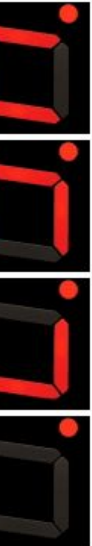




AGILE IT MANAGEMENT SCRUM, **DEVOPS**, LEAN IT

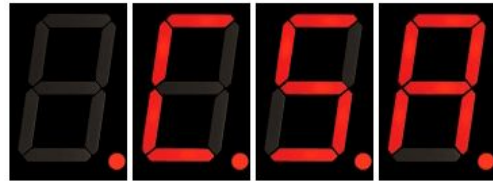
prácticas de devops



Carles San Agustín



www.carlessanagustin.com



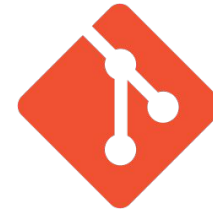
[@carlesanagustin](https://twitter.com/carlesanagustin)



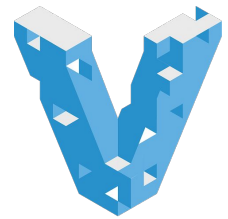
[linkedin.carlessanagustin.com](https://www.linkedin.com/company/carlessanagustin)

índice: programario

1. ¿qué es devops?



2. desarrollo



○ git (práctica) + vagrant (práctica)

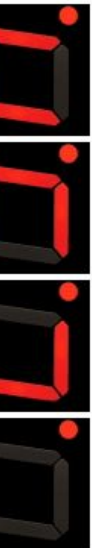
3. despliegue

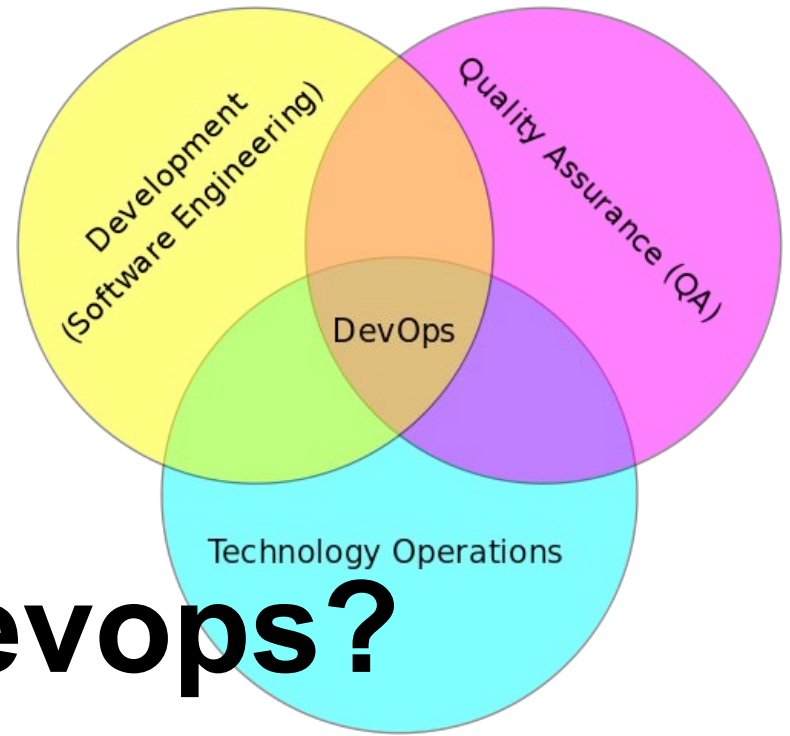
○ ansible (práctica) + nagios (práctica)



4. entornos

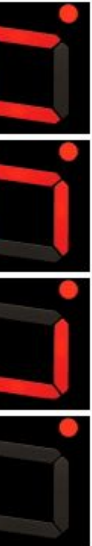
○ docker (práctica)



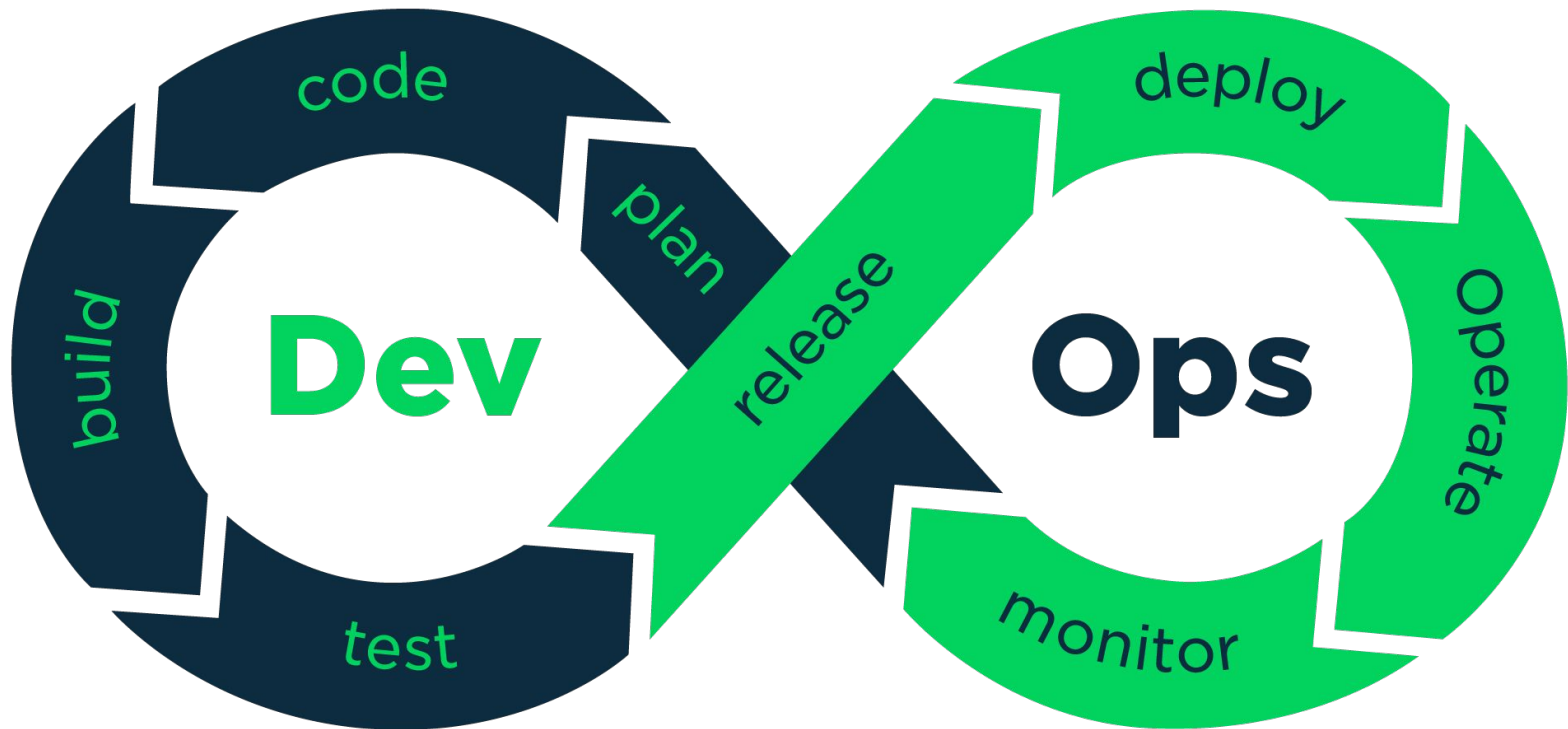


¿qué es devops?

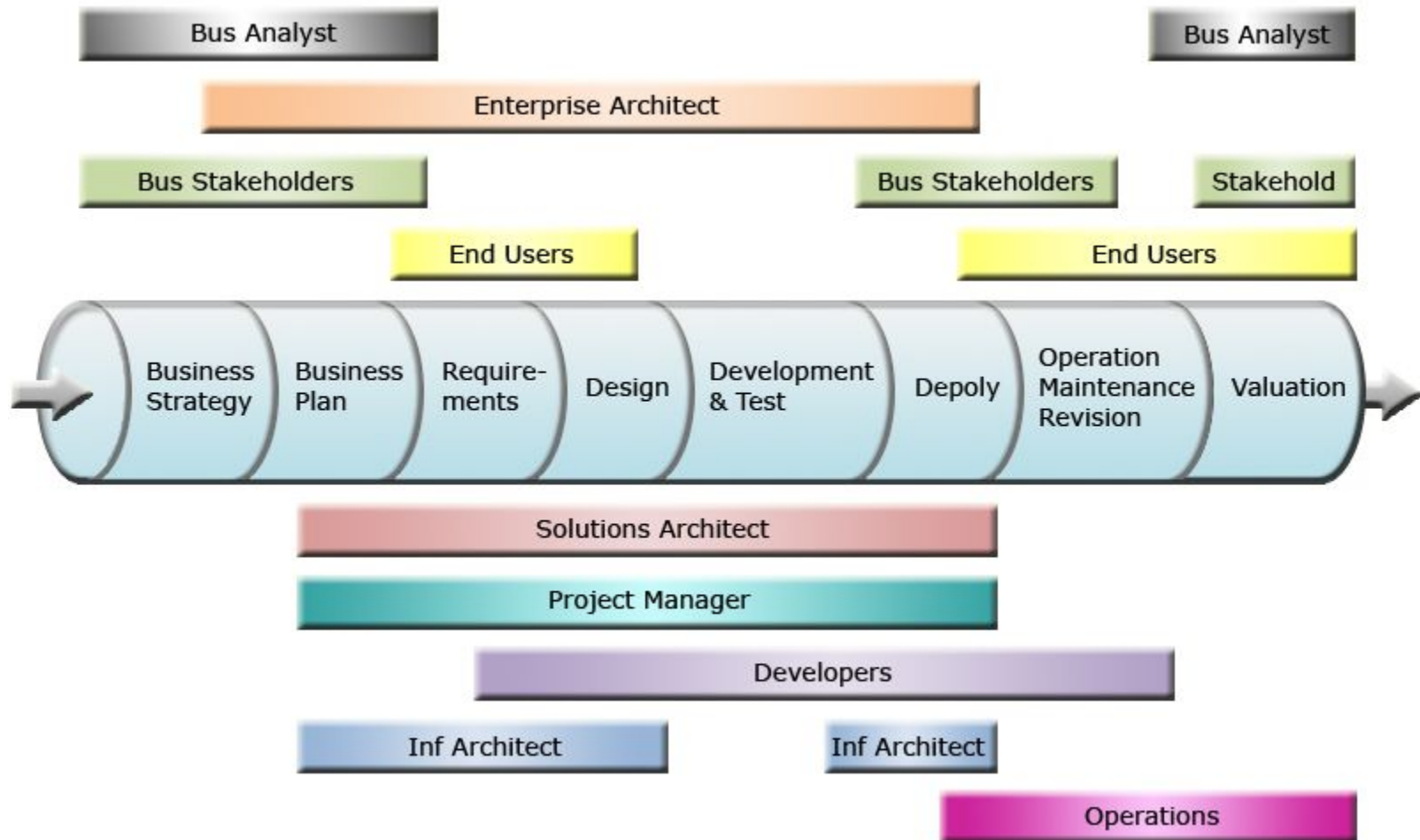
desarrollo y operaciones



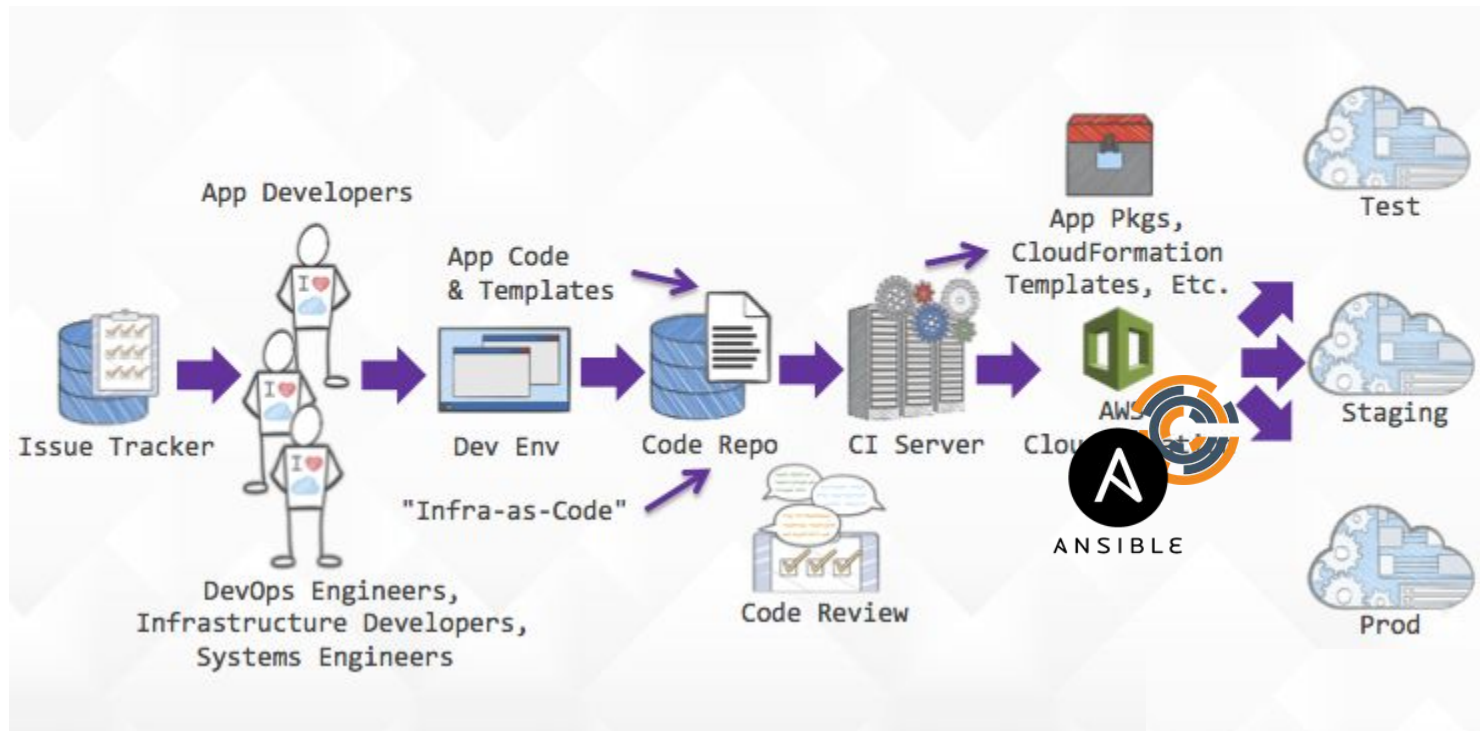
¿qué es devops? - bucle de publicación y realimentación



