



CLOUD FOUNDRY™
DEPLOY & SCALE YOUR APPLICATIONS IN SECONDS

Cloud Foundry Bootcamp

GOTO 2012

Josh Long

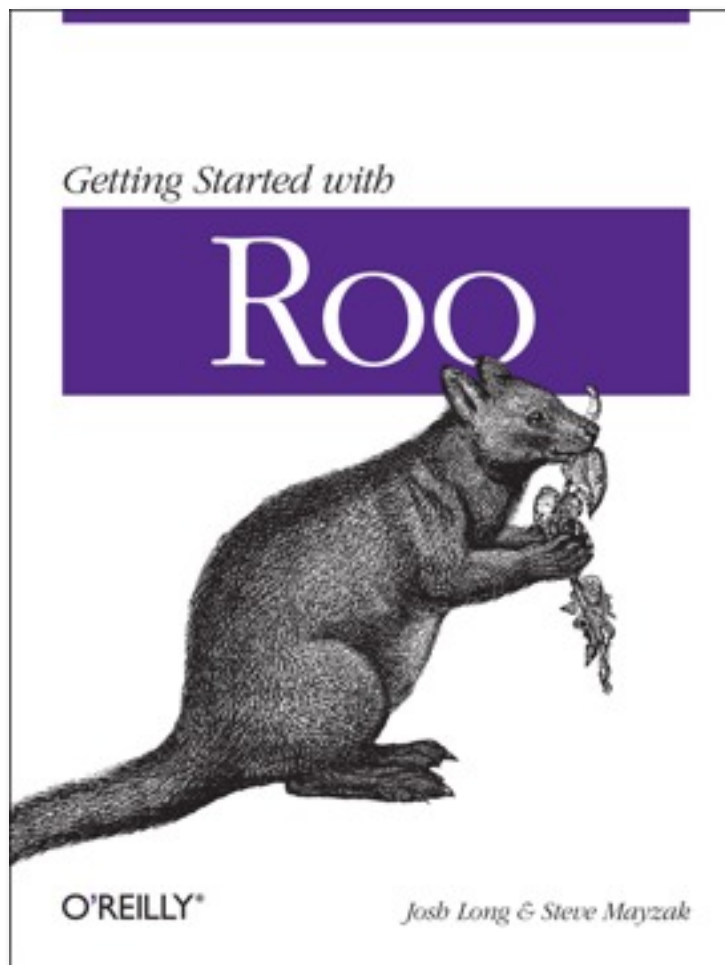
Spring Developer Advocate

josh.long@springsource.com

Josh Long

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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, onw
secure your spot!)

Before we continue on to the heavy 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 the Cloud Foundry logo, a search bar, and links for 'Get Started', 'Get Involved', 'Partners', 'Blog', and 'About'. The main heading is 'Sign up for Cloud Foundry'. Below this, there are two input fields: 'Email' and 'Promo Code (optional)'. To the right of these fields, there is a paragraph of text explaining that registration is free and that users can deploy and scale various applications. Below the input fields, there is a section titled 'VMware Cloud Foundry Terms of Service' with a scrollable text area. At the bottom, there is a checkbox labeled 'I have read and agree to the Terms of Service' and a 'Request Invite' button.

Register / Sign In

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](#)

hatter.  

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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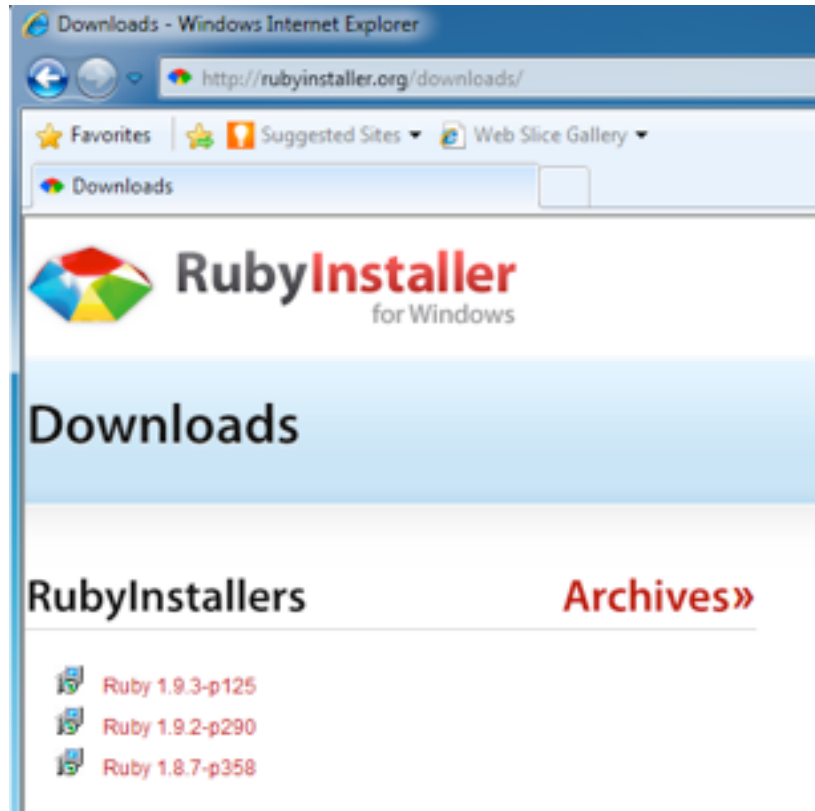
Ways to use Cloud Foundry

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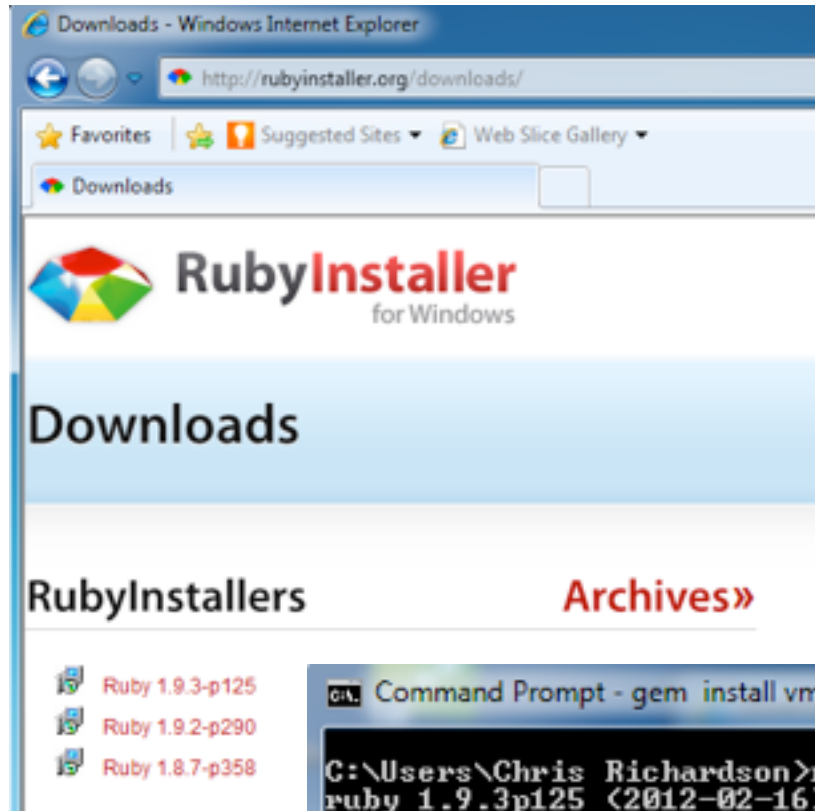
```
Usage: vmc [options] command [<args>] [command_options]  
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```



Installing vmc on Windows



Installing vmc on Windows



Install the vmc gem

A screenshot of a Windows Command Prompt window titled 'G:\ Command Prompt - gem install vmc'. The window shows the following commands and output:

