



# Cloud Application Development with Eclipse Tools for Cloud Foundry

Speakers:



Elson Yuen, Software Engineer, IBM



Kris De Volder, Software Developer, Pivotal Software

Date: October 27, 2015

Session ID: CON11177

# Agenda

---

- Introduction to Cloud Foundry
- Overview of Eclipse Tools for Cloud Foundry
- Functions provided by the Tools
- Demo: IBM Eclipse Tools for Bluemix
- Demo: Working with Spring Boot Applications in CF
- How to extend or contribute to the project?

# Introduction to Cloud Foundry

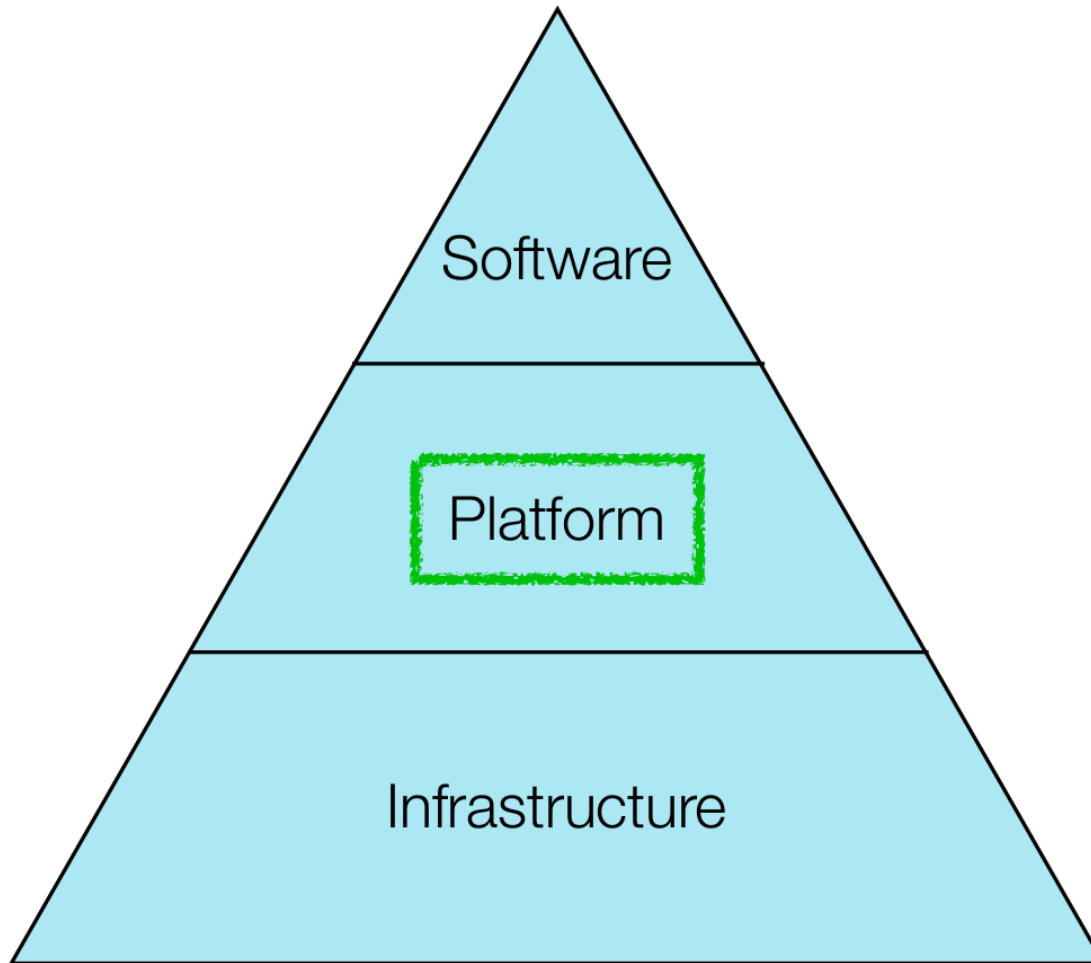
# What is Cloud Foundry?

