Cloud Application Development with Eclipse Tools for Cloud Foundry

Speakers:

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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?

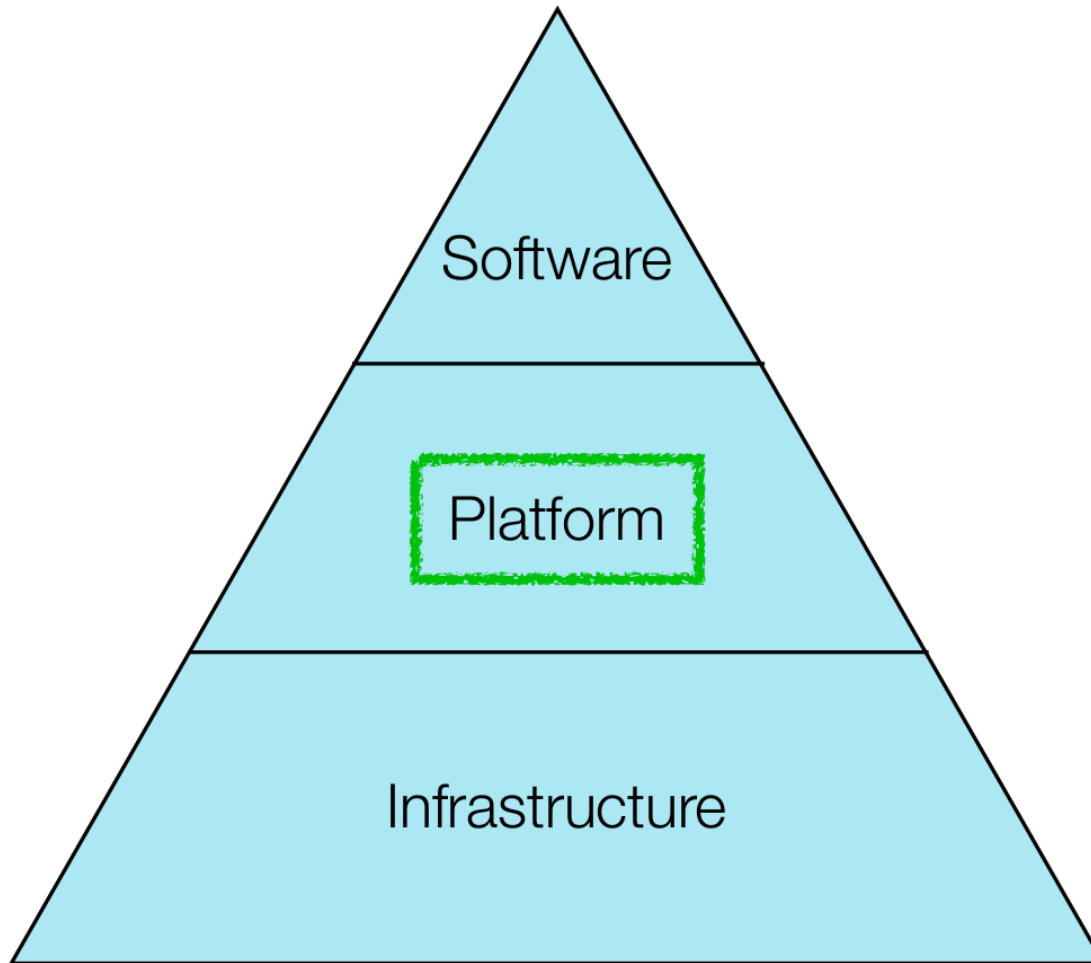# Introduction to Cloud Foundry

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]
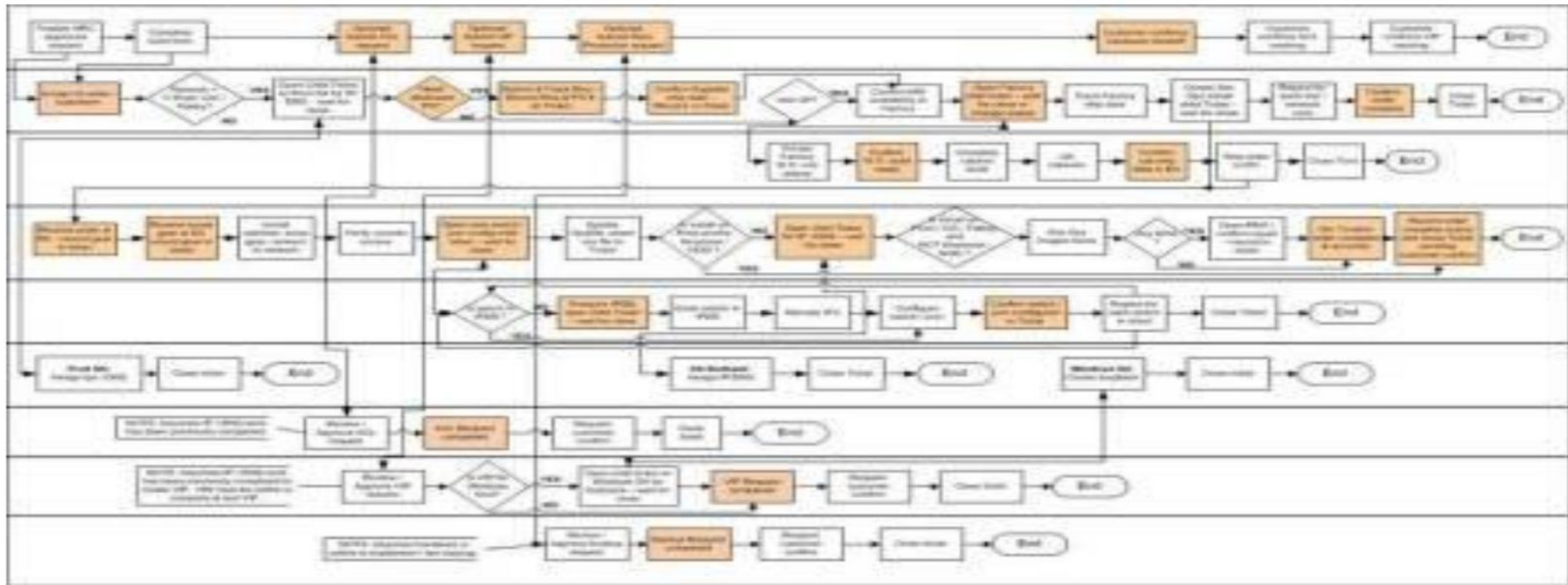
What is PaaS?

Software

Gmail, Salesforce,
Flickr, Google Docs...

Platform