```
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%)
```

A yellow arrow points from the text 'Install the vmc gem' to the 'gem install vmc' command in the Command Prompt.

Installing vmc on Mac OSX

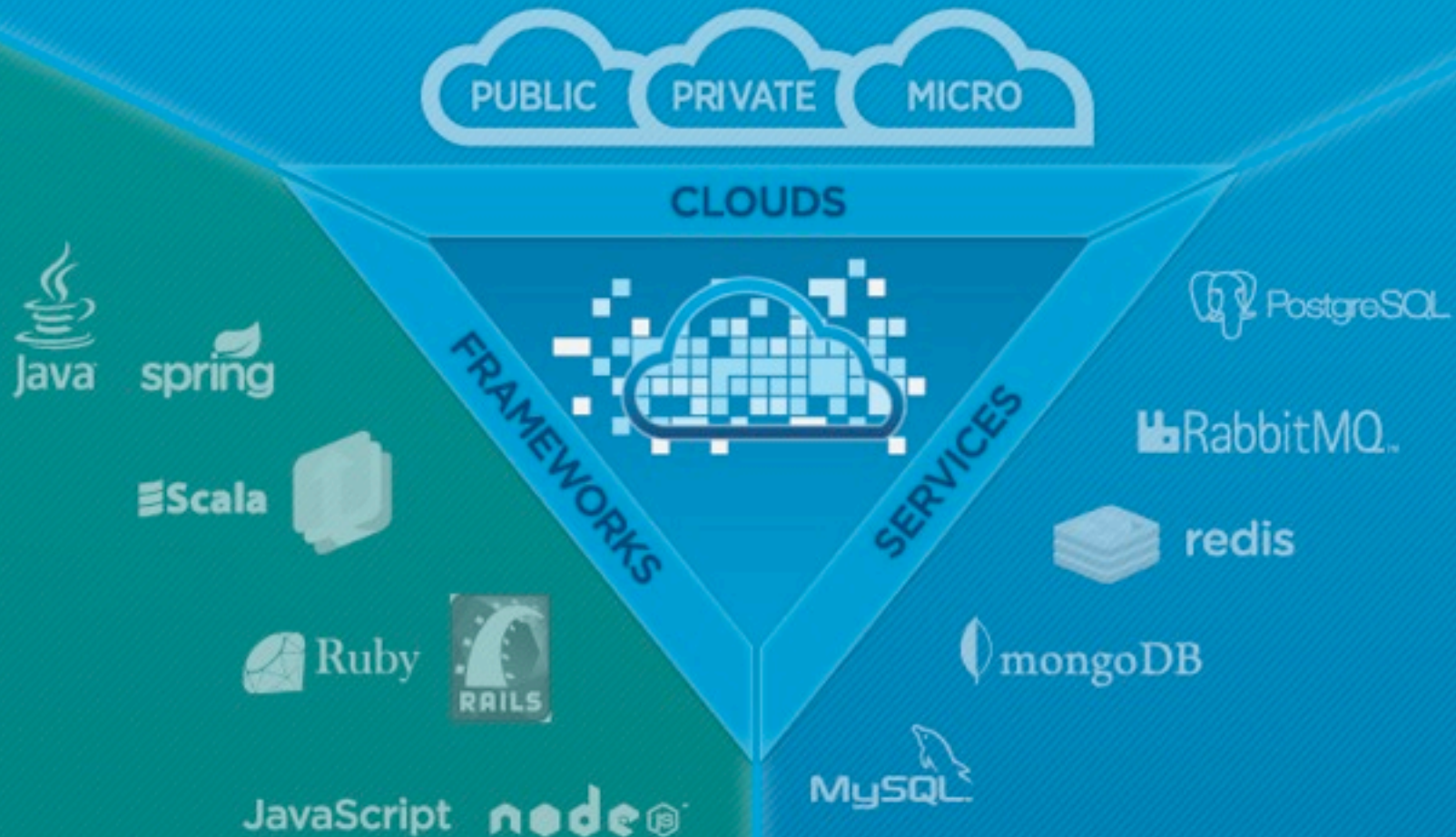
Use Ruby Version Manager <http://beginrescueend.com/>

```
$ bash -s stable <<(curl -s https://raw.githubusercontent.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



CONFIDENTIAL

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**

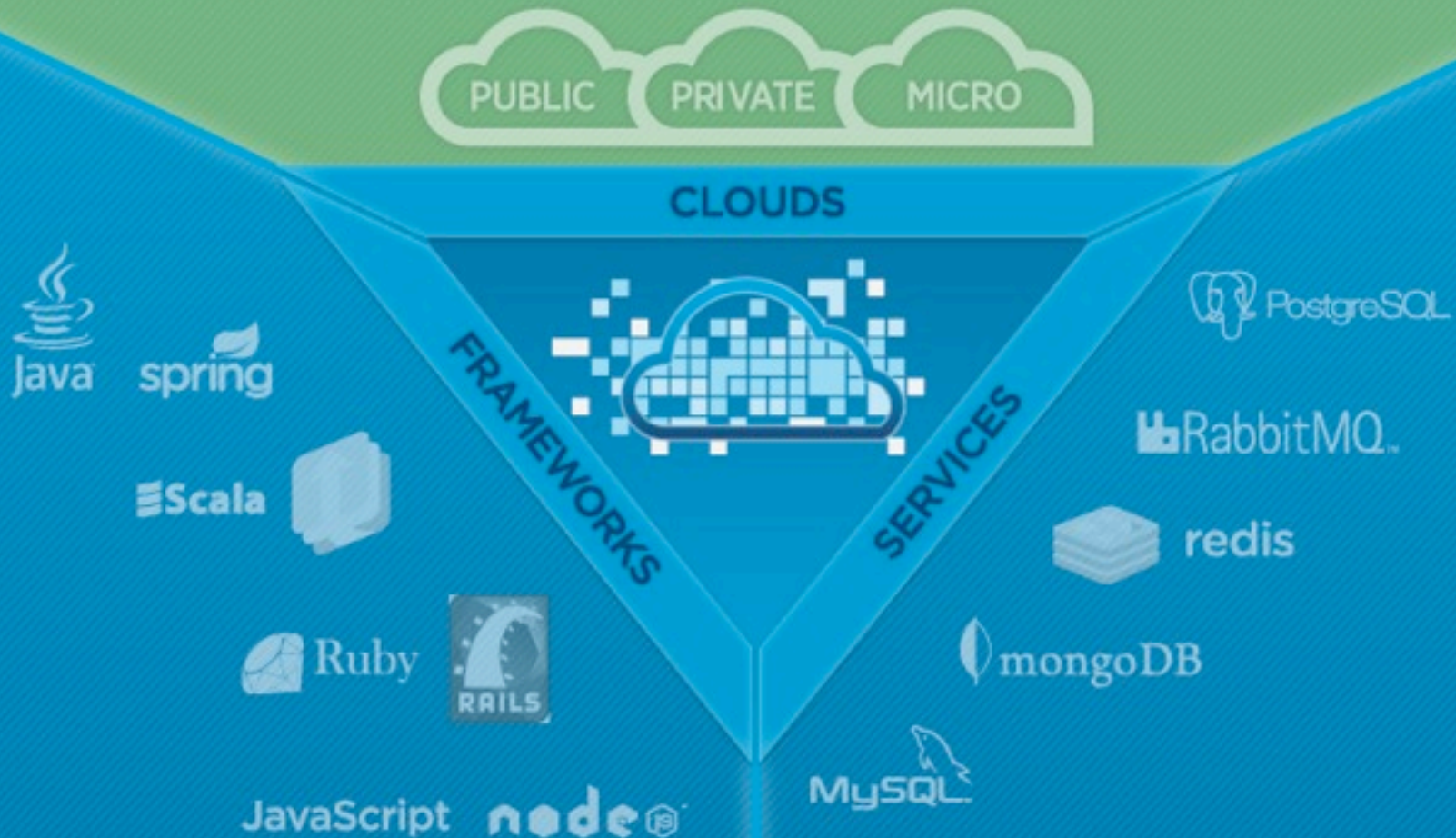
- **Ecosystem Partners**

- **.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



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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



- 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

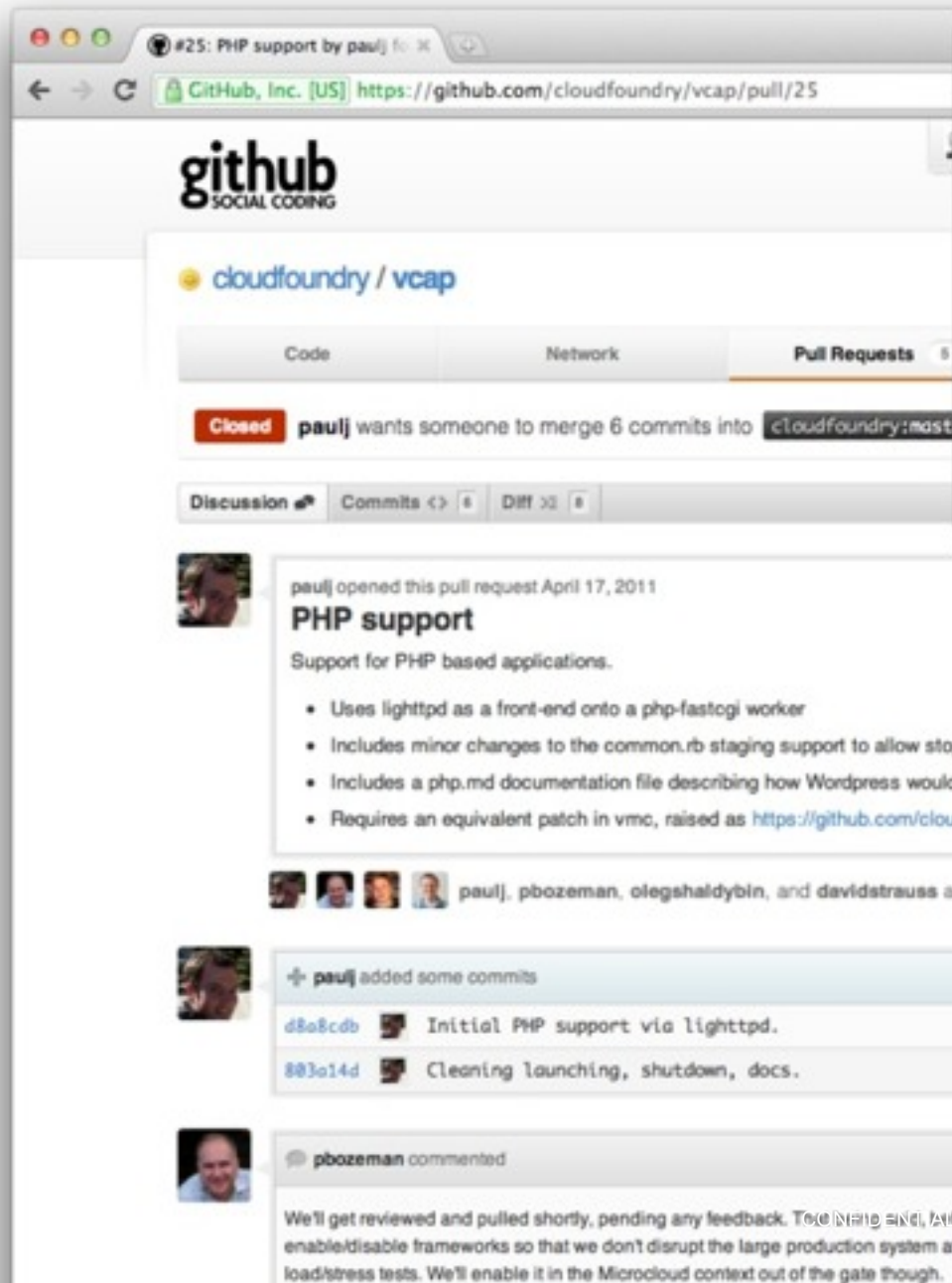
I'm making this issue read-only. I think the points here have been made. There's no reason to email thousands of people every time someone says "+1".

