



CLOUD FOUNDRY™
DEPLOY & SCALE YOUR APPLICATIONS IN SECONDS

Cloud Foundry Bootcamp

GOTO 2012

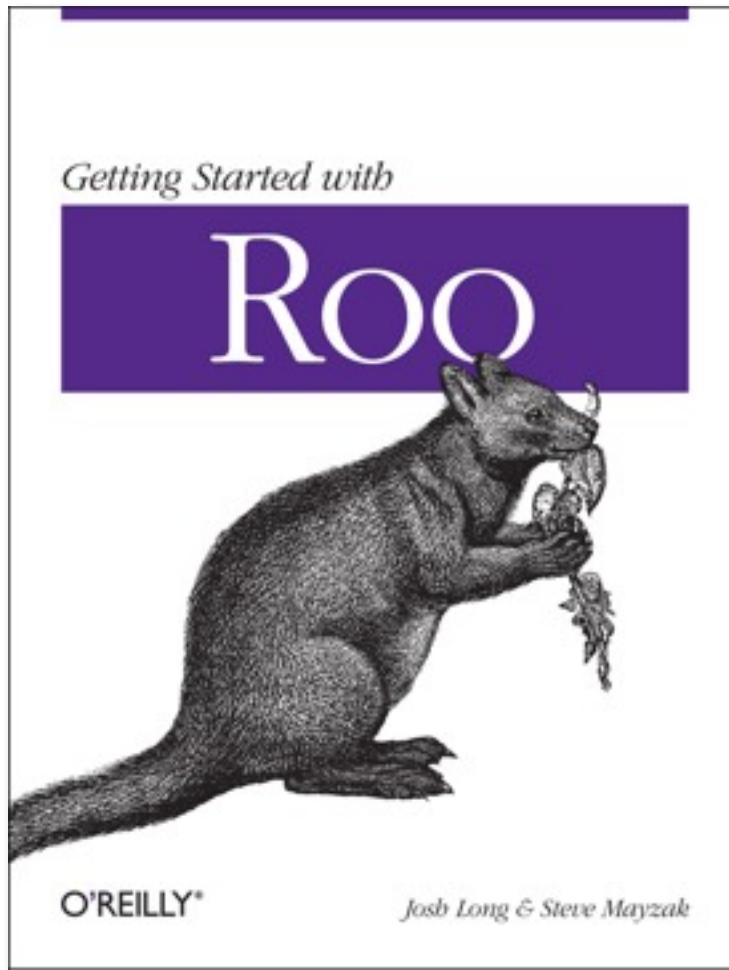
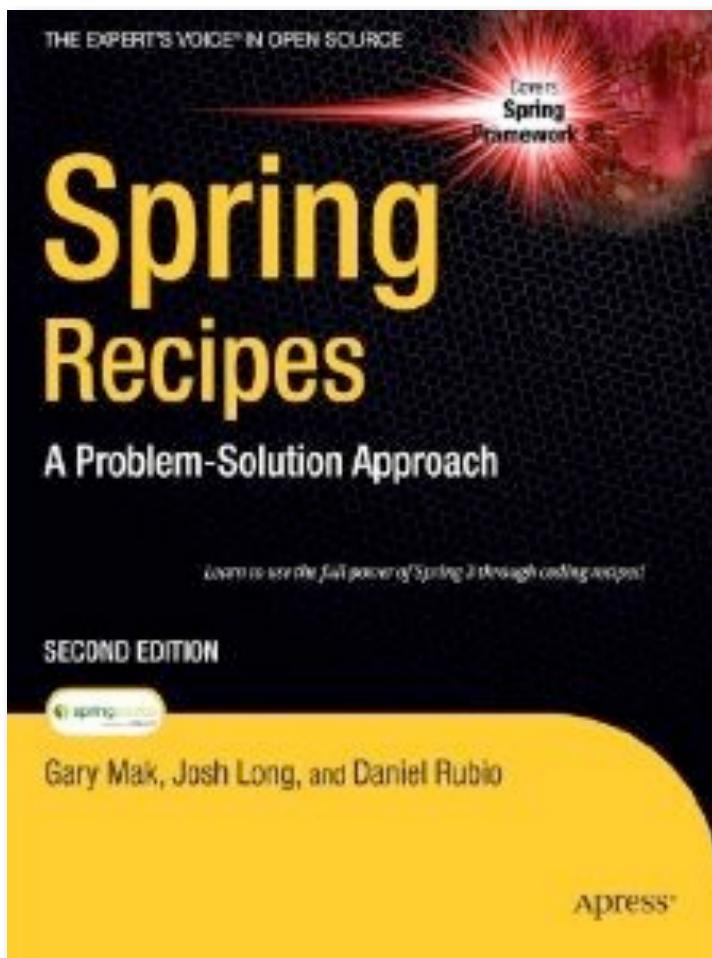
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 **spring**source community





About Josh Long

Contributor To:

- Spring Integration
- Spring Batch
- Spring Hadoop
- Activiti Workflow Engine

[Visit our blog](#)

NEWS & EVENTS

THIS WEEK IN SPRING, APRIL

Submitted by Josh Long on Tue, 2012-04-10
in [News and Announcements](#)

What a great week! The [Cloud Foundry](#) Asian and US legs of the tour. Now, onward to secure your spot!)

Before we continue on to the news of the

getting started with Cloud Foundry...

Register <http://cloudfoundry.com/signup>

The screenshot shows the Cloud Foundry registration page. At the top, there's a navigation bar with links for 'Register / Sign In', 'Get Started', 'Get Involved', 'Partners', 'Blog', and 'About'. The main heading is 'Sign up for Cloud Foundry'. Below it, there are fields for 'Email' and 'Promo Code (optional)'. To the right of the promo code field is a descriptive text block. A black arrow points from the text 'Use promo code' to the 'Promo Code' input field. At the bottom, there's a section titled 'VMware Cloud Foundry Terms of Service' with a checkbox for accepting the terms. There are also social media sharing icons for Twitter, Facebook, and LinkedIn, and a 'Request Invite' button.

Register / Sign In search

Get Started Get Involved Partners Blog

About

Sign up for Cloud Foundry

Email

Promo Code (optional)

Register for a [free](#) CloudFoundry.com account.
CloudFoundry.com is a public instance of Cloud Foundry operated by VMware.

With a few simple steps you will be able to deploy and scale Spring/Java, Grails, Ruby on Rails, Sinatra, Scala and Node.js applications while leveraging a variety of services including vFabric Postgres, vFabric RabbitMQ, MongoDB, MySQL and Redis. Visit our [Getting Started](#) section to learn more.

VMware Cloud Foundry Terms of Service

Thank you for using Cloud Foundry. By using the Cloud Foundry service and any related software (collectively the "Service"), you ("You") accept and agree to be bound by the following terms and conditions (the "Agreement"). IF YOU ARE ENTERING INTO THIS AGREEMENT ON BEHALF OF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY TO THESE TERMS AND CONDITIONS, IN WHICH CASE THE TERMS "YOU" OR "YOUR" SHALL REFER TO SUCH ENTITY. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT AGREE WITH THESE TERMS AND

I have read and agree to the [Terms of Service](#)

batter.

Request Invite

Use promo code
CFOpenTour2012

Welcome email

Welcome to Cloud Foundry - Your signup is approved!  Inbox x me x x-important x



Cloud Foundry no-reply@cloudfoundry.com

to me ▾

Thank you for your interest in Cloud Foundry - the industry's first open platform as a service.

We have approved your request for a Cloud Foundry account.

Your credentials are listed below.

Email: your@email.com

Temporary password: ItsASecret

These credentials enables you to deploy applications to CloudFoundry.com and download your Micro Cloud Foundry

Ways to use Cloud Foundry



Ways to use Cloud Foundry

```
bash-3.2$ vmc help
```

```
Usage: vmc [options] command [<args>] [command_options]  
Try 'vmc help [command]' or 'vmc help options' for more information.
```



Ways to use Cloud Foundry

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Ways to use Cloud Foundry

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Ways to use Cloud Foundry

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```
Usage: vmc [options] command [<args>] [command_options]  
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```



Installing vmc on Windows



A screenshot of a Windows Internet Explorer browser window. The address bar shows the URL <http://rubyinstaller.org/downloads/>. The page content is from the RubyInstaller website. It features a logo with overlapping colored squares (red, green, blue) followed by the text "RubyInstaller" in bold and "for Windows". Below this is a large blue header bar with the word "Downloads" in white. Underneath, there are two sections: "RubyInstallers" and "Archives»". The "RubyInstallers" section contains three links: "Ruby 1.9.3-p125", "Ruby 1.9.2-p290", and "Ruby 1.8.7-p358", each preceded by a small icon of a computer monitor.



Installing vmc on Windows

Downloads - Windows Internet Explorer
http://rubyinstaller.org/downloads/

Favorites Suggested Sites Web Slice Gallery

Downloads

RubyInstaller for Windows

Downloads

RubyInstallers Archives»

Ruby 1.9.3-p125
Ruby 1.9.2-p290
Ruby 1.8.7-p358

Command Prompt - gem install vmc

```
C:\Users\Chris Richardson>ruby -v
ruby 1.9.3p125 (2012-02-16) [i386-mingw32]

C:\Users\Chris Richardson>gem install vmc
Fetching: spruz-0.2.13.gem (100%)
Fetching: json_pure-1.5.4.gem (100%)
Fetching: rubyzip2-2.0.2.gem (100%)
```

