

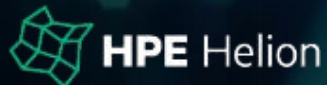


HPE Stackato 云原生应用开发

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Software is eating up the world*



之前只是听说

* Marc Andreessen
in Wall Street Journal

5


2015 Gartner 调查表明

- 到2019年，企业软件销售额达到\$150B ~\$201B
- 45%的企业IT的首要目标是“应用现代化”
- SaaS将占软件实现的50%
- 到2020年，75%的商业应用将自建，而不是购买。

正在变为现实.....

An aerial photograph of a parking lot with a grid of white lines. A large green-bordered white rectangle is centered in the image, containing the text '交付软件的能力不再是差异'.

交付软件的能力不再是差异

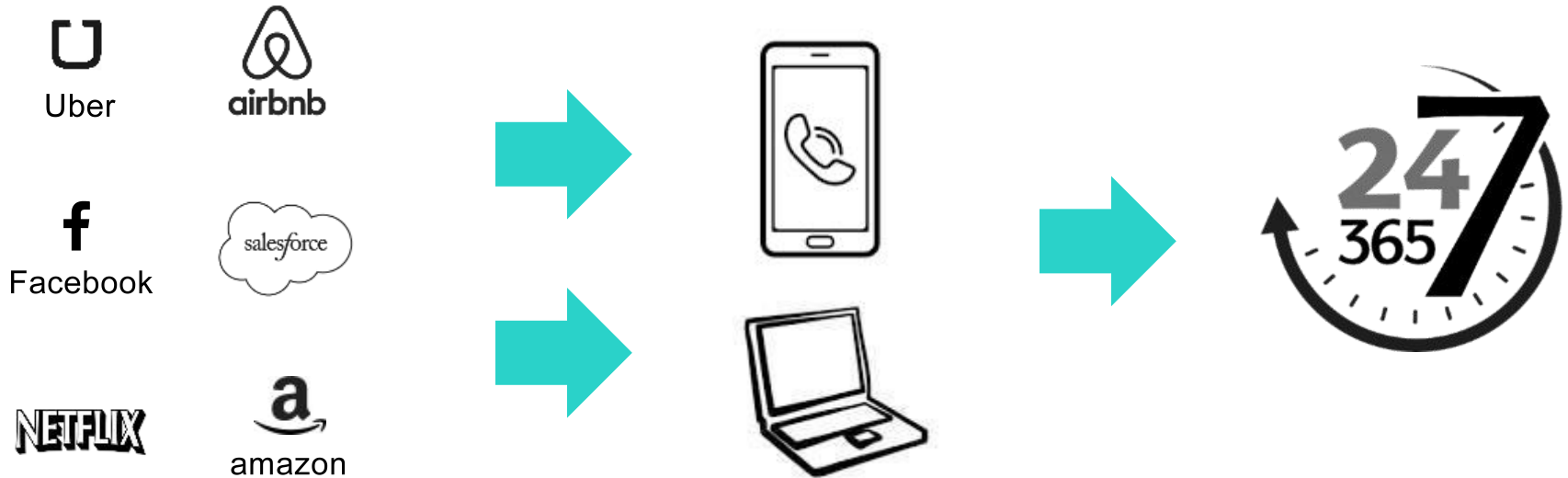


最基本的生存策略



差异化即数字化体验

用户对软件的期望：持续在线，持续演进



云原生应用的四个期望

Velocity

Resiliency

Scale

Ubiquity



如何才能得到Cloud Native的真谛？

An aerial photograph showing a long, straight pipeline crossing a wide body of water. The pipeline consists of many parallel white pipes supported by wooden pilings. In the background, there are green mountains under a blue sky with scattered white clouds. The water is calm, and there are some small islands or patches of land in the water.

高水准的持续交付



什么类型的应用可以持续交付?