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 [lapsboy](#), Jul 28, 2009

Open Source Advantage



- 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**

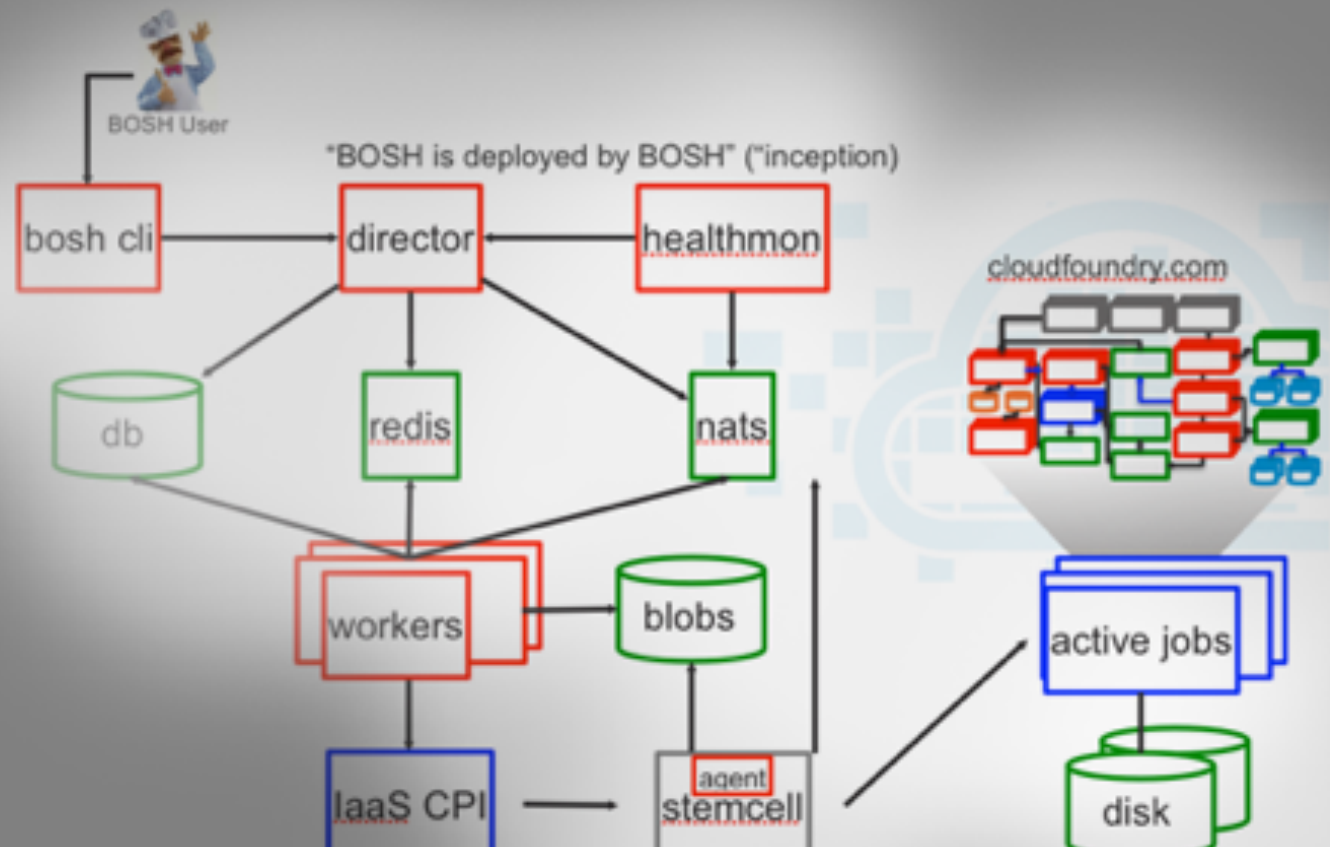




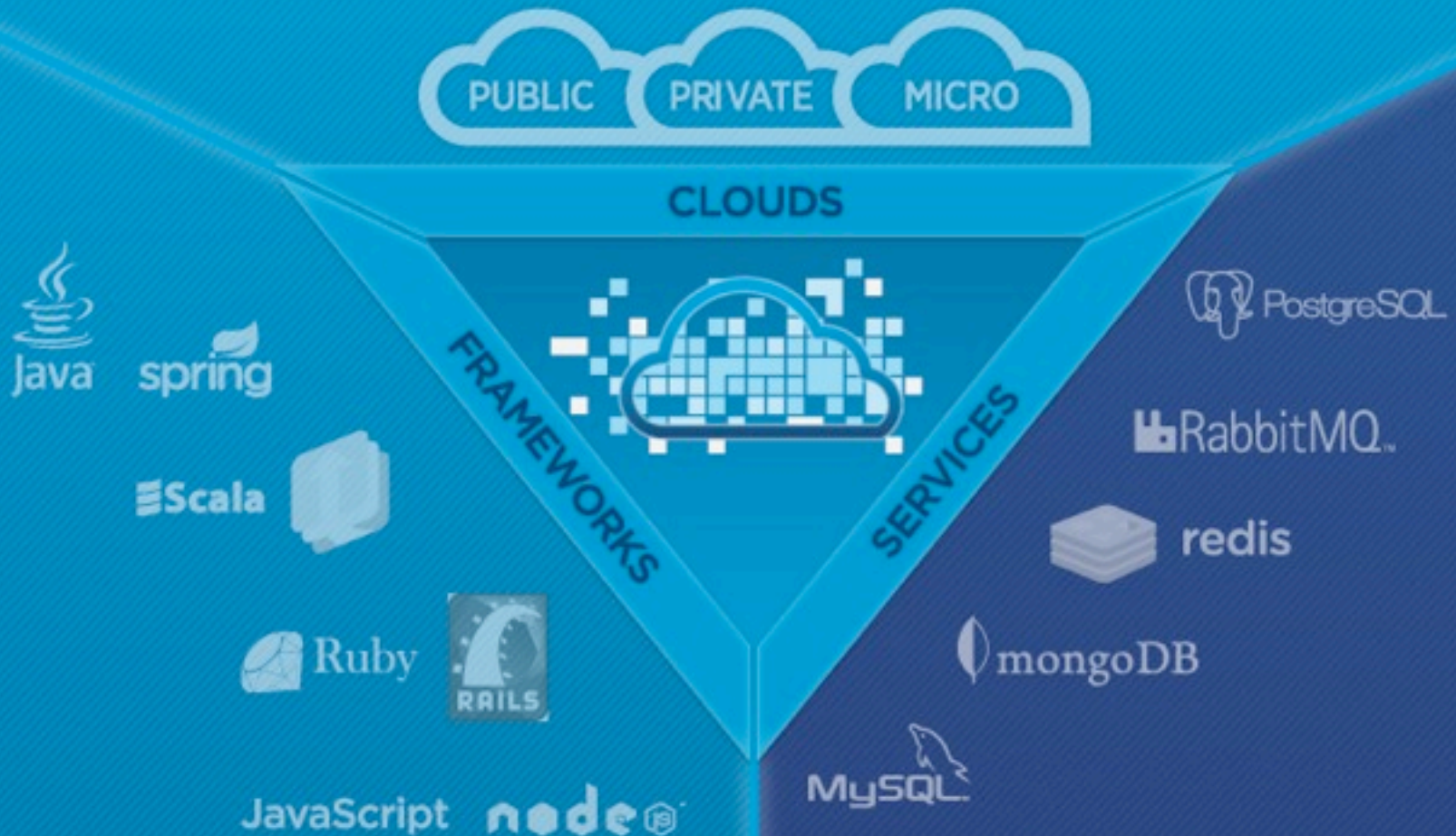
Name	The open platform-as-a-service project
Email	support@cloudfoundry.org
Website/Blog	http://www.cloudfoundry.org
Member Since	Feb 16, 2011

BOSH

Public Repositories (7)



Cloud Foundry: Services



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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



