



# IBM Bluemix, the digital innovation platform

Linux day 2015, Torino

Greta Boffi, IBM Cloud EcoD



# Cloud Service Models

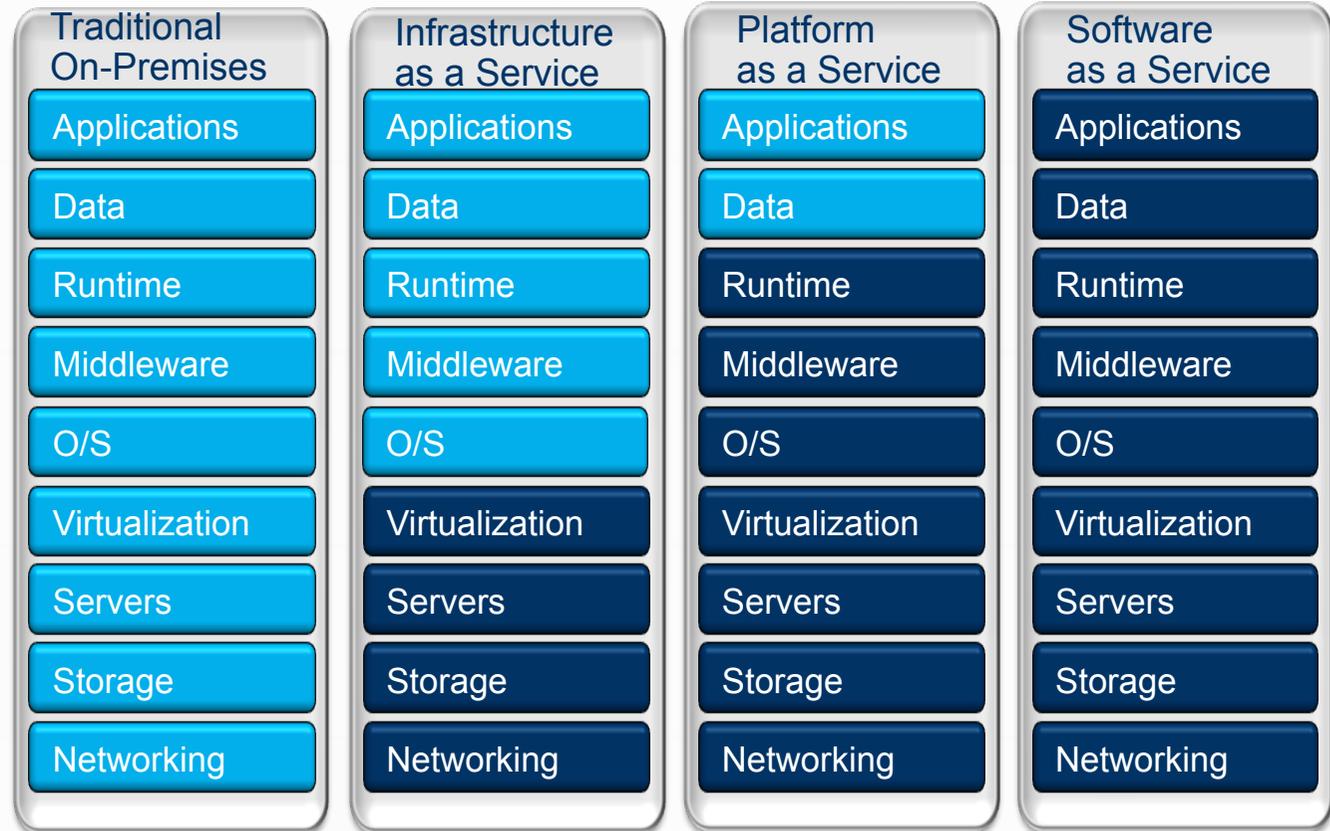


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an IBM Company

IBM SaaS

Bluemix eliminates / dramatically simplifies various tasks:

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



■ Client Manages

■ Vendor Manages in Cloud

[ibm.biz/Bluemix2015](http://ibm.biz/Bluemix2015)



# Bluemix: IBM's Cloud Platform

Build, run, scale, manage, integrate & secure applications in the cloud

## Developer experience

- Rapidly deploy and scale applications in any language.
- Compose applications quickly with useful APIs and services and avoid tedious backend config.
- Realize fast time-to-value with simplicity, flexibility and clear documentation.