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

Infrastructure

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	Developer
`cf-iaas.yml`	`target <my cloud>`
`provision <my cloud>`	`push <my app>`
`add_capacity <my cloud>`	`create <my services>`
	`bind <my services>`
	`scale <my app> +100`

🕐 **Cloud Deployment: 2-4 hours**　　🕐 **App Deployment: 30-90 seconds**

What is Open?

What is Open?
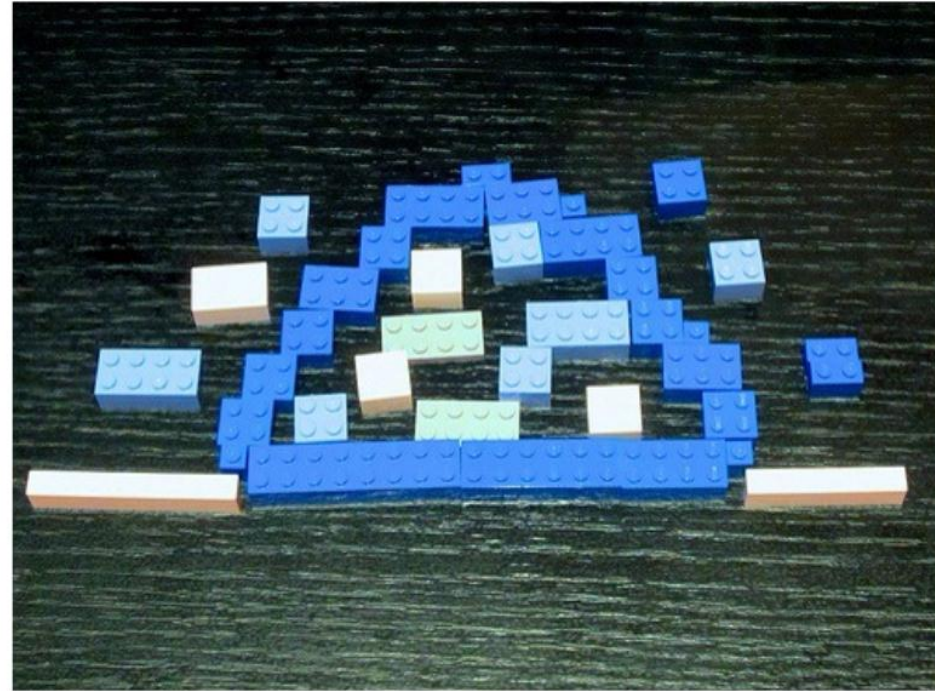
All the pieces to make your own!