---

*“Cloud Foundry (CF) is an **open** platform as a service (**PaaS**) that provides a **choice** of clouds, runtime frameworks, and application services.”*

*[<http://cloudfoundry.org>]*

# What is PaaS?



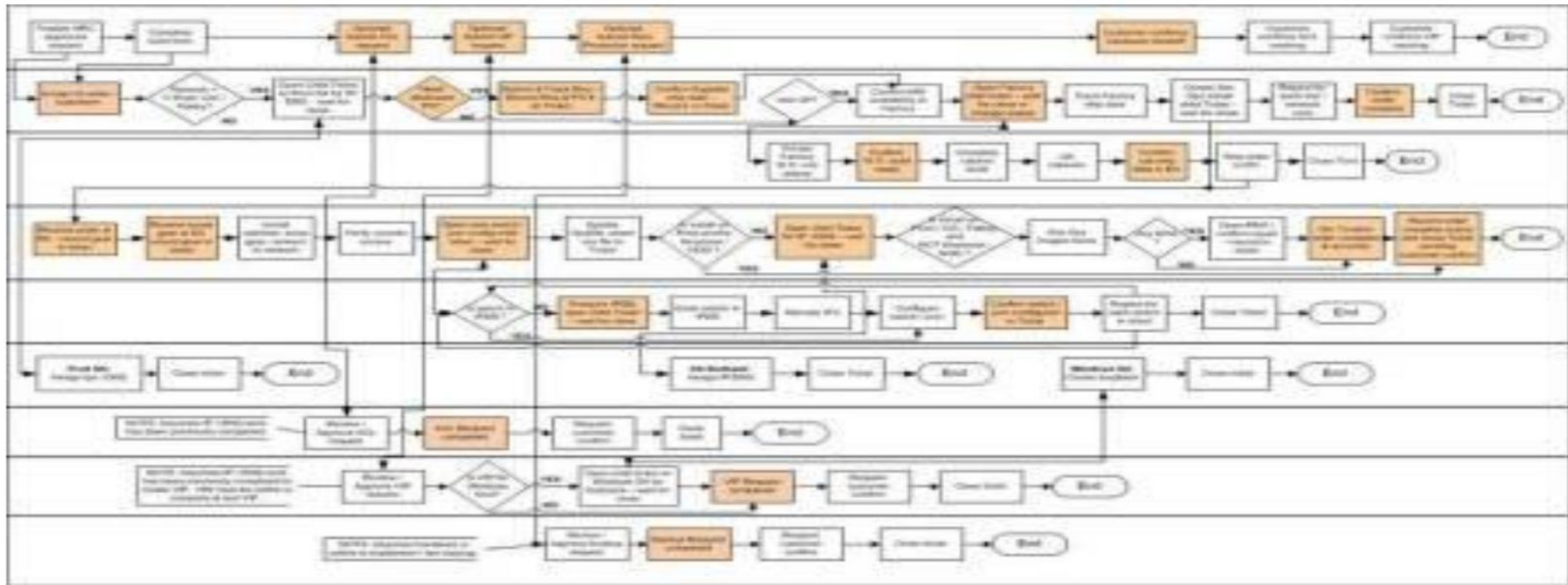
Gmail, Salesforce,  
Flickr, Google Docs...

Google AppEngine,  
Heroku, Cloud Foundry,  
EngineYard, Apprenda...

Amazon EC2, Google CE,  
OpenStack, vSphere,  
Joyent, Cloud Stack,  
Eucalyptus...

# Why PaaS?

Simplify from this:



\* An actual application provisioning/update flow in a large enterprise. Image is blurred for privacy reasons

# Why PaaS?

To: pushing apps to the cloud with a few easy verbs

## Operator

```
cf-iaas.yml  
provision <my cloud>  
add_capacity <my cloud>
```

## Developer

```
target <my cloud>  
push <my app>  
create <my services>  
bind <my services>  
scale <my app> +100
```




Cloud Deployment: 2-4 hours







App Deployment: 30-90 seconds

# What is Open?







[Pull requests](#) [Issues](#) [Gist](#)


  




## Cloud Foundry



 San Francisco, CA  <https://www.cloudfoundr...>  [cf-dev@cloudfoundry.org](mailto:cf-dev@cloudfoundry.org)

