



Webinar: Jump-start to CloudFoundry

Part 1: What is CF?

December 3, 2015

Johan Rodin

IBM Cloud Software Technical Sales

Johan.Rodin@se.ibm.com



Businesses have a choice to make

Open Source Only



*‘Significant Assembly
Required’*

Proprietary



*Vendor Lock-in
Assured*

Open “Plus”



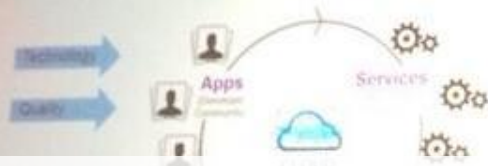
Enterprise Innovation



Cloud Foundry

A polyglot “Platform for the People”

Building an Open Ecosystem for the Cloud...



**CLOUD
FOUNDRY™**

- A Polyglot platform for the people
- The basis for IBM Bluemix
- Quickly becoming the de facto open PaaS platform
- Foundation established Dec. 2014; Executive Director & Board named Feb. 11, 2015



What is Cloud Foundry?

- Cloud Foundry is an open standard for cloud applications
- It is open source, multi-cloud, and multi-vendor
- It is hardened production infrastructure for global enterprises
- It is designed to make devops the normal state of computing
- *It is built for fast-cycle innovation of cloud applications*



What Are The Benefits Of Cloud Foundry?

- For business:
 - speed to market + higher rate of user adoption
- For development:
 - scalable microservices + continuous deployment
- For operations:
 - faster cycle time + higher reliability
- For *everyone*:
 - it's Open Source = No Vendor Lock-in

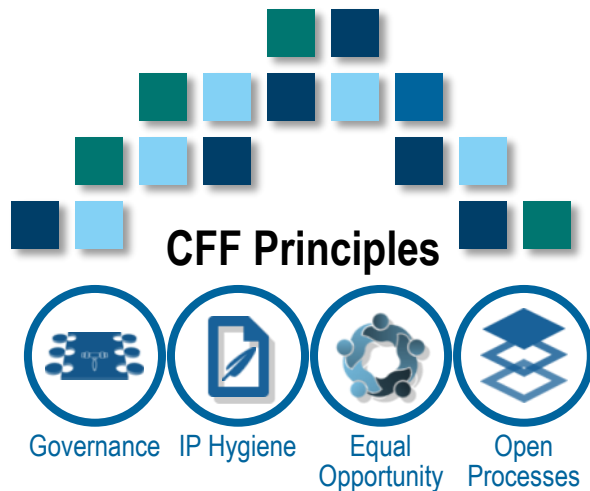


To put it another way...

- Organizations are adopting Cloud Foundry because:
 - *fast* is now a necessity, not a nice-to-have
 - Cloud Foundry makes *faster* easy.
- Building on Cloud Foundry doesn't just mean reducing costs, it also means expanding revenue.



A platform for the people: Cloud Foundry Foundation



CFF Mission

Establish and sustain Cloud Foundry as the global industry standard PaaS open source technology with a thriving ecosystem

Deliver continuous quality, value and innovation to users, operators and providers of Cloud Foundry technology

Provide a vibrant agile experience for contributors that delivers high quality cloud-native apps at high velocity with global scale

Platinum Members



Gold Members



Silver Members



TOTAL CONTRIBUTORS	LINES OF CODE	PULL REQ / WK	COMPANIES
1,638 Average per month 2014 average: 85 Lifetime average: 58	810k	40+	47+



IBM Contributions to Cloud Foundry

- CLI extensibility/plugin architecture
- Diego
- .Net buildpack
- Context-based Path Routing
- Arbitrary Parameters on Service Provisioning
- Abacus (billing and metering)
- Performance Acceptance Tests
- AdminUI
- Liberty Buildpack
- Asynchronous Service Provisioning