Install the vmc gem

Installing vmc on Mac OSX

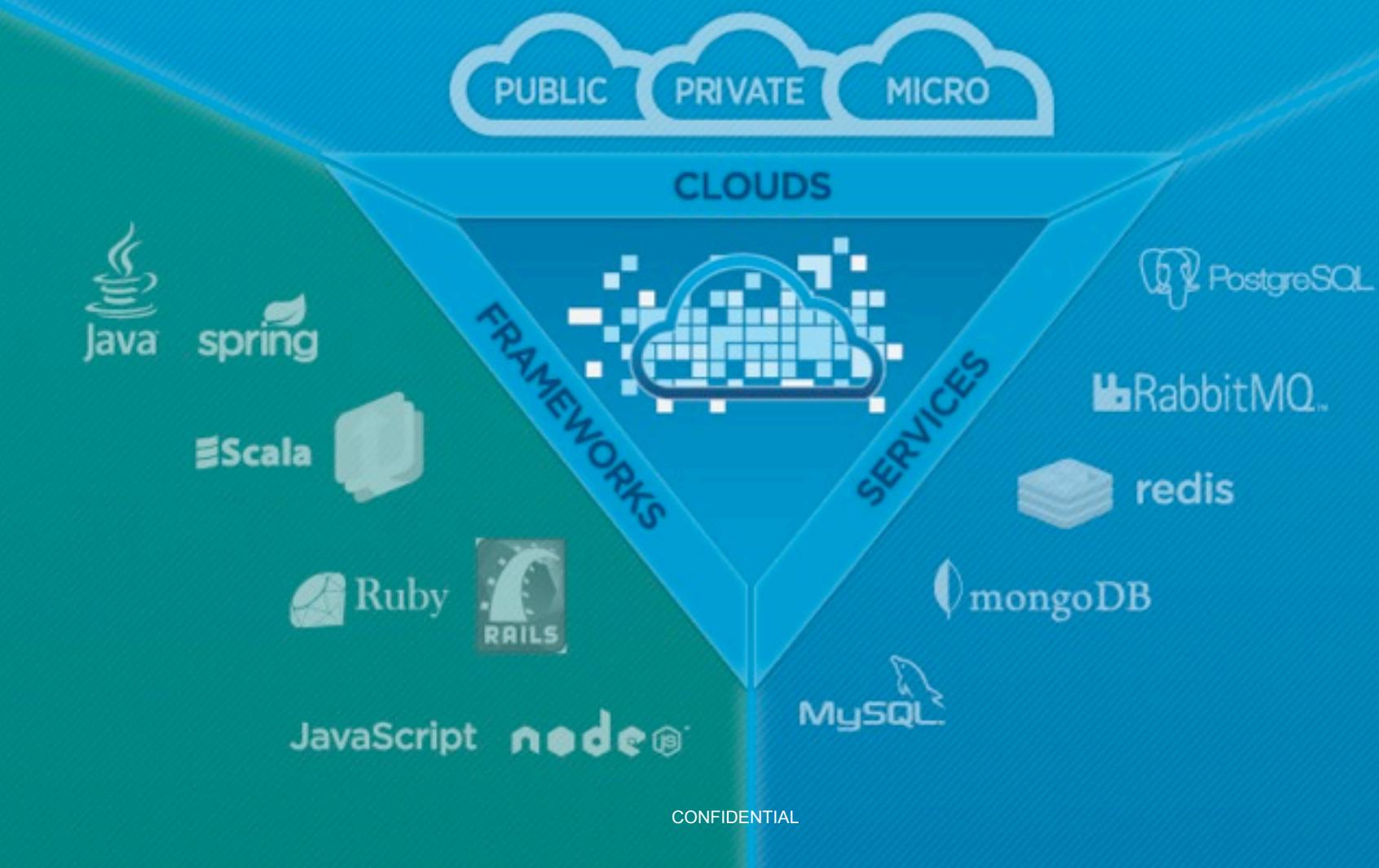
Use Ruby Version Manager <http://beginrescueend.com/>

```
$ bash -s stable <<(curl -s https://raw.github.com/wayneeseguin/rvm/master/binscripts/rvm-installer)
$ rvm install 1.9.2
$ rvm use 1.9.2
$ gem install vmc
```

**what does
Cloud Foundry
offer?**



Cloud Foundry: Choice of Runtimes



Frameworks and Runtimes Supported

- **Out of the Box**

- **Java** (.WAR files, on Tomcat. Spring's an ideal choice here, of course..)
- **Scala** (Lift, Play!)
- **Ruby** (Rails, Sinatra, etc.)
- **Node.js**

- **Ecosystem Partners**

- **.NET** (Uhuru, Tier3)
- **Python** (Stackato)
- **PHP** (AppFog)
- **Haskell** (1)
- **Erlang** (2)

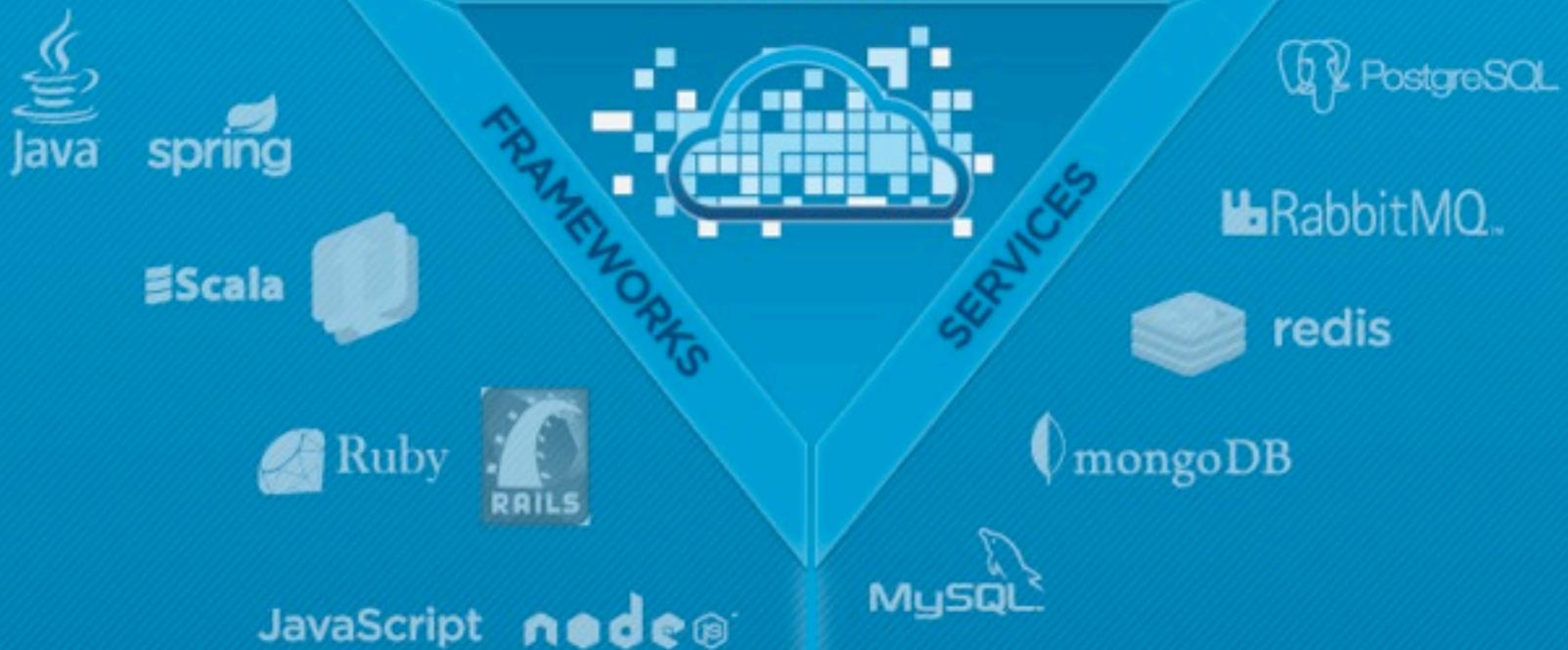


- 1) <http://www.cakesolutions.net/teamblogs/2011/11/25/haskell-happstack-on-cloudfoundry/>
- 2) <https://github.com/cloudfoundry/vcap/pull/20>

Cloud Foundry: Choice of Clouds



CLOUDS



CONFIDENTIAL

Main Risk: Lock In



Welcome to the hotel california

Such a lovely place

Such a lovely face

Plenty of room at the hotel california

Any time of year, you can find it here

Last thing I remember, I was

Running for the door

I had to find the passage back

To the place I was before

'relax,' said the night man,

We are programmed to receive.

You can checkout any time you like,

But you can never leave!

-the Eagles

Open Source Advantage

The screenshot shows a web browser window with the URL code.google.com/p/googleappengine/issues/detail?id=13. The page title is "Issue 13 - googleappengine". The main content area displays Issue 13, which is titled "Issue 13: PHP support is a must". It has 3198 stars. The issue was reported by [mimazim](#) on April 8, 2008. The status is "Acknowledged". The owner is listed as "----". The type is "Feature" and the priority is "Medium". The component is "Languages". The restrict field is "Restrict-AddIssue...t-Commit". The description states: "PHP is one of the most popular language for web. SO I think PHP support is very important, I guess". Below the description, it says "Showing comments 420 - 919 of 919 [Older >](#)". A comment from [jordan.d...@gmail.com](#) dated July 23, 2009, says: "PHP = More Developers, More projects Python = Less Devs, less projects".

- added April 8, 2008
- 3198 people starred it
- eventually closed in January, 2011
- never added

Comment [1666](#) by project member [i...@google.com](#), Jan 6, 2011

I'm making this issue read-only. I think the points here have been made. There's no reason to email thousands of people every time someone says "+1".

There are no current plans to support PHP on App Engine. No one on this team is against the idea, and given unlimited resources, we would do it. At this time, bringing another language runtime to App Engine is unfeasible given the other goals we are trying to meet.

please support php.

Comment [1167](#) by [tapsboy](#), Jul 28, 2009

Open Source Advantage

The screenshot shows a GitHub pull request page for a project named 'vcap'. The title of the pull request is 'PHP support' by user 'paulj'. The status is 'Closed'. The summary states: 'paulj wants someone to merge 6 commits into cloudfoundry:master'. Below the summary, there is a detailed description of the pull request, a list of commits, and a comment from another user.

paulj opened this pull request April 17, 2011

PHP support

Support for PHP based applications.

- Uses lighttpd as a front-end onto a php-fastcgi worker
- Includes minor changes to the common.rb staging support to allow stop scripts to be overridden
- Includes a php.md documentation file describing how Wordpress would be installed using the patch
- Requires an equivalent patch in vmc, raised as <https://github.com/cloudfoundry/vmc/pull/4>

paulj, pbozeman, olegshaldybin, and davidastraus are participating in this pull request.

paulj added some commits April 15, 2011

- d8e8cd... Initial PHP support via lighttpd.
- 883e14... Cleaning launching, shutdown, docs.

pbozeman commented April 17, 2011

We'll get reviewed and pulled shortly, pending any feedback. To do this and before we can pull it, we want to add the ability to enable/disable frameworks so that we don't disrupt the large production system at Cloud Foundry until this has been through our load/stress tests. We'll enable it in the Microcloud context out of the gate though.

- Cloud Foundry announced April, 2011
- Community PHP support submitted April, 2011
- Code pulled in August, 2011

Cloud Foundry: Clouds



- **AppFog.com**
 - community lead for PHP
 - PaaS for PHP



- **Joyent**
 - community lead for Node.js



- **ActiveState**
 - community lead for Python, Perl
 - Providers of Stackato private PaaS



Micro Cloud Foundry (beta)

- **micro.cloudfoundry.com**
- **works on OS X, Windows, Linux**

The screenshot shows a web browser window for 'Micro Cloud Foundry' at <https://my.cloudfoundry.com/micro>. The page is labeled 'BETA'. It features a large 'Cloud Foundry Micro Cloud Foundry' logo. Below it, there are links for 'Blog', 'Open Source', and 'Community'. The main heading is 'Micro Cloud Foundry'. A subtext states: 'Micro Cloud Foundry™ - now you can run a complete instance of Cloud Foundry on your own computer.' It says 'Getting started is as simple as 1, 2, 3:' followed by three steps: 1. Install (VMware Player or Workstation), 2. Login (using CloudFoundry.com credentials), and 3. Download (the virtual machine image). At the bottom, it notes: '*A valid CloudFoundry.com account is required.' On the right side, there is a login form with fields for 'Email' and 'Password', and a 'Login' button.



Learn more

- Watch the Screencast
- Read the Getting Started Guide
- Find Answers in the Knowledge Base

*A valid CloudFoundry.com account is required.