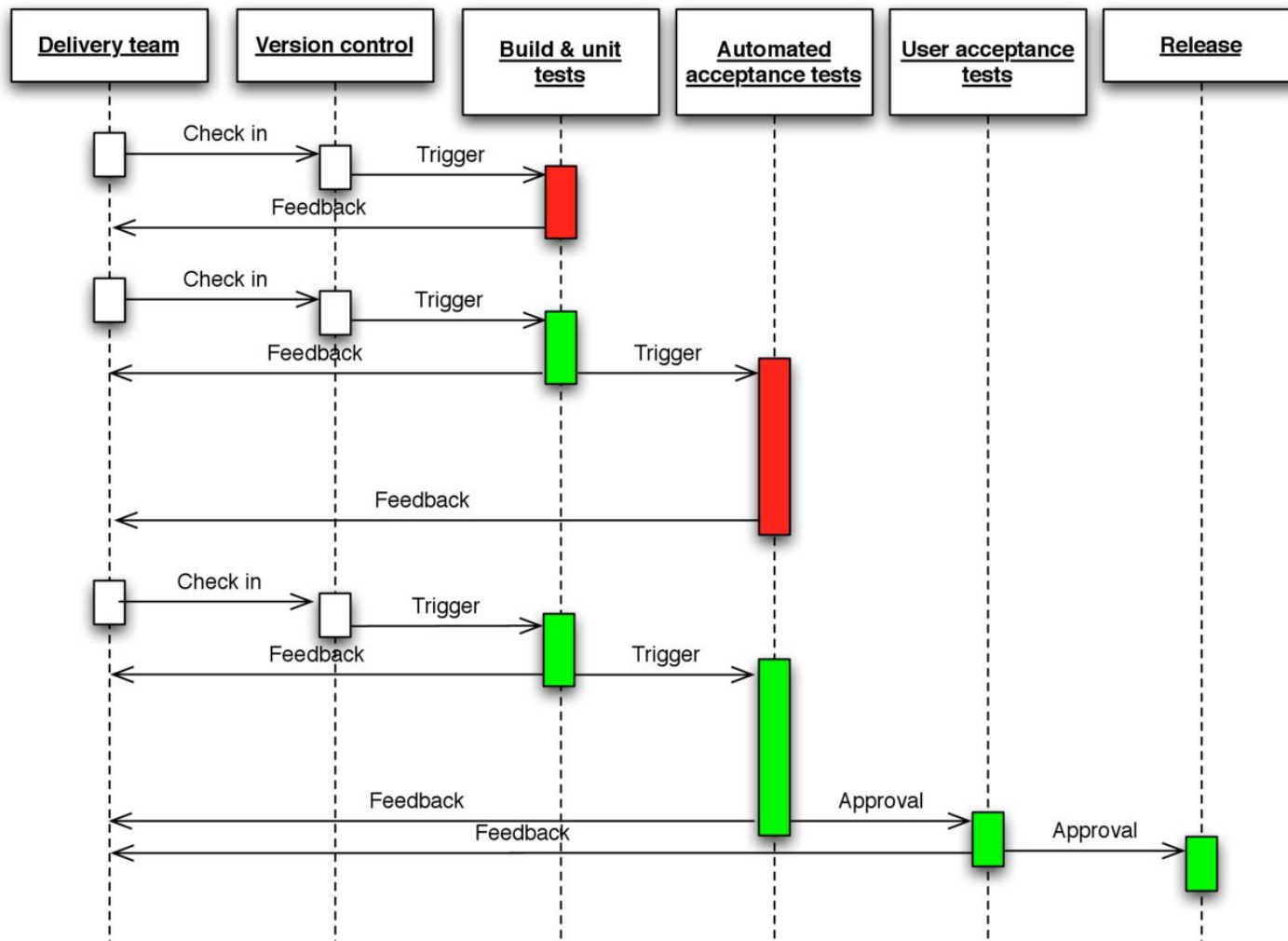
¿qué es devops? - ciclo de vida de una solución



¿qué es devops? - infraestructura como código (laC)



¿qué es devops? - tubería de despliegue (CI)



fuelle: jez humble

PERIODIC TABLE OF DEVOPS TOOLS (V2) [EMBED](#) [DOWNLOAD](#) [ADD](#)

Os	Open Source	SCM	Database Mgmt	Build
Fr	Free	CI	Repo Mgmt	Testing
Fm	Freemium	Deployment	Config / Provisioning	Containerization
Pd	Paid	Cloud / IaaS / PaaS	Release Mgmt	Collaboration
En	Enterprise	BI / Monitoring	Logging	Security

91 En Xlr XL Release	92 En Ur UrbanCode Release	93 En Bm BMC Release	94 En Ca CA Release Automation	95 En Au Automic	96 En Pl Plutora Release	97 En Sr Micro Focus Release	98 Pd Tfs Team Foundation	99 Fm Ti Trello	100 Pd Jr Jira	101 Fm Rf HipChat	102 Fm Sl Slack	103 Fm Fd Flowdock	104 Pd Pv Pivotal Tracker	105 En Sn ServiceNow
106 Os Ki Kibana	107 Fm Nr New Relic	108 En Dt Dynatrace	109 Os Ni Nagios	110 Os Zb Zabbix	111 En Dd Datadog	112 Os El Elasticsearch	113 Fm Ad AppDynamics	114 En Sp Splunk	115 Fm Le Logentries	116 Fm Sl Sumo Logic	117 Os Ls Logstash	118 Os Sn Snort	119 Os Tw Tripwire	120 En Ff Fortify WebInspect

entorno de prácticas



ZIPI

(192.168.56.10)

DOCKER engine
NAGIOS node



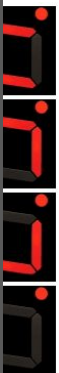
ZAPE

(192.168.56.11)

ANSIBLE server
NAGIOS server

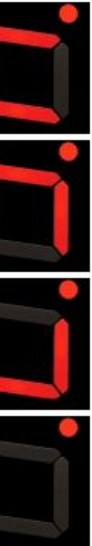


<http://localhost:8082/nagios3/>



herramientas para las prácticas

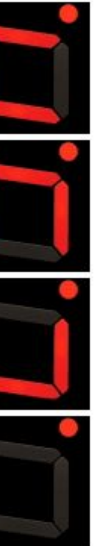
- virtualbox: <https://www.virtualbox.org/>
- vagrant: <http://www.vagrantup.com/>
- putty: <http://www.chiark.greenend.org.uk/>
- sublime text: <http://www.sublimetext.com/>
- git: <http://git-scm.com/>
- sourcetree: <http://www.sourcetreeapp.com/>





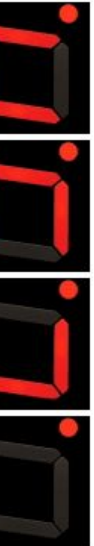
desarrollo

día 1



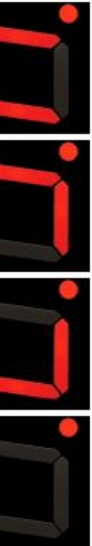
desarrollo: índice

1. editor
2. entorno virtualizado
3. control de versiones

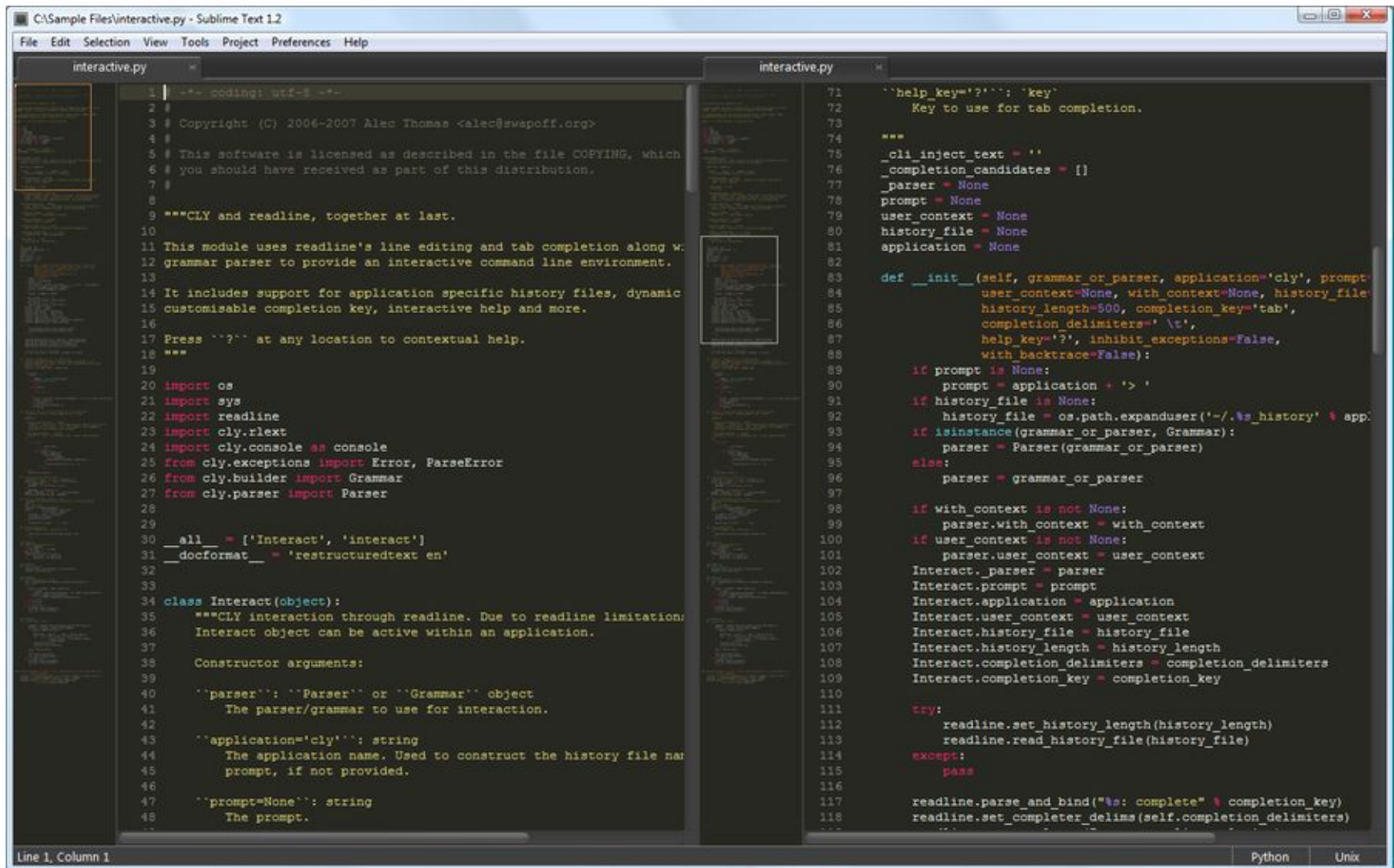


editores: herramientas

Geany BBEdit TextWrangler
Vim UltraEdit
TextEdit Pico jEdit
Tincta gedit VEDIT
Kate TextMate Alphatk Editra
AkelPad XEmacs Atom Nano SublimeText Gobby Coda
TextPad ConTEXT JOE JED
JOVE KEDIT KWrite
Notepad++ epsilon ScITE
PSPad Xeditor Acme PolyEdit