Platinum

Sponsor

16->23

Contributors

#2

Contributions

7

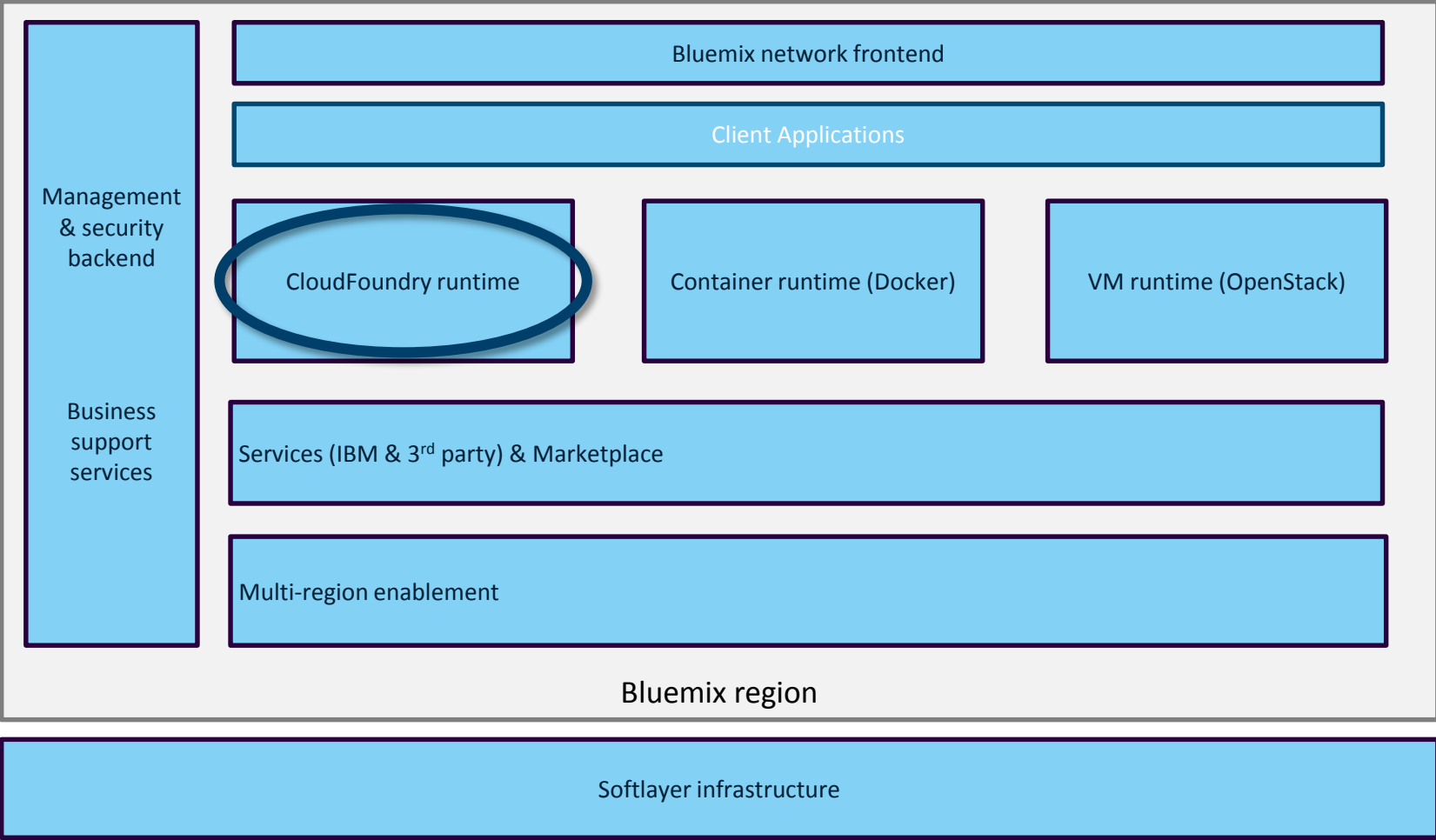
Projects

#1

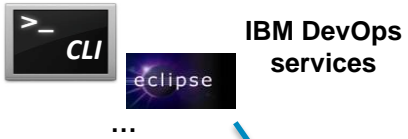