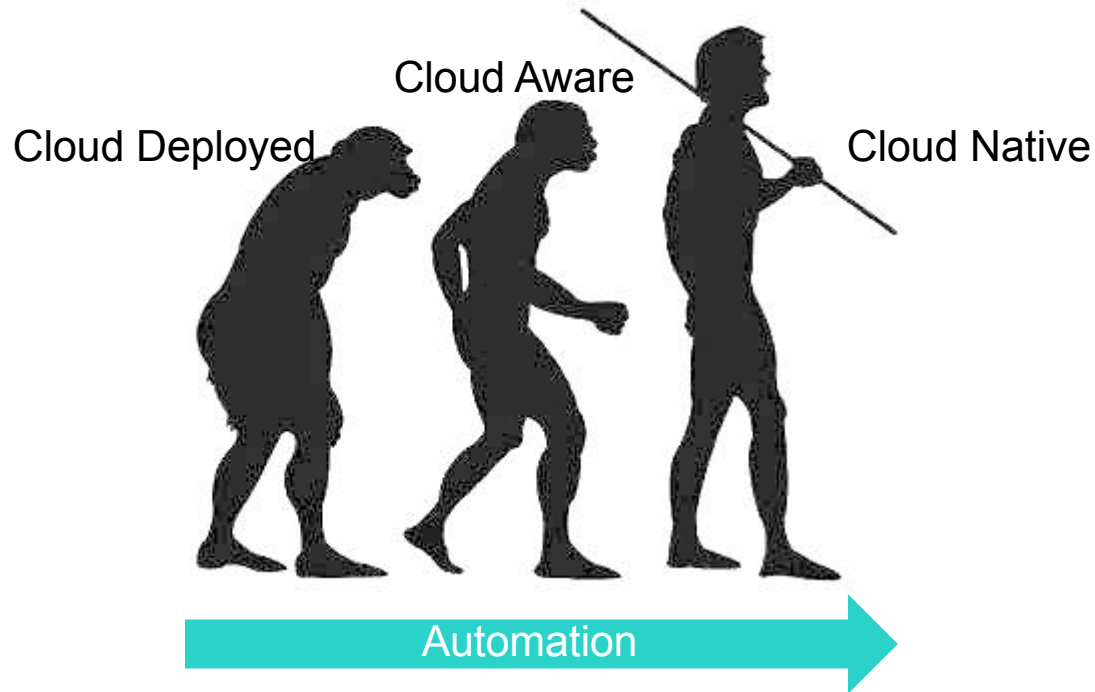
传统应用：

稳定性、可用性和可扩展性是标配

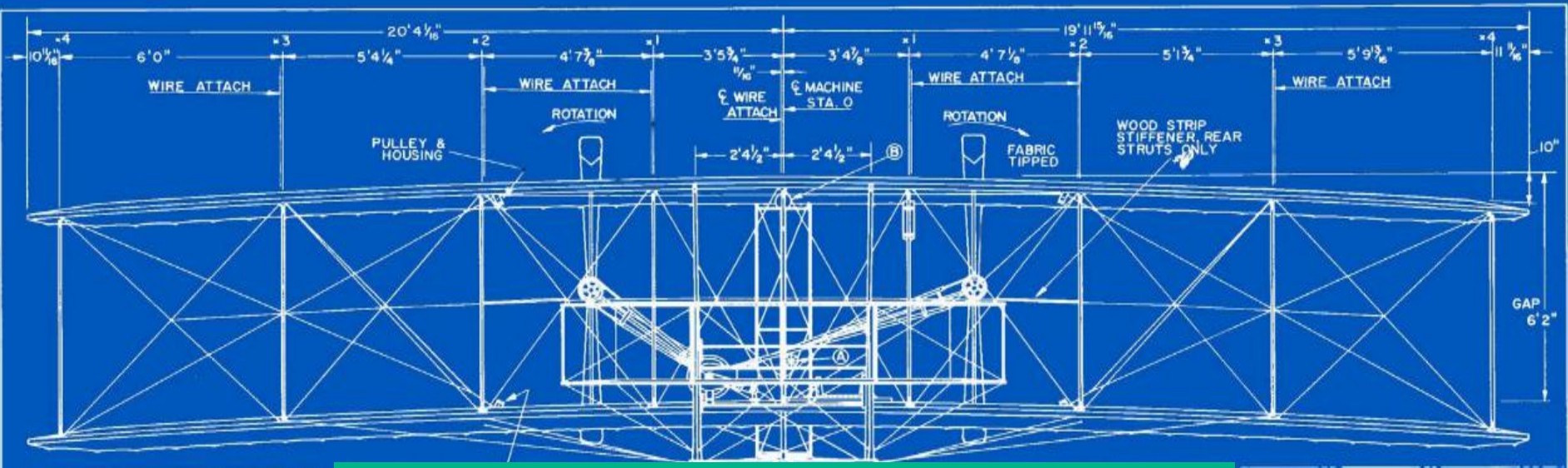


如果迁移传统应用到云，有什么好处？

从云部署到云原生

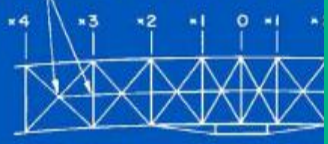


Meeting Velocity, Scaling, Resiliency, and Ubiquity requirements requires standardization and automation



云原生应用长什么样子？

INTERPLANE STRUTS DRILLED TO ACCEPT HORIZONTAL WIRE, ALL WIRES SOLDERED AT CROSS JOINTS



WIRE TRUSS FRONT STRUTS RIGID ASSEMBLY



WIRE TRUSS REAR STRUTS FLEXIBLE ASSEMBLY TO ALLOW WARPING



WIRE TRUSS ELEVATOR

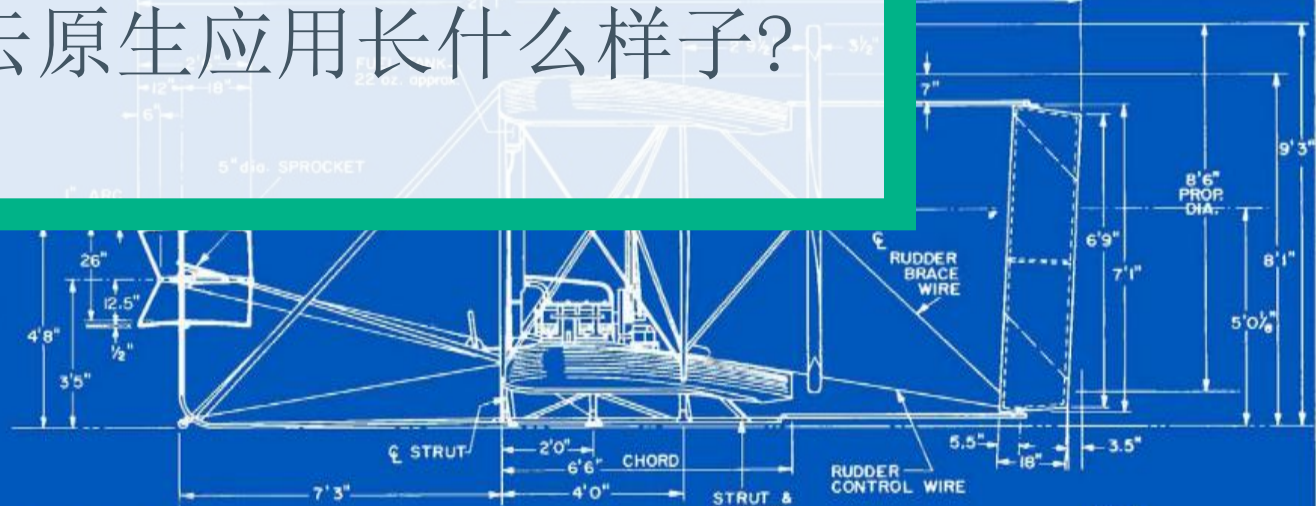


STA. 1 STA. 2 STA. 3
LONGITUDINAL WIRE TRUSSING



COLORING NOTES
 FABRIC, UNBLEACHED, UNDOPE MUSLIN (OFF WHITE)
 EXPOSED ASH & SPRUCE, CLEAR VARNISHED
 ENGINE & METAL FITTINGS, FLAT BLACK
 PROPELLERS, MEDIUM GRAY