 **Repositories**

 People **145**

Filters ▾

**firehose-plugin**

Updated a minute ago

Go ★ 1 🍴 0

**docs-loggregator**

Updated 2 minutes ago

HTML ★ 0 🍴 1

**cf-release**


















Cloud Foundry Release

Updated 5 minutes ago

Shell ★ 353 🍴 422

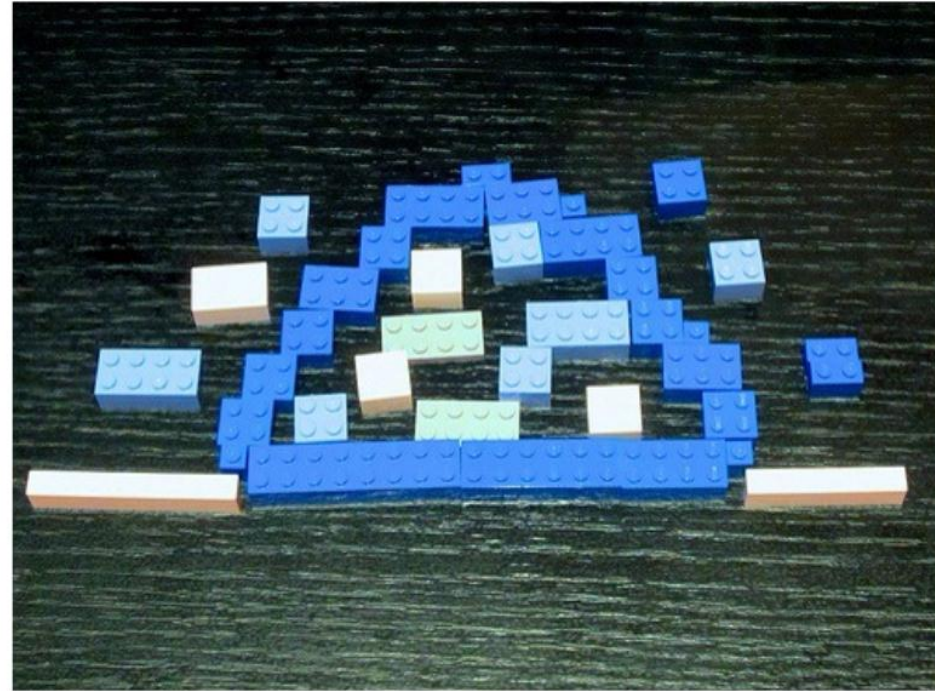
### People

145 >





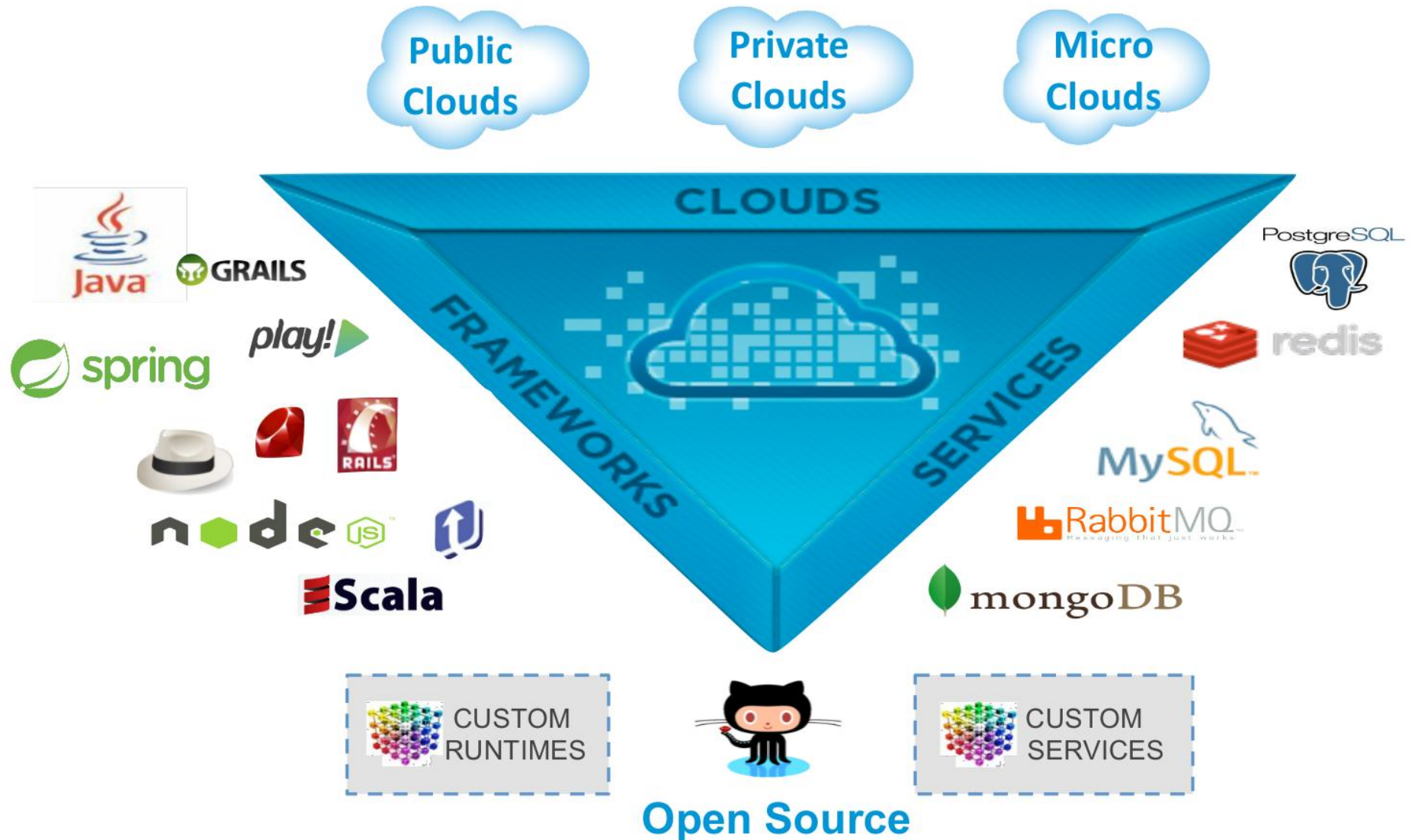
# What is Open?