Largest deployment



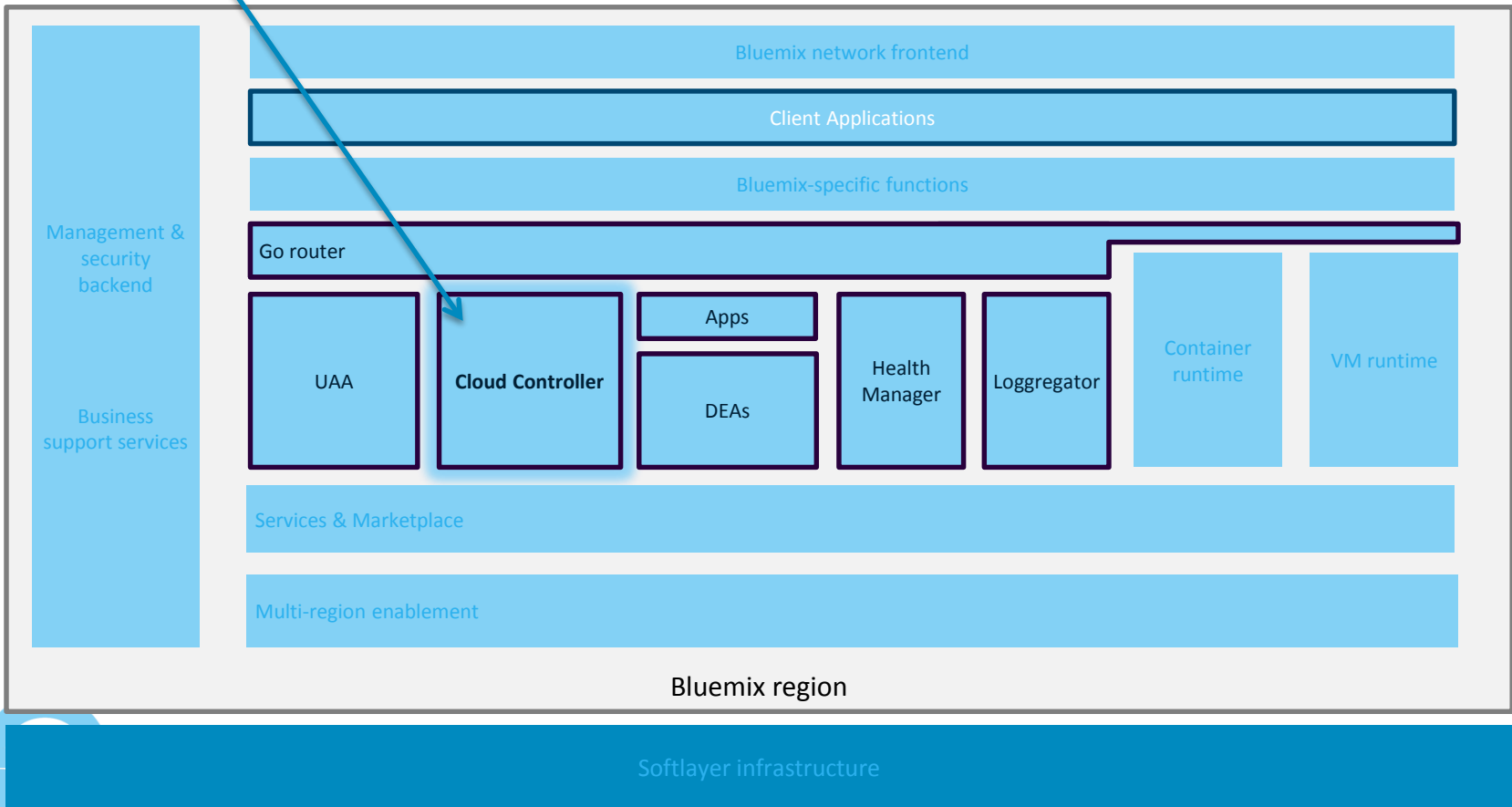
High-level architecture



Zooming into the CloudFoundry runtime... (1)