editores - sublime text

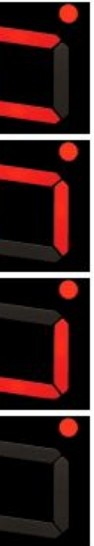


```
1  -*- coding: utf-8 -*-
2
3  Copyright (C) 2006-2007 Alec Thomas <alec@swapoff.org>
4
5  This software is licensed as described in the file COPYING, which
6  you should have received as part of this distribution.
7
8
9  """CLY and readline, together at last.
10
11 This module uses readline's line editing and tab completion along w
12 grammar parser to provide an interactive command line environment.
13
14 It includes support for application specific history files, dynamic
15 customisable completion key, interactive help and more.
16
17 Press ``?`` at any location to contextual help.
18 """
19
20 import os
21 import sys
22 import readline
23 import cly.rlexst
24 import cly.console as console
25 from cly.exceptions import Error, ParseError
26 from cly.builder import Grammar
27 from cly.parser import Parser
28
29
30 all_ = ['Interact', 'interact']
31 __docformat__ = 'restructuredtext en'
32
33
34 class Interact(object):
35     """CLY interaction through readline. Due to readline limitation:
36     Interact object can be active within an application.
37
38     Constructor arguments:
39
40     ``parser``: ``Parser`` or ``Grammar`` object
41         The parser/grammar to use for interaction.
42
43     ``application='cly'``: string
44         The application name. Used to construct the history file na
45         prompt, if not provided.
46
47     ``prompt=None``: string
48         The prompt.
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71     ``help_key='?'``: 'key'
72         Key to use for tab completion.
73
74     """
75     cli_inject_text = ''
76     _completion_candidates = []
77     _parser = None
78     prompt = None
79     user_context = None
80     history_file = None
81     application = None
82
83     def __init__(self, grammar_or_parser, application='cly', prompt=
84         user_context=None, with_context=None, history_file=
85         history_length=500, completion_key='tab',
86         completion_delimiters=' \t',
87         help_key='?', inhibit_exceptions=False,
88         with_backtrace=False):
89         if prompt is None:
90             prompt = application + '> '
91         if history_file is None:
92             history_file = os.path.expanduser('~/.%s_history' % app
93         if isinstance(grammar_or_parser, Grammar):
94             parser = Parser(grammar_or_parser)
95         else:
96             parser = grammar_or_parser
97
98         if with_context is not None:
99             parser.with_context = with_context
100         if user_context is not None:
101             parser.user_context = user_context
102         Interact._parser = parser
103         Interact.prompt = prompt
104         Interact.application = application
105         Interact.user_context = user_context
106         Interact.history_file = history_file
107         Interact.history_length = history_length
108         Interact.completion_delimiters = completion_delimiters
109         Interact.completion_key = completion_key
110
111     try:
112         readline.set_history_length(history_length)
113         readline.read_history_file(history_file)
114     except:
115         pass
116
117     readline.parse_and_bind("%s: complete" % completion_key)
118     readline.set_completer_delims(self.completion_delimiters)
119     ...
```

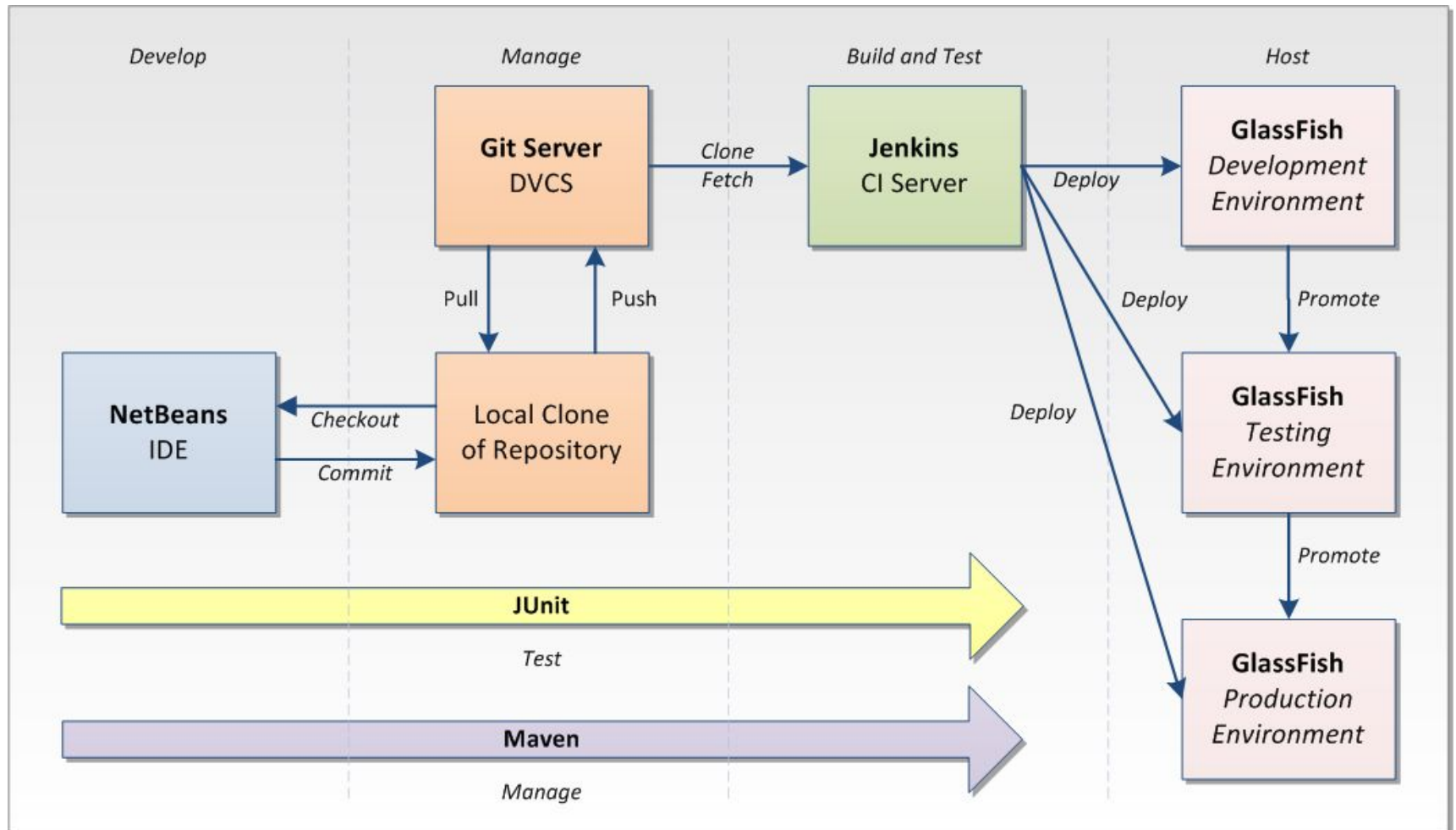


ejemplos reales

día 1



ejemplo 1.1: Java CI



fuelle: <http://goo.gl/3sjkL2>

ejemplo 1.2: Sergejus Barinova on deployment @ AdForm

Adform Releazr by RnD

Release Dashboard

Deploy Queue

Facts

ADFORM's barinovas

Show releases for

any

team for period

2013-04-11

-

2013-04-19

Register new release

Export to Excel

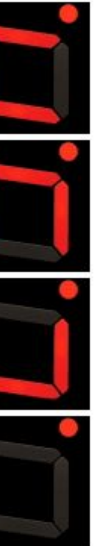
Team, Release	DEV1	DEV3	INTEG	PREPROD	PROD
2013-04-19 (4)	4 passed	1 failed 3 passed	4 passed	4 passed	4 passed
Direct Integrations AdServing (Global) Notes: 2013-04-19 - 1.2.372	passed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log Mark not ready	passed Deploy Roll back Resume Log
Direct Integrations Inventory Sources UI	passed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log Mark not ready	passed Deploy Roll back Resume Log
Direct Integrations Inventory Sources Service	passed Deploy Roll back Resume Log	failed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log	passed Deploy Roll back Resume Log Mark not ready	passed Deploy Roll back Resume Log

fuelle: <http://www.infoq.com/presentations/continuous-delivery-happiness>



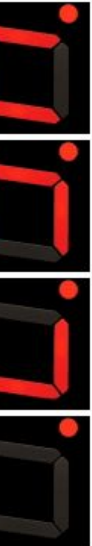
desarrollo: git

control de versiones

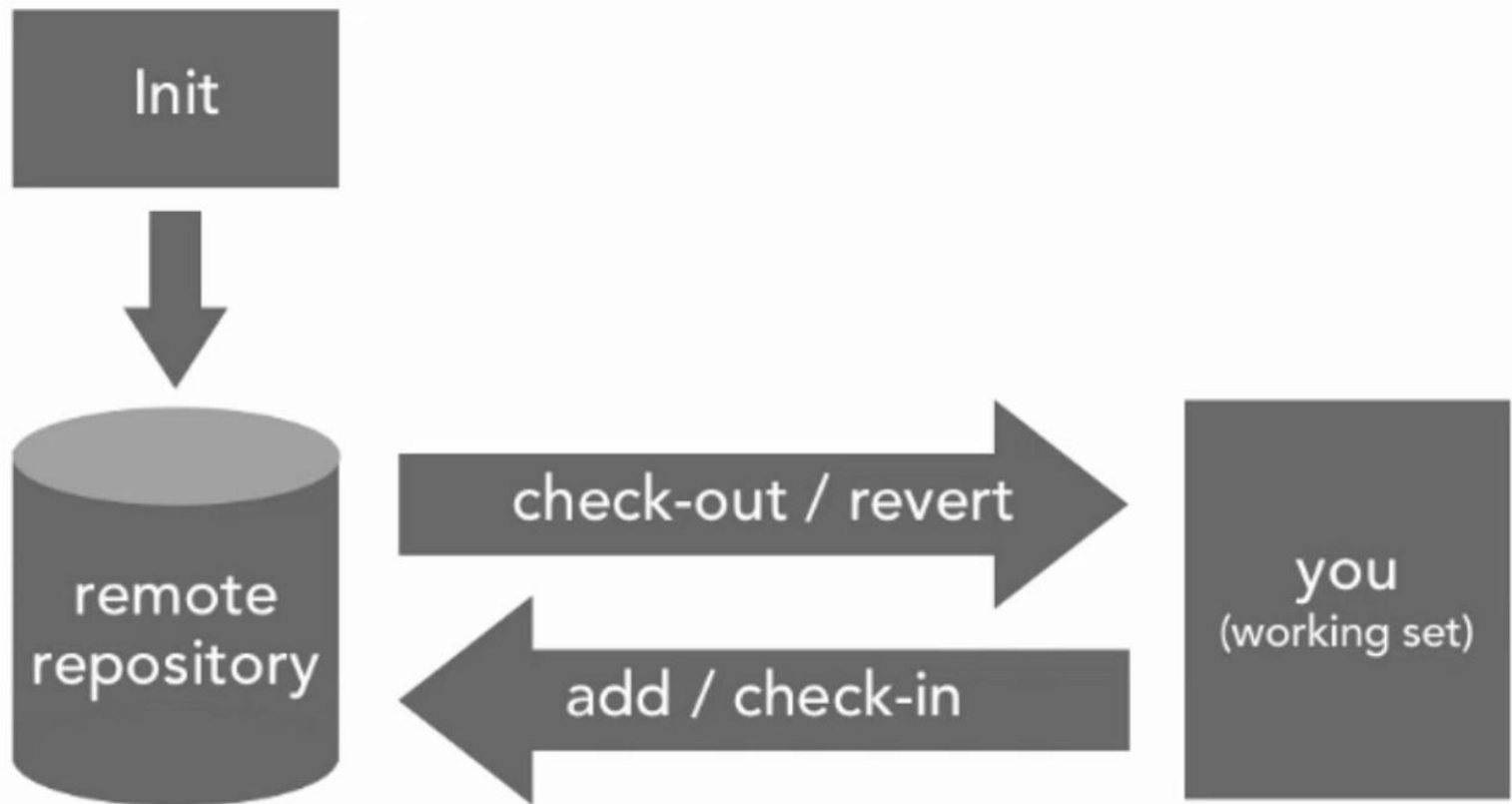


control de versiones: herramientas

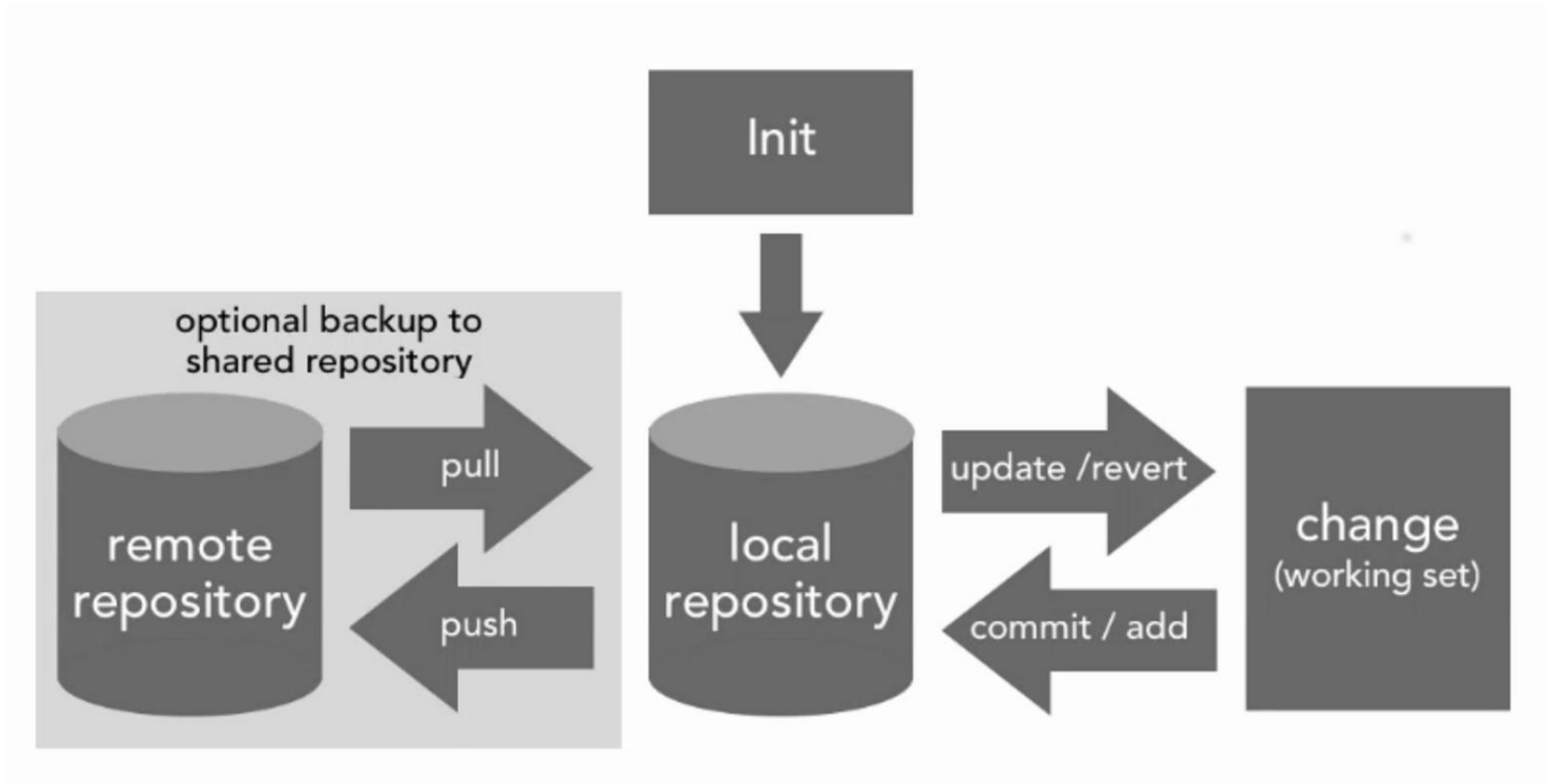
Mercurial Vault
Git SVK Monotone
BitKeeper darcs CVS
Subversion
Synergy Vesta TFS
StarTeam Perforce
VSS Codeville
Fossil PVCS Bazaar
Veracity