All the pieces to make  
your own!

“if you can’t open it, you  
don’t own it” (O’Reilly MAKE)

# Cloud Foundry: Open PaaS



# Overview of Eclipse Tools for Cloud Foundry

# What are Eclipse Tools for Cloud Foundry?

---

- Eclipse tools that contain common, reusable application deployment tools, with scaling and service features for Cloud Foundry
- Helps users deploy and test their applications on Cloud Foundry without leaving their Eclipse IDEs
- It also has a framework that allows third-party vendors to contribute their own Cloud Foundry-based definitions where users can deploy their applications

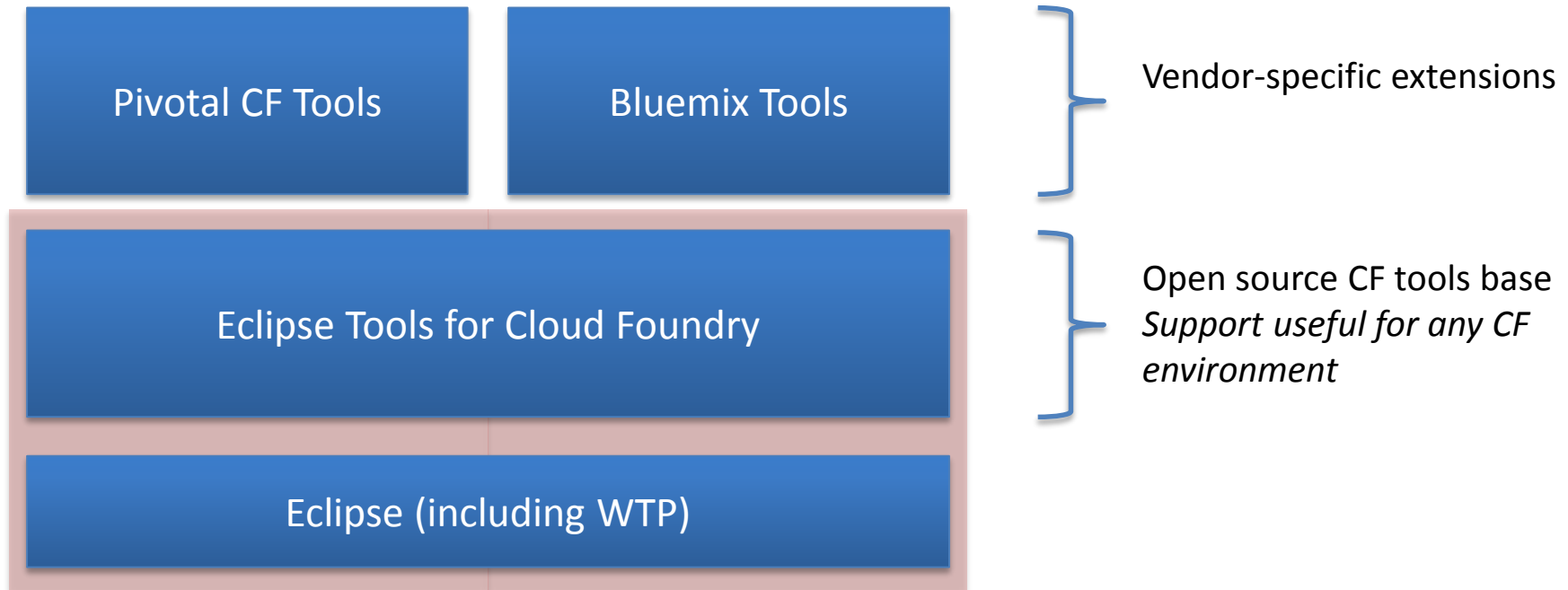
## A bit of history...