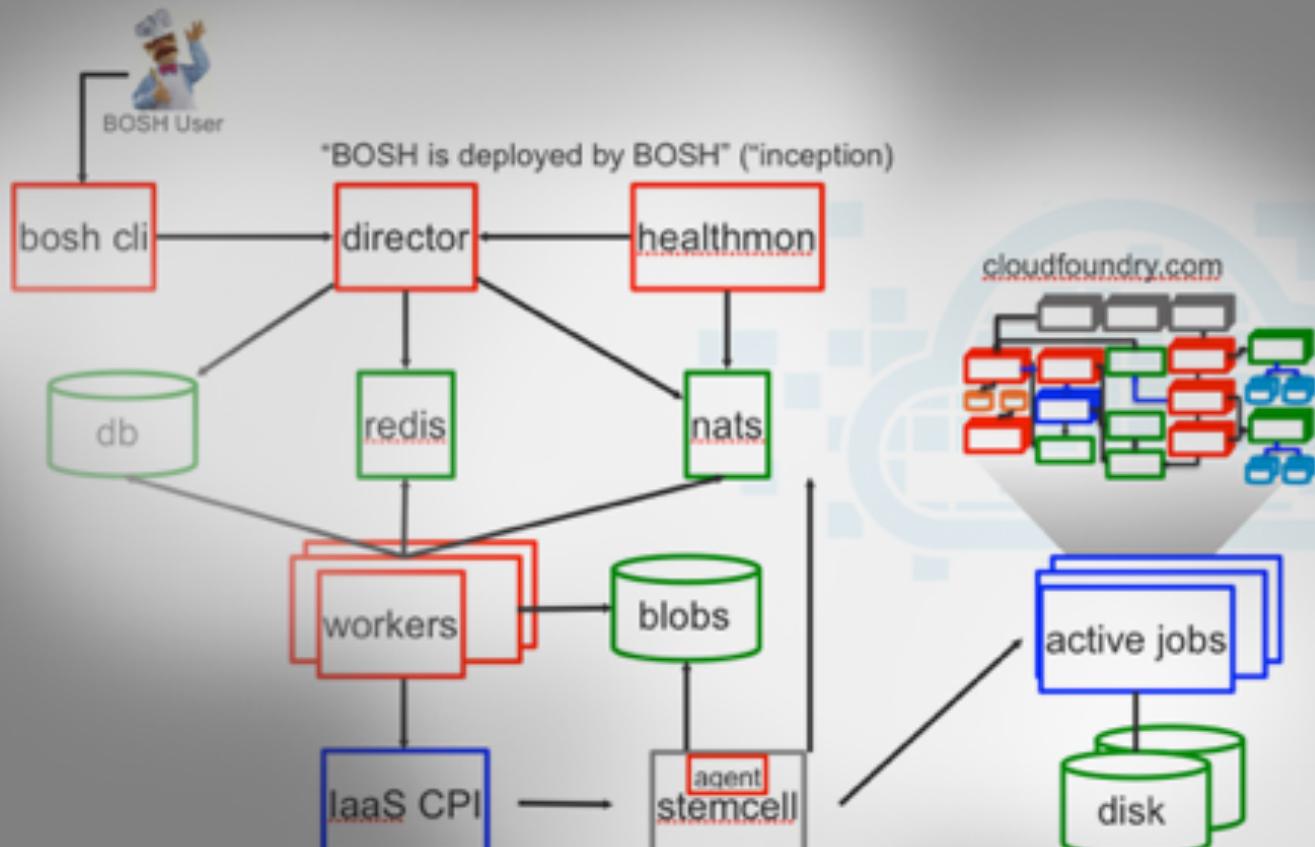
CONFIDENTIAL



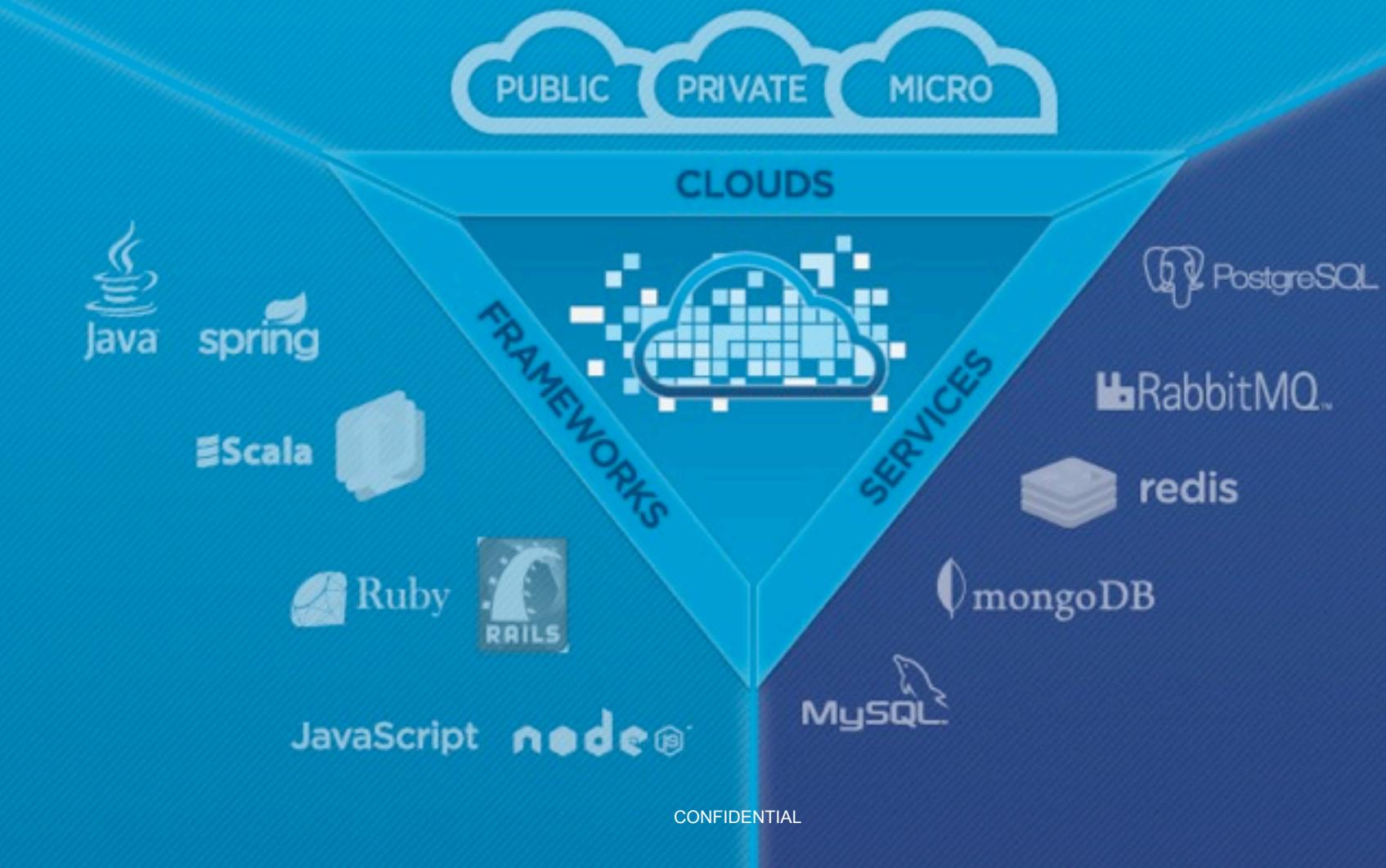
Name	The open platform-as-a-service project
Email	support@cloudfoundry.org
Website/Blog	http://www.cloudfoundry.org
Member Since	Feb 16, 2011

BOSH

Public Repositories (7)



Cloud Foundry: Services



Cloud Foundry: Services

- **Take Advantage of Services**

- they cost nothing to setup
- they deliver value

- **They Encourage Better Architectures**

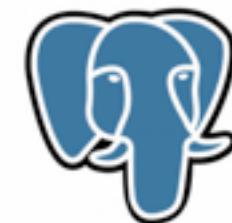
- Need a fast read-write cache? Redis is ready to go!
- Need to store long-tail documents? Give MongoDB a try
- Need to decouple what applications do from when they do it?
Use messaging and RabbitMQ



redis



PostgreSQL



mongoDB
{name: "mongo", type:"DB"}

Accessing Your Services

- Debugging and accessing the data locally

- Caldecott --> Service tunneling. Access your Cloud Foundry service as if it was local.



**Demo: logging in,
asking questions, &
deploying from the CLI**



Demo: Using the tunnel to talk to your services

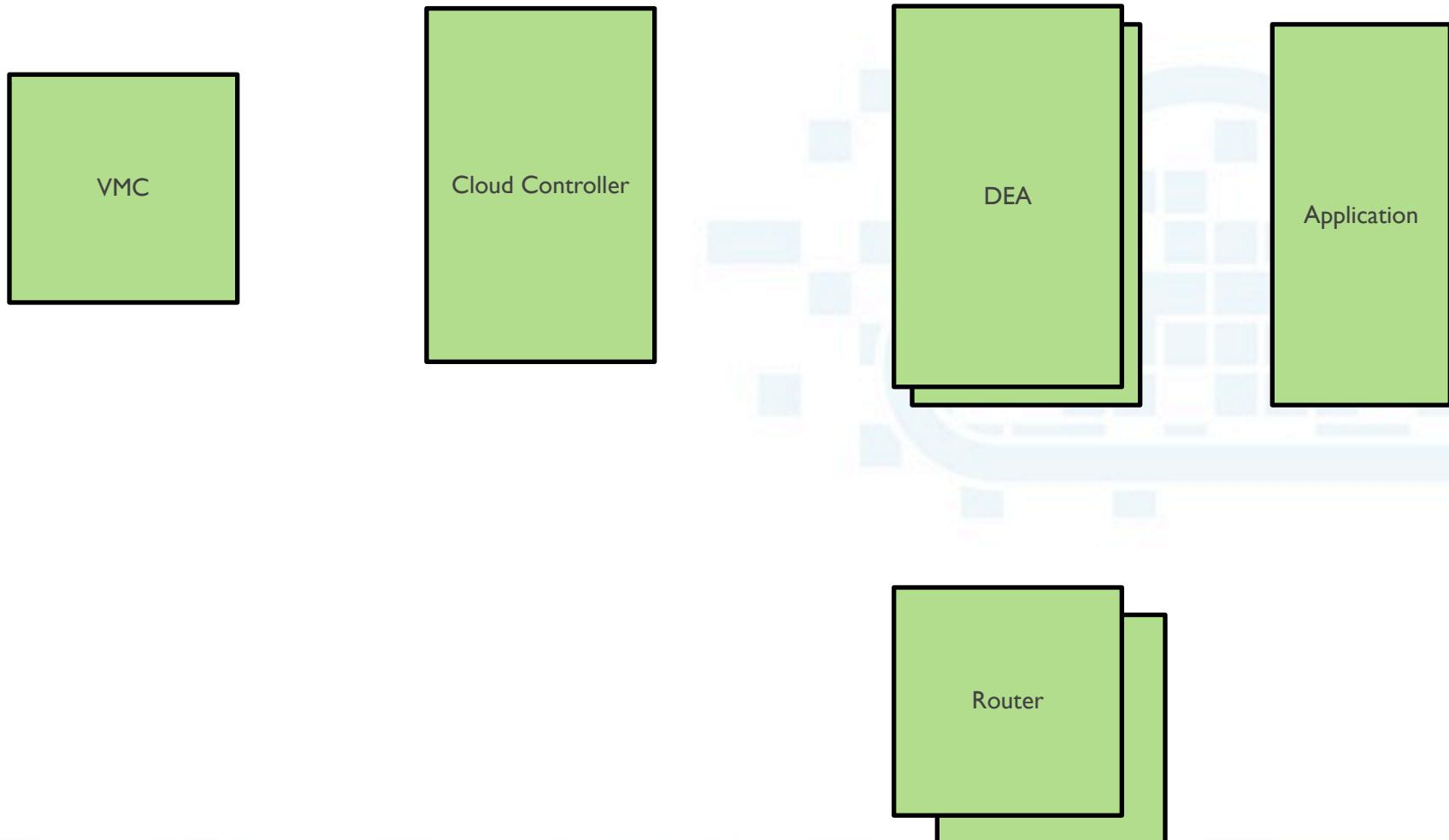
springsource toolsuite™

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In the U.S. other countries, or both. Eclipse is a trademark of the Eclipse Foundation, Inc.