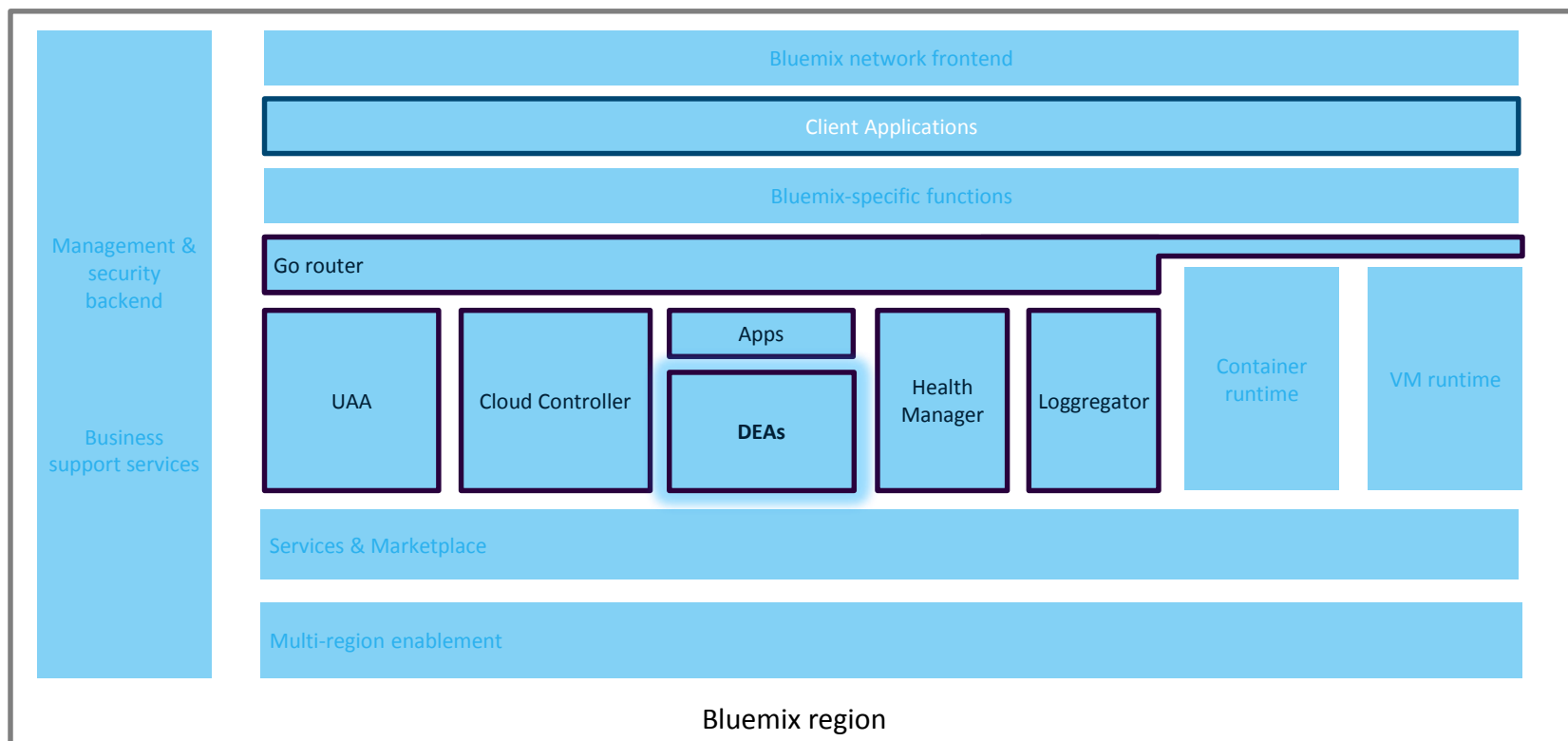


Developers interface with the **Cloud Controller** using various clients (cf, Eclipse, DevOps services) for pushing & managing apps and create & manage service instances. It provides a RESTful interface to domain objects (apps, services, organizations, spaces, service instances, user roles, and more).



Zooming into the CloudFoundry runtime... (2)

A **DEA** (Droplet Execution Agent) is a machine/agent that can run one or multiple apps. DEAs are responsible for an app's lifecycle: building, starting and stopping apps as instructed. It keeps track of all instances, and periodically broadcasts messages about their state. **Buildpacks** create app droplets which execute on a DEA.

