using route sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com
Binding sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com to sbil-ae-maintenance-
dev1-new...
OK

Uploading sbil-ae-maintenance-dev1-new...

Done uploading
OK


Starting app sbil-ae-maintenance-dev1-new in org SvcsIT-AnEOrg / space dev1 as
********...
```

Running	sbil-ae-maintenance-dev1	1	1 GB	an hour ago	https://sbil-ae-maintenance-dev1.ausv...
Starting	sbil-ae-maintenance-dev1-new	1	1 GB	a few seconds ago	https://sbil-ae-maintenance-dev1-new....

Automação e PCF

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- Nova versão está online
- Health check iniciado
- Smoke test iniciado

Console Output

```
#######################
### Smoketest result ###
#######################
https://sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com/actuator/health: 401
https://sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com/health:          200
https://sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com/smoke:          200
```

Running	sbil-ae-maintenance-dev1	1	1 GB	an hour ago	https://sbil-ae-maintenance-dev1.ausv...
Running	sbil-ae-maintenance-dev1-new	1	1 GB	a minute ago	https://sbil-ae-maintenance-dev1-new....

Automação e PCF

- Health check **aprovado**
- Smoke test **aprovado**
- Nova versão substitui a anterior

Console Output

```
######################
### Smoketest result ###
######################
https://sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com/actuator/health: 401
https://sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com/health:          200
https://sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com/smoke:           200


Removing route sbil-ae-maintenance-dev1-new.ausvdc02.pcf.dell.com from app sbil-ae-
maintenance-dev1-new in org SvcsIT-AnEOrg / space dev1 as ********...
OK
Creating route sbil-ae-maintenance-dev1.ausvdc02.pcf.dell.com for org SvcsIT-AnEOrg
/ space dev1 as ********...
OK
Route sbil-ae-maintenance-dev1.ausvdc02.pcf.dell.com already exists
Adding route sbil-ae-maintenance-dev1.ausvdc02.pcf.dell.com to app sbil-ae-
maintenance-dev1-new in org SvcsIT-AnEOrg / space dev1 as ********...
OK
Renaming app sbil-ae-maintenance-dev1 to sbil-ae-maintenance-dev1-old in org
SvcsIT-AnEOrg / space dev1 as ********...
OK
Renaming app sbil-ae-maintenance-dev1-new to sbil-ae-maintenance-dev1 in org
SvcsIT-AnEOrg / space dev1 as ********...
OK
Removing route sbil-ae-maintenance-dev1.ausvdc02.pcf.dell.com from app sbil-ae-
maintenance-dev1-old in org SvcsIT-AnEOrg / space dev1 as ********...
OK
```

Running	sbil-ae-maintenance-dev1	1	1 GB	2 minutes ago	https://sbil-ae-maintenance-dev1.ausv...
Running	sbil-ae-maintenance-dev1-old	1	1 GB	6 minutes ago	no bound route

Automação e PCF

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- Versão anterior é desativada e rotas são removidas

Console Output

```
/sbil/ci/bin/pcf/cf stop sbil-ae-maintenance-dev1-old
Stopping app sbil-ae-maintenance-dev1-old in org SvcsIT-AnEOrg / space dev1 as
********...
OK