"if you can't open it, you don't own it" (O'Reilly MAKE)

Cloud Foundry: Open PaaS
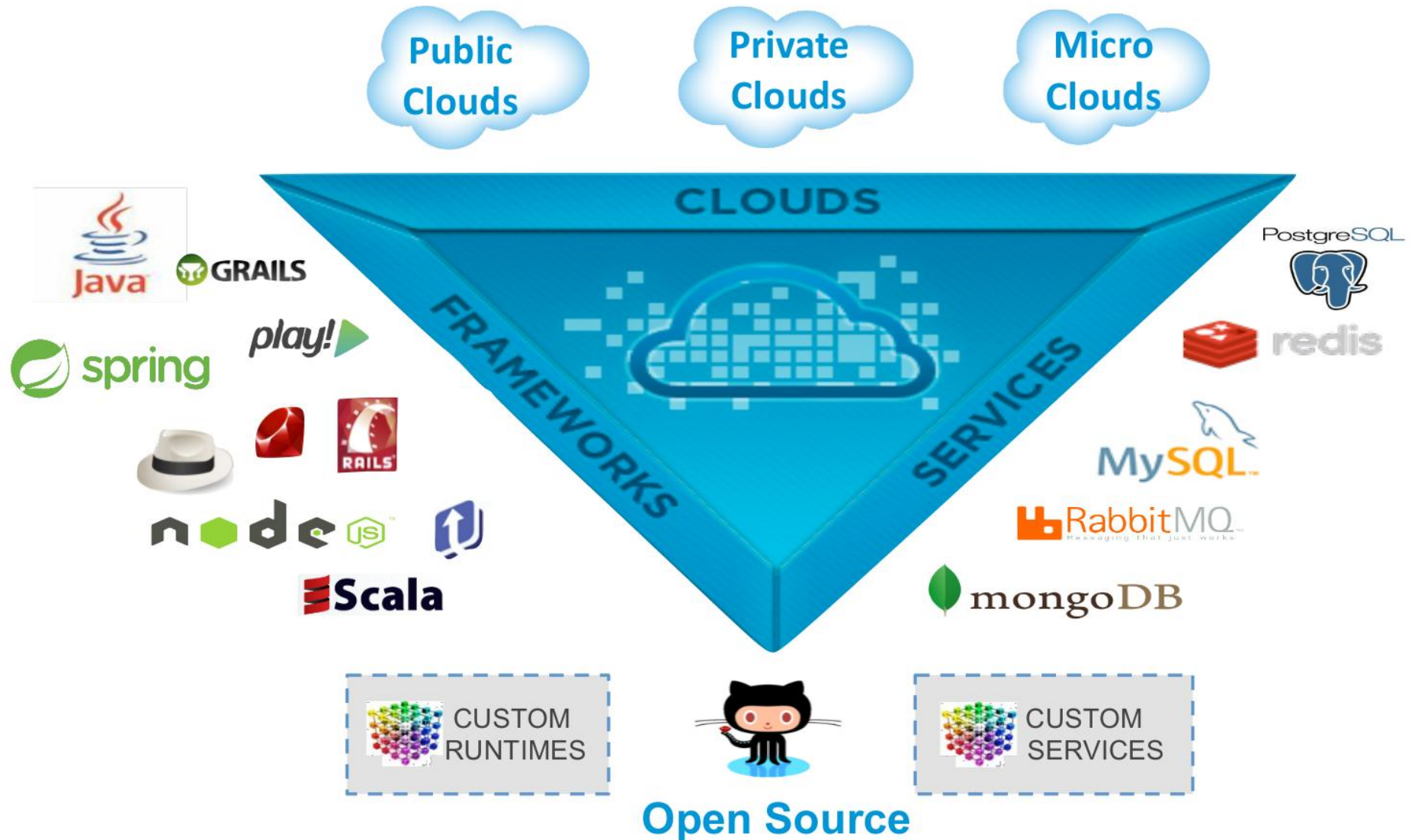
Overview of Eclipse Tools for Cloud Foundry