RUDDERS COVERED ON OUTSIDE SURFACE ONLY



1903
 WRIGHT BROTHERS
 "FLYER"

DRAWN & RESEARCHED BY:
 HERB. KELLEY

云原生应用架构特征

动态分布式配置管理

弹性扩展

API网关



自动负载均衡和故障切换

集群管理、容器编排

服务发现与注册

云原生组件

12-因子 设计



开发现在化、可扩展、可维护的云应用的一种方法

PaaS



提供应用生命周期管理、可扩展、故障恢复、授权与认证和日志

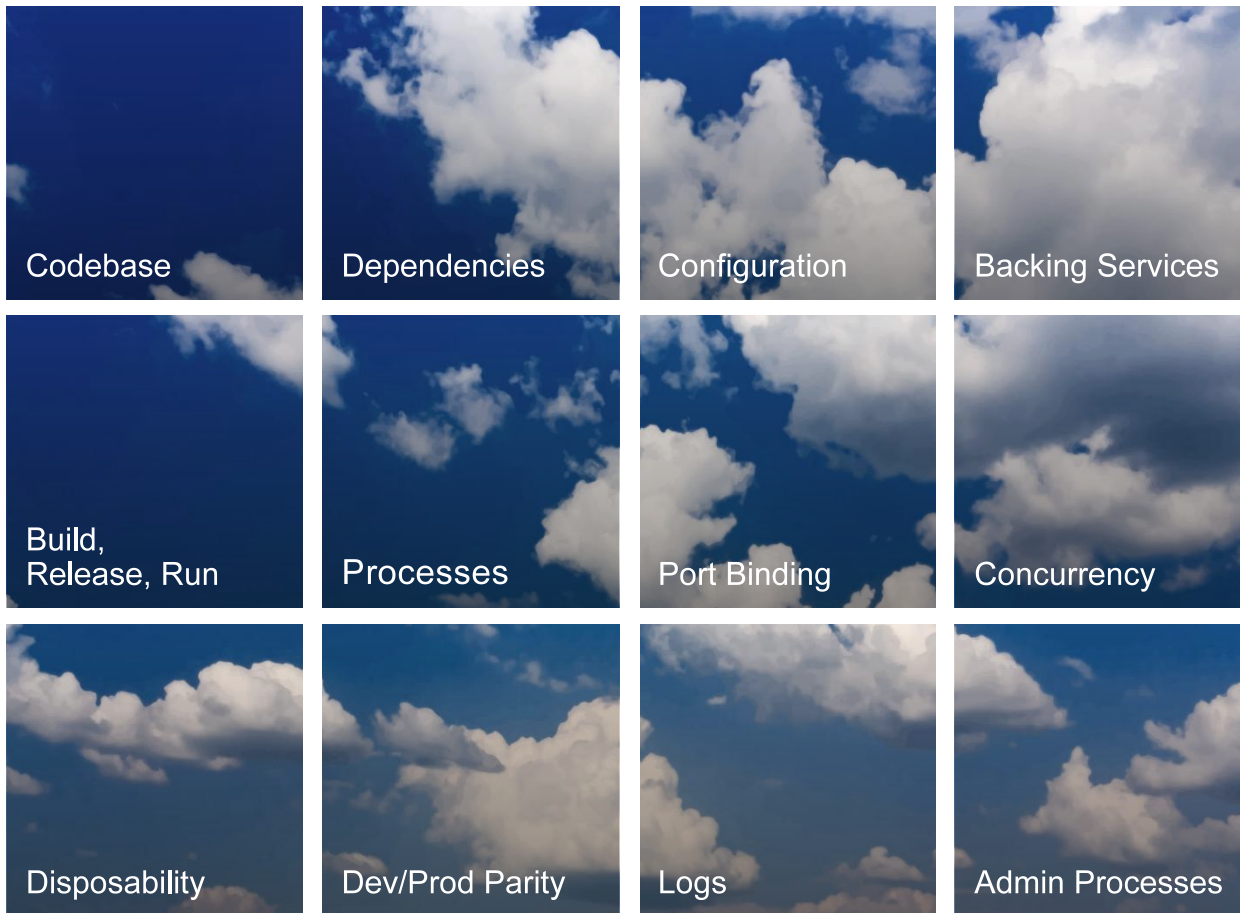
微服务



一种软件架构：由很多小的、独立进程和彼此互相通过API通信（与语言无关）的复杂应用。