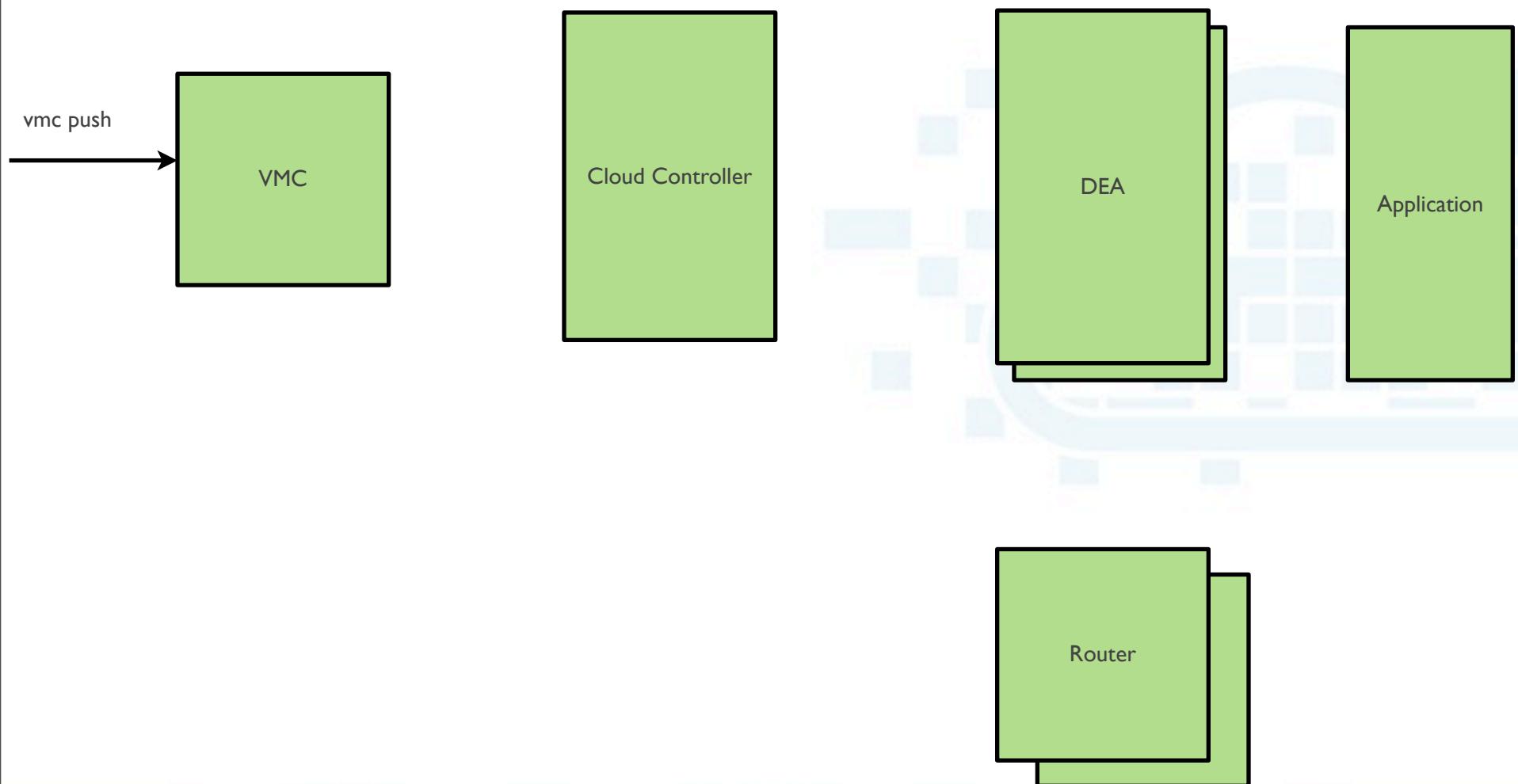


Demo: developing with Eclipse & STS

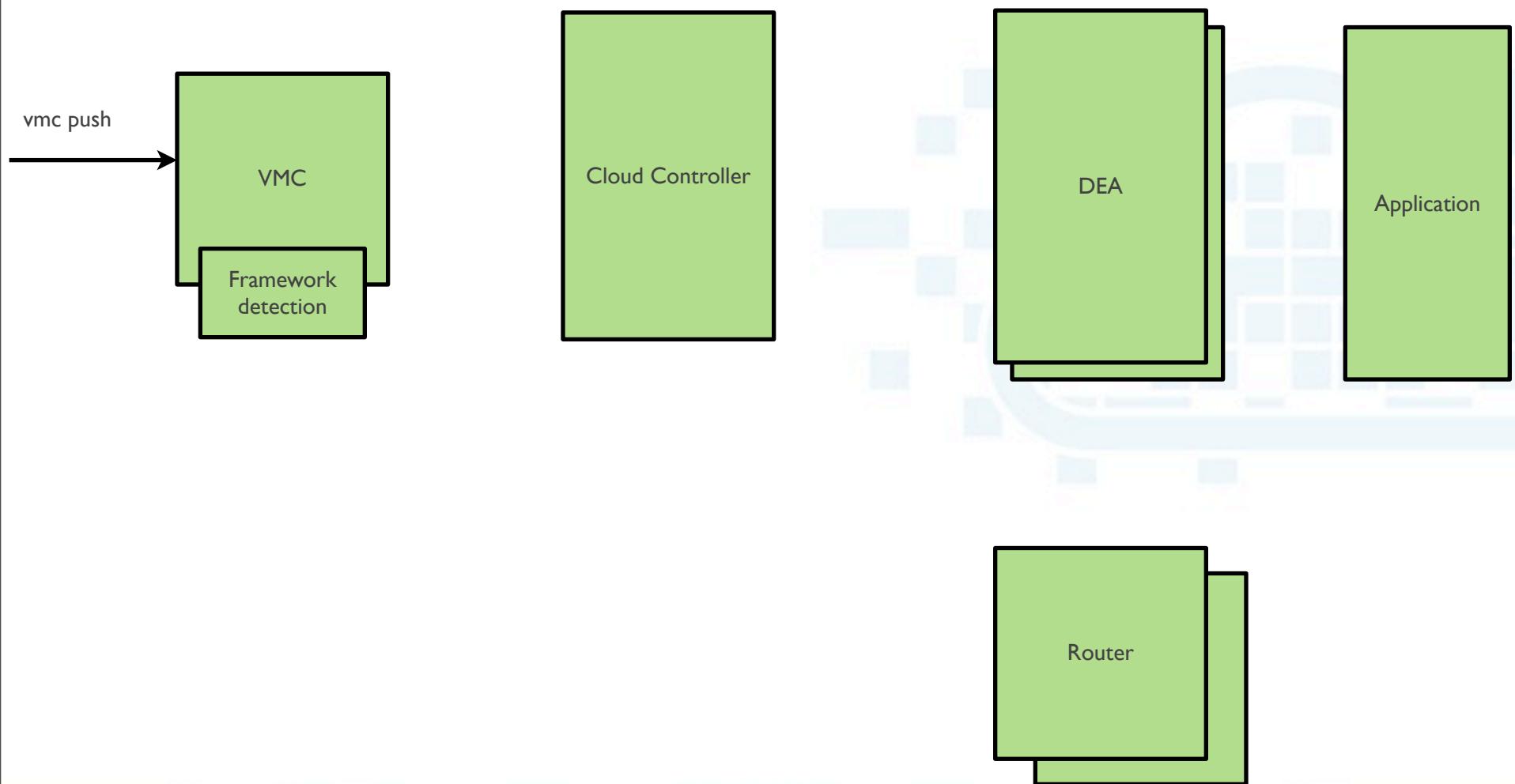
Application Deployment Flow



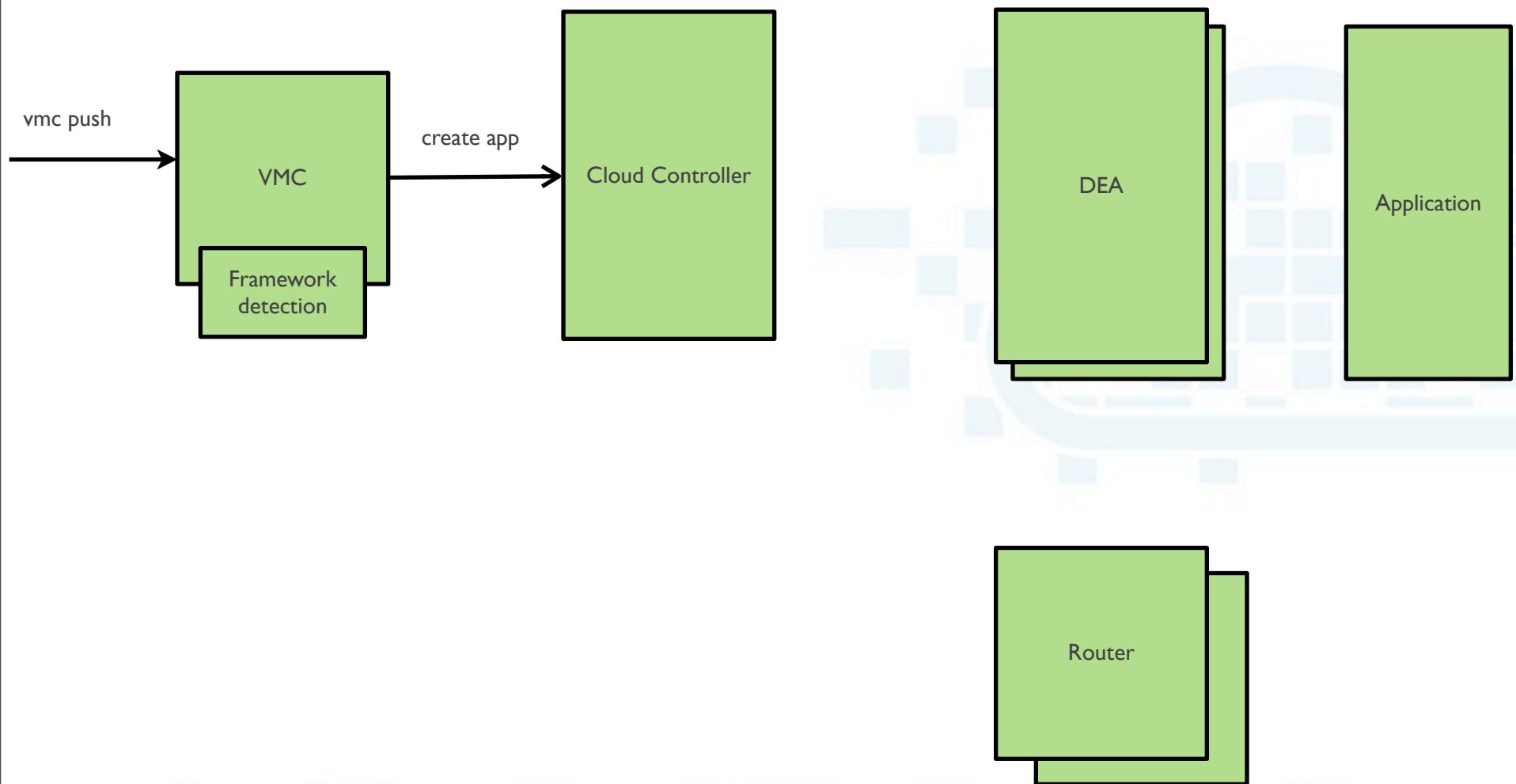
Application Deployment Flow



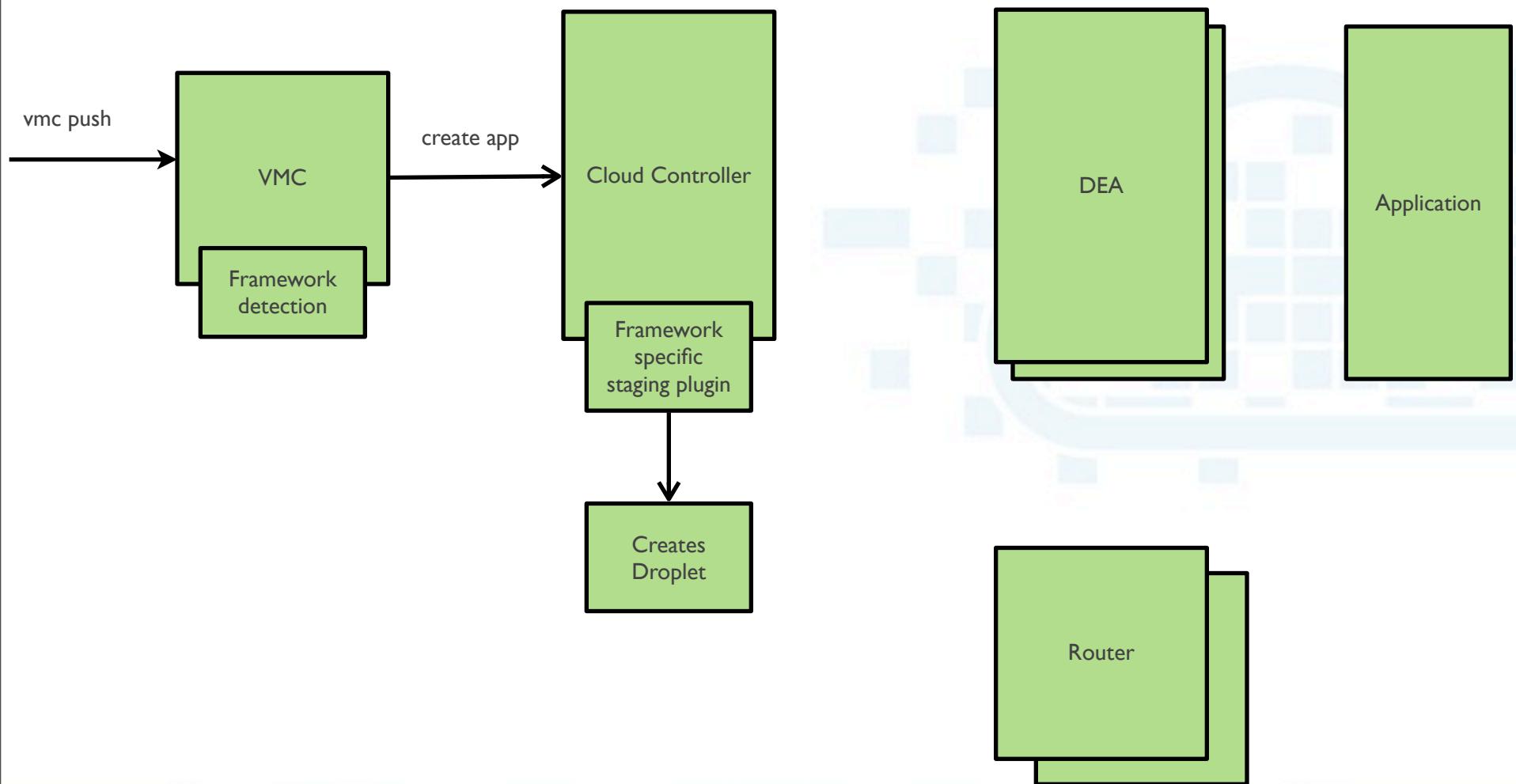
Application Deployment Flow



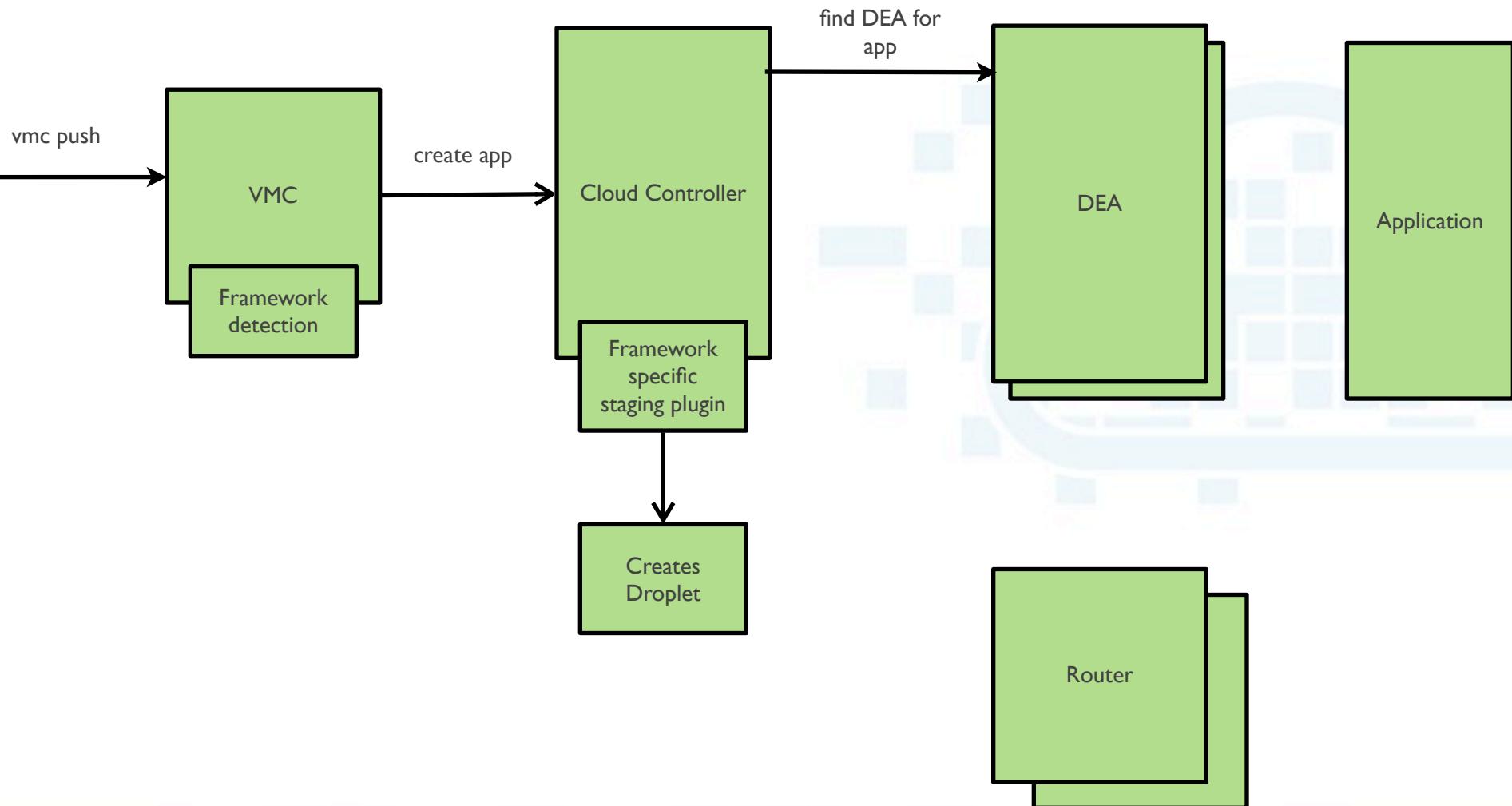
Application Deployment Flow



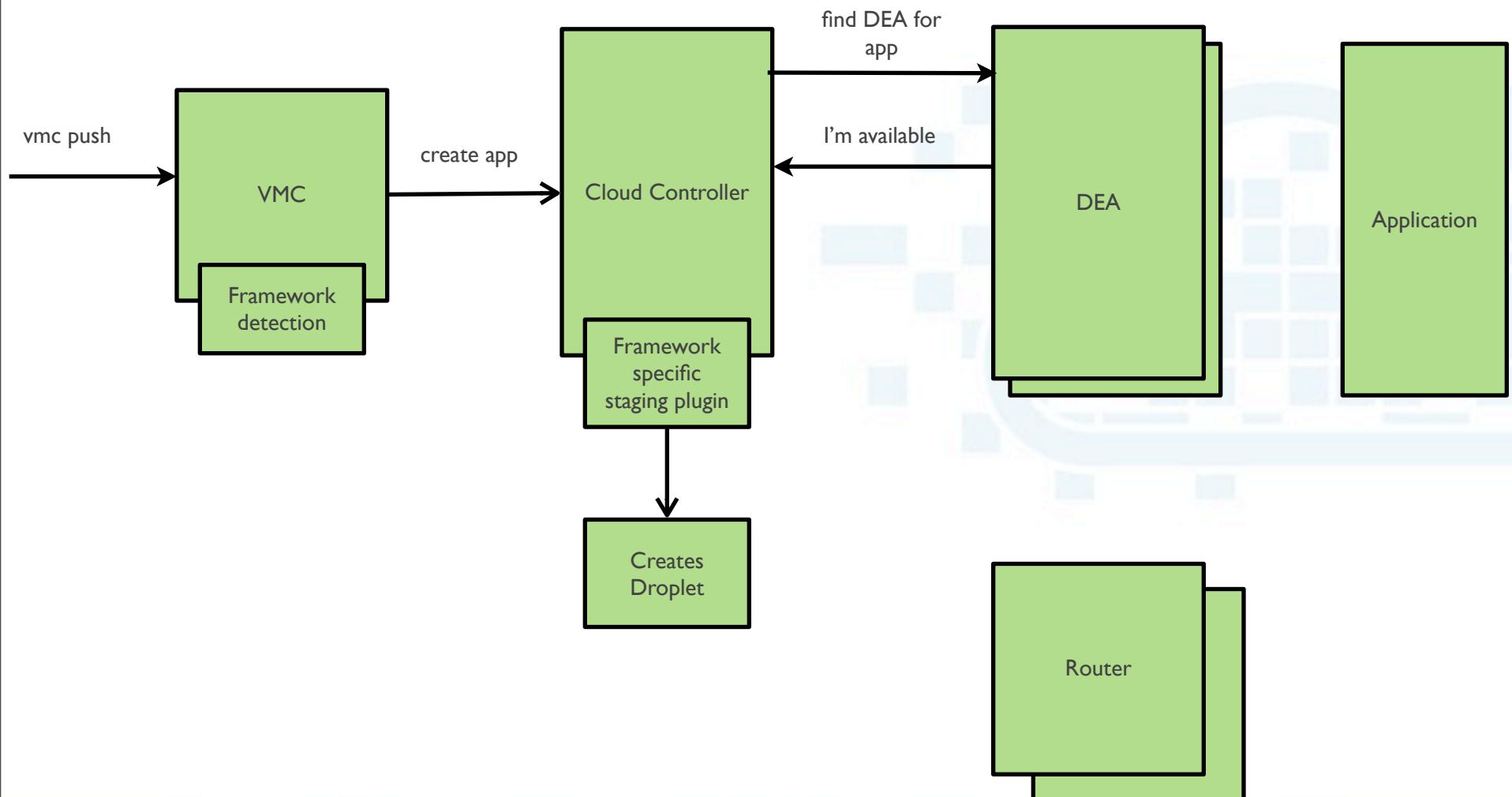
Application Deployment Flow



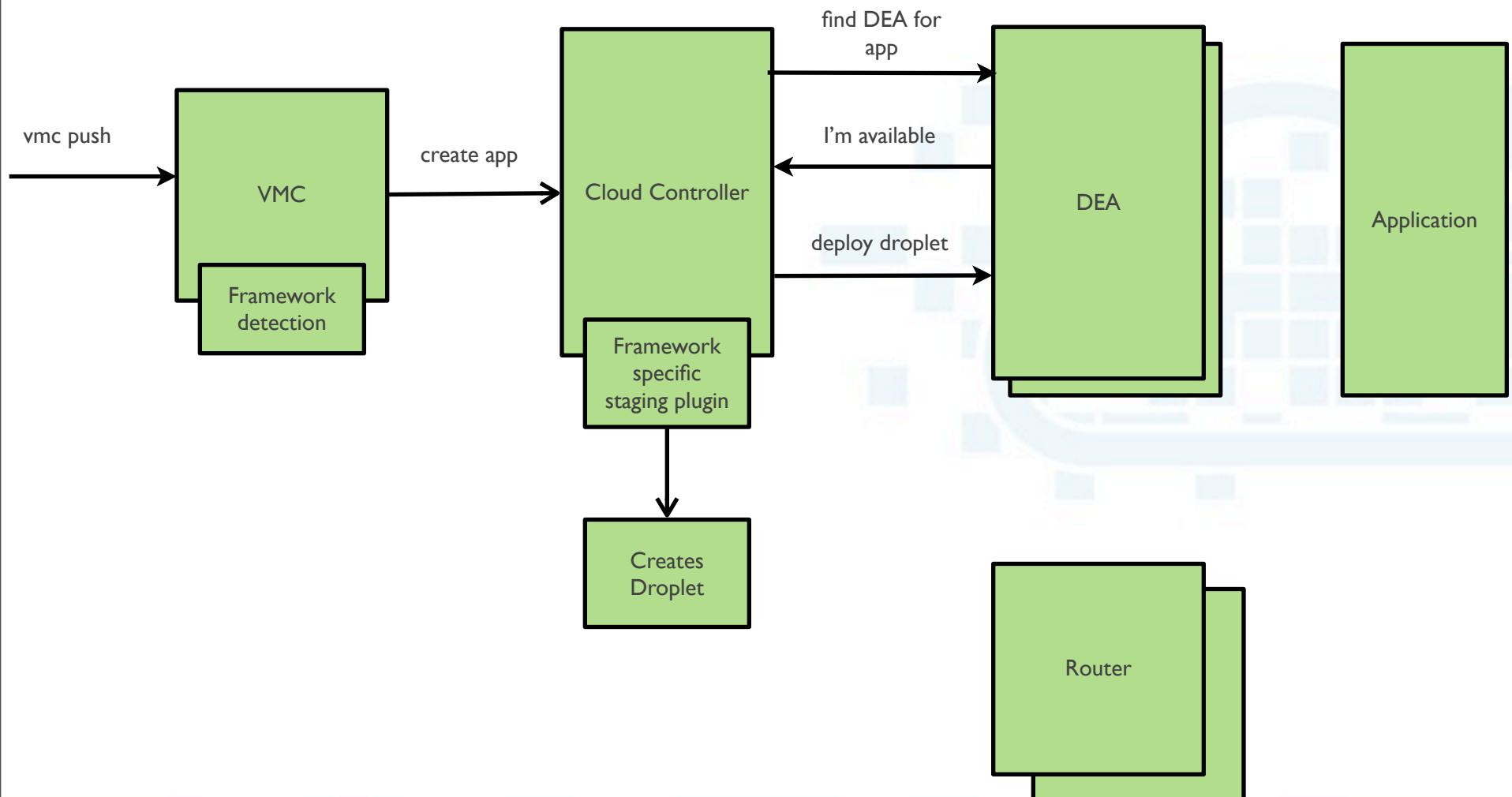