Built on a foundation of open technology.

## Enterprise capability

- Securely integrate with existing on-prem data and systems.
- Choose from flexible deployment models.
- Manage the full application lifecycle with DevOps.
- Develop and deploy on a platform built on a foundation of open technology.

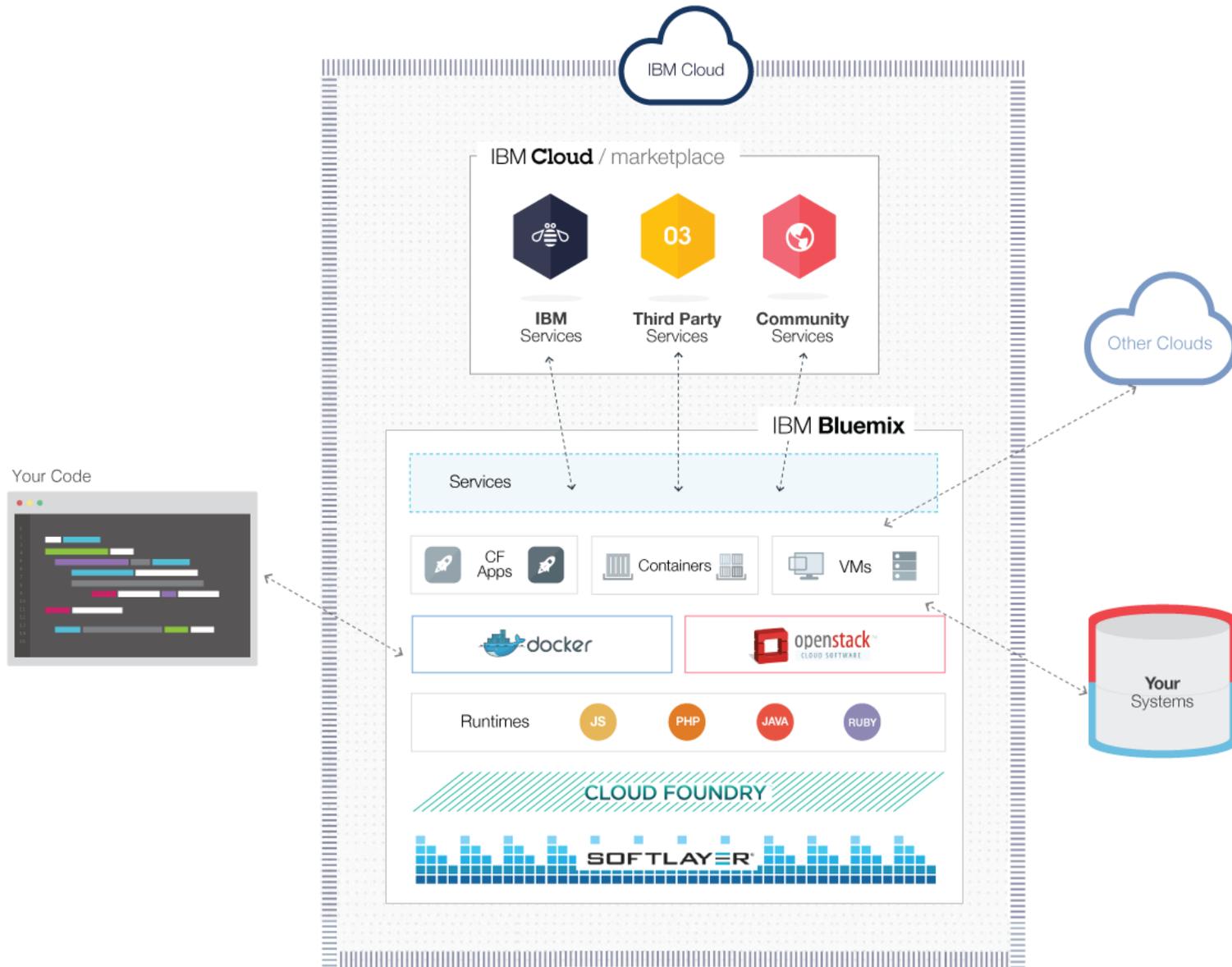
## Bluemix service categories

- DevOps
- Big Data
- Mobile
- Watson
- Business Analytics
- Database
- Web and application
- Security
- Internet of Things
- Cloud Integration
- API management & Integration