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

Pivotal CF Tools

Bluemix Tools

Eclipse Tools for Cloud Foundry

Eclipse (including WTP)

Vendor-specific extensions

Open source CF tools base
Support useful for any CF environment
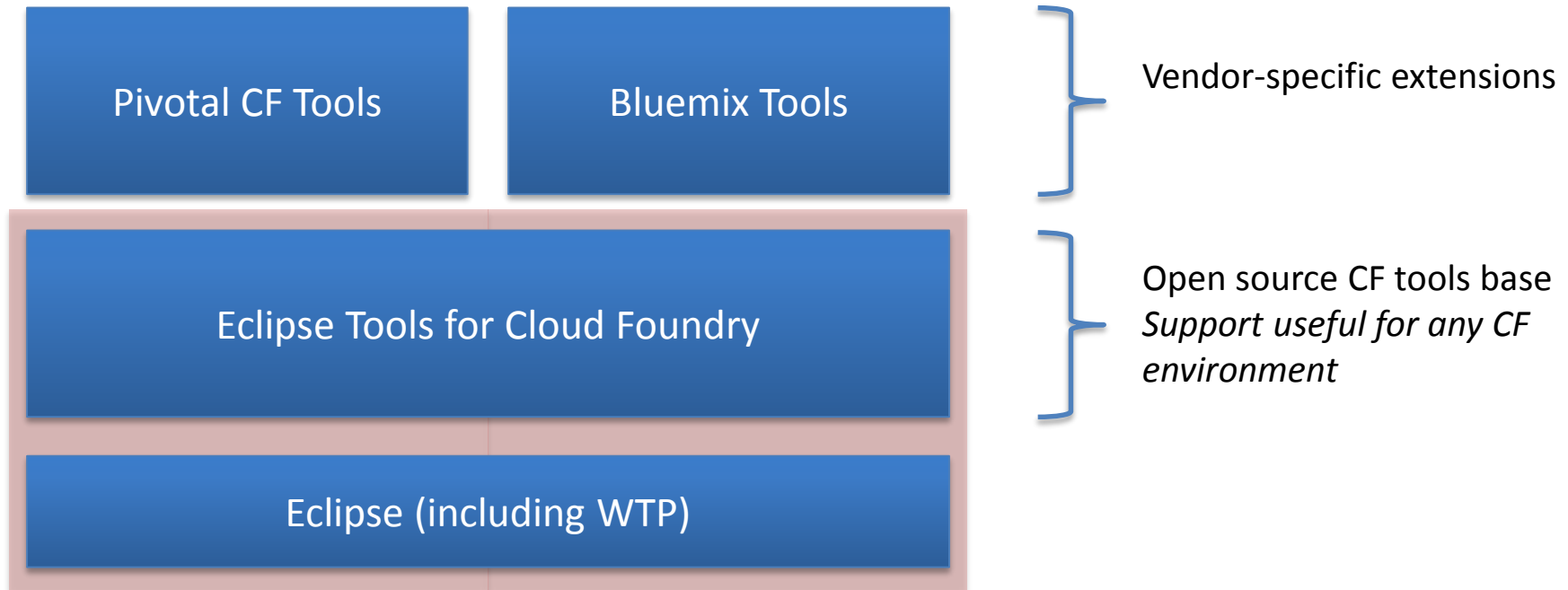
Boxes not to scale ☺