---

- *Mar 2012* – First release 1.0.0 by Pivotal as an open source project under the Cloud Foundry Foundation
- *Apr 2014* - IBM has actively participated in joint releases with Pivotal since CF v1.6.1
- *Aug 2015* – This project has recently become an Eclipse project under the Eclipse Cloud Development (ECD) project
- This project is largely a collaboration between Pivotal and IBM with involvement from HP and Huawei as well.

# Cloud Foundry Tools Landscape

---



Boxes not to scale ☺

# Functions supported by the Tools

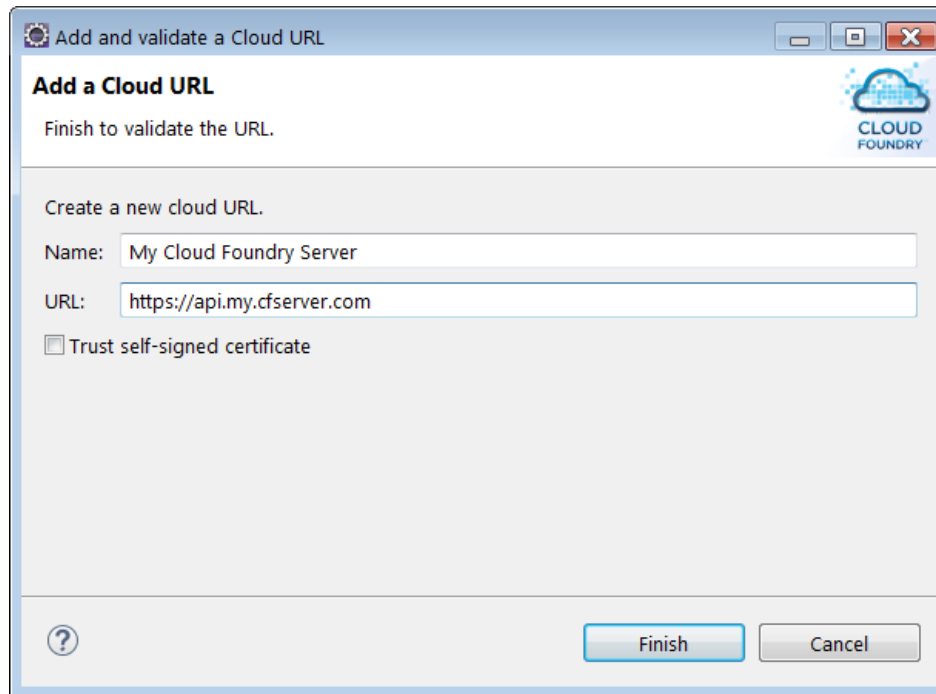
---

- Deploy application projects directly from Eclipse
- See and control the running applications on CF
- Manage services
- Bind and unbind services to applications
- Application scaling
- Debug applications on CF

# Connect to the CF server

---

- You can connect to the CF server of your choice



The screenshot shows a dialog box titled "Add and validate a Cloud URL" with a gear icon in the top-left corner and standard window controls in the top-right. The main heading is "Add a Cloud URL" with a sub-instruction "Finish to validate the URL." and a Cloud Foundry logo in the top-right. The dialog prompts the user to "Create a new cloud URL." and contains two text input fields: "Name:" with the value "My Cloud Foundry Server" and "URL:" with the value "https://api.my.cfserver.com". Below these fields is a checkbox labeled "Trust self-signed certificate" which is currently unchecked. At the bottom-left is a help icon (question mark), and at the bottom-right are "Finish" and "Cancel" buttons.