使用12因子来创建云原生应用

开发和部署软件的最佳实践





说容易、做不容易？

Better Together

12-factor apps + PaaS



Definition of PaaS

SaaS



Dropbox



PAAS平台运行在IAAS平台上支持SAAS应用的运行

PaaS



Elastic Beanstalk



Google app engine

CLOUD FOUNDRY



kubernetes

提供应用生命周期管理、可扩展、故障恢复、授权与认证和日志、以及多租户

IaaS



Windows Azure



Google Cloud Platform



PAAS平台确定应用正常服务，尽管IAAS平台资源失败的情况下。

PaaS 的影响力



快速推向市场

应用部署分钟级（不是VM）
而不是几周。



产品及创新

自动化程度高、创新速度快
满足开发人员的需求



成本

提高服务器利用率和管理员的工作
效率（一台服务和一个人可以支撑
多个应用）

30x

改进在应用部署

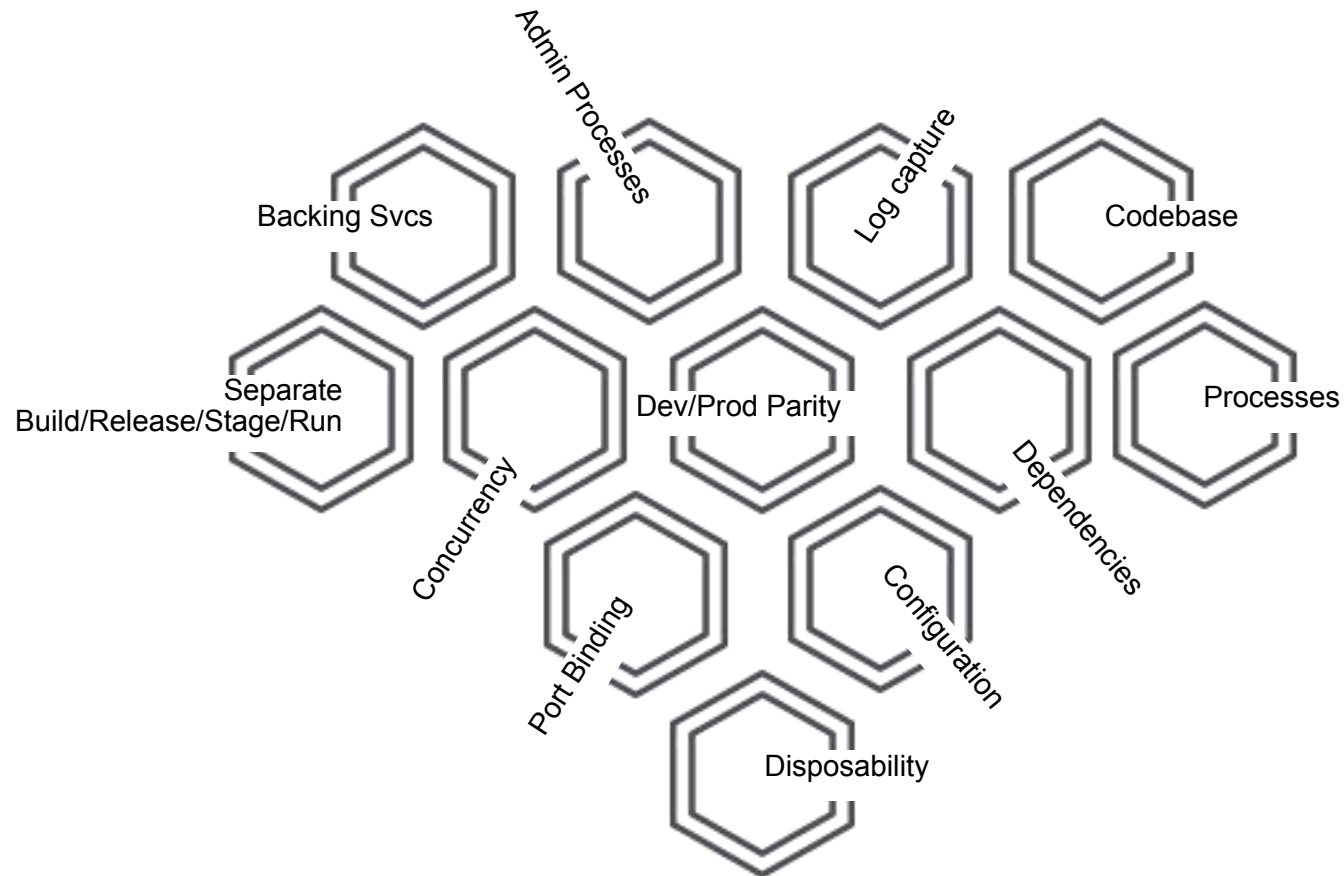
40x

应用原型快速验证

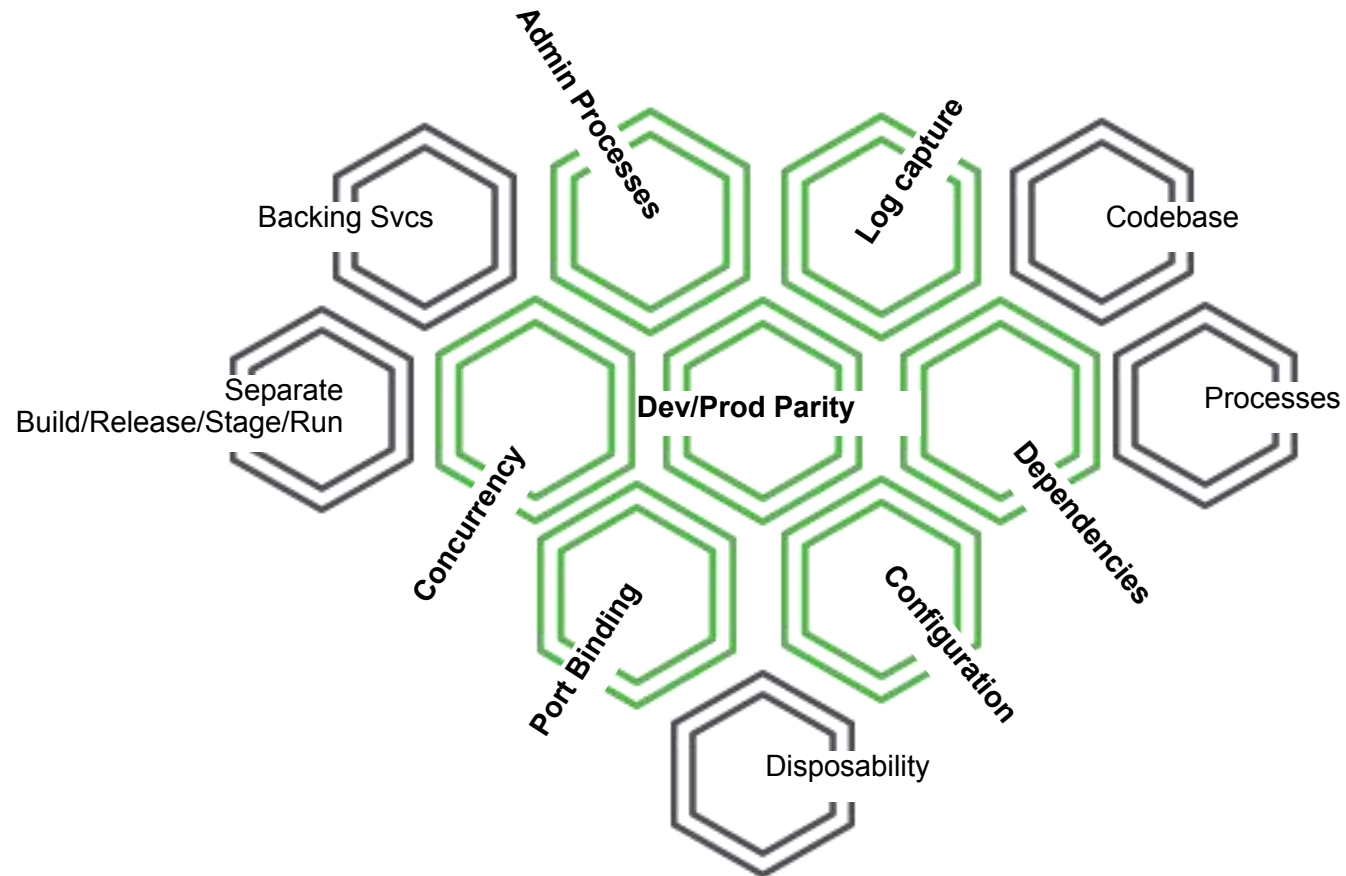
90%

减少管理应用的成本

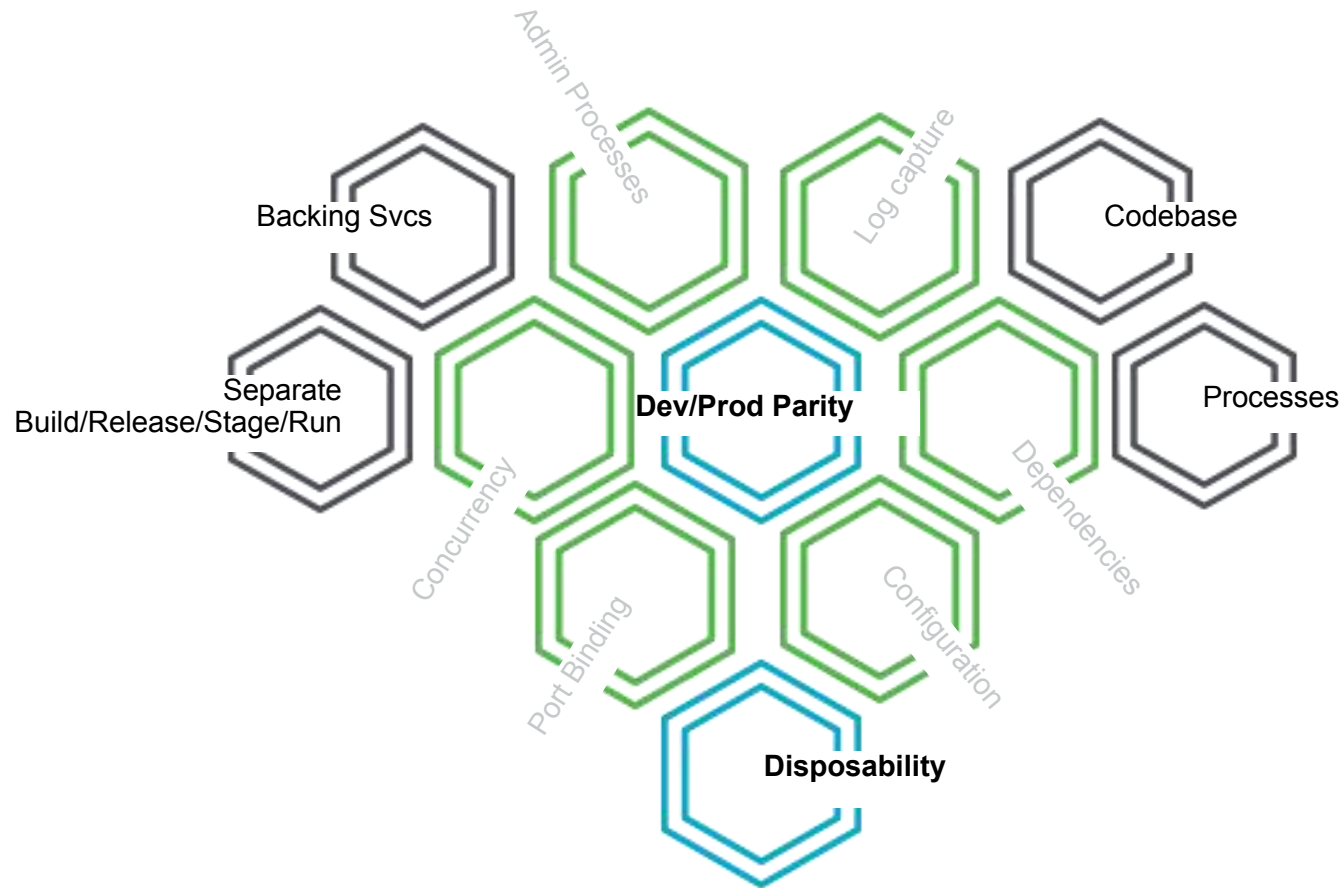
Cloud Applications Design Patterns: 12-factor