Functions supported by the Tools
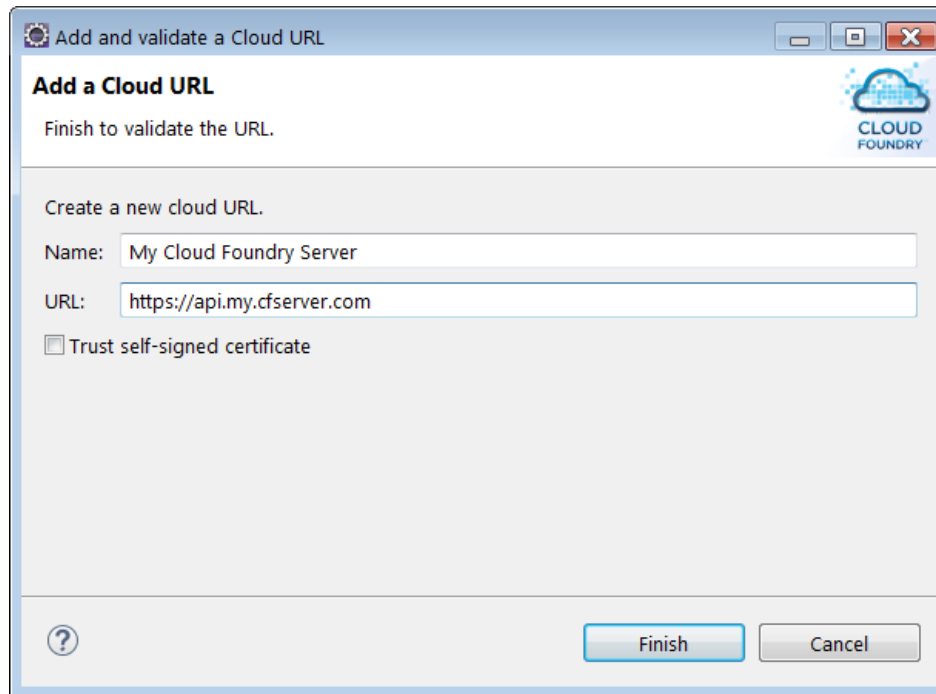
➢ Deploy application projects directly from Eclipse

➢ 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

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

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
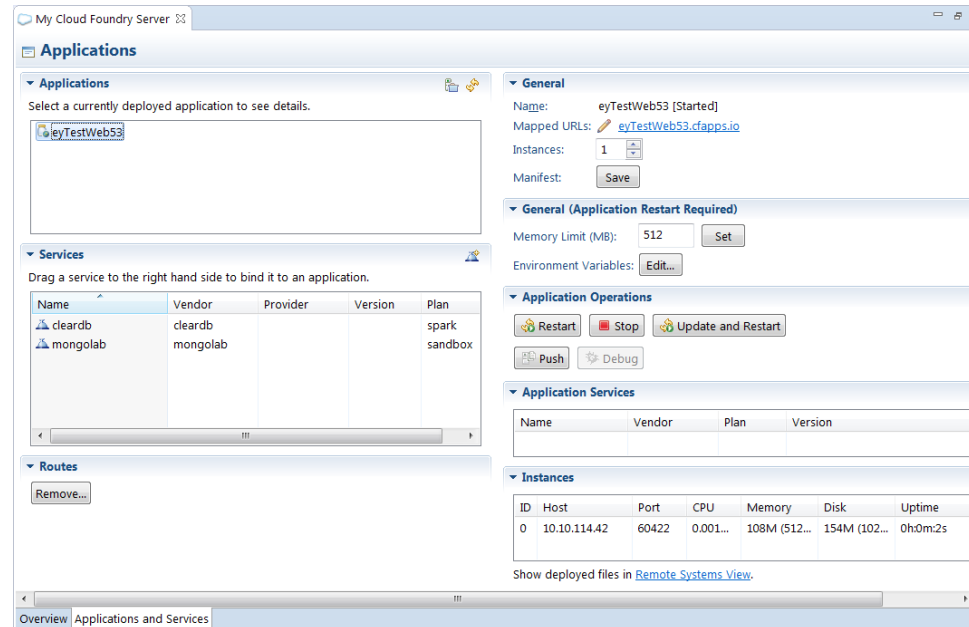
Service creation and binding