PostgreSQL



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



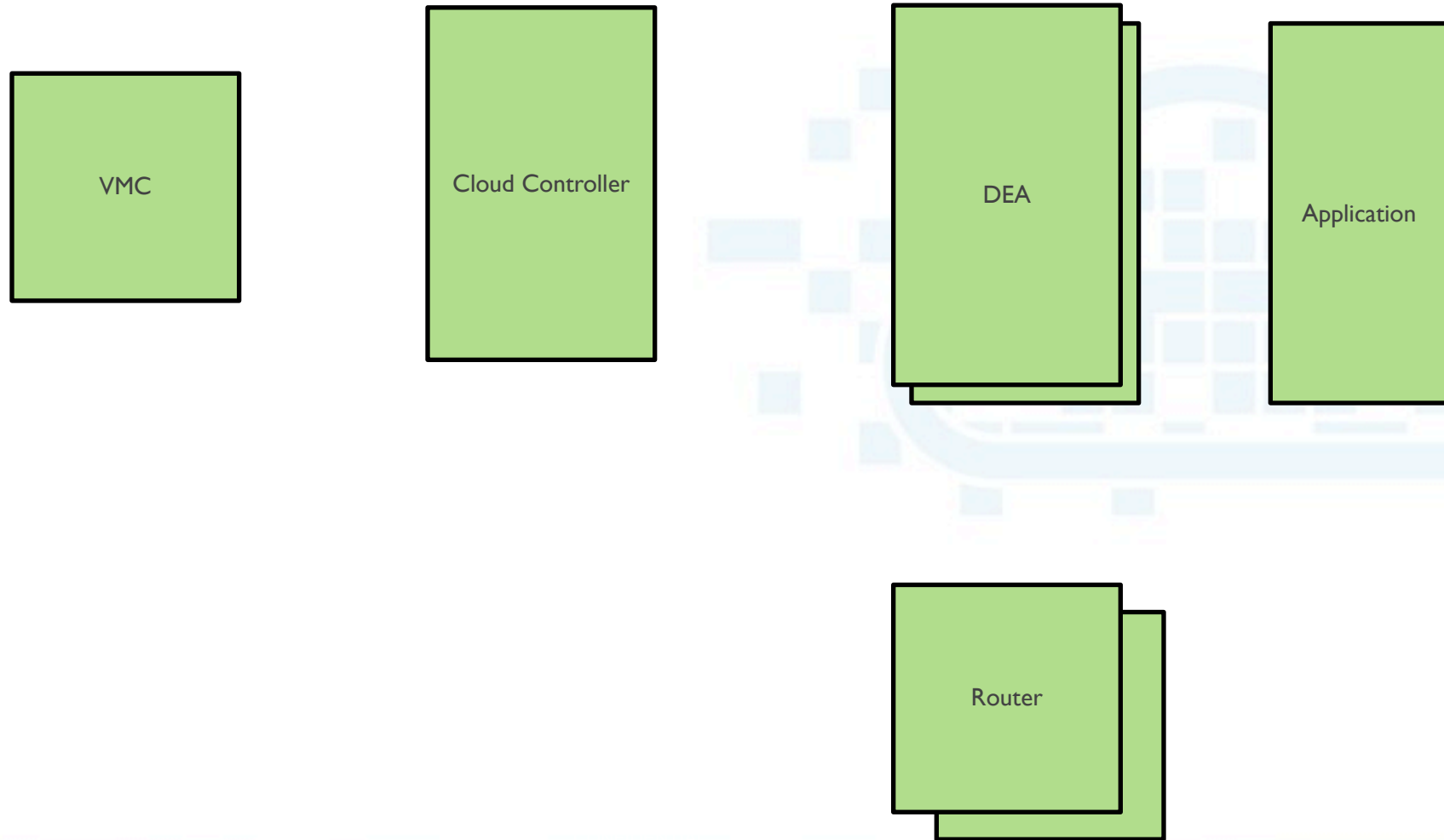
springsource toolsuite™

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

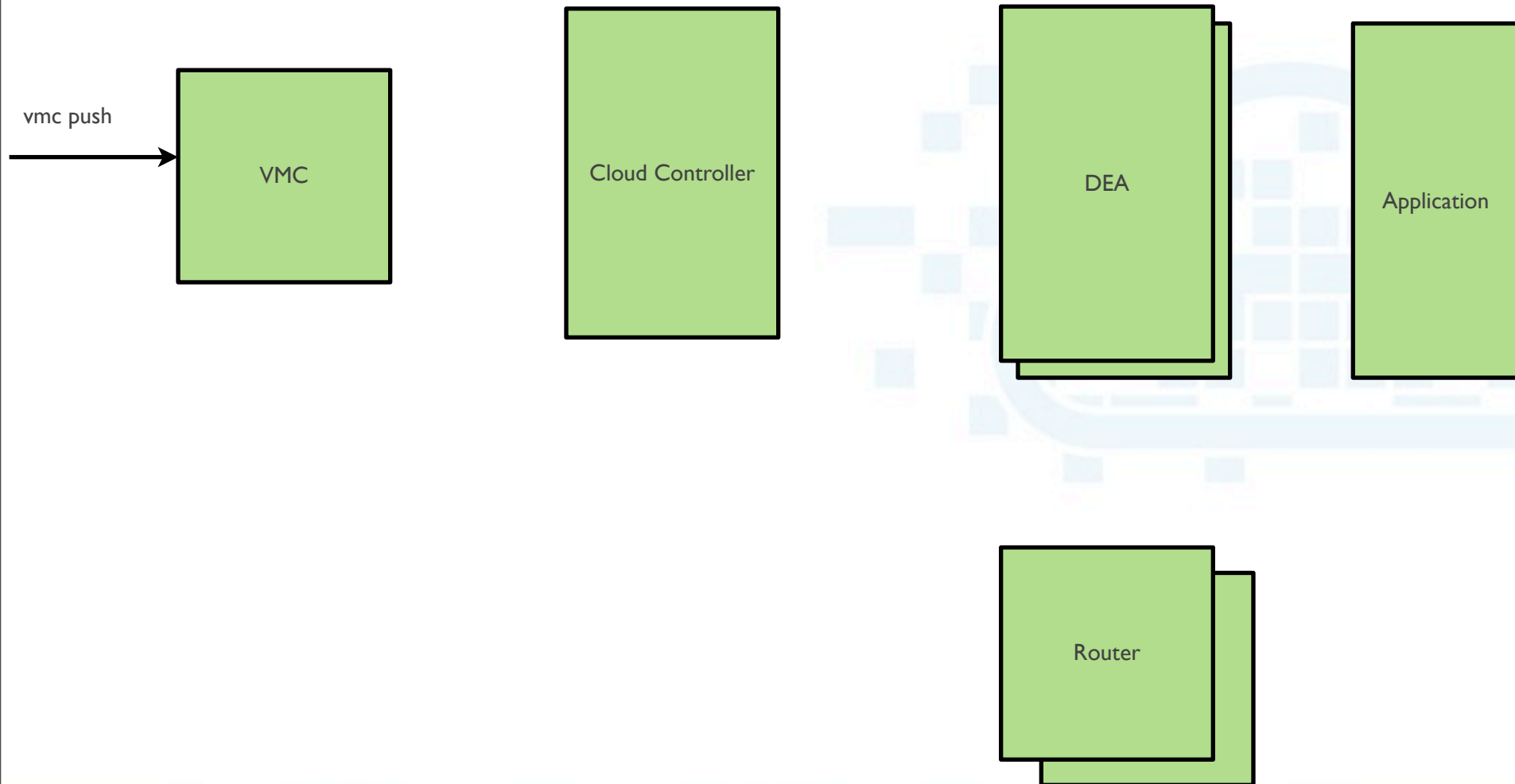


Demo: developing with Eclipse & STS

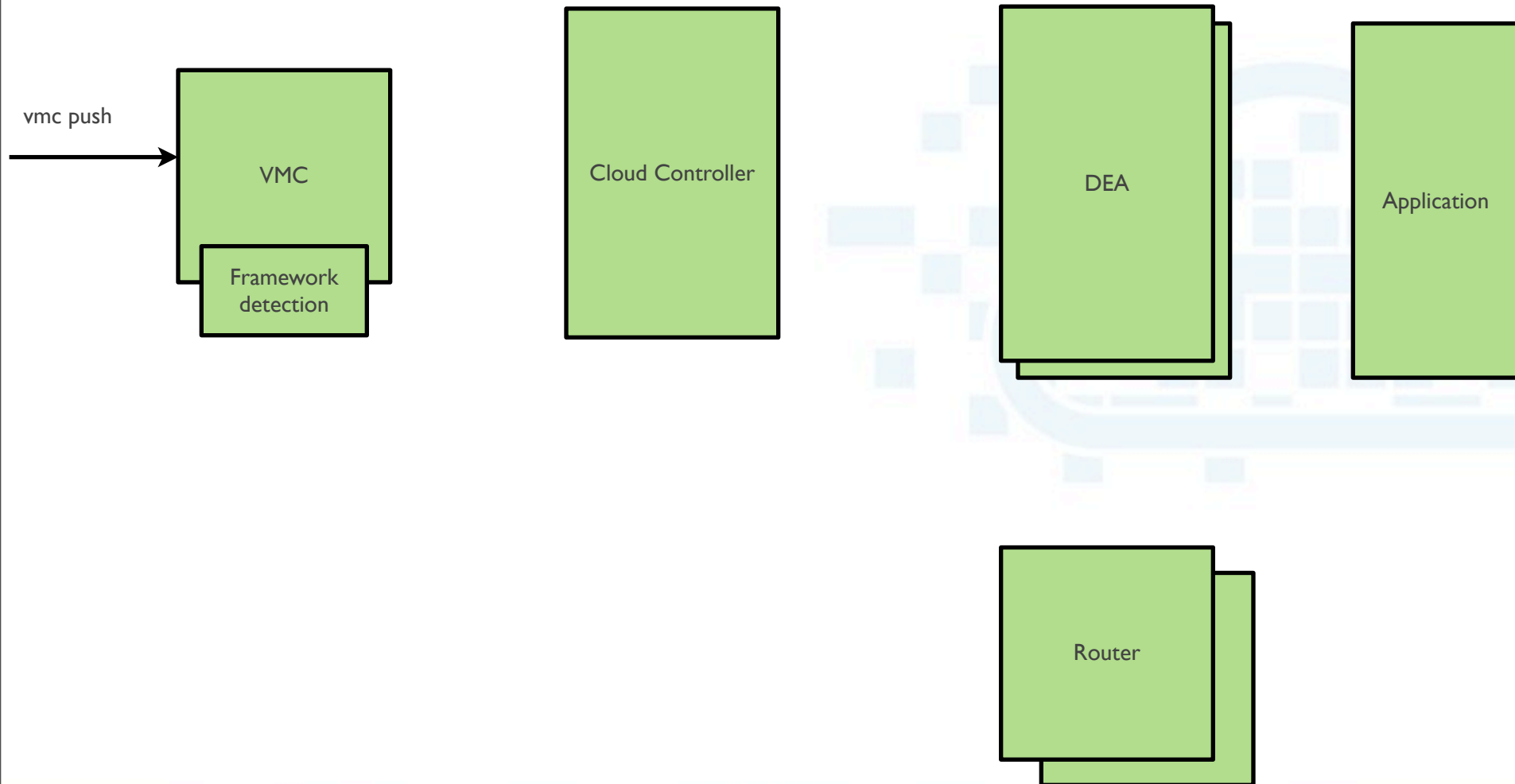
Application Deployment Flow



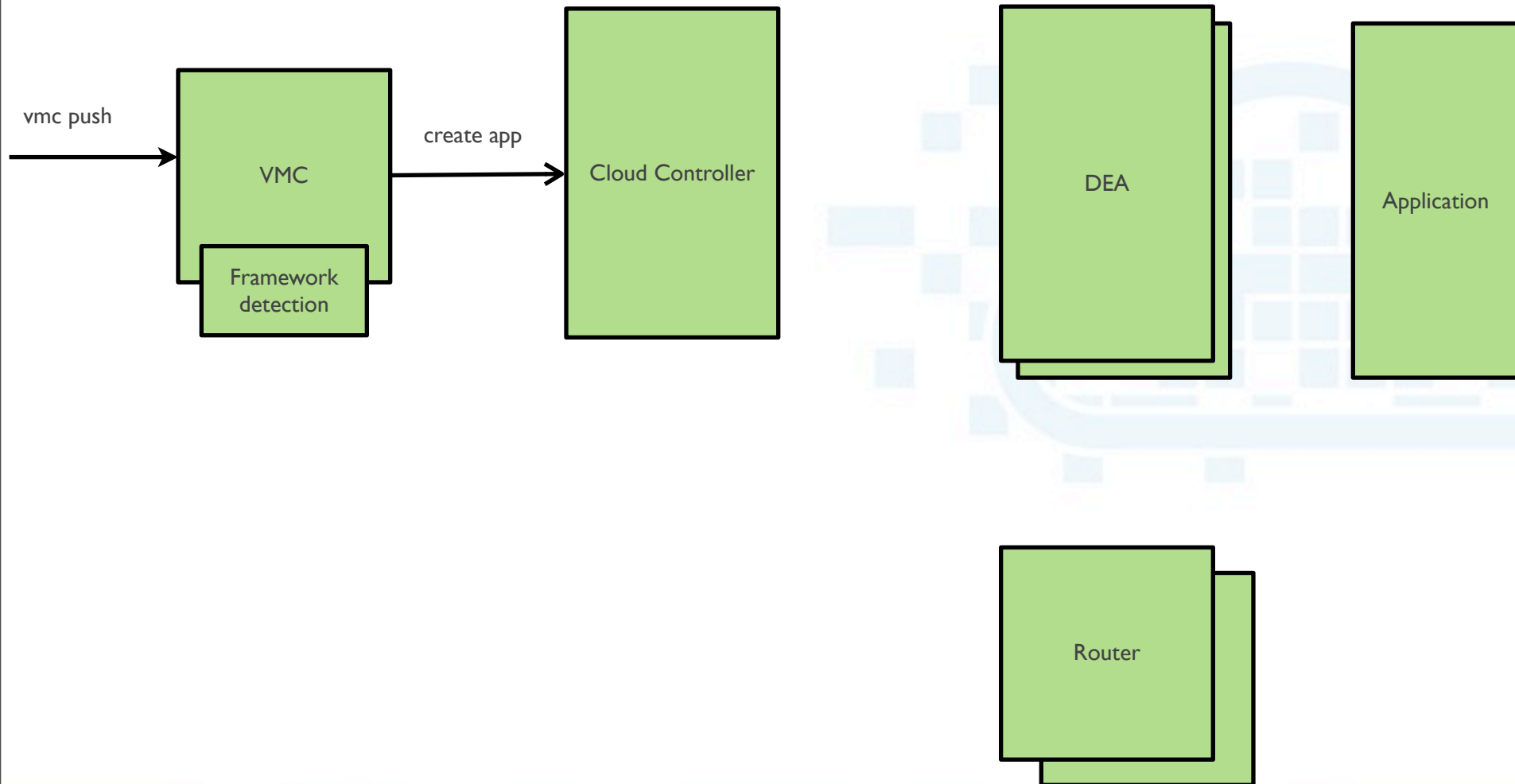
Application Deployment Flow



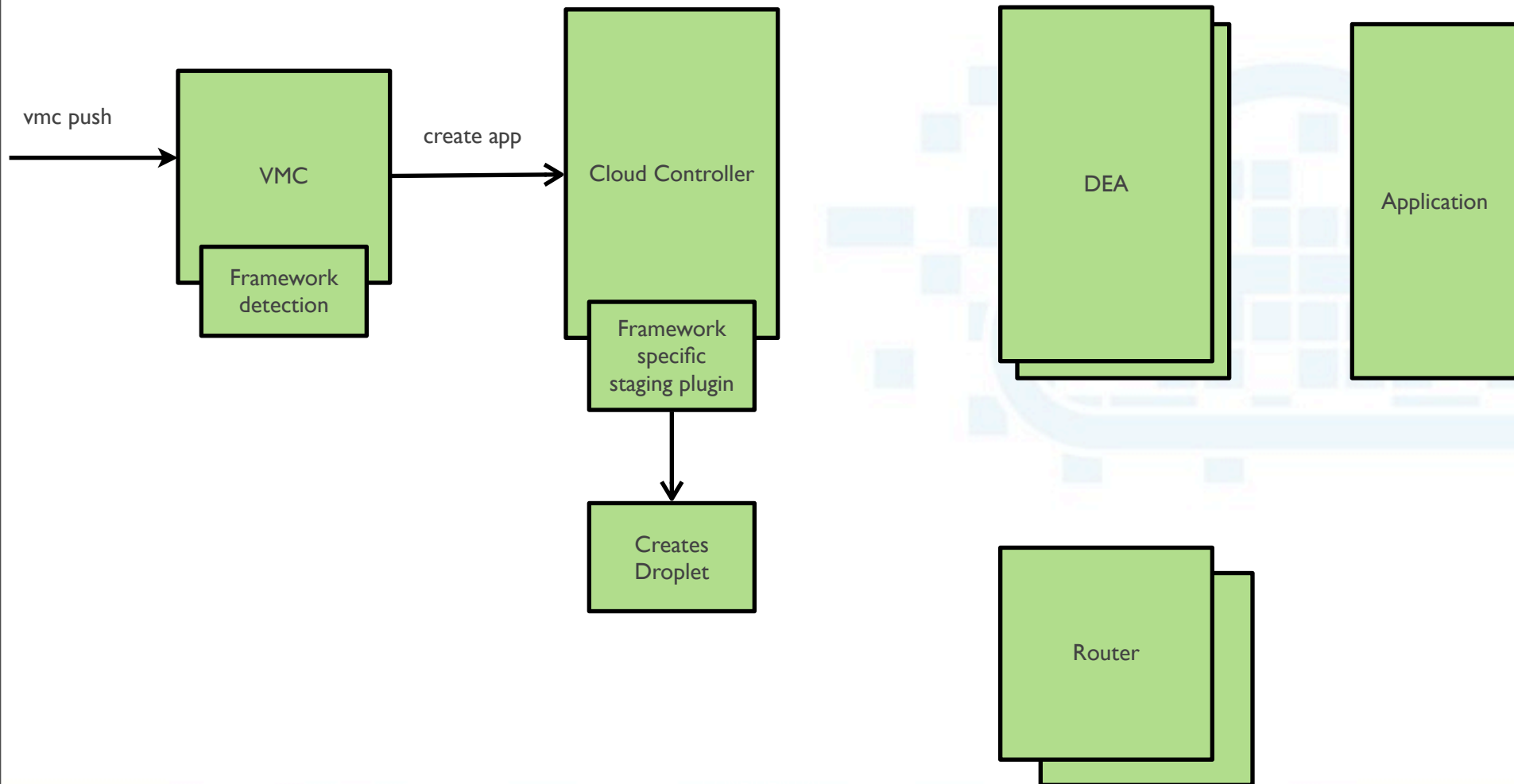