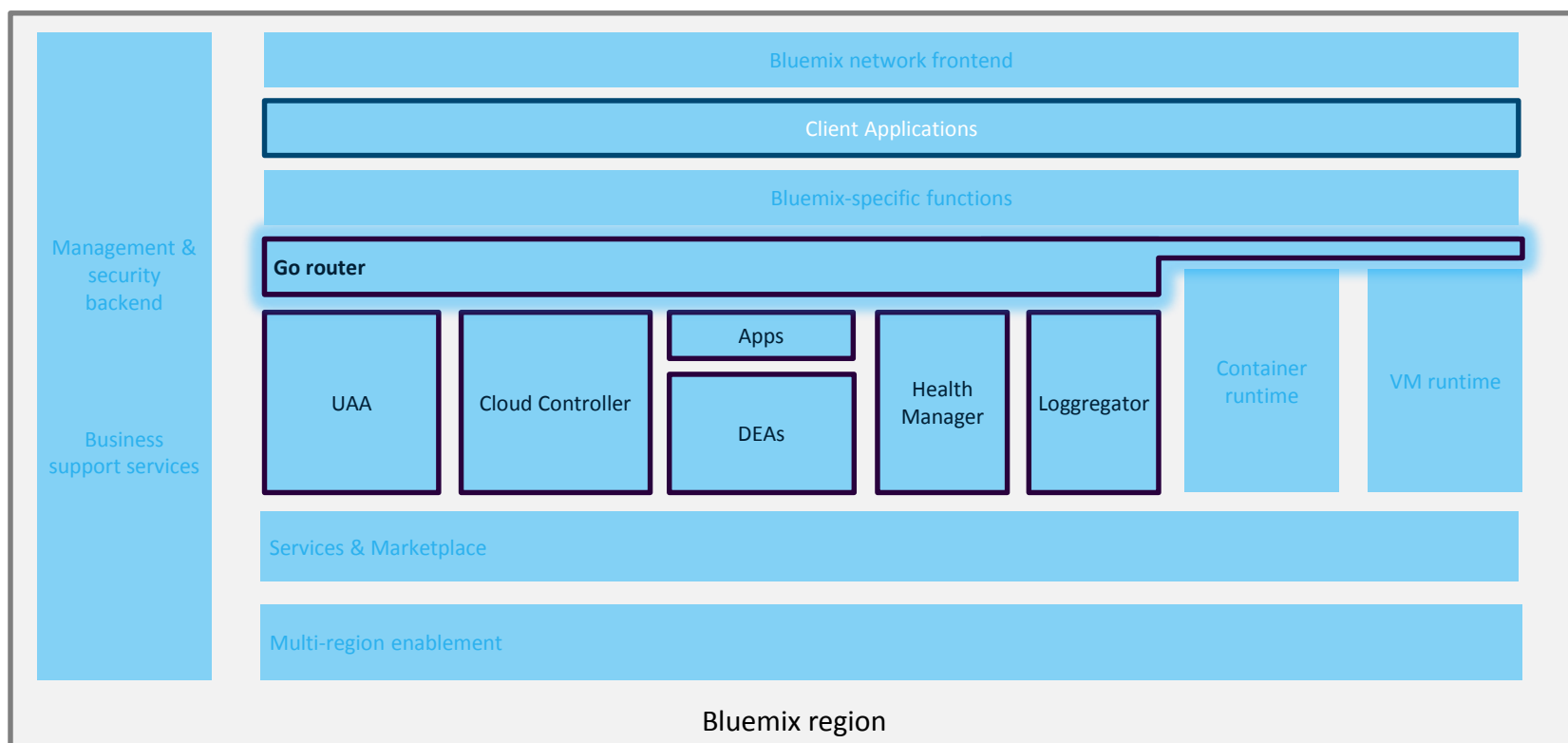


Softlayer infrastructure



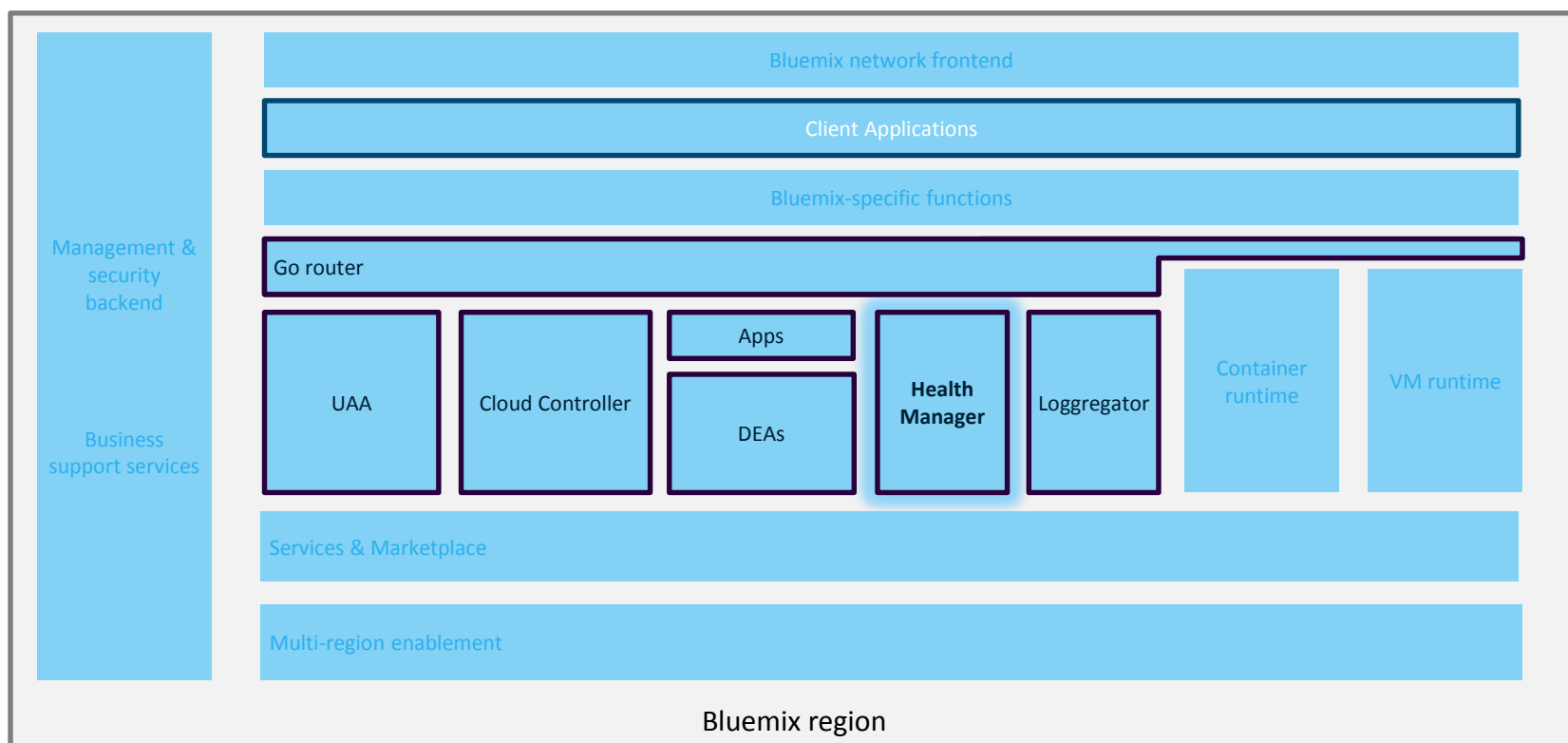
Zooming into the CloudFoundry runtime... (3)

The **GoRouter** shapes and routes all external system traffic (HTTP/API) and application traffic from the internet/intranet. It maintains a **dynamic routing** table for each load-balanced app instance with IP addresses and ports for access via the internet.



Zooming into the CloudFoundry runtime...(4)

The **Health Manager** monitors application uptime/health by looking for mismatched application states (expected/actual). The Cloud Controller provides the expected state and the DEAs provide the current state. If the Health Manager sees an incorrect current state, it notifies the Cloud Controller.