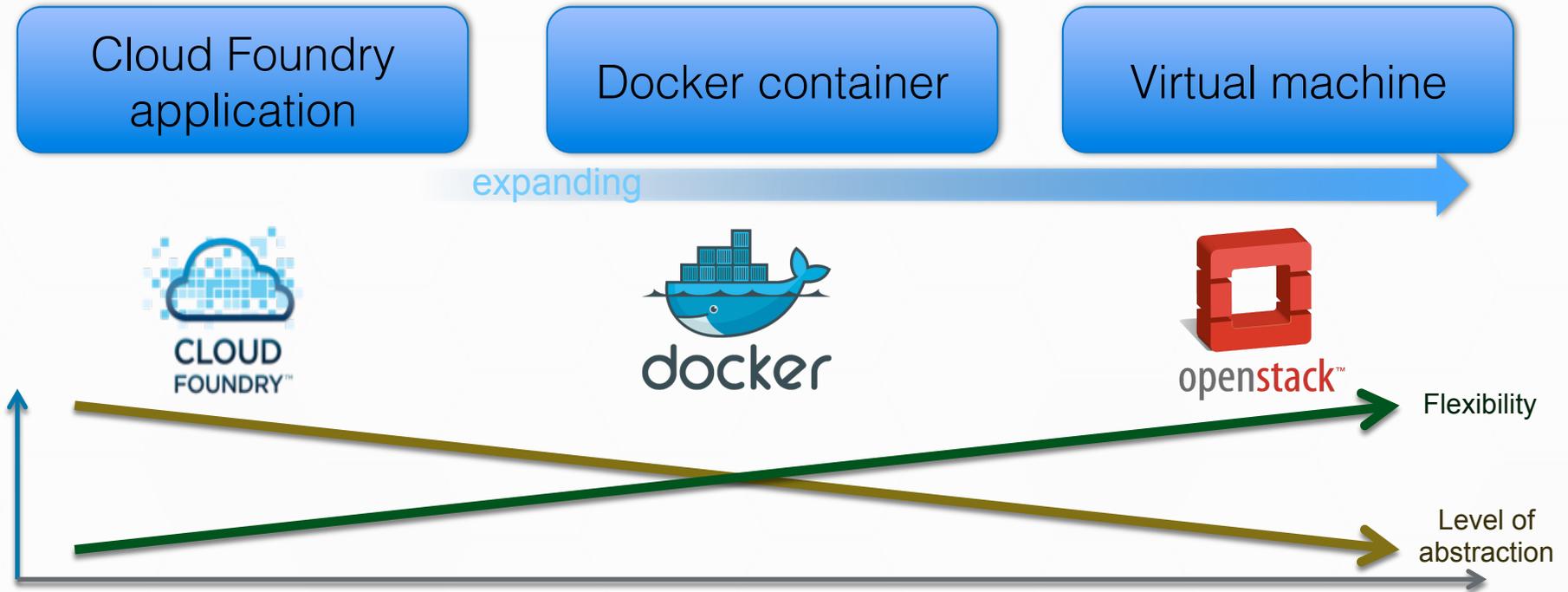
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# Bluemix structure