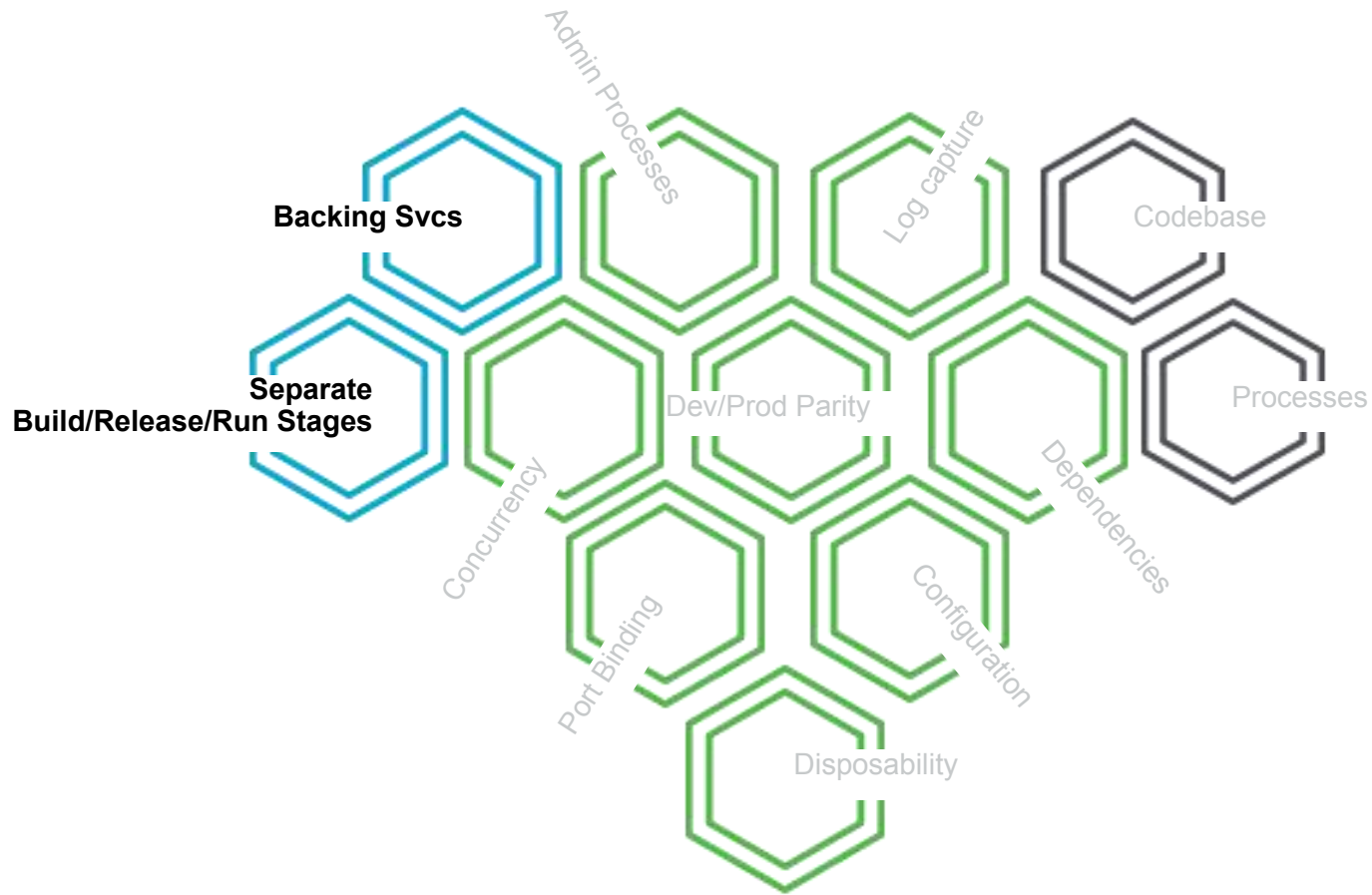
12-factor Automation with PaaS



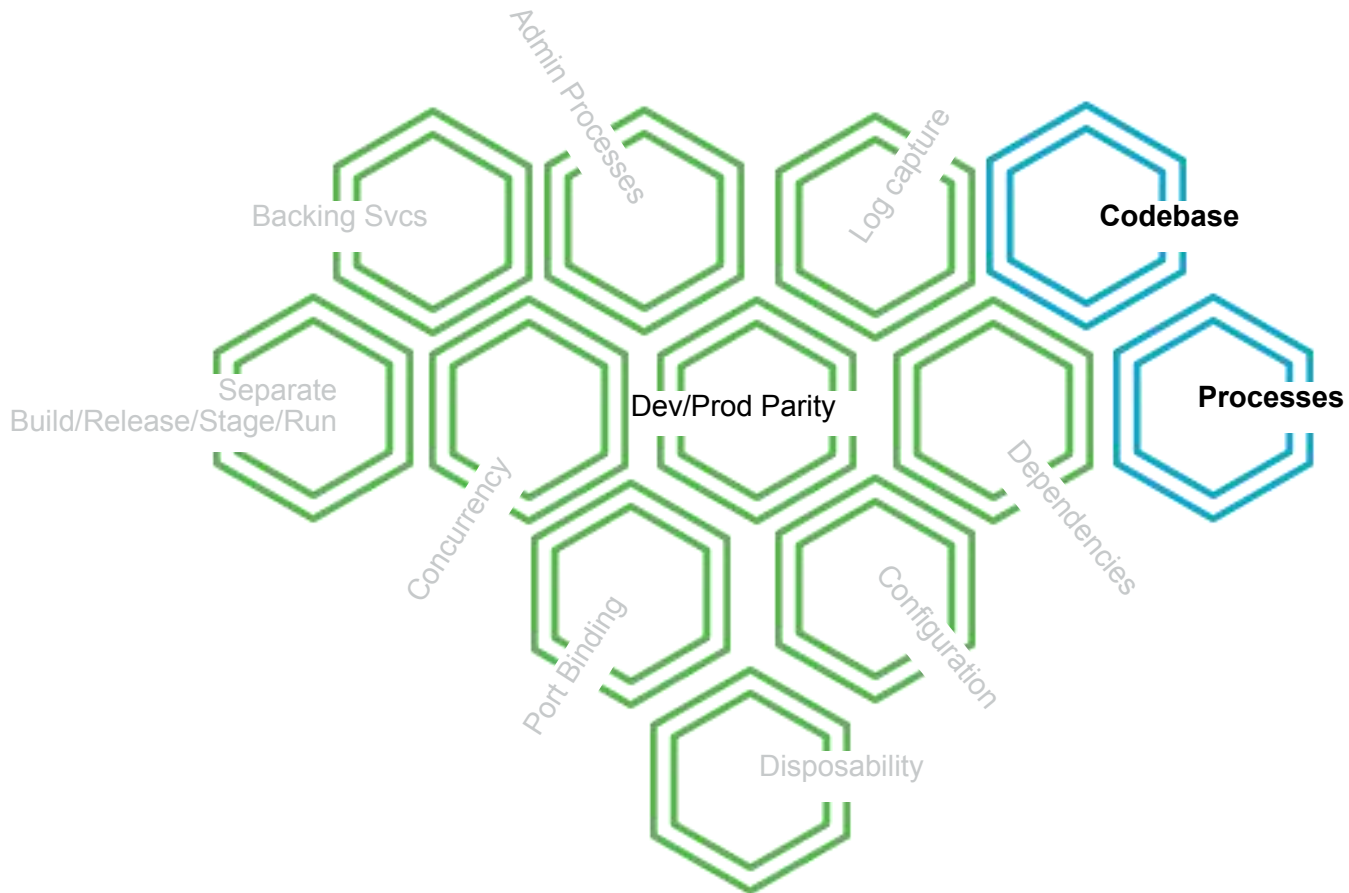
12-factor Automation with PaaS and Docker



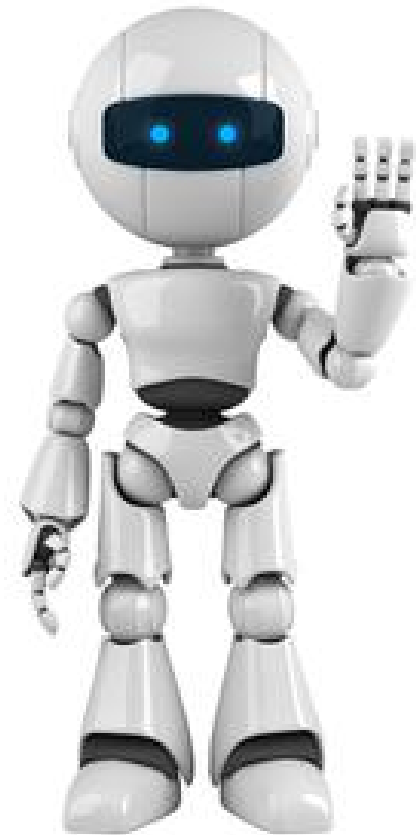
Stackaot 4.0 Provides Backing Services, CI/CD



Microservices Fulfill 12-Factor with PaaS



Stackato4.0 企业的PAAS
平台,设计满足12因子的云原
生应用变成了现实



HPE Helion Stackato 4 隆重上市

专为企业级开发团队定制的Cloud Foundry应用开发云平台



DevOps理念落地

- 一体化DevOps交付平台
- 实时机制 打破开发堡垒
- 打包开发测试运维工具集



企业级PaaS平台

- 应用和数据的控制权
- 安全合规的开发与部署
- 按业务所需随时扩容



集开放包容于一体

- 基于CloudFoundry并认证
- 部署于任意主流的IaaS平台
- 多种开发语言和框架支持



世界级专家服务

- 定制化部署及交付
- 从咨询到培训 快速上线
- 端到端应用云化服务

Hello, admin.

There are 7 patches available for this system.
[View available patches](#)

Getting started with HPE Helion Stackato 3.6.2

From this interface you can:

- manage users and administrators
- manage user applications
- view system status, graphs and cloud events
- create HPE Helion Stackato apps (sample code in Sample Applications)
- deploy apps from Sample Applications
- configure system and service settings
- and much more

[Never show me this again](#)

 Read the Documentation	 Contact Support	 Download the Client
 Deploy a Sample Application	 Organization Membership	 Account Details
 Configure Available Services	 Manage Organizations	 Manage Users
 View All Deployed Applications	 View Cloud Events	 View Dashboards

使用Stackato开发云原生应用

创建Maven工程

工程结构目录如下

- spring-boot-sample
 - src/main/java
 - stackato.spring_boot_sample
 - Application.java
 - stackato.spring_boot_sample.controller
 - MainController.java
 - stackato.spring_boot_sample.models
 - Person.java
 - JRE System Library [JavaSE-1.8]
 - Maven Dependencies
 - src/main/resources
 - templates
 - index.html
 - application.properties
 - src
 - target
 - manifest.yml
 - pom.xml

WEB服务返回内容

```
MainController.java Application.java index.html
```

```
1 <html>
2 <body>
3 <h2>Spring Boot Restful and Web Sample!</h2>
4 </body>
5 </html>
6
```