control de versiones: centralizado



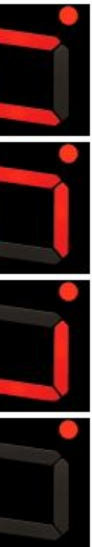
control de versiones: distribuido



control de versiones: centralizado contra distribuido

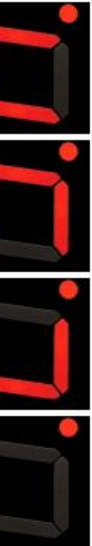
Centralized	
CVS	1986
Perforce	1995
Subversion	2000
MS Team Foundation Server	2010

Distributed	
Git	2005
Mercurial	2005

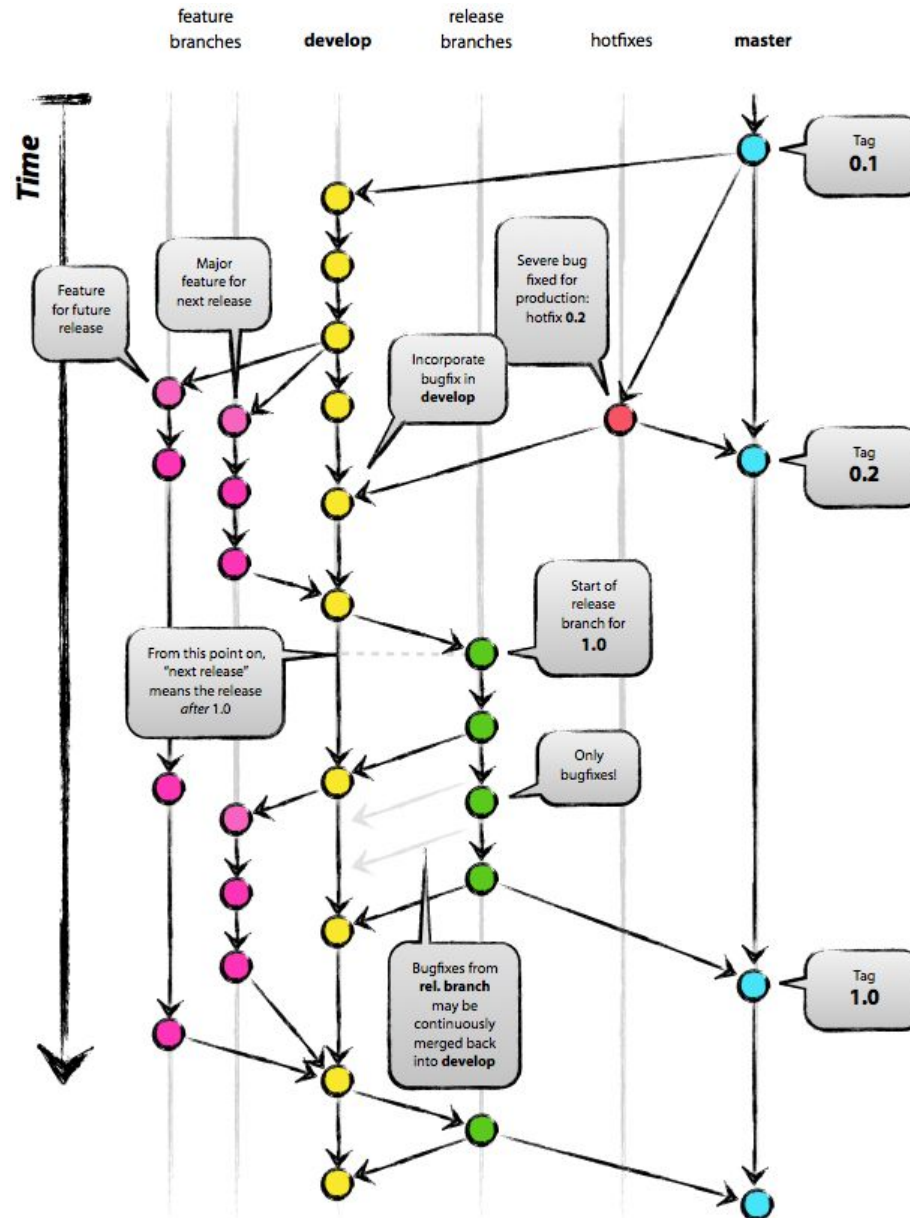


control de versiones: beneficios

- Sincronización
- Responsabilidad
- Detección de conflictos
- Seguimiento de cambios
- Deshacer a la versión X
- Etiquetado de cambios
- *Copias de seguridad*

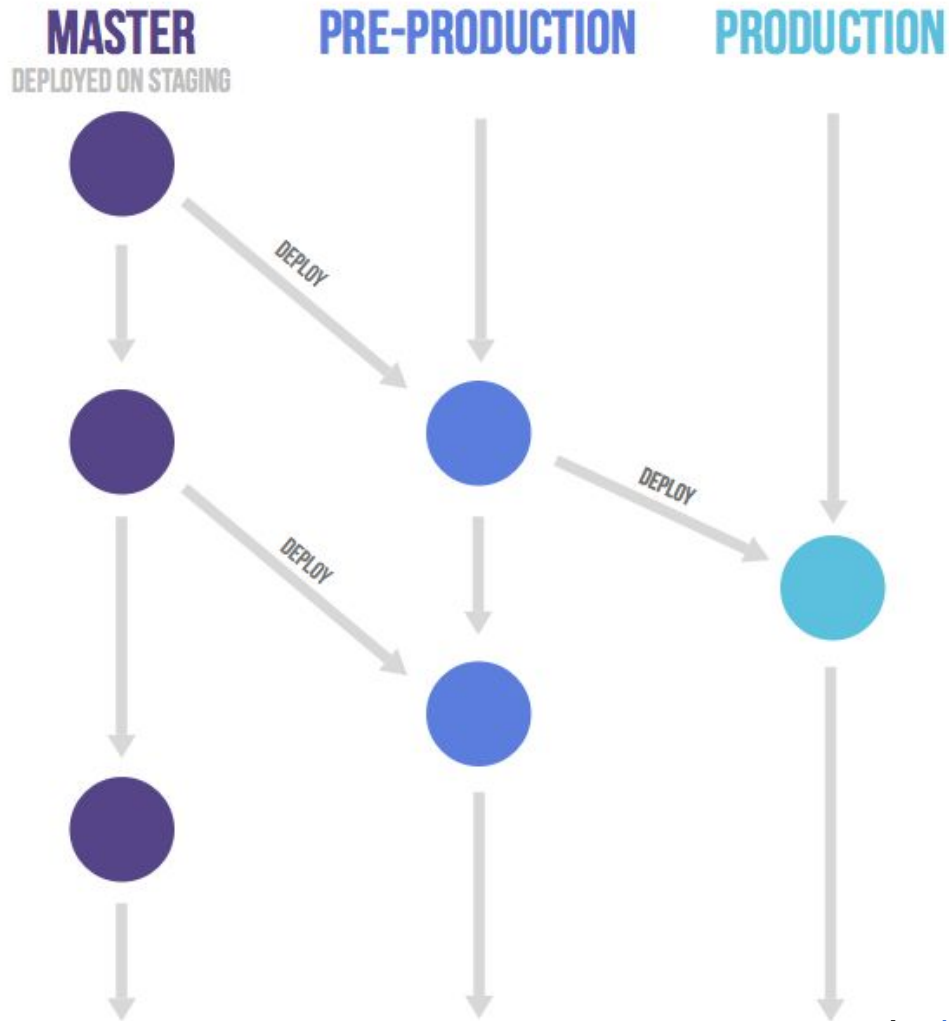


ramas: git flow



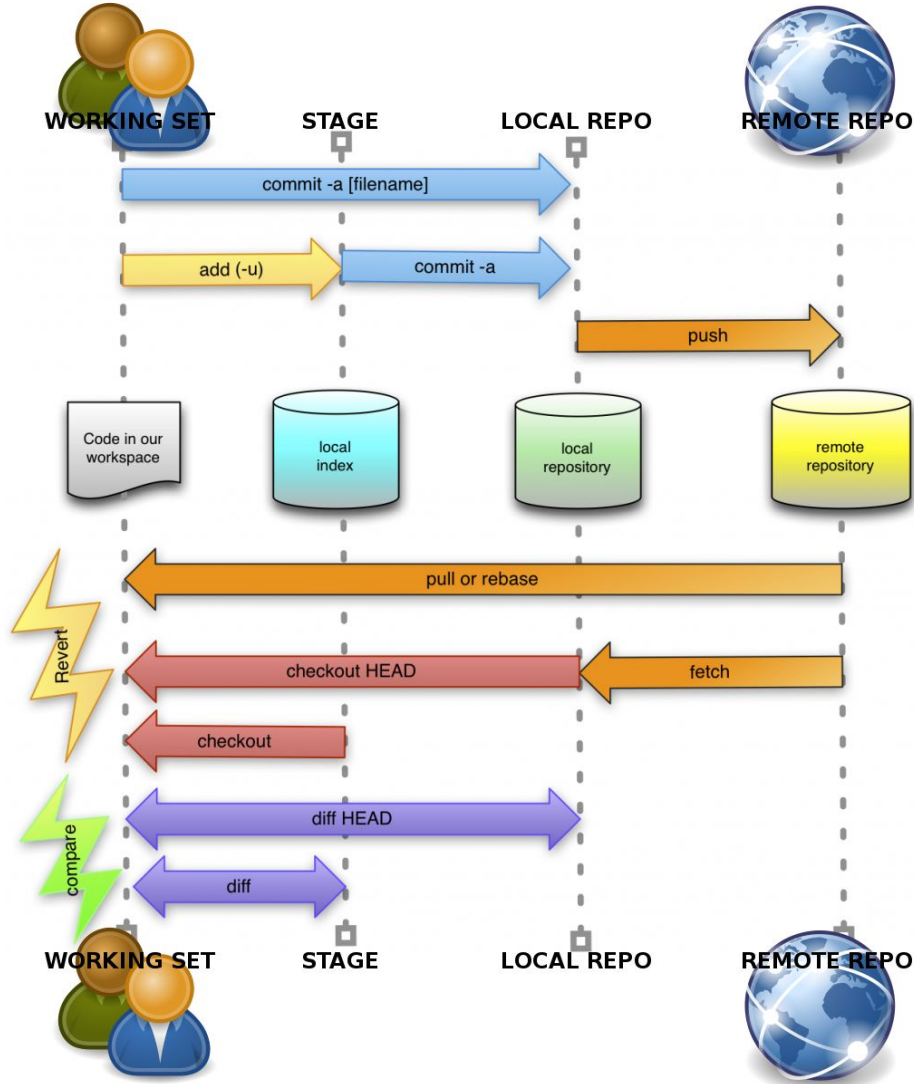
más: <http://goo.gl/Tf1vn>

ramas: gitlab flow



más: <https://goo.gl/Z0w1nQ>

desarrollo: git - comandos de transporte de datos



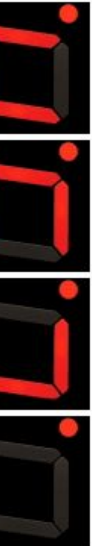
desarrollo: git - más información

Git - <http://git-scm.com>

<http://gitref.org/>

<https://www.atlassian.com/git/>

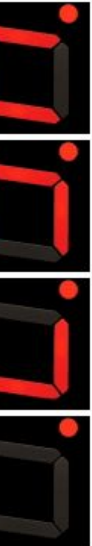
<http://rogerdudler.github.io/git-guide/>