##########################################
### sbil-ae-maintenance-dev1-old stopped ###
##########################################
############################################################
### sbil-ae-maintenance-dev1 Blue-Green Deployment Succeeded ###
############################################################
```

Running	sbil-ae-maintenance-dev1	1	1 GB	6 minutes ago	https://sbil-ae-maintenance-dev1.ausv...
Stopped	sbil-ae-maintenance-dev1-old	1	1 GB	10 minutes ago	no bound route

Automação e PCF - Pipelines

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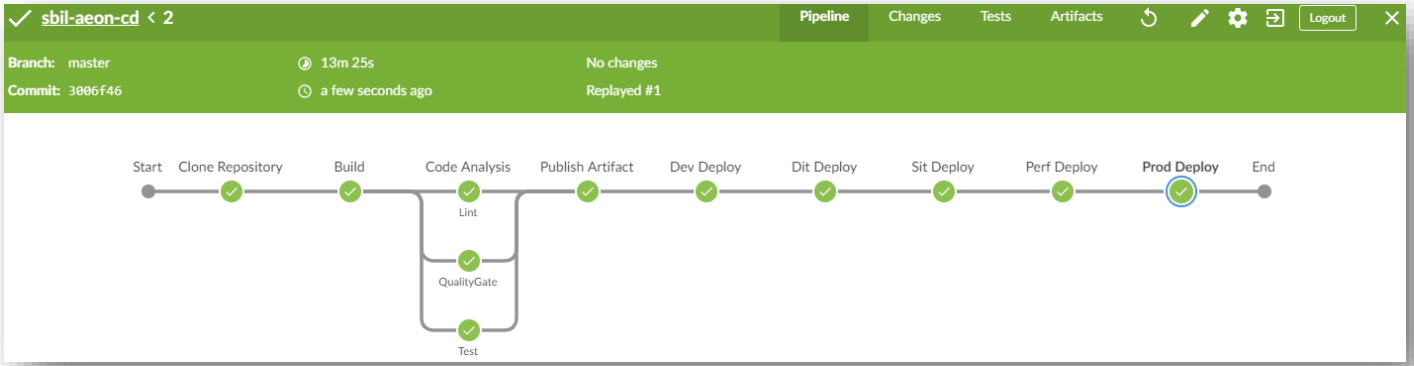

- CI/CD facilitada com a automação
  - Jenkins Blue Ocean

Automação e PCF - Pipelines

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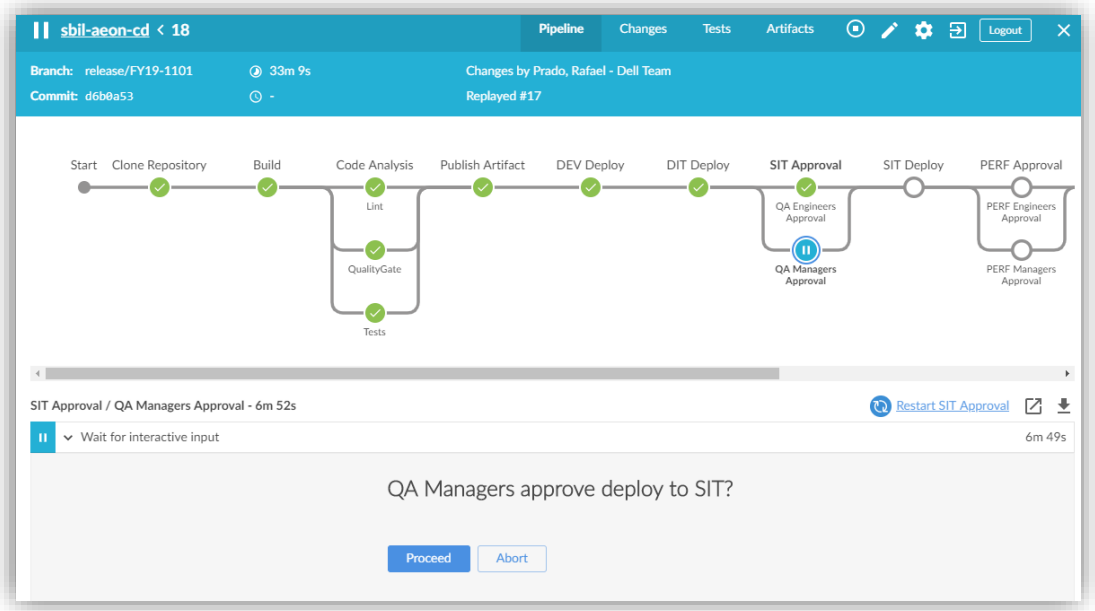

- CI/CD facilitada com a automação
  - Jenkins Blue Ocean

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Obrigado

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