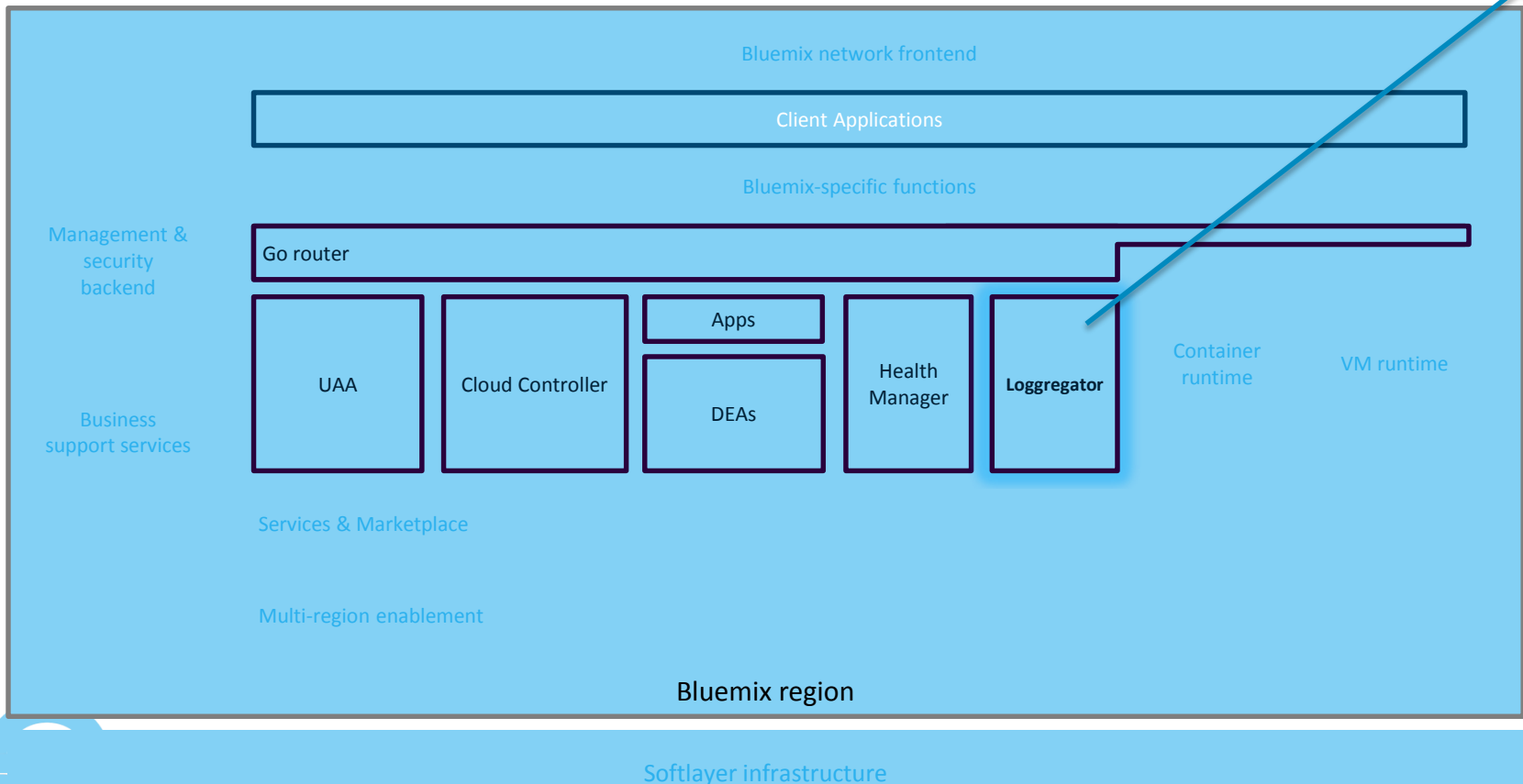


Zooming into the CloudFoundry runtime...(5)