desarrollo:

git - práctica

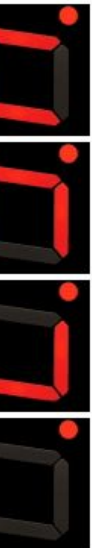
<http://try.github.io/>



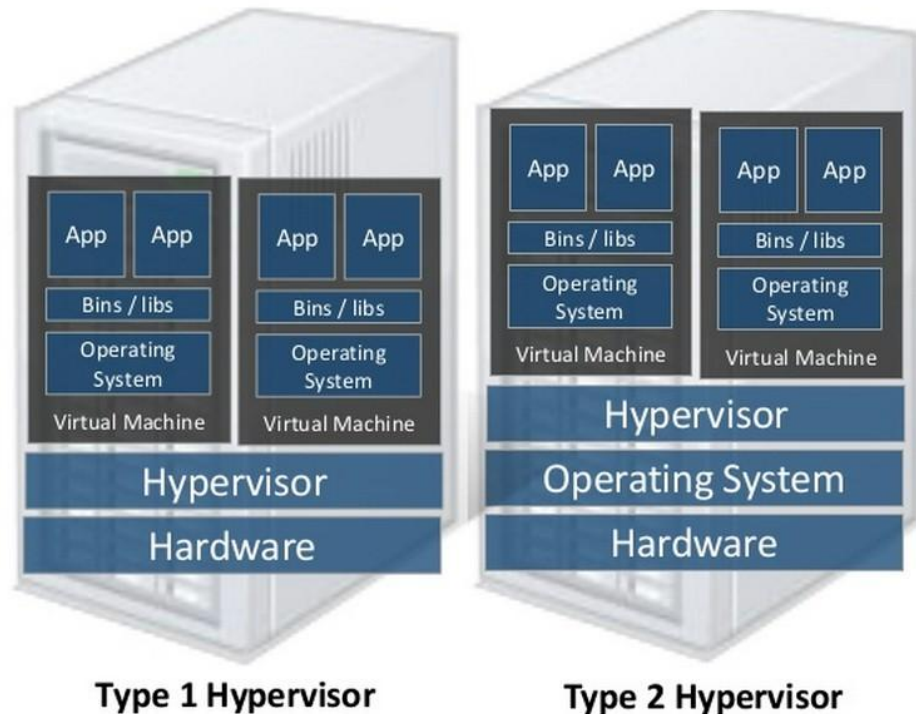


desarrollo: vagrant

entorno de desarrollo virtualizado



entorno virtualizado: ¿que es?

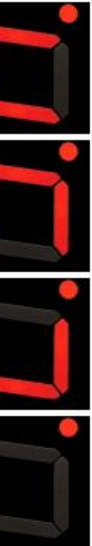


Oracle VM Server, Citrix
XenServer, VMware
ESX/ESXi, Microsoft
Hyper-V, ...

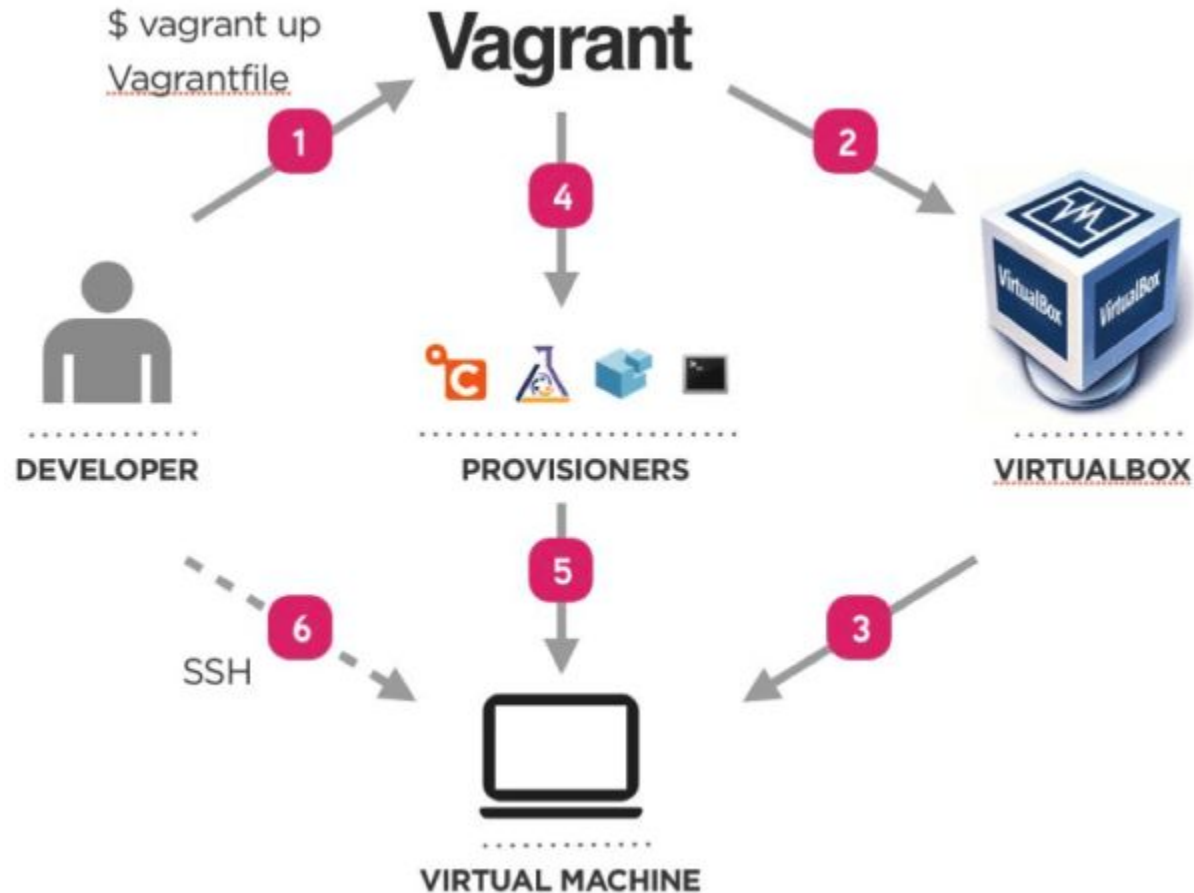
VMware Workstation,
VMware Player,
VirtualBox, Parallels,
KVM, QEMU, ...

entorno virtualizado: herramientas

Vagrant Hercules
GXemul OracleVM
DOSEMU QEMU
Virtuozzo OpenVZ
Xen OVPsim PikeOS
VMware KVM VirtualPC
LXC Hyper-V SunxVMserver PearPC
QuickTransit
VirtualBox

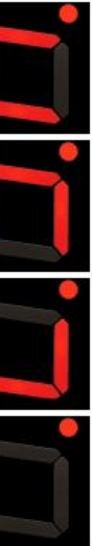


desarrollo: vagrant - ¿que es?



desarrollo: vagrant - práctica

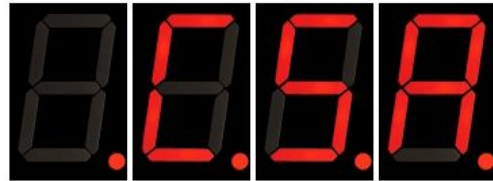
<https://github.com/carlessanagustin/AITM>



Carles San Agustín



www.carlessanagustin.com



[@carlesanagustin](https://twitter.com/carlesanagustin)

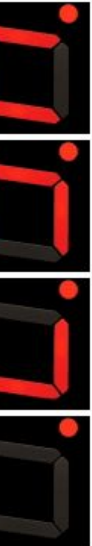


[linkedin.carlessanagustin.com](https://www.linkedin.com/company/carlessanagustin)



AGILE IT MANAGEMENT SCRUM, **DEVOPS**, LEAN IT

prácticas de devops

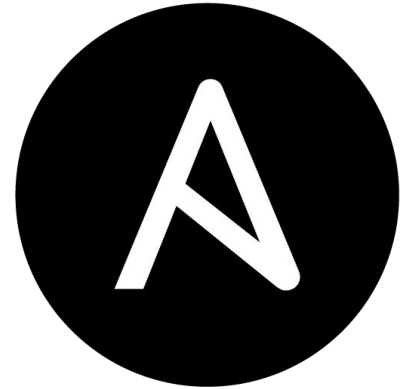




despliegue

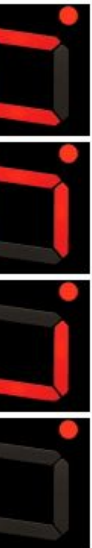
día 2





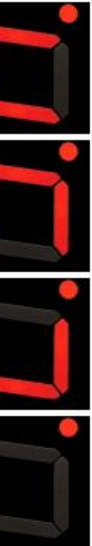
despliegue: ansible

infraestructura como código
gestión de configuración



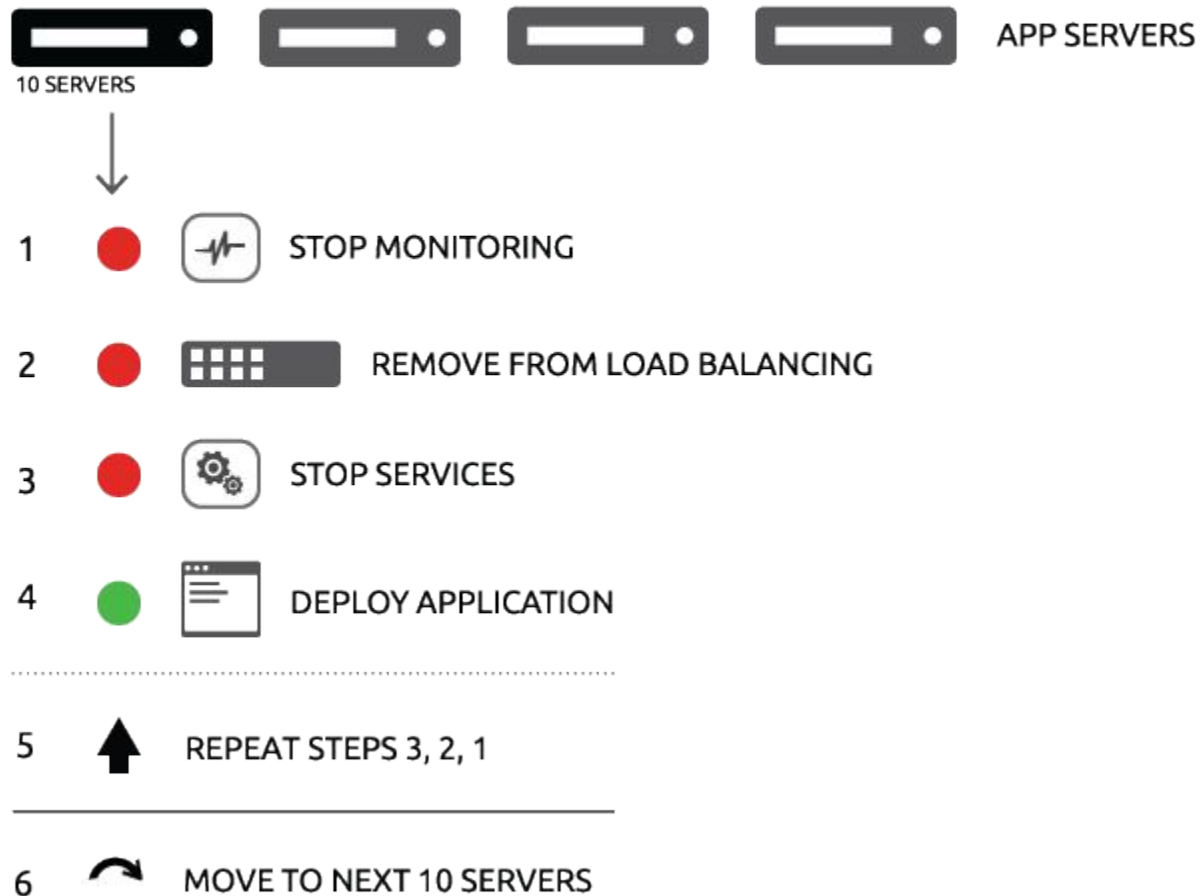
gestión de la configuración: herramientas

Ansible
Spacewalk
ISconf salt NixOS
Rundeck cdist
Bcfg2 Synctool
Radmind CFEngine STAF NOC
Juju Rex Quattor Puppet
Rudder GLPI
PIKT SmartFrog
LCFG Opsi Chef