# Bluemix offers different compute models to “run your code”



## Consistent experience:

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

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# The Bluemix tour

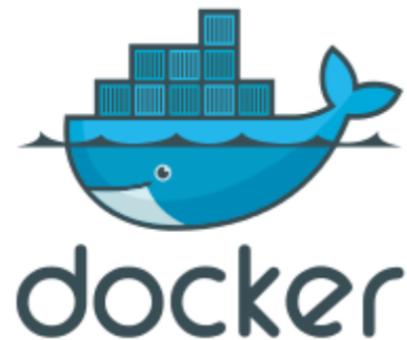
Demo of the Bluemix interface

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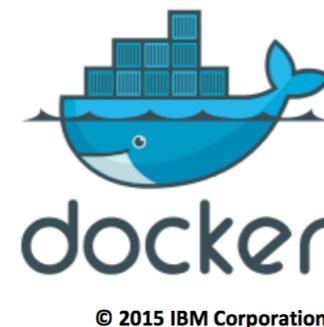
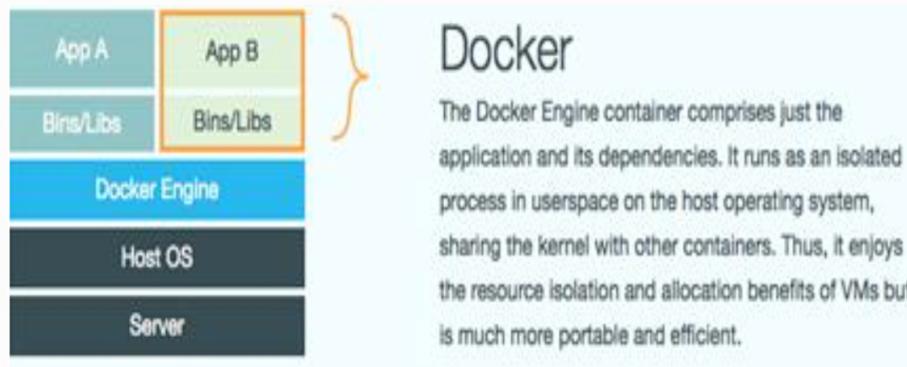
# Containers in cloud environments

- Virtual software objects include all the elements that an application needs to run
- Each container includes just the application and its dependencies
- Containers run as an isolated process on the host operating system
- You get the benefits of resource isolation and allocation
- Because containers are portable and efficient, you can build applications quickly