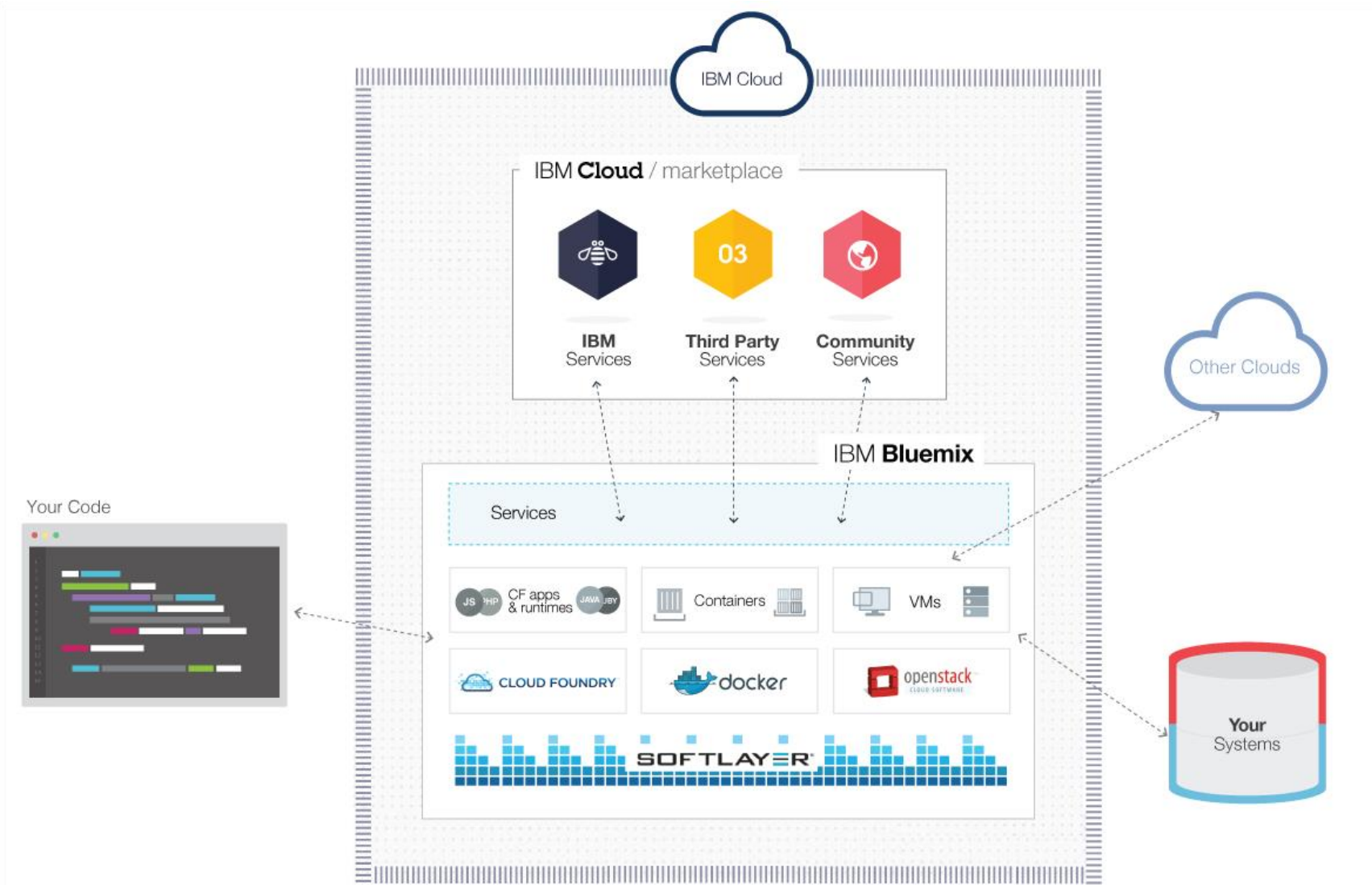
The **Loggregator** is the single source for all logs about an application. This includes logs written to system.out / err, http traffic logs and logs about an app crashing and getting restarted automatically.

Logs can be retrieved by connecting a log mgmt solution of choice with the loggregator [1] and/or using the CLI command “cf logs <appname> --recent”.