Application Deployment Flow



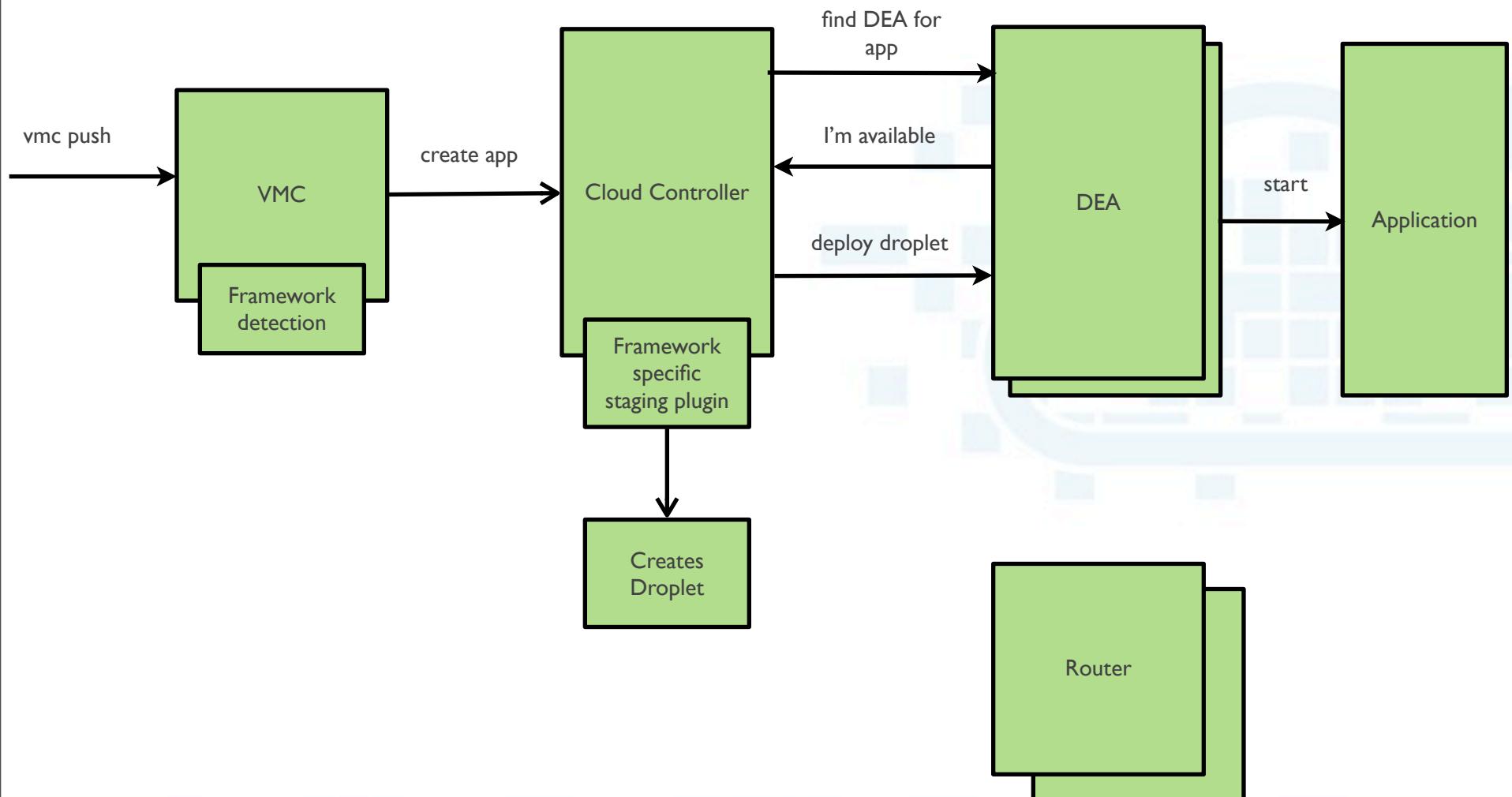
Application Deployment Flow



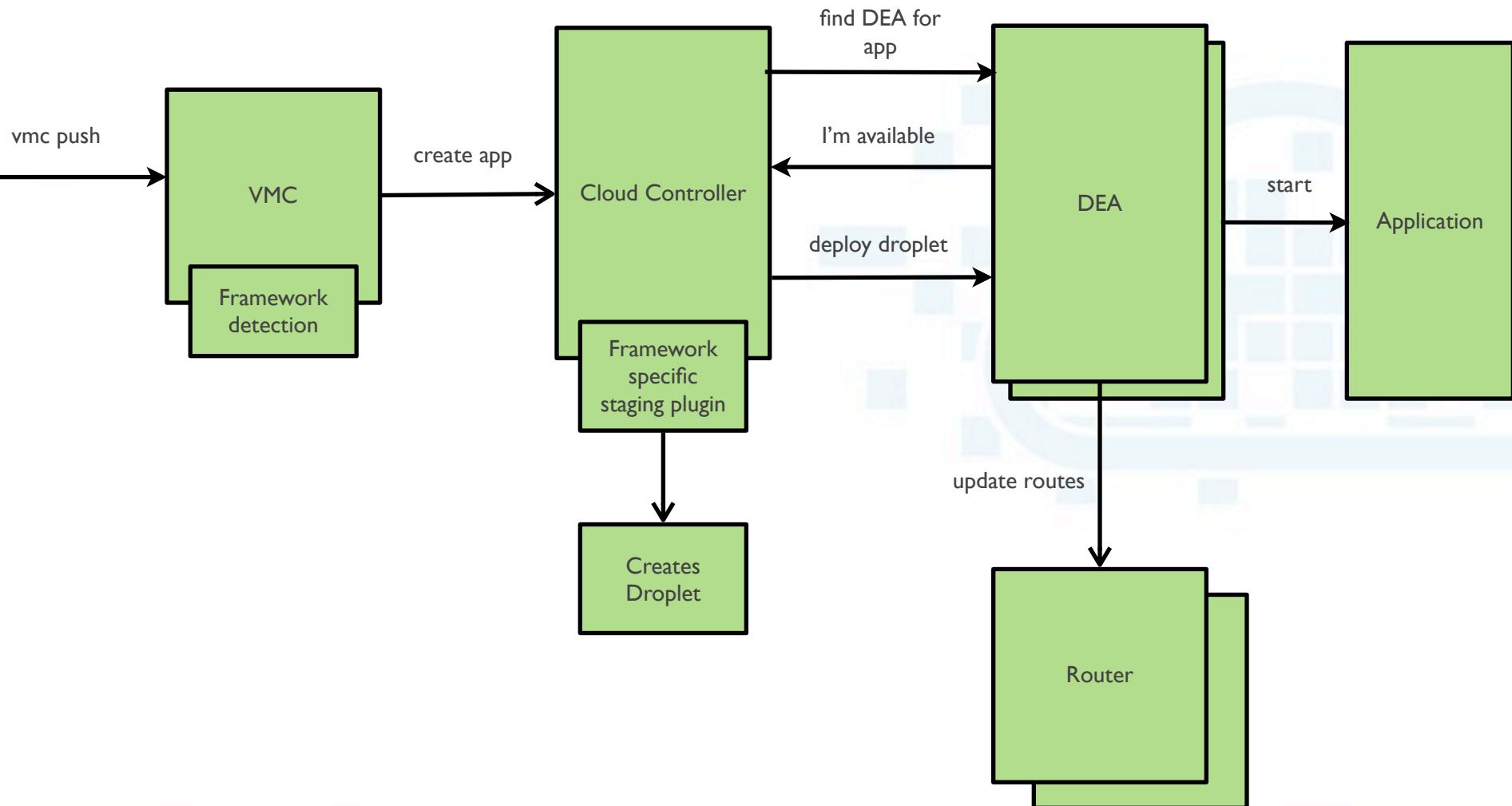
Application Deployment Flow



Application Deployment Flow

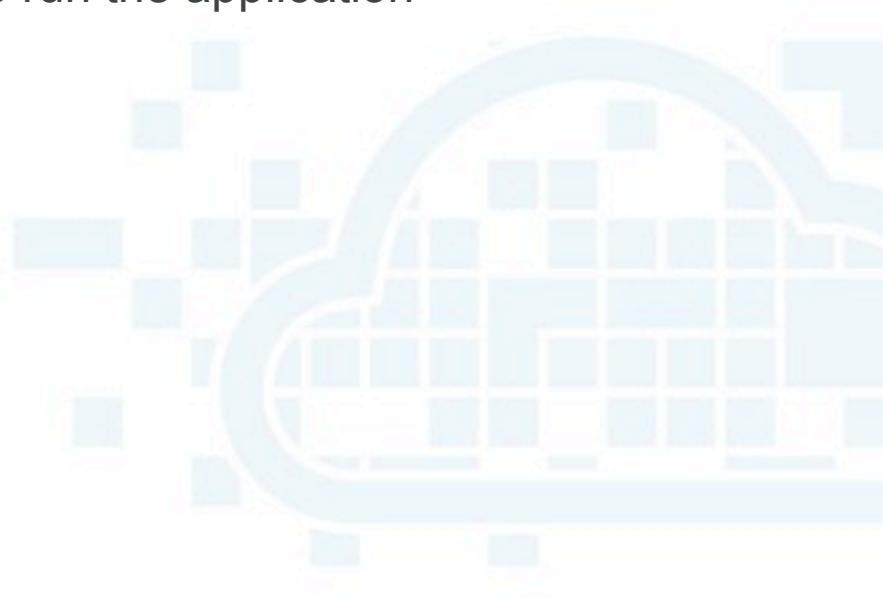


Application Deployment Flow



About the staging plugin

- Framework specific
- Creates a zip file = black box
 - Contains everything necessary for DEA to run the application
 - Two scripts: start.sh, stop.sh

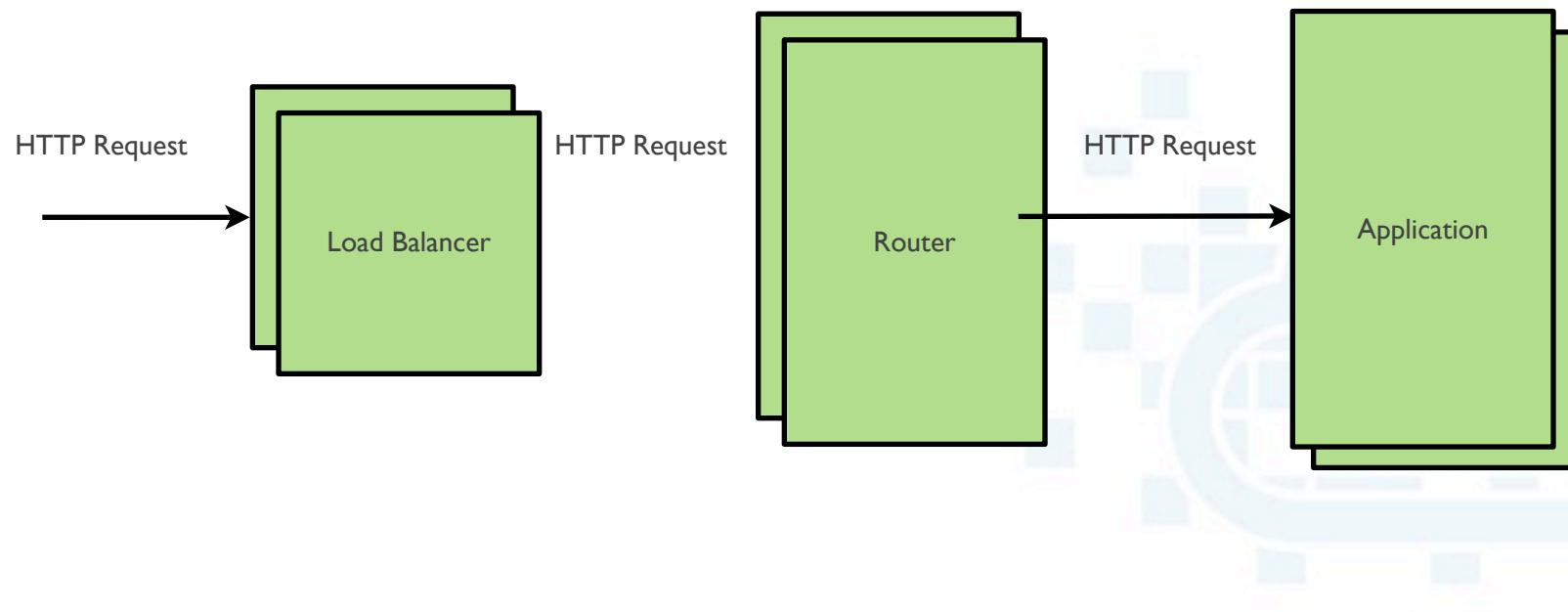