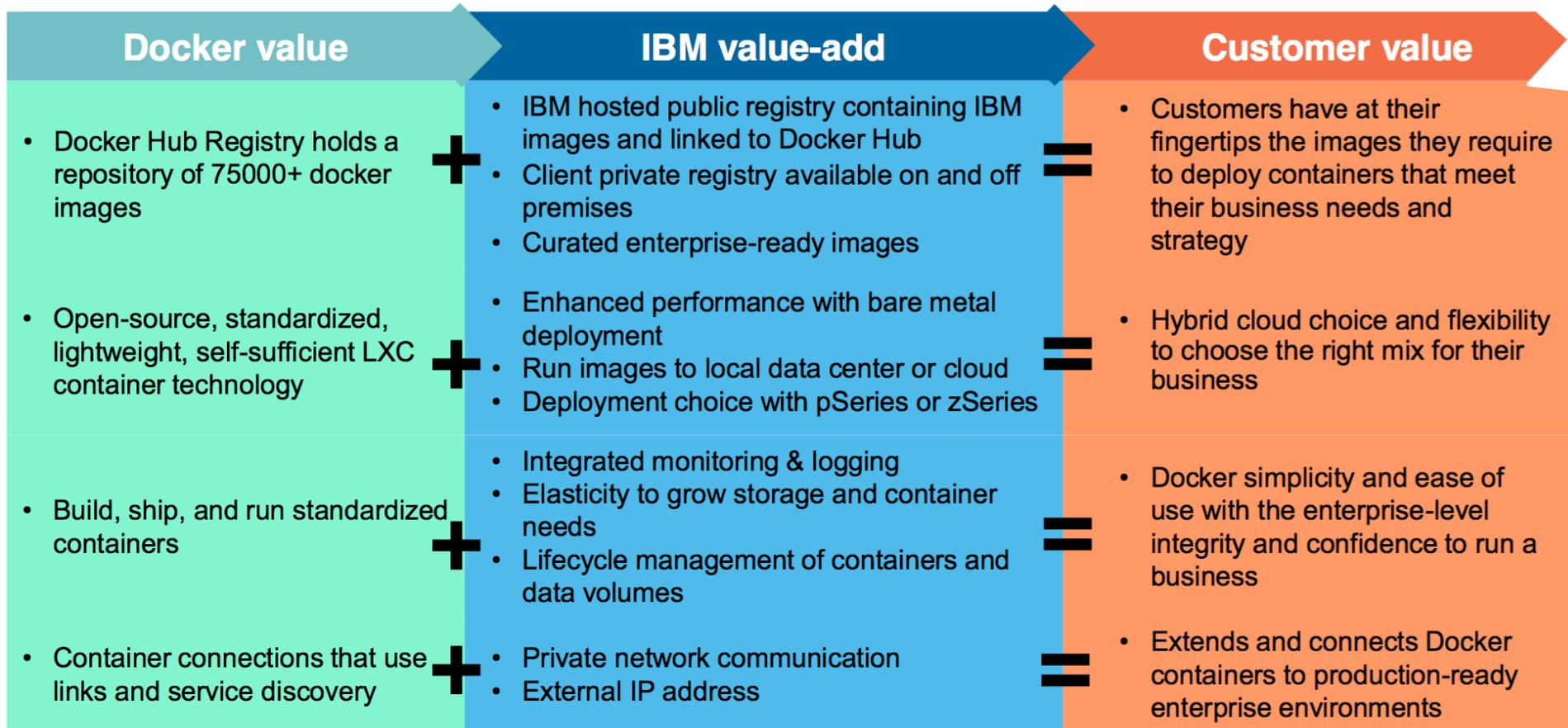
# Docker containers

- An open platform for developers and system administrators to build, ship and run distributed applications
- Docker components include:
  - Docker Engine
  - Docker Hub/Registry
  - Dockerfile
  - Image
- Client-server architecture:
  - Docker service
  - REST/APIs
  - Docker client



# Value of IBM Containers

Deploy and manage distributed cloud workloads in a hybrid environment packaged as Docker containers.



# Advantages and differentiators of IBM Containers

## Key differentiators:

1. Push and pull containers from on-premises to off-premises service
2. Hosted private registry with access controls
3. Integrated container monitoring and logging
4. One-step public IP configuration
5. Services integration, including seamless IaaS and PaaS with other Bluemix services such as analytics

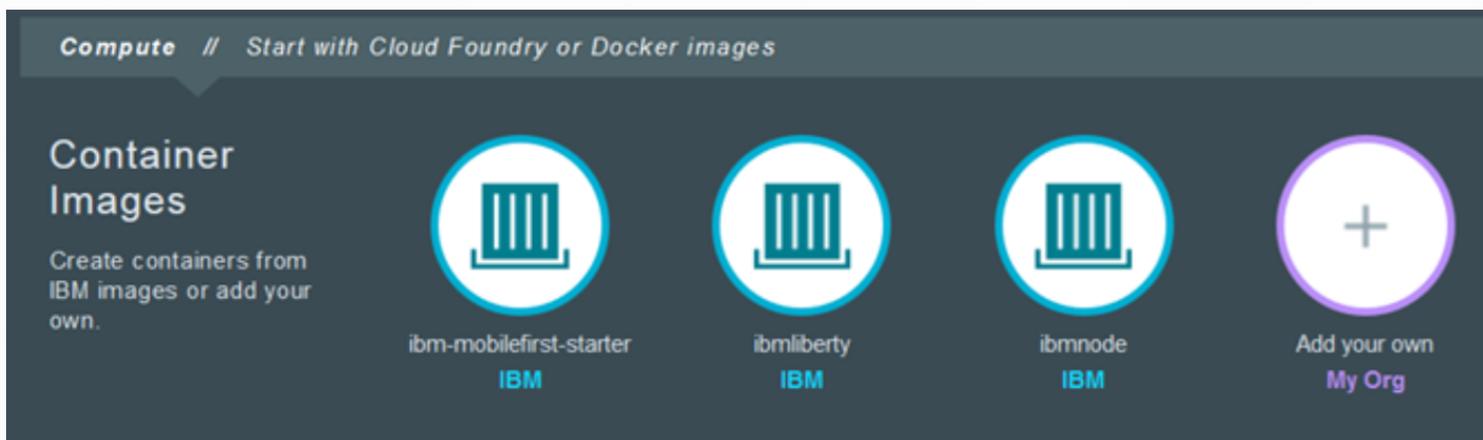
## Key advantages:

1. Automate the build of Docker images
2. Manage and distribute Docker images in private Docker registries
3. Easily host containers in the cloud
4. Scale and auto-recovery built in
5. Logging and monitoring built in

Compute // Start with Cloud Foundry or Docker images

### Container Images

Create containers from IBM images or add your own.