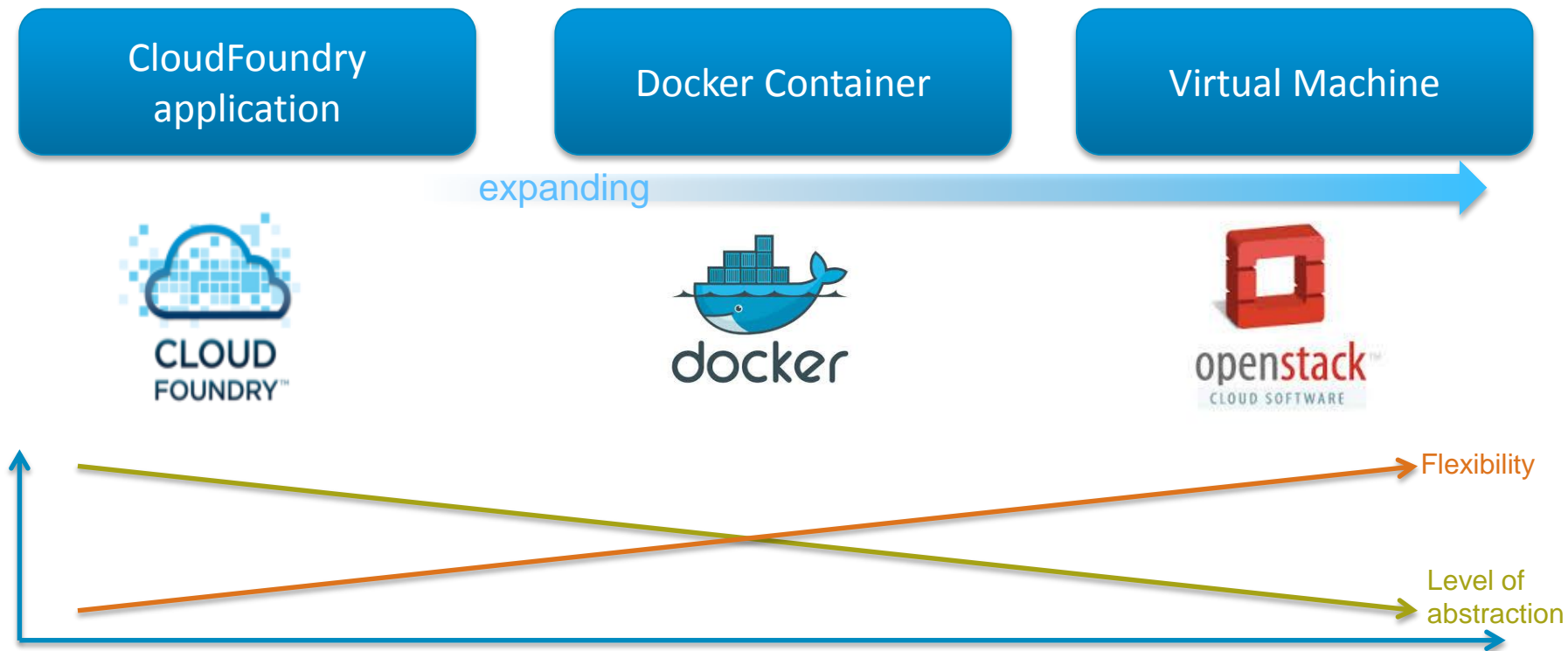
Retrieve logs



Bluemix structure



Bluemix offers different compute models to run your code



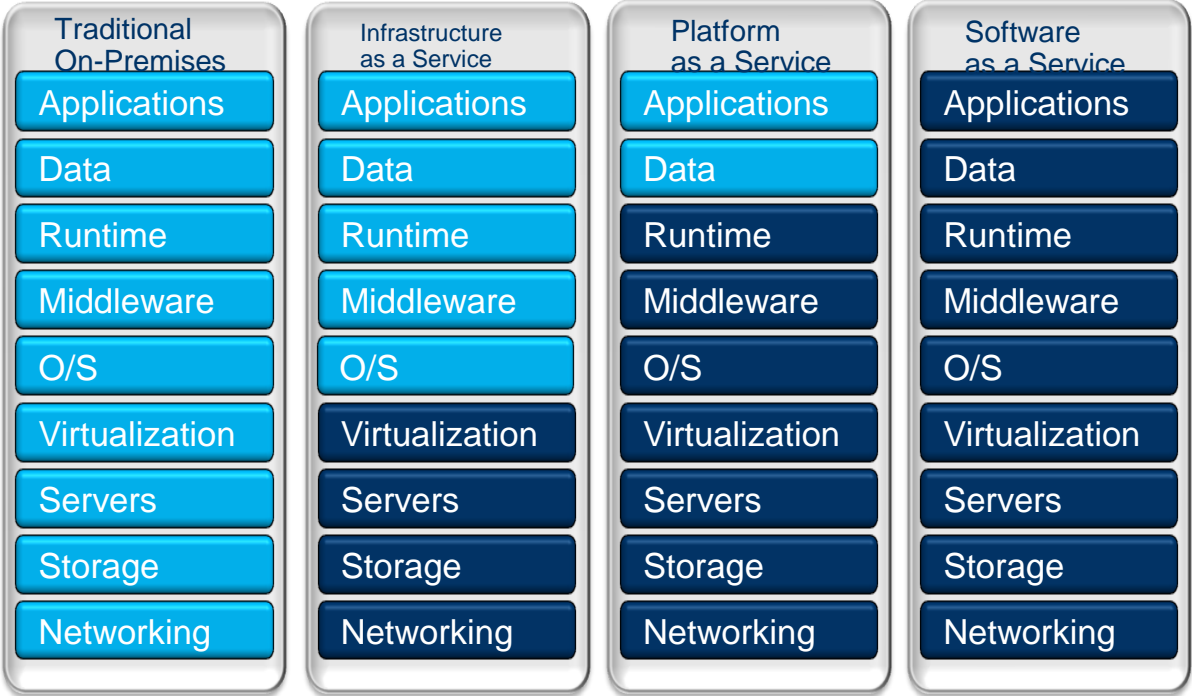
Consistent experience:

- Common service binding & consumption model
 - Common user ID & permissions model
- Ability to hook into common routing layer

Benefits of running an application in Bluemix on CloudFoundry

Eliminates / simplifies various tasks:

- Health management
- Load-balancing
- Scaling
- Deployment
- OS patching
- OS security hardening



■ Client Manages ■ Vendor Manages in Cloud

Standardization; OPEX savings; faster time to value



Three Takeaways

1

Cloud Foundry (CF) is an open standard for cloud applications.

2

Organizations are adopting Cloud Foundry because ***fast*** is now a necessity, not a nice-to-have
→ Cloud Foundry makes *faster* easy.

3

Innovating with purpose: IBM has been **systematically charting a roadmap for open technologies**. For example, with its Open Cloud Architecture and contributions to the community.