Staging plugin for the Spring framework

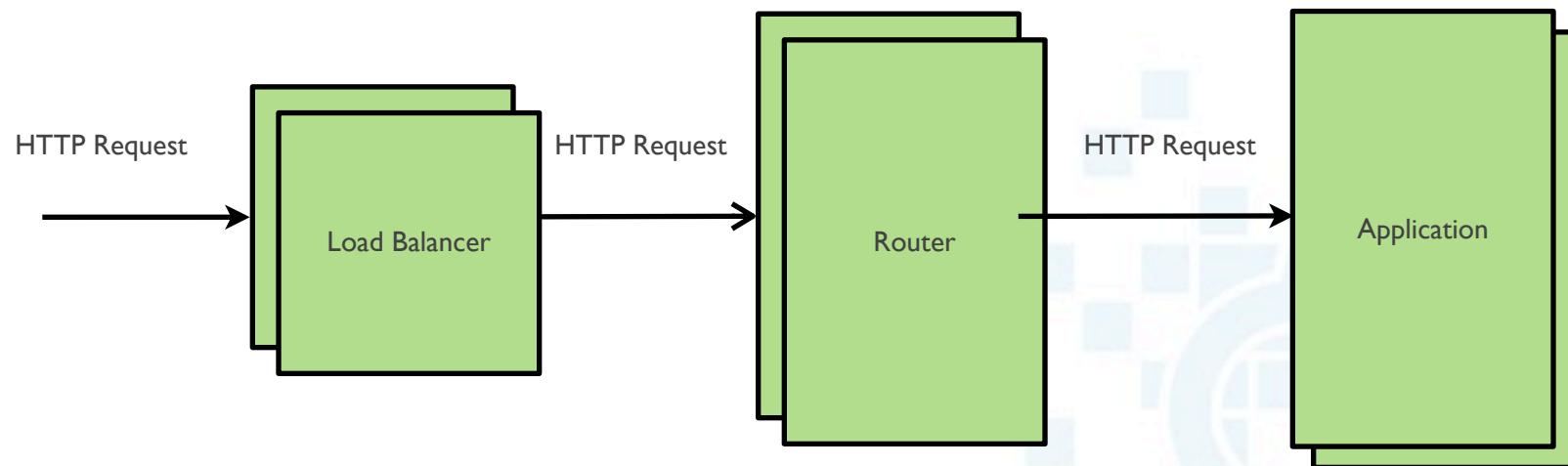
- Adds **CloudAutoStagingBeanFactoryPostProcessor** bean:
 - Modifies bean definitions
 - Implements auto-reconfiguration
- Defines **CloudApplicationContextInitializer** in web.xml
 - Activates cloud profile
 - Defines PropertySource for CloudEnvironment properties



Request handling flow



Request handling flow

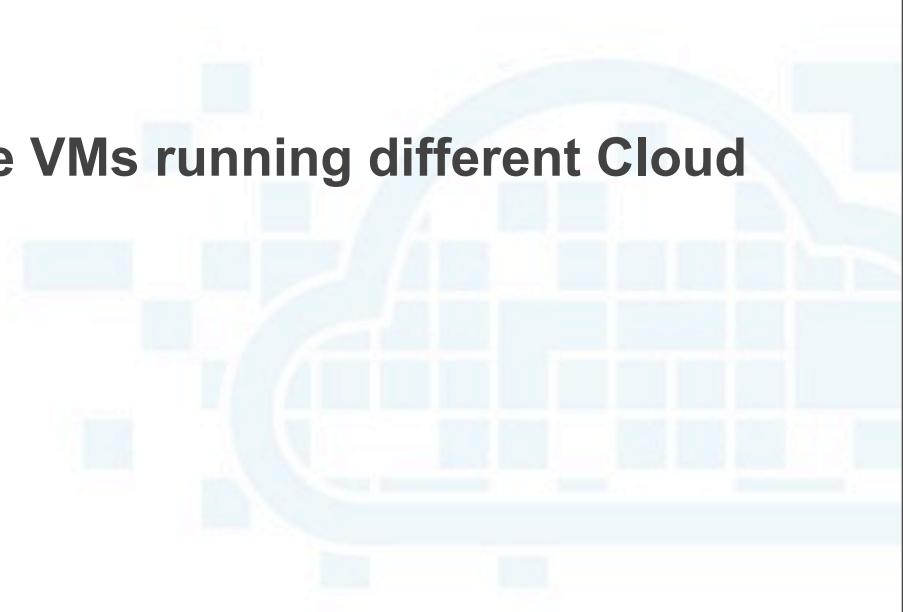


Self Healing Infrastructure

- **If an application instance crashes**
 - DEA detects unexpected exit => DEA broadcasts message
 - Routers remove instance from routing
 - Health manager notifies Cloud Controller
 - Cloud Controller re-launches instance
- **If an DEA VM crashes**
 - Application instances become unavailable
 - Health Manager notices the missing instances and notifies the Cloud Controller
 - Cloud Controller requests application instances to be started
 - Existing DEA will reply and start the applications

But where are the VMs?!?