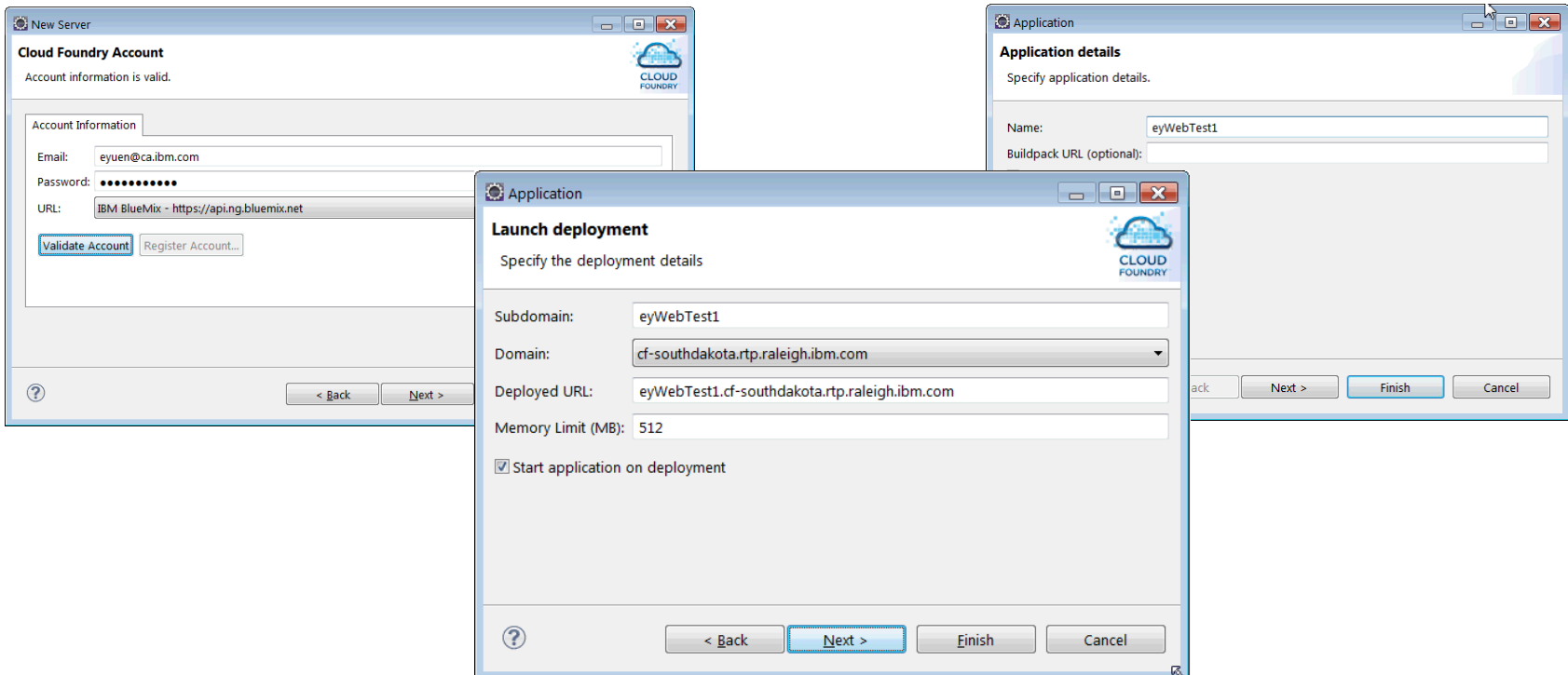
# Deployment

---

- Deployment is a complicated process, you need to:
  - Right-click on something
  - Select Run > Run on Server
- That's it – just treat it like any server 😊

# Deployment Prompts

- You'll be prompted during deployment to select a name (hostname), # of instances, and memory use

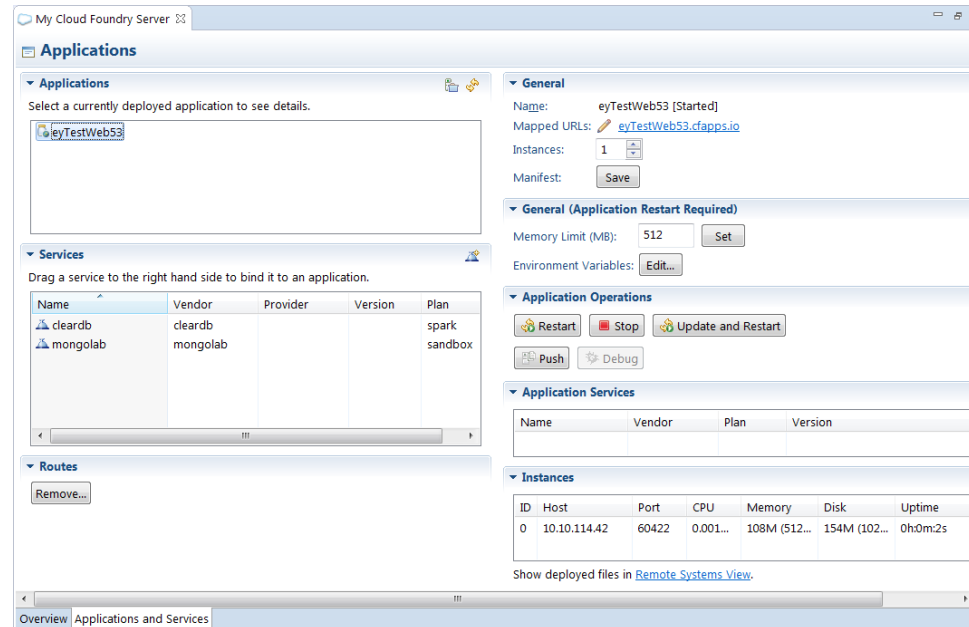


The image displays three overlapping Eclipse IDE dialog boxes related to Cloud Foundry deployment:

- New Server**: A dialog titled "Cloud Foundry Account" with the message "Account information is valid." It contains fields for "Email" (eyuen@ca.ibm.com), "Password" (masked with dots), and "URL" (IBM BlueMix - https://api.ng.bluemix.net). Buttons for "Validate Account" and "Register Account..." are at the bottom.
- Application**: A dialog titled "Application details" with the message "Specify application details." It contains fields for "Name" (eyWebTest1) and "Buildpack URL (optional)".
- Launch deployment**: A dialog titled "Launch deployment" with the message "Specify the deployment details." It contains fields for "Subdomain" (eyWebTest1), "Domain" (cf-southdakota.rtp.raleigh.ibm.com), "Deployed URL" (eyWebTest1.cf-southdakota.rtp.raleigh.ibm.com), and "Memory Limit (MB)" (512). A checkbox "Start application on deployment" is checked. Navigation buttons "< Back", "Next >", "Finish", and "Cancel" are at the bottom.

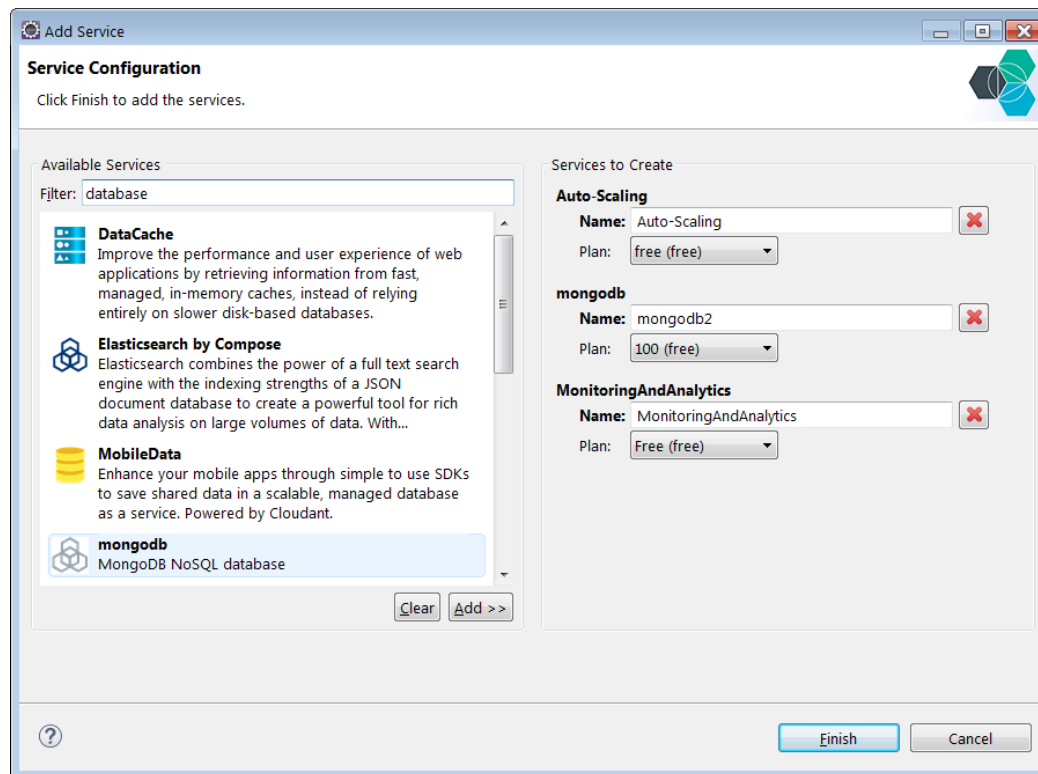
# Server Editor

- Server tuning, e.g. number of instances, memory
- Application & instance information
- Bound services
- Environment variables
- Remove unused routes
- Link to Remote System view