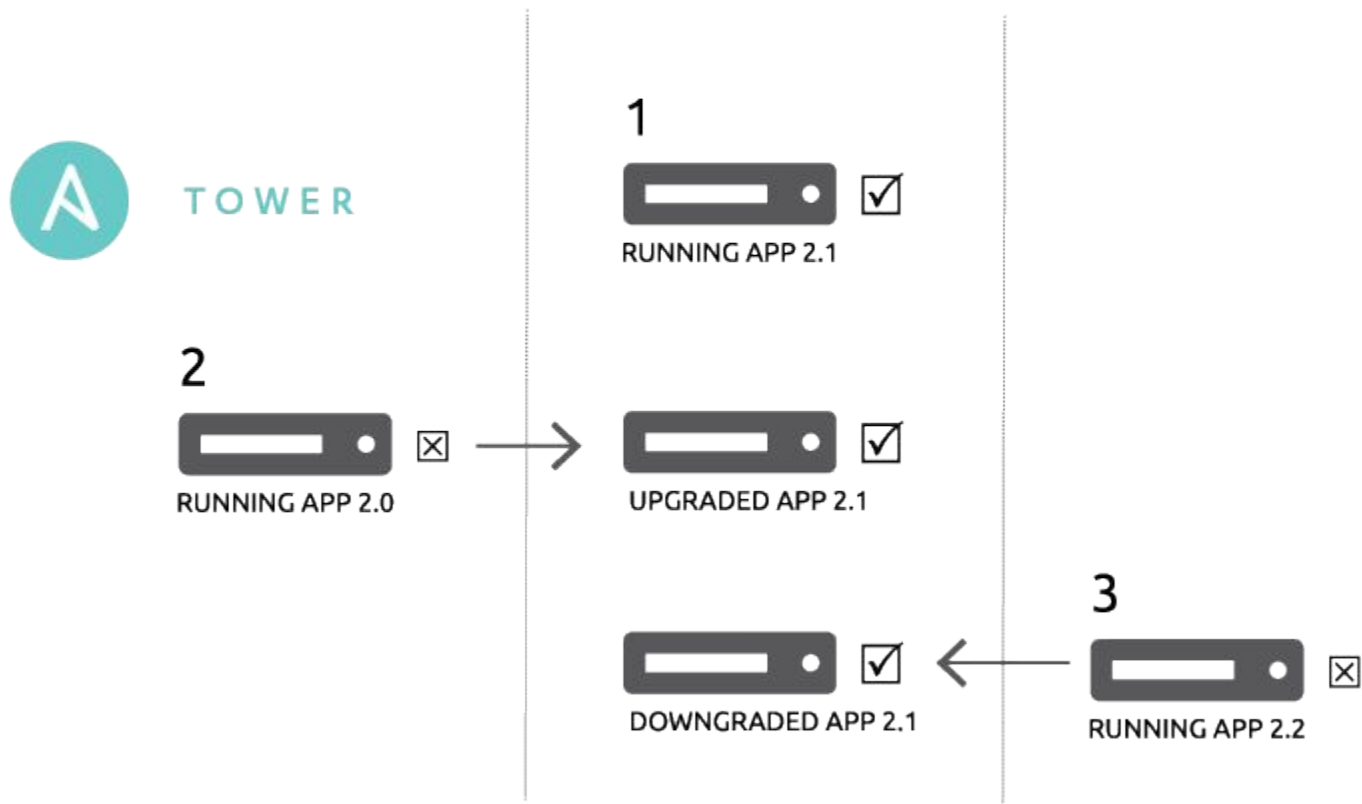
gestión de la configuración: ansible

- application deployment



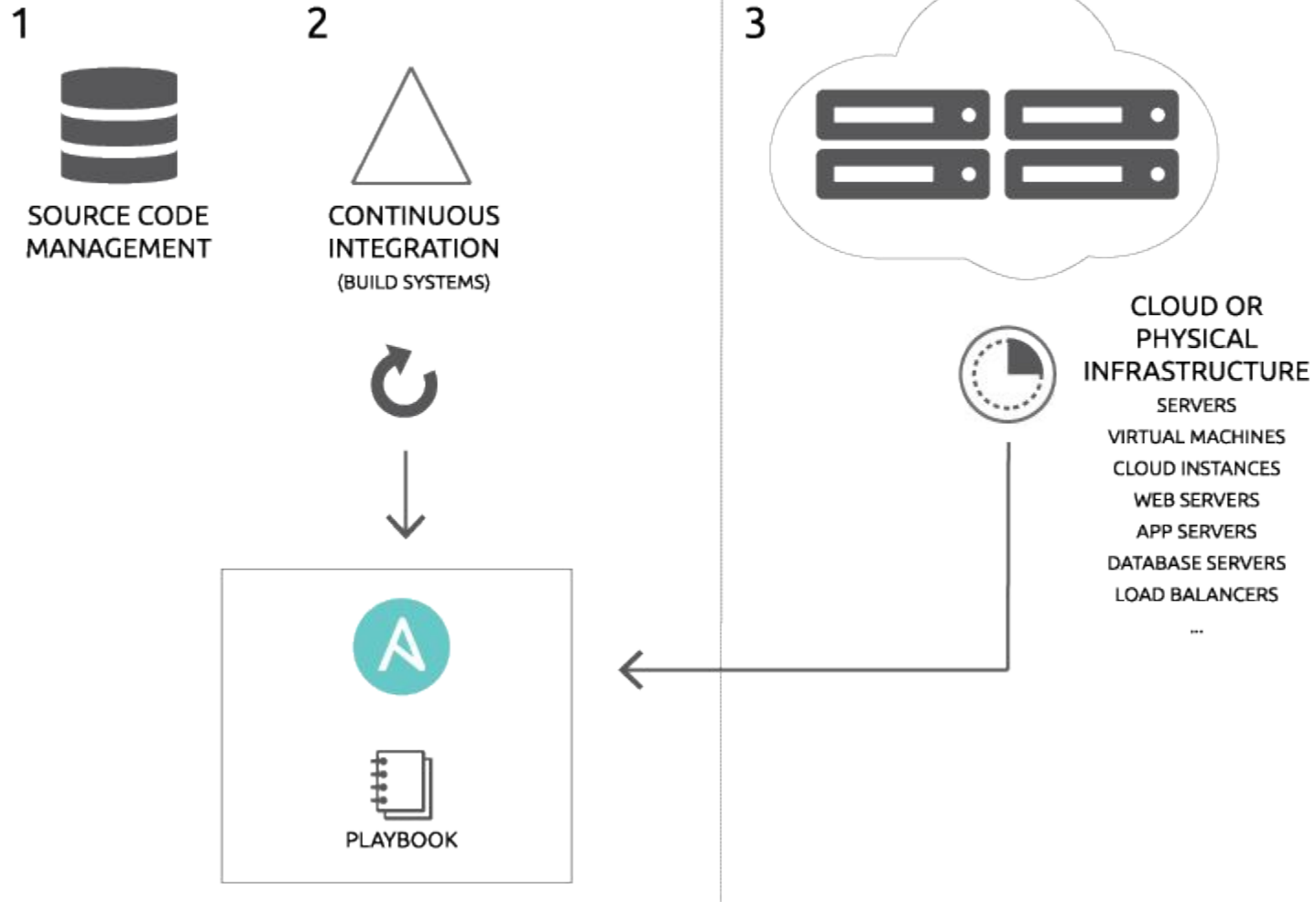
gestión de la configuración: ansible - configuration management

Configure all servers to run App version 2.1



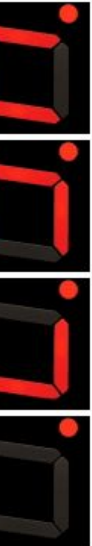
gestión de la configuración: ansible

- continuous delivery

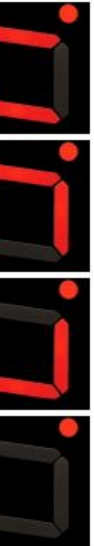


gestión de la configuración: ansible - práctica

<https://github.com/carlessanagustin/AITM>



despliegue: rendimiento



rendimiento: herramientas

SilkPerformer

BlazeMeter WebLOAD

VisualStudioUltimate

NeoLoad loadUI Gatling

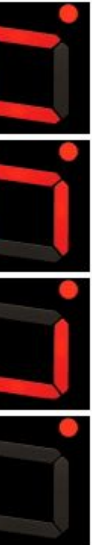
Blitz LoginVSI

JMeter Loaderio

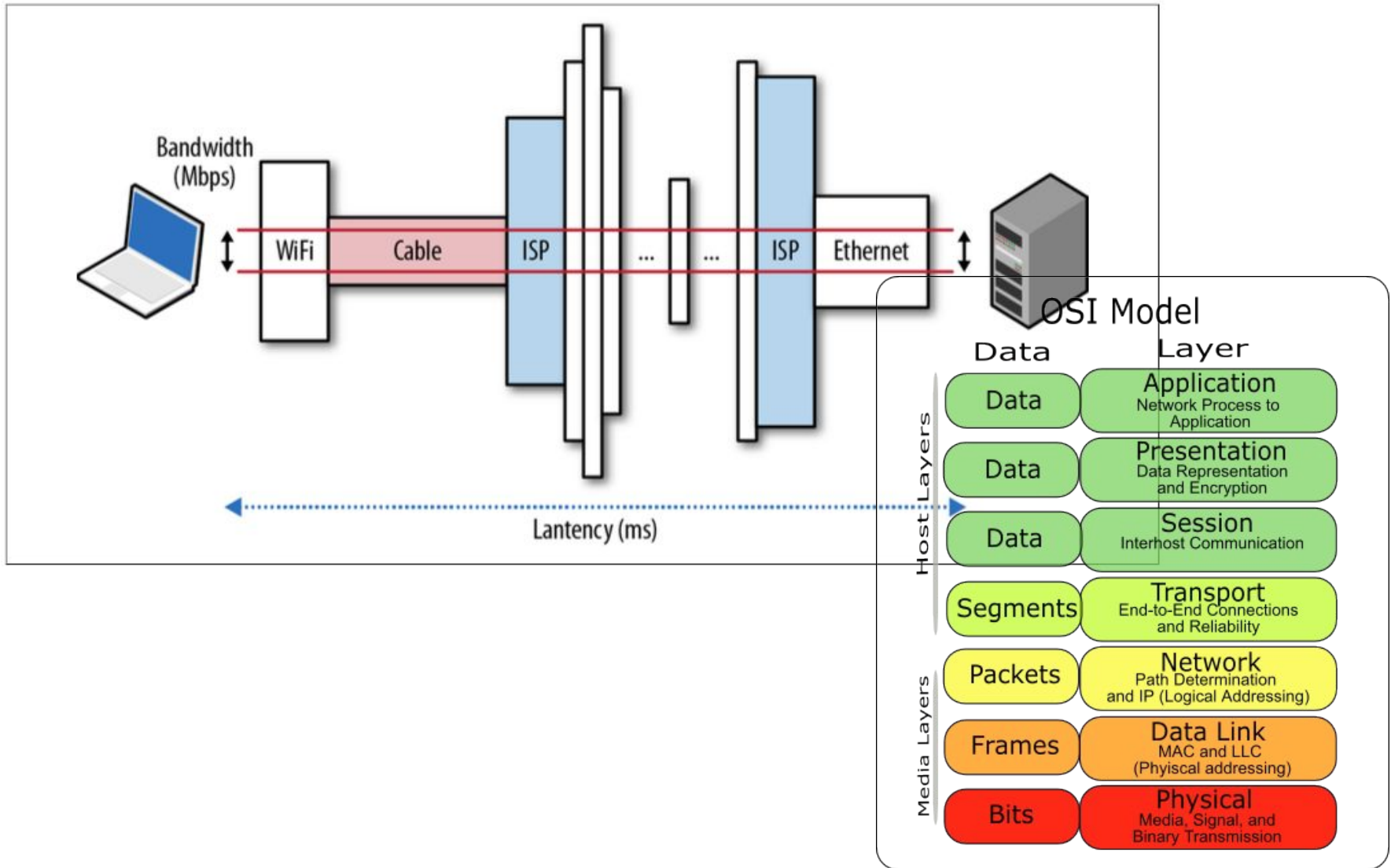
LoadRunner OpenSTA

CloudTest

TestStudio



rendimiento web: arquitectura



rendimiento web: ejemplos

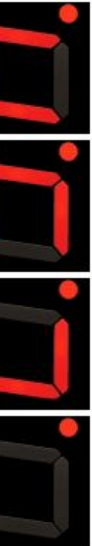
más: <http://goo.gl/F2QgU9>





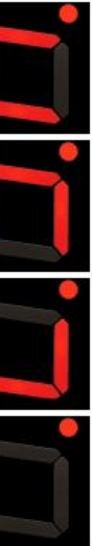
despliegue: nagios

monitorización



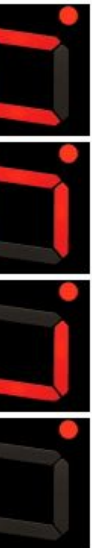
monitorización: herramientas

Zabbix OpenNMS
Nagios
Shinken PathSolutions
Argus
Scrutinizer
Glasswire Opsview Ganglia Cacti
OpenKBM SevOne NNMi AccelOps
NetXMS Spiceworks InterMapper
ServersCheck Pandora ExtraHop
collectd Monitorix Kaseya
Zenoss
Icinga NeuralStar Munin
Solarwinds