- **Cloud Foundry has a layered architecture**
 - Cloud Controller, DEA, ... layer = processes
 - VM management layer
- **Benefits: decoupling, simplicity,**
- **CloudFoundry.com creates vSphere VMs running different Cloud Foundry components**



What is in Micro Cloud Foundry?



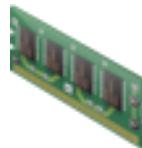
A cloud packaged as a VMware Virtual Machine

Use as a developer sandbox

- Use the services from Junit integration tests
- Deploy your application for functional testing
- Remote debugging from STS

Pre-requisites for using Micro Cloud Foundry

Minimum 1 GB



RAM

Minimum 8 GB



Disk

Internet Connectivity



(w/DHCP is ideal)

VMware Fusion



VMware Workstation



VMware Player



VMC



Command line



STS



GUI

Register and login to CloudFoundry.com

Micro Cloud Foundry

Micro Cloud Foundry™ - now you can run a complete instance of Cloud Foundry on your own computer.

Getting started is as simple as 1, 2, 3:

1. Install

[VMware Player](#) (free) or [VMware Workstation](#) for Windows and Linux users.
[VMware Fusion](#) for Mac OS X users.

2. Login

Using your CloudFoundry.com credentials*

3. Download

Your Micro Cloud Foundry virtual machine image

*A valid CloudFoundry.com account is required.

Login

Email

Password

[Login](#)

or [sign up](#) for CloudFoundry.com

Learn more

- [Watch the Screencast](#)
- [Read the Getting Started Guide](#)
- [Find Answers in the Knowledge Base](#)

Select a domain name

Micro Cloud Foundry

Create

Before continuing, you will need a unique domain name for your Micro Cloud Foundry. This will generate the configuration token you need to initialize your Micro Cloud Foundry.

.cloudfoundry.me

Available

Create

*.cloudfoundry.me => IP address of your machine where Micro Cloud Foundry is running

Remember the configuration token

Micro Cloud Foundry

Reserved

'cer-micro1.cloudfoundry.me' domain has been reserved

Please use the token below to configure your Micro Cloud Foundry.

The configuration token is:

bench-nation-bright

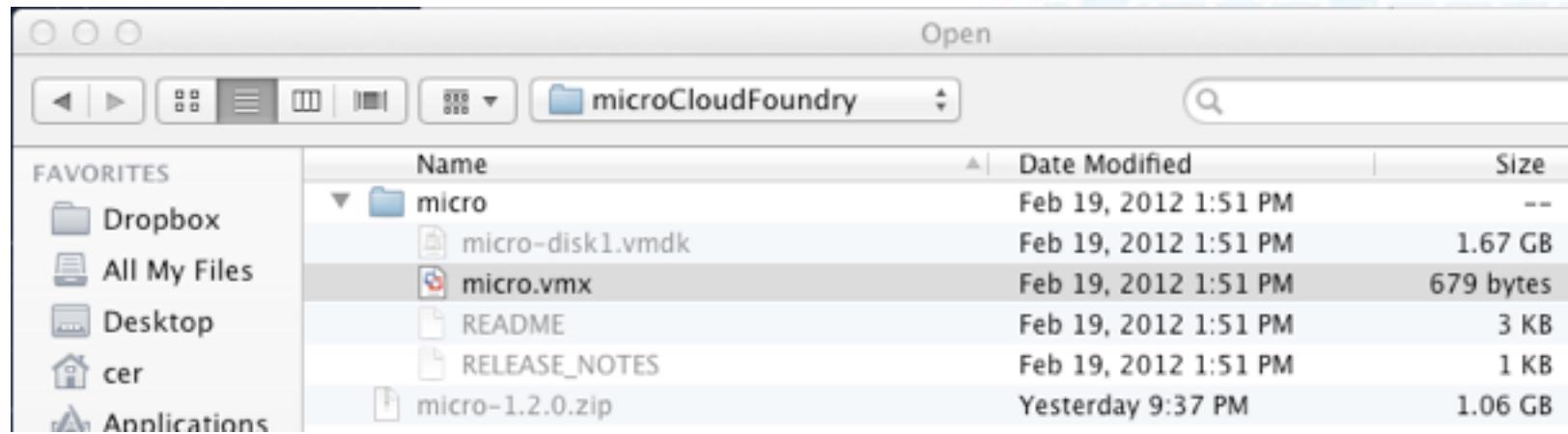
[Manage Your Domains](#)

Download, unzip and open micro.vmx

Downloads

You will need to have either [VMware Workstation](#), [VMware Fusion](#) or [VMware Player](#) installed to run the Micro Cloud Foundry VM.

[Download Micro Cloud Foundry VM](#)



Micro Cloud Foundry v1.2.0

Welcome to VMware Micro Cloud Foundry version 1.2.0

Network up / offline

Micro Cloud Foundry not configured

1. configure
2. refresh console
3. expert menu
4. help
5. shutdown VM

Select option: 1

Set password Micro Cloud Foundry VM user (vcap)

Password: *****

Confirmation: *****

Password changed!

1. DHCP

2. Static

Select network: 1

HTTP proxy: [none]

Enter Micro Cloud Foundry configuration token or offline domain name:

bench-nation-bright_

updating DNS: 100% ███ Time: 00:00:08

done

Installing Micro Cloud Foundry: will take up to five minutes

Micro Cloud Foundry v1.2.0

Welcome to VMware Micro Cloud Foundry version 1.2.0

Network up / offline

Micro Cloud Foundry not configured

1. configure
2. refresh console
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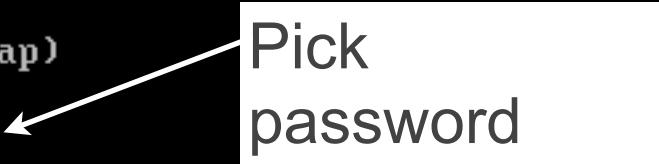
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Pick
password



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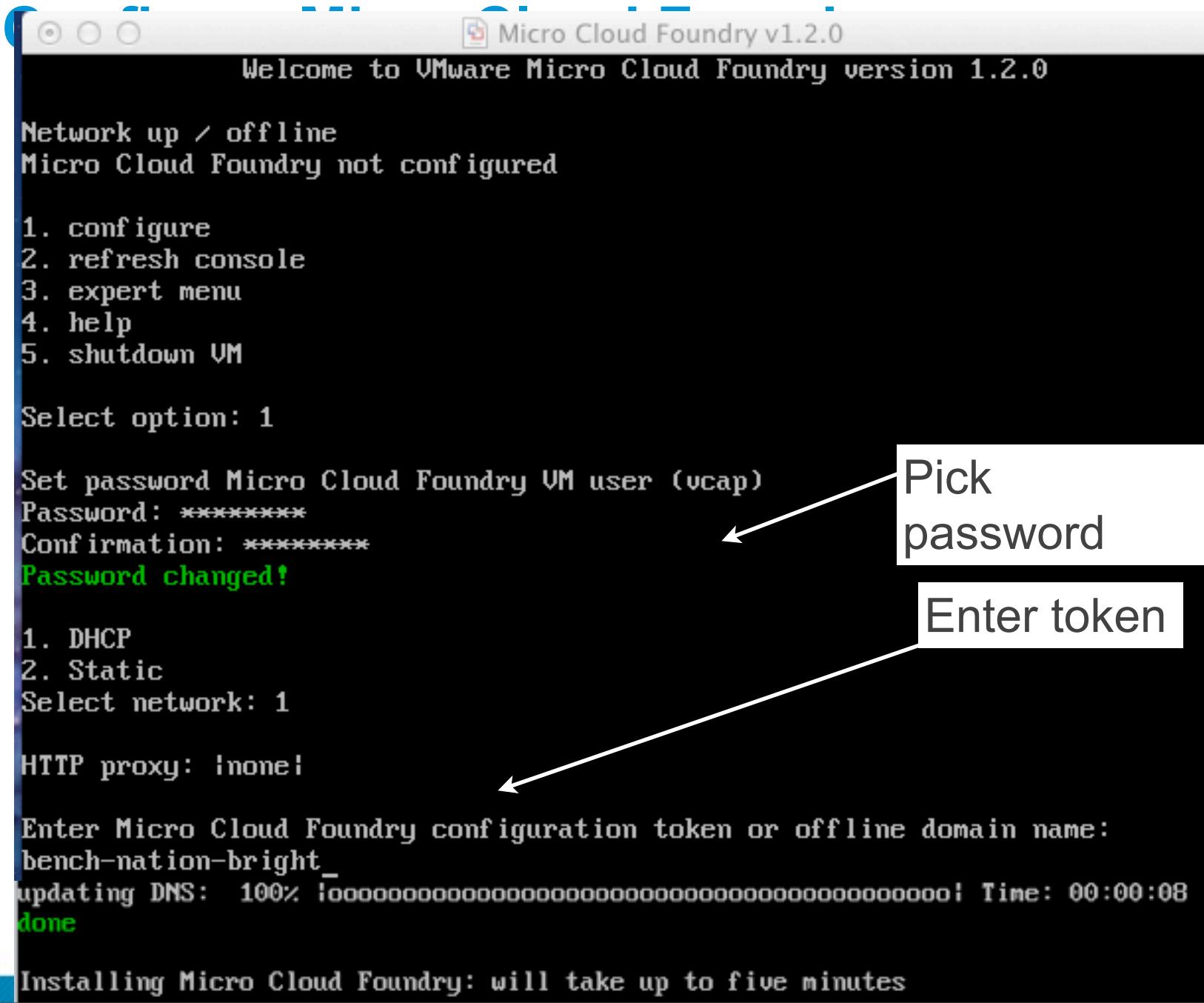
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bench-nation-bright_

updating DNS: 100% ███ Time: 00:00:08

done

Installing Micro Cloud Foundry: will take up to five minutes



Pick password

Enter token

- 1. DHCP
- 2. Static

Select network: 1

HTTP proxy: [none]

```
Enter Micro Cloud Foundry configuration token or offline domain name:  
bench-nation-bright_  
updating DNS: 100% [oooooooooooooooooooo] Time: 00:00:08  
done
```

Installing Micro Cloud Foundry: will take up to five minutes

Logging into Micro Cloud Foundry



Logging into Micro Cloud Foundry

```
$ vmc target api.cer-micro1.cloudfoundry.me
```

```
Successfully targeted to [http://api.cer-micro1.cloudfoundry.me]
```



Logging into Micro Cloud Foundry

```
$ vmc target api.cer-micro1.cloudfoundry.me
```

```
Successfully targeted to [http://api.cer-micro1.cloudfoundry.me]
```

```
$ vmc register
```

```
Email: crichardson@vmware.com
```

```
Password: * * * * *
```

```
Verify Password: * * * * *
```

```
Creating New User: OK
```

```
Attempting login to [http://api.cer-micro1.cloudfoundry.me]
```

```
Successfully logged into [http://api.cer-micro1.cloudfoundry.me]
```

Josh Long | josh.long@springsource.com
twitter: @starbuxman

A close-up photograph of a bird's head, likely an owl or hawk, looking directly at the camera. The bird has large, expressive orange eyes with dark pupils and a white, hooked beak. Its feathers are dark and textured. The background is blurred green foliage.

Questions?