➤ Create services and bind them to an application either during application deployment or in the server editor
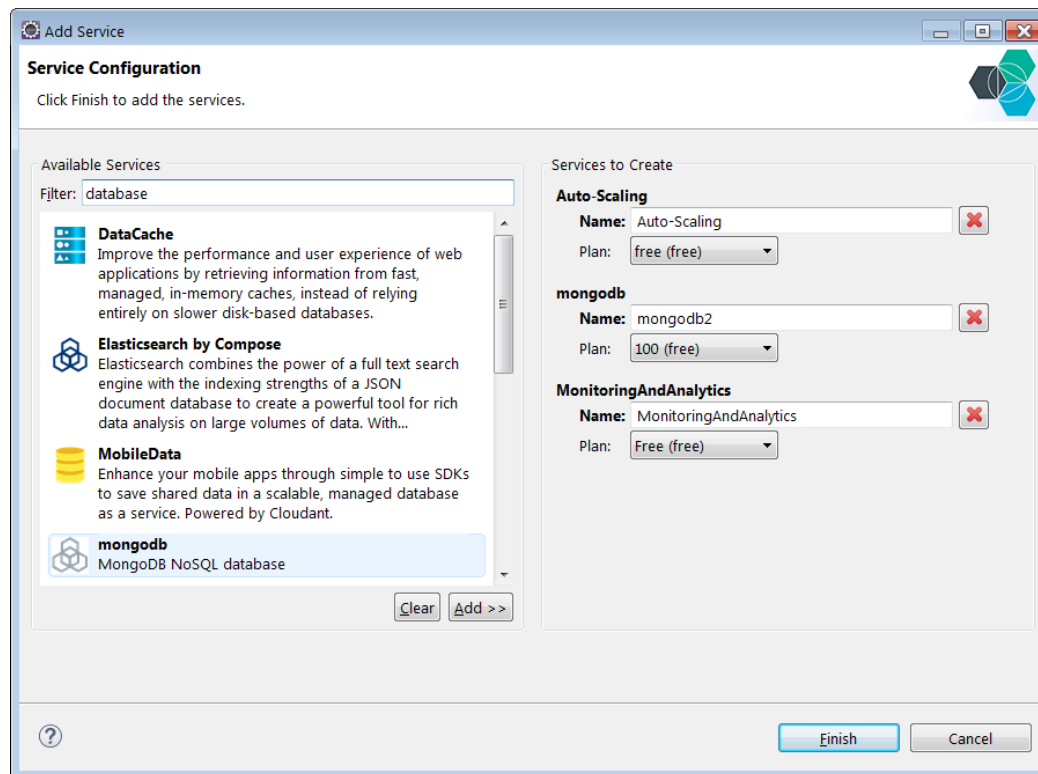
Remote Systems View

➢ View what is in the cloud, such as applications deployed, logs, etc.
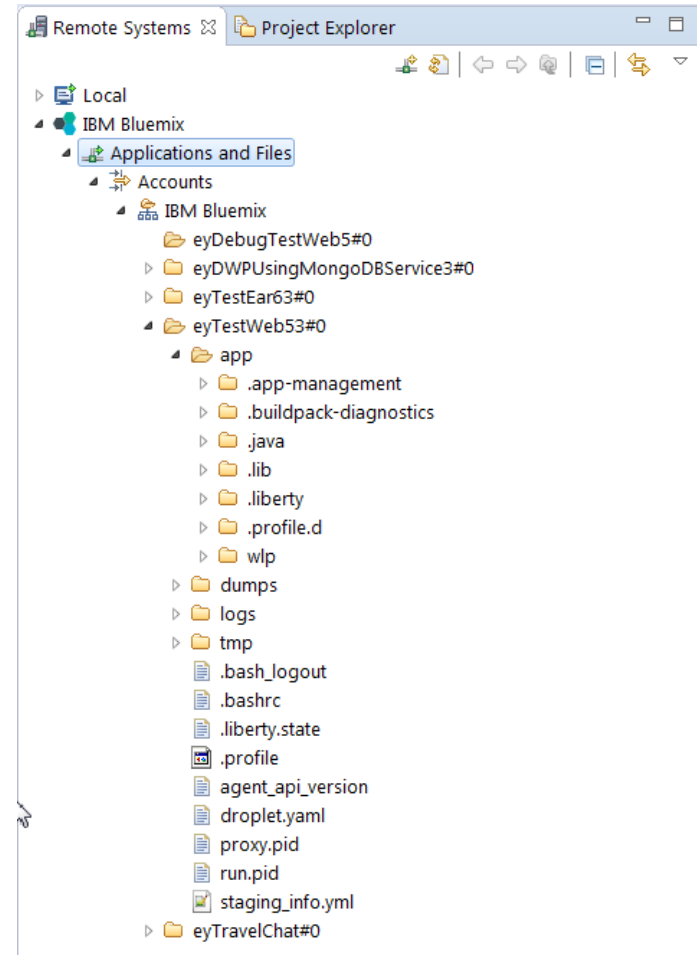
Demo: IBM Eclipse Tools for Bluemix
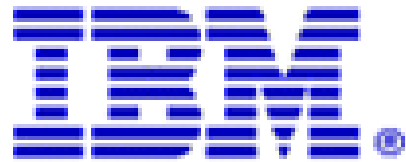
Bluemix Demo

➢ Deploy application, create and bind service to application

➢ Debug Node.js application

Demo: Working with Spring Boot Applications in CF

Pivotal

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

➢ 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
org.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!