Application Deployment Flow



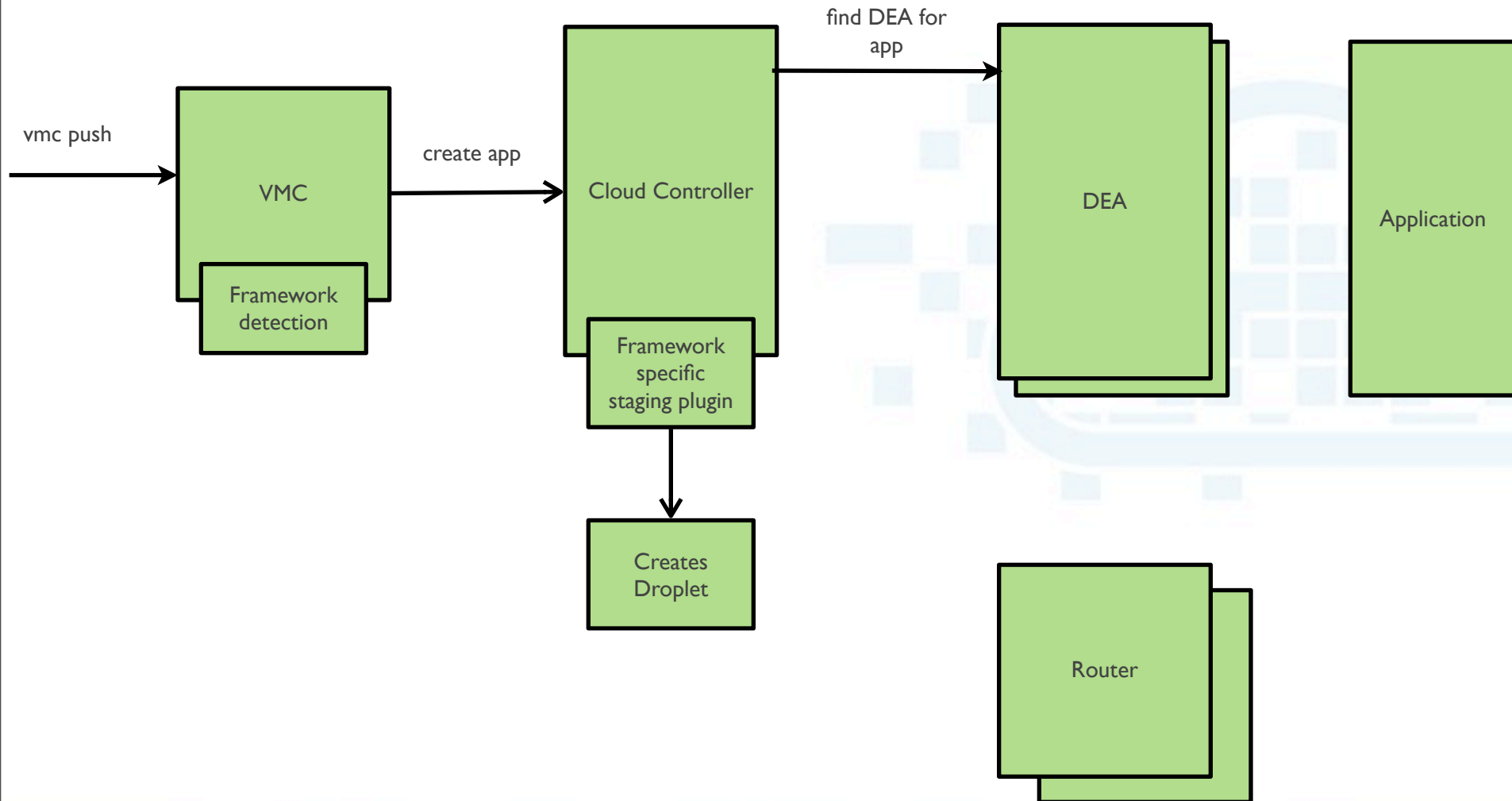
Application Deployment Flow



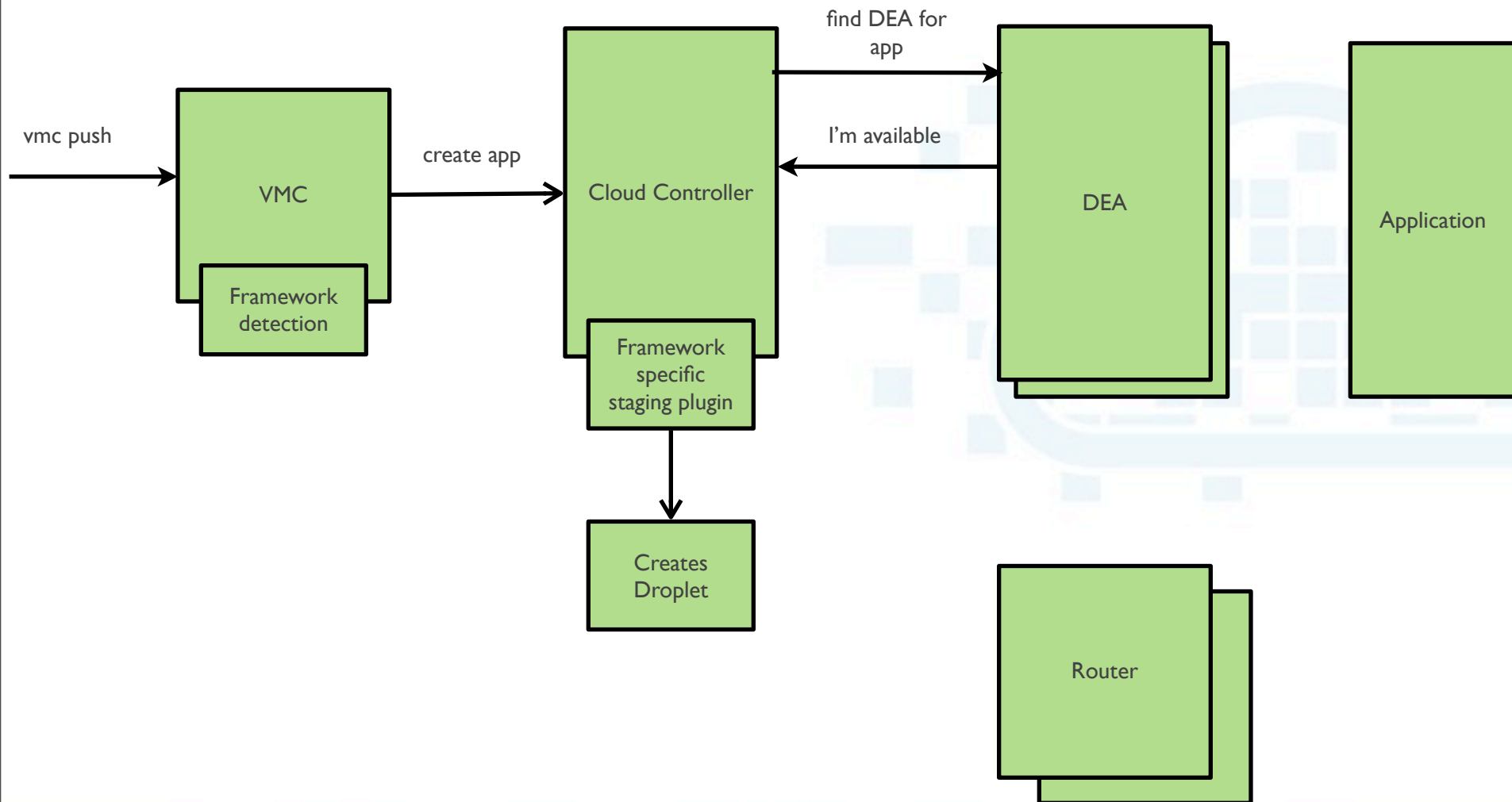
Application Deployment Flow



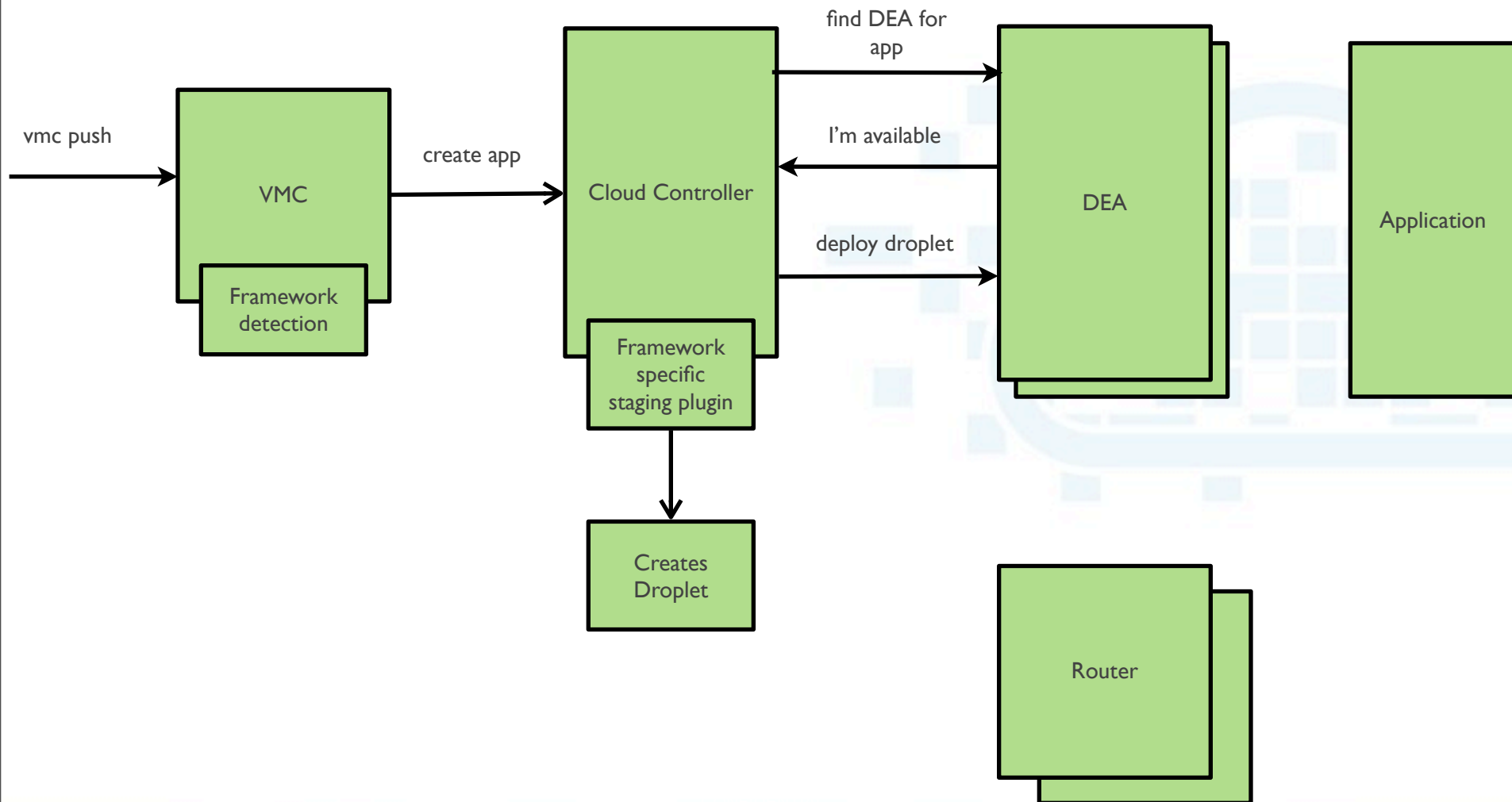
Application Deployment Flow



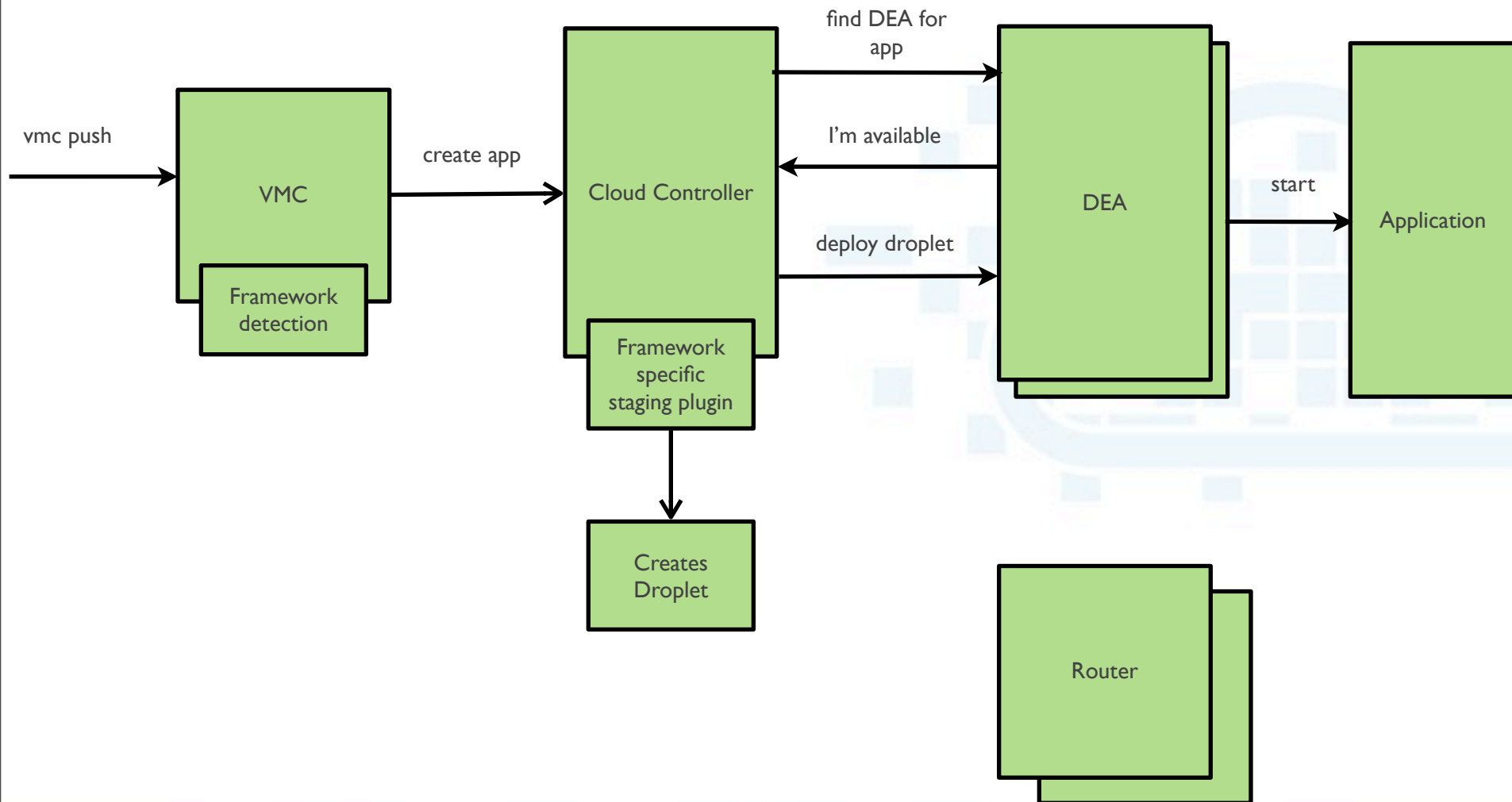
Application Deployment Flow



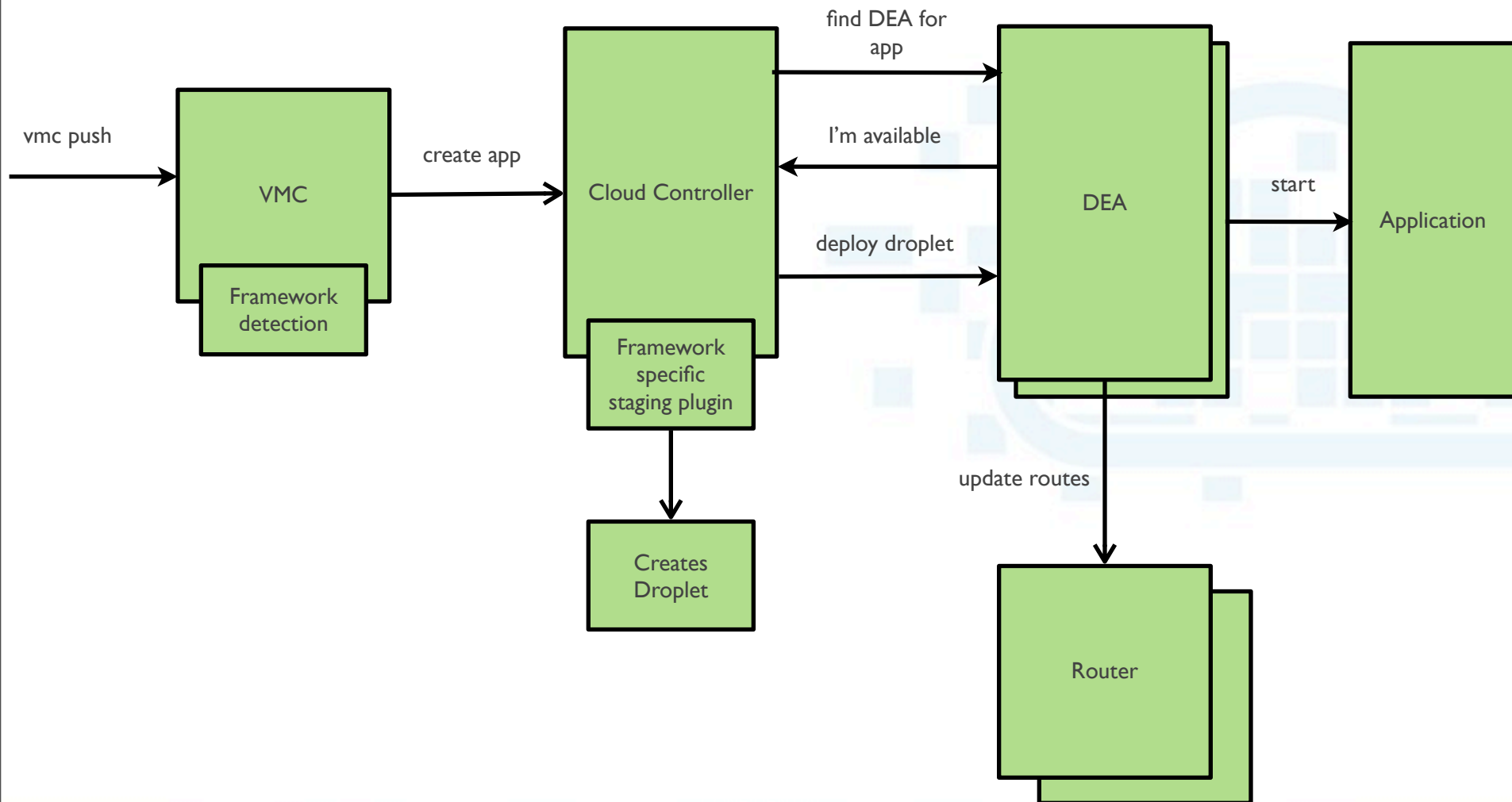
Application Deployment Flow



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