Restful 服务返回内容

```
MainController.java Application.java index.html MainController.java
```

```
1 package stackato.spring_boot_sample.controllers;
2
3 import org.springframework.stereotype.Controller;
4
5 @Controller
6 public class MainController {
7
8     @RequestMapping("/")
9     // @ResponseBody
10    public String index() {
11        return "index";
12    }
13
14    @RequestMapping("/showPerson")
15    public @ResponseBody Person showPerson() {
16        return new Person("mike.cao", "mike.cao@gmail.com");
17    }
18 }
19
20
21
22
```

Stackato开发云原生应用-Mainfest

applications:

```
name: demo
buildpack: https://github.com/hpcloud/stackato-
buildpack-python.git
memory: 128
stackato:
  autoscale:
    enabled: true
  instances:
    min: 4
    max: 10
  cpu:
    min: 30
    max: 85
```

env:

```
CELERY_ENV:
  default: crisper
processes:
  web: demo
requirements:
  pypm: [celery]
hooks:
  pre-running:
    - sudo cp $HOME/fstab
    /etc/fstab
    - sudo mount /dev/shm
min_version:
  server: 0.9.0.143
  client: 1.0
```

Stackato开发云原生应用-Mainfest

普通进程或者框架运行

```
name: stackato-worker  
instances: 1  
command: ruby worker.rb
```

Harbor服务，支持TCP/UDP

```
name: stackato-worker  
instances: 1  
command: ruby worker.rb  
Services:  
  tcp-harbor: harbor
```

Stackato开发云原生应用-Docker APP

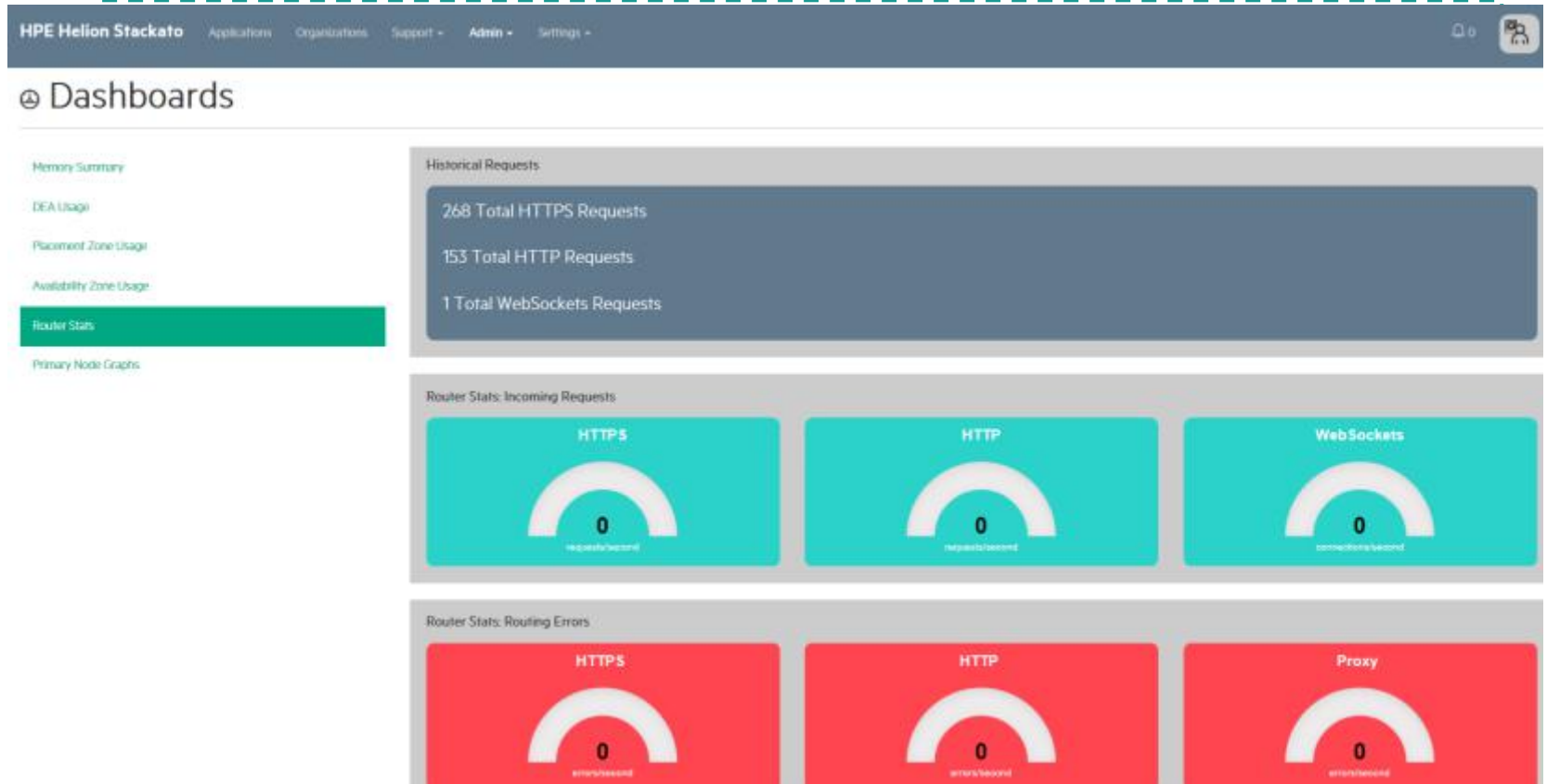
打包好的Docker应用

```
stackato push -n --docker-image  
my.registry.com/namespace/app-name:latest
```

```
ENTRYPOINT /usr/bin/python manage.py runserver  
0.0.0.0:$PORT
```

Stackato的访问

Dashboards





**Hewlett Packard
Enterprise**



谢谢！