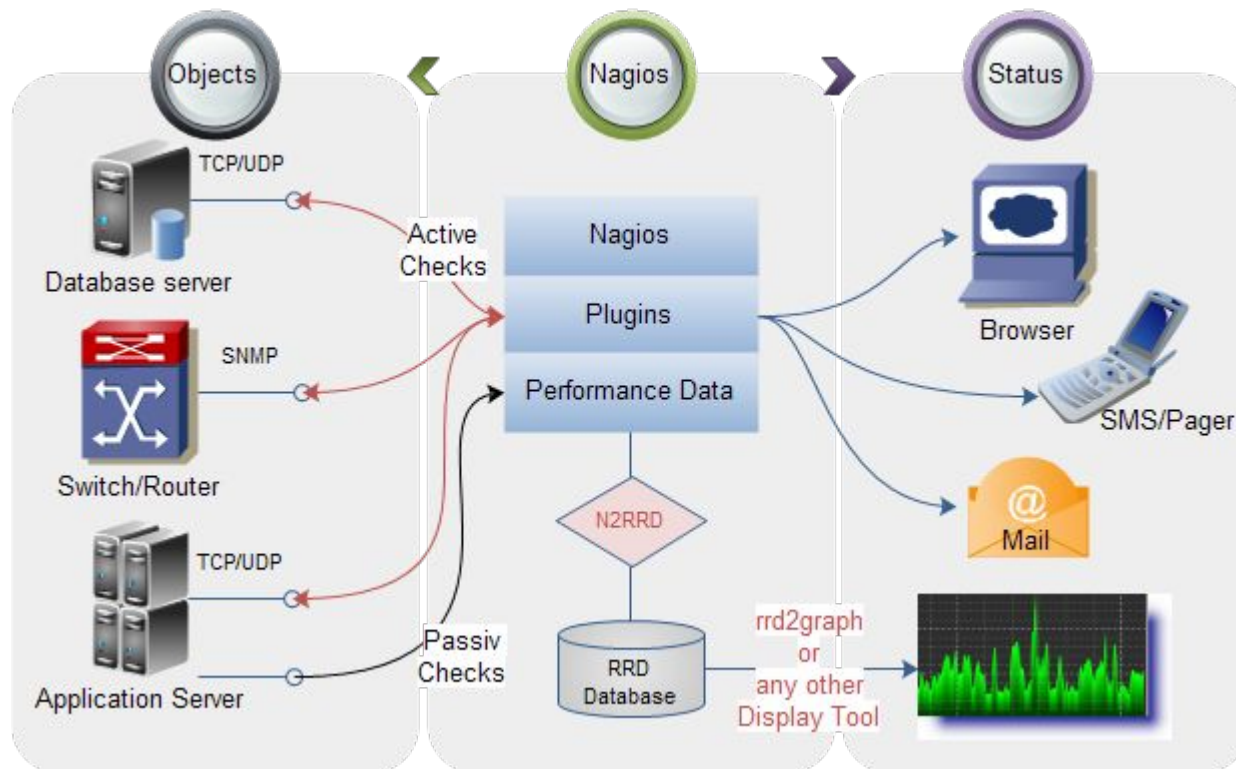


monitorización: tipos

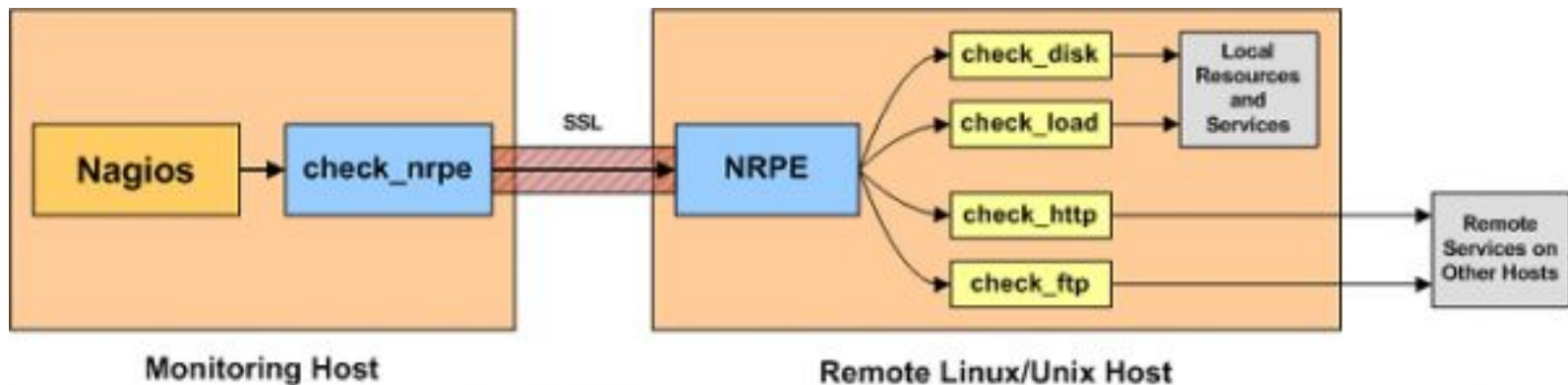
- Monitoreo de sistemas
- Monitoreo de redes
- Monitoreo de la dependencias
- Integración
- Monitoreo de la actividad de negocio
- Instrumentación de procesos o traceo
- Procesamiento de eventos complejos



monitorización: nagios - arquitectura

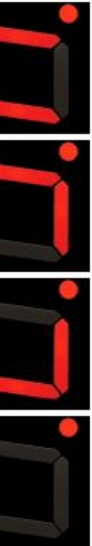


monitorización: nagios remote plugin executor



monitorización de sistemas y redes: nagios - práctica

<https://github.com/carlessanagustin/ALTm>



N



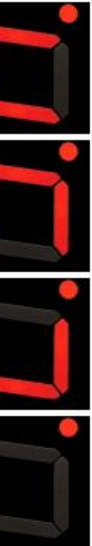
ejemplos reales

día 2



ejemplo 3.1: Andy Sykes on monitoring @ forward3d

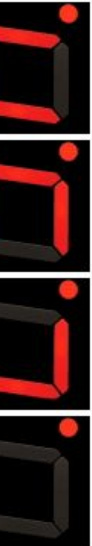
- sensu: <http://sensuapp.org/>
- graphite: <http://graphite.readthedocs.org/en/latest/>
- flapjac: <http://flapjack.io/>



fuentes: <https://www.youtube.com/watch?v=Q9BagdHGopg>

ejemplo 2.2: ruby on rails stack (sysdivision)

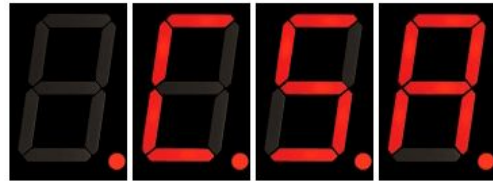
- ubuntu
- proxmox
- nginx
- unicorn
- ruby + rails
- capistrano
- redis
- mongodb
- capybara + cucumber



Carles San Agustín



www.carlessanagustin.com



[@carlesanagustin](https://twitter.com/carlesanagustin)

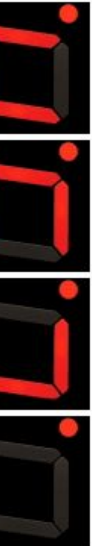


[linkedin.carlessanagustin.com](https://linkedin.com/company/carlessanagustin)



AGILE IT MANAGEMENT SCRUM, **DEVOPS**, LEAN IT

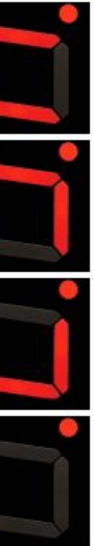
prácticas de devops



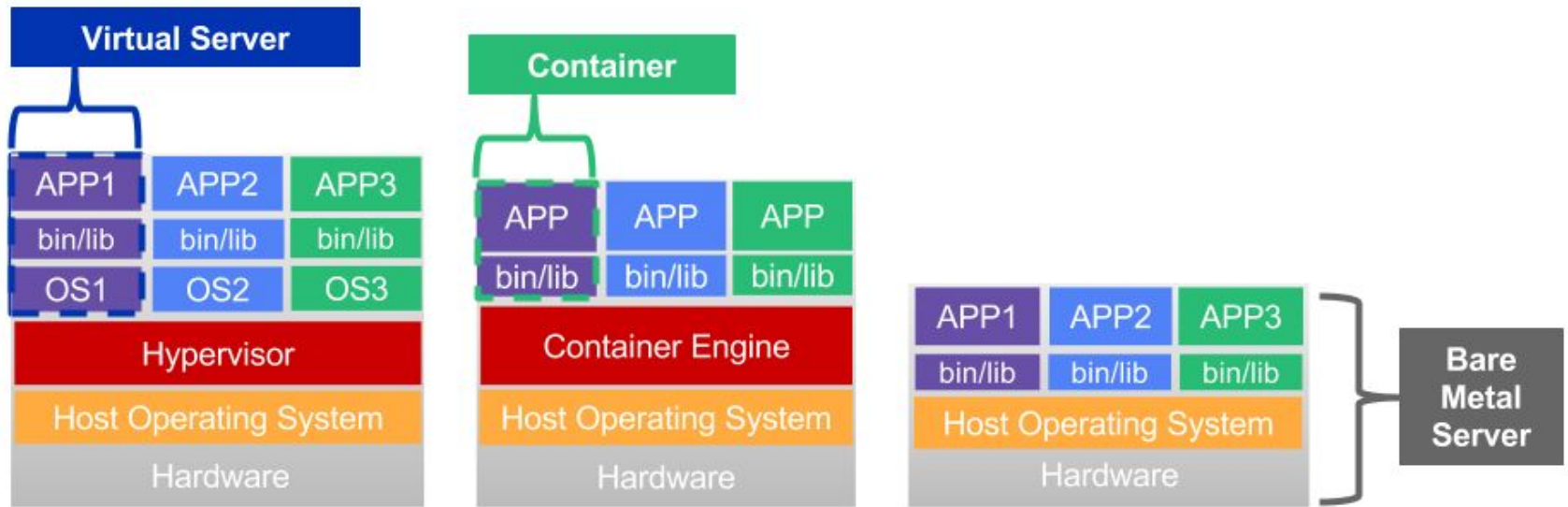


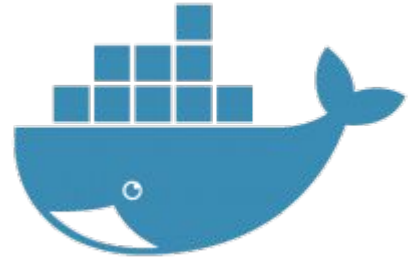
entornos

día 3



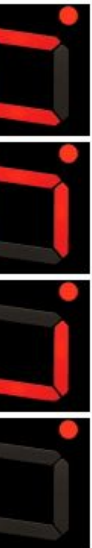
entornos actuales





entornos: docker

contenedores de aplicaciones



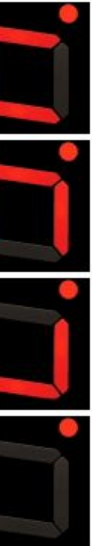
separación de intereses

desarrolladores o programadores

- Código
- Librerías
- Aplicación
- Gestor de paquetes
- Información y datos

operaciones o sysadmin

- Registro (logging)
- Acceso remoto
- Configuración de red
- Monitorización



separación de intereses

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- Acceso remoto
- Configuración de red
- Monitorización