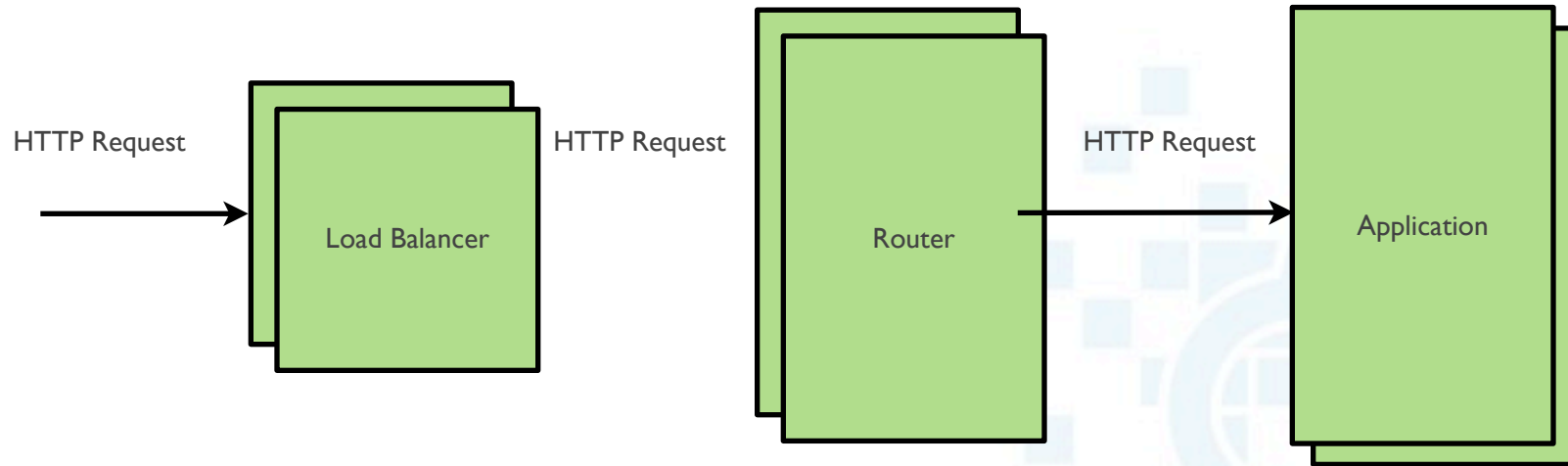


Staging plugin for the Spring framework

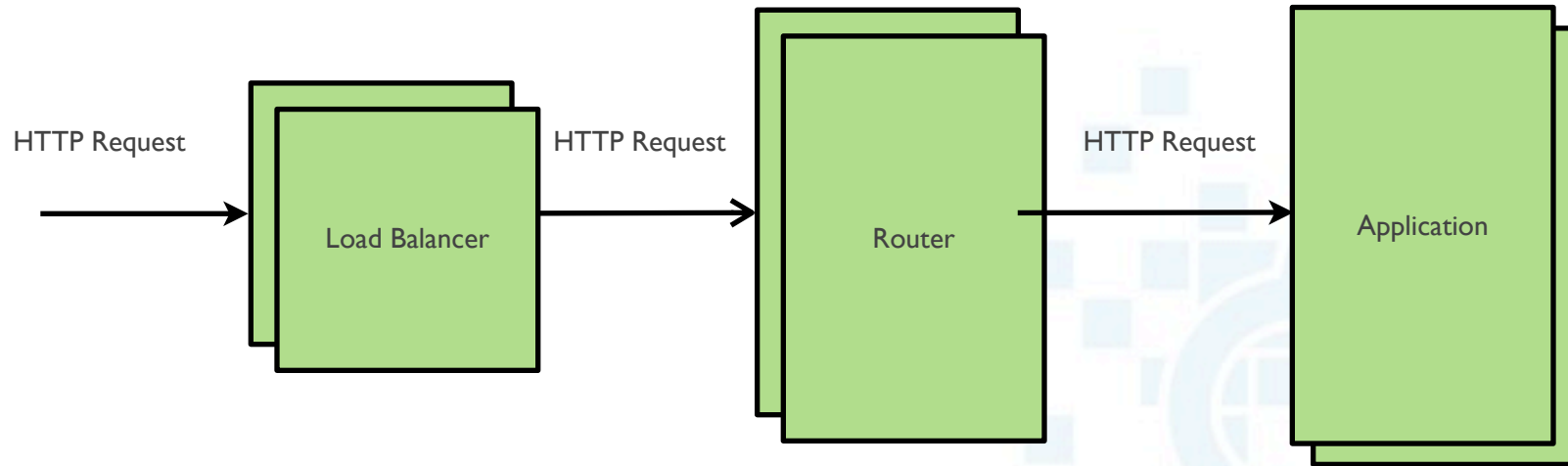
- **Adds CloudAutoStagingBeanFactoryPostProcessor bean:**
 - Modifies bean definitions
 - Implements auto-reconfiguration
- **Defines CloudApplicationContextInitializer in web.xml**
 - Activates cloud profile
 - Defines PropertySource for CloudEnvironment properties



Request handling flow