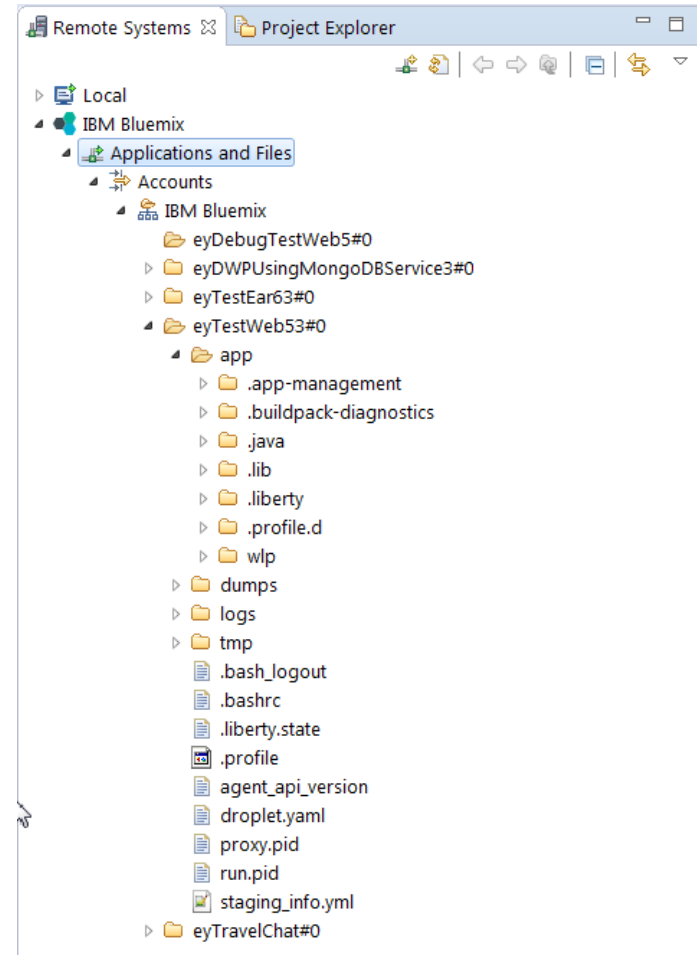
# Service creation and binding

- Create services and bind them to an application either during application deployment or in the server editor

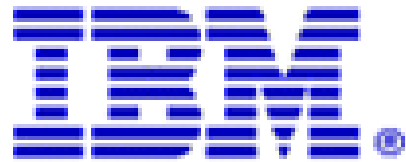


# Remote Systems View

- View what is in the cloud, such as applications deployed, logs, etc.



# Demo: IBM Eclipse Tools for Bluemix



# Bluemix Demo

---

- Deploy application, create and bind service to application
- Debug Node.js application

# Demo: Working with Spring Boot Applications in CF

**Pivotal**<sup>®</sup>



# Spring Boot

---

"Takes an opinionated view of building production-ready Spring applications. Spring Boot favors convention over configuration and is designed to get you up and running as quickly as possible."

[<http://projects.spring.io/spring-boot/>]

# Boot Apps on Pivotal CF

---

- What I want to show you:
- Deploy Jar, not War! (Because it's just so much simpler)
  - Spring Cloud Connections. Bind services on CF and configure them automatically.
  - Spring Boot Devtools: Make changes to your app and have them go live in seconds

How to extend or contribute to the  
project?

# How do I develop a branding server?

---

- Start by taking a look at the CF branding plugin as an example:  
[\*org.eclipse.cft.server.branding\*](https://github.com/eclipse-cft/server.branding)
- Create your own branding plugin by cloning that branding plugin as your starting point
- Try adding a new extension of:  
[\*org.eclipse.cft.server.core.application\*](https://github.com/eclipse-cft/server.core.application)  
[\*org.eclipse.cft.server.ui.applicationWizard\*](https://github.com/eclipse-cft/server.ui.applicationWizard)  
to define support for deploying a new type of module

# How to contribute to the project?

---

- When you have some changes that you want to contribute to the Eclipse Tools for Cloud Foundry project, open a bugzilla under product *ECD > CFT*
- Fork the GitHub repository:  
<https://github.com/eclipse/cft>
- Submit a pull request to request for the patch to be adopted:  
<https://help.github.com/articles/fork-a-repo>  
<https://help.github.com/articles/creating-a-pull-request>
- Your pull request will be reviewed and adopted if accepted

# Useful information

---

- Eclipse project page:  
<https://projects.eclipse.org/projects/ecd.cft>
- Basic documentation on usage of the Cloud Foundry Eclipse Plugin framework:  
<http://docs.cloudfoundry.org/buildpacks/java/sts.html>
- Defects and enhancements (Product *ECD* > *CFT*):  
<https://bugs.eclipse.org/>
- Source code on GitHub: <https://github.com/eclipse/cft>
- IBM Eclipse Tools for Bluemix:  
<https://developer.ibm.com/wasdev/downloads/#asset/tools-IBM-Eclipse-Tools-for-Bluemix>
- Pivotal Web Services: <https://run.pivotal.io/>

# Questions?

---



# Check out our booths

---

- Exhibits in Hilton San Francisco Union Square exhibition hall
  - IBM Bluemix booth – Elson – 1-2pm today
  - IBM Code Rally booth
  - Pivotal booth – Cloud native applications
- Vote for this session!

➤ Questions?



Thank you!