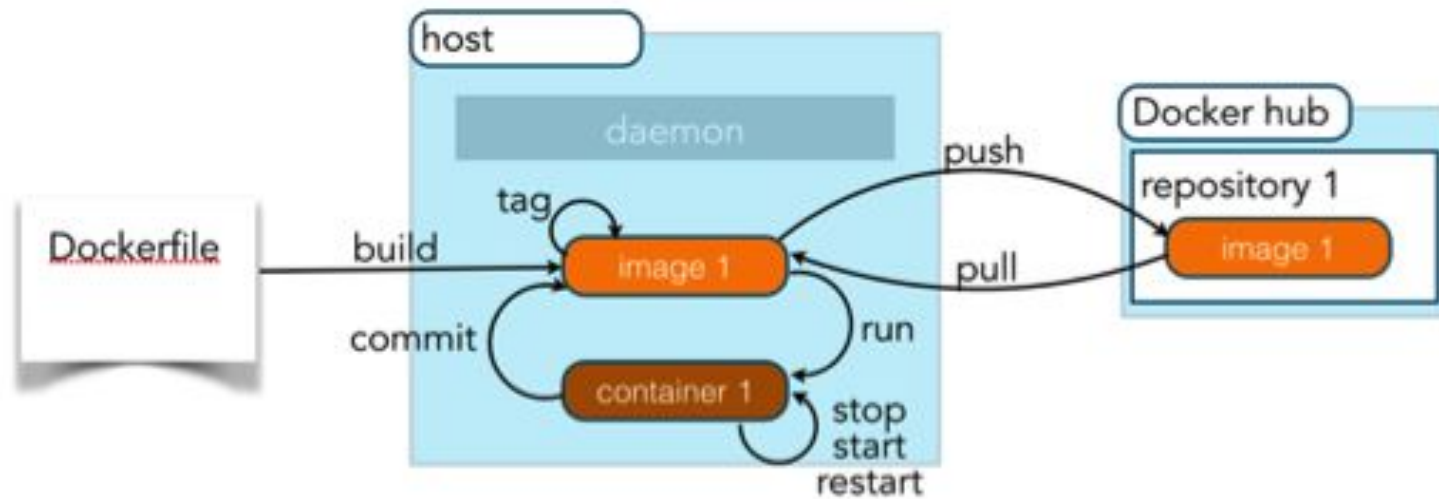
Consistencia de sistemas

Gestión de redes y
volúmenes nativo

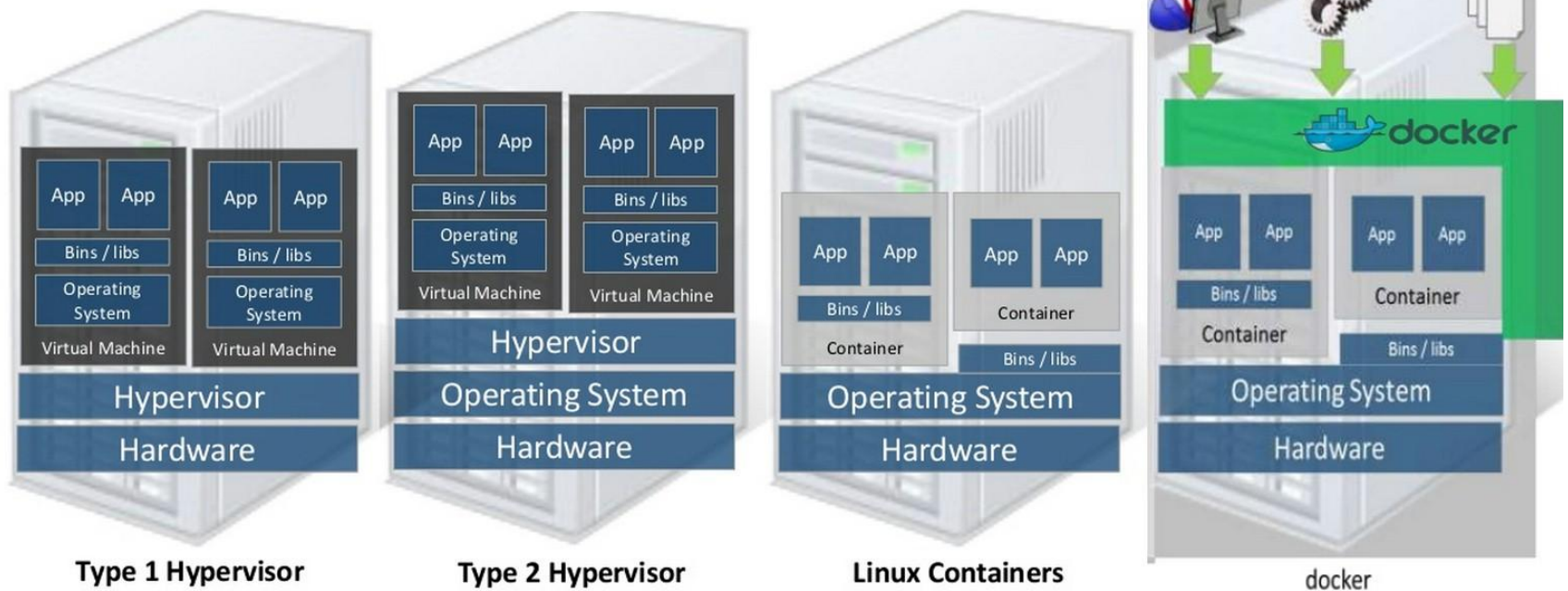
Clustering y redes
escalable nativo

Flexibilidad con
arquitectura conectable al
ecosistema

docker: workflow



máquinas virtuales vs docker



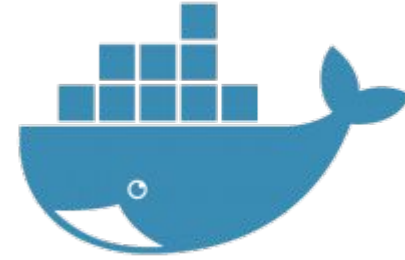
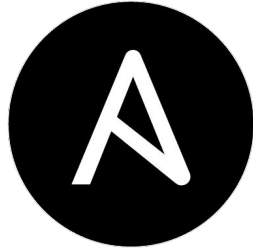
Oracle VM Server, Citrix
XenServer, VMware
ESX/ESXi, Microsoft
Hyper-V, ...

VMware Workstation,
VMware Player,
VirtualBox, Parallels,
KVM, QEMU, ...

LXC

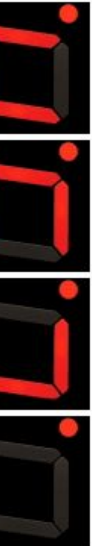
Docker

ansible vs docker



- Muchas veces depende de otros playbooks o repositorios (como apt-get o yum) para instalar software.
- Las dependencias son resueltas a tiempo de convergencia (instalación o actualización)
- Los cambios pueden ser desplegados para evolucionar un servidor.

- Docker aprovisiona aplicaciones en servidores en una capa separada del sistema operativo.
- Las dependencias son resueltas en el momento de crear la imagen (ejemplo: *docker build* o *docker entrypoint*).
- Los cambios deben hacerse deteniendo y sustituyendo un container por una nueva versión (matar el ganado).



docker: dockerfile

```
FROM ubuntu:12.04
```

➤ Base Image

```
RUN apt-get -y install ruby
```

➤ Install Dependencies

```
ADD . /app/
```

➤ Add Files to Container

```
EXPOSE 3000
```

➤ Expose Port

```
CMD rails server
```

➤ Launch Command

myapp

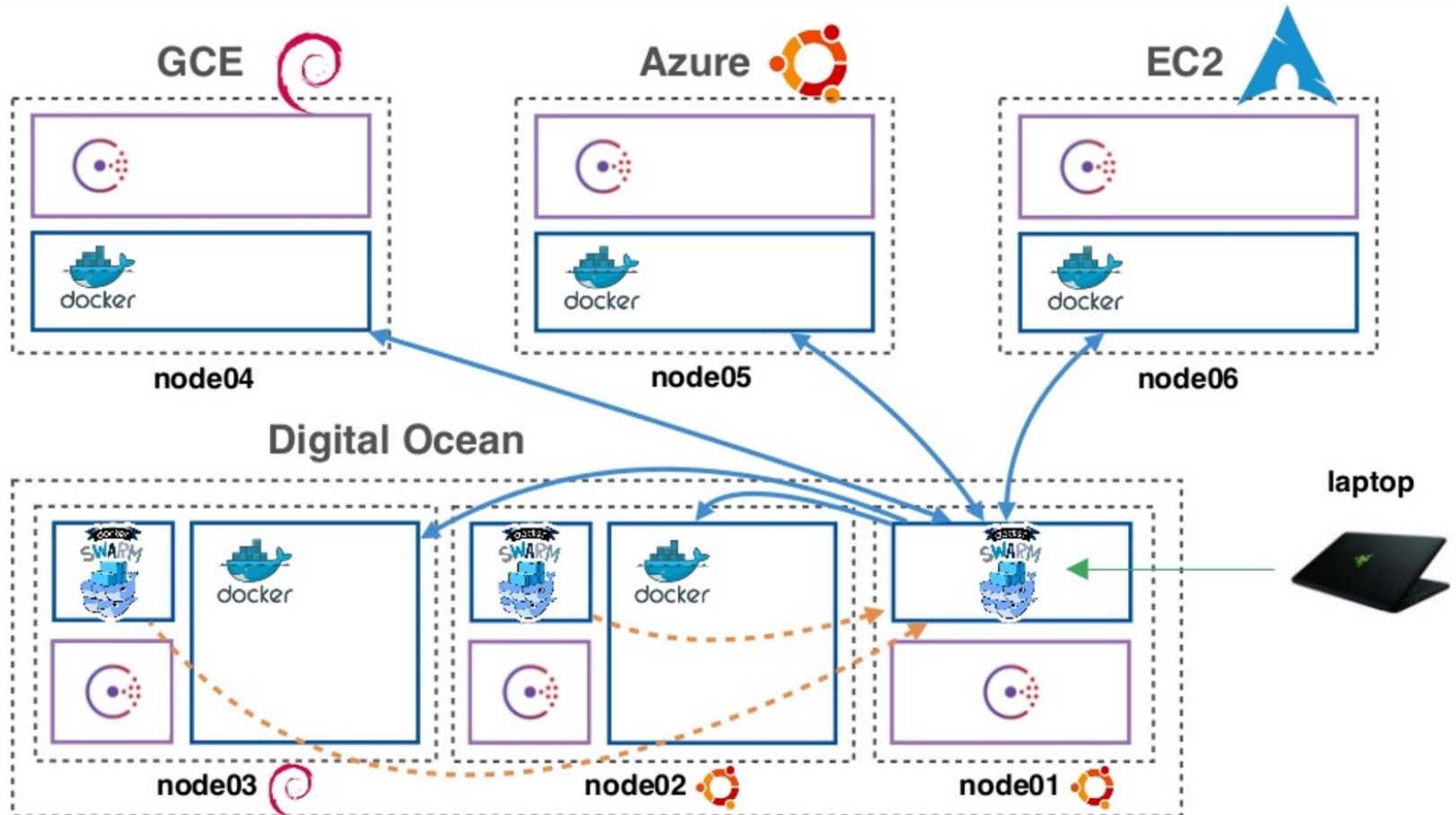


construye, empaqueta y ejecuta cualquier aplicación, en cualquier lugar

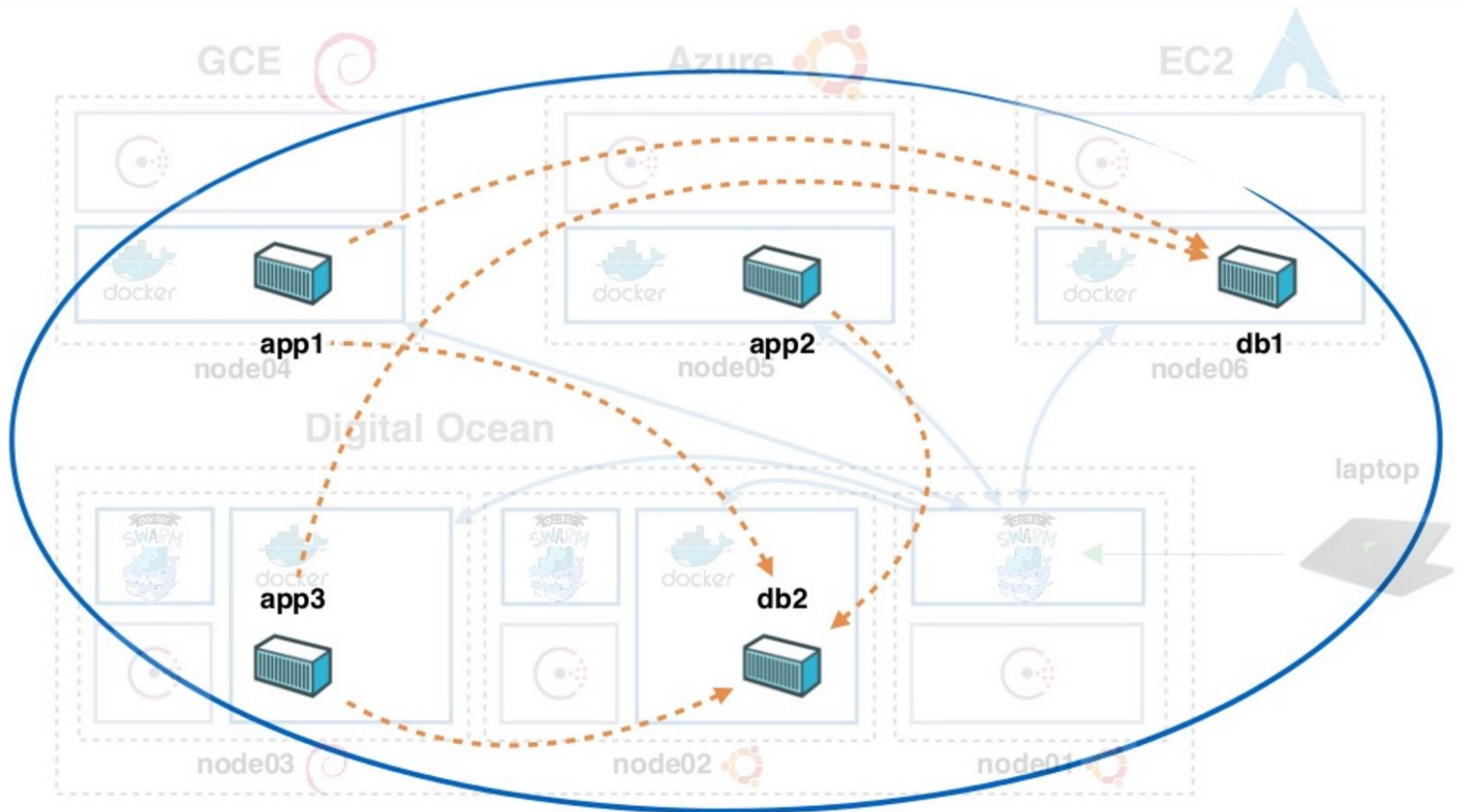


Docker motto: Build, Ship, and Run Any App, Anywhere

docker: sistemas distribuidos

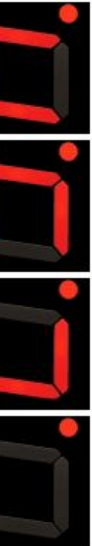
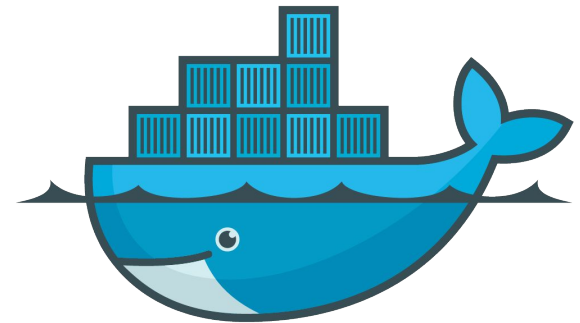


docker: sistemas distribuidos



entornos: docker - práctica

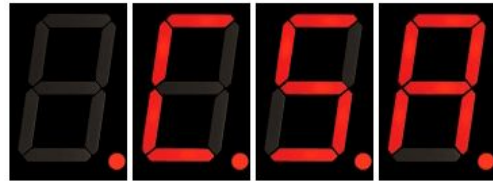
<https://github.com/carlessanagustin/AITM>



Carles San Agustín



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