Request handling flow

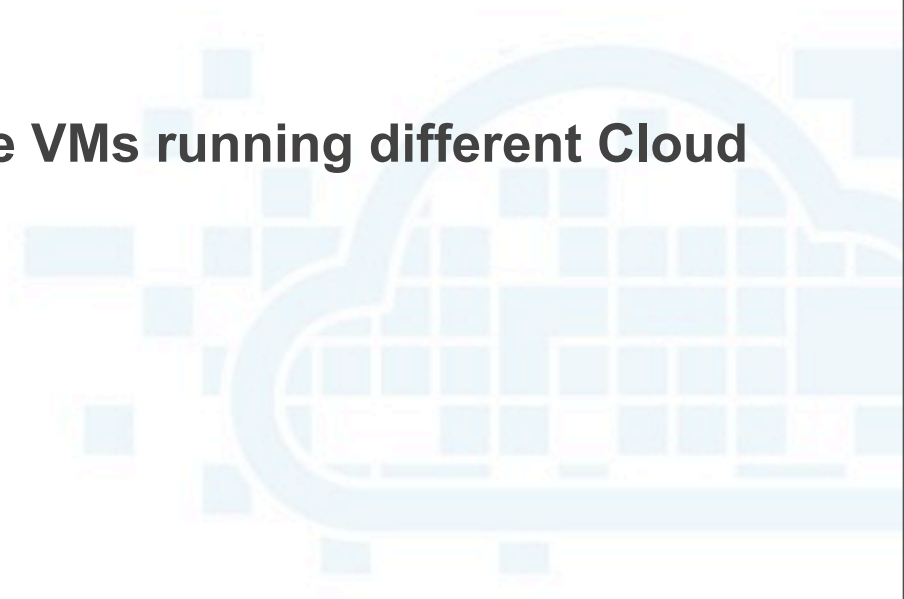


Self Healing Infrastructure

- **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?



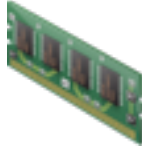
A cloud packaged as a VMware Virtual Machine

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

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

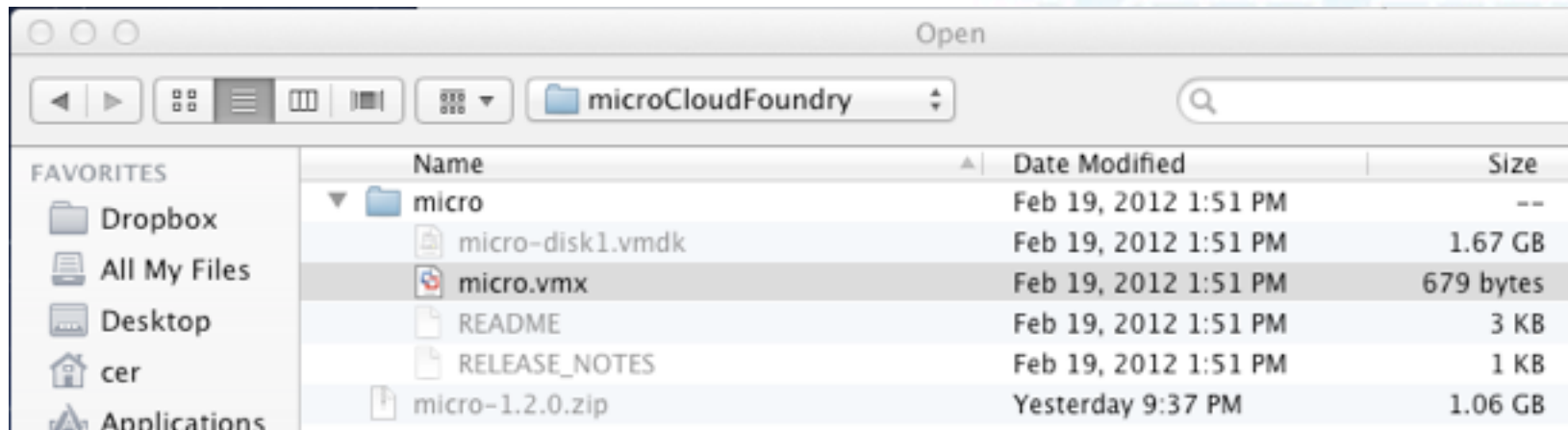
Manage Your Domains

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



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% !oo! Time: 00:00:08

done

Installing Micro Cloud Foundry: will take up to five minutes

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done

Installing Micro Cloud Foundry: will take up to five minutes

Pick
password

Enter token

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](https://twitter.com/starbuxman)**



Questions?