The screenshot shows a dark-themed interface for 'Container Images'. At the top, it says 'Compute // Start with Cloud Foundry or Docker images'. Below this, the title 'Container Images' is followed by the instruction 'Create containers from IBM images or add your own.' There are four circular icons in a row, each representing a different image source. The first three are IBM-provided images: 'ibm-mobilefirst-starter', 'ibmliberty', and 'ibmnode'. Each of these has a teal icon of a server rack. The fourth is 'Add your own My Org', which has a white icon with a plus sign. The IBM logo is visible below each of the first three icons.

ibm-mobilefirst-starter  
IBM

ibmliberty  
IBM

ibmnode  
IBM

Add your own  
My Org

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# The Bluemix tour

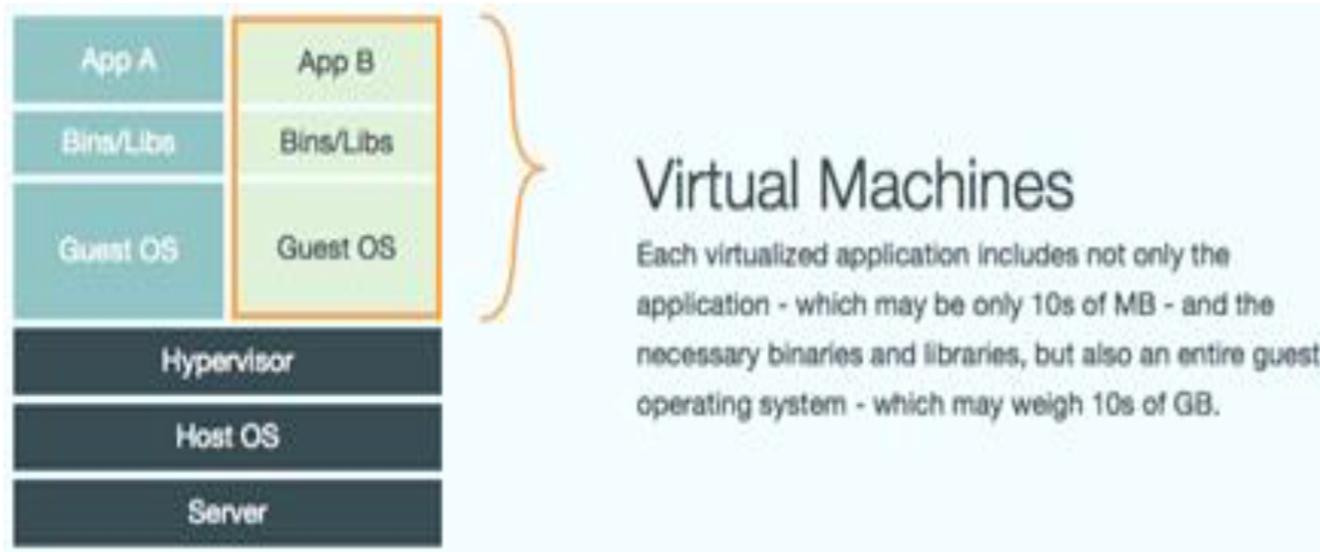
## Demo of the IBM Containers

[ibm.biz/Bluemix2015](http://ibm.biz/Bluemix2015)



# OpenStack virtual machines

- A software implementation of a machine that's hosted by a real machine based on OpenStack software
- Includes the application, its dependencies/middleware, and a guest operating system (OS)
- Managed by a hypervisor server for resource allocation and provisioning
- Multiple VMs can run simultaneously on a single host
- Guest OSs might not be the same as the host OS



# Advantages of OpenStack VMs

- Enables creation of VMs running in public and private OpenStack clouds
- Allows reuse of existing VM images
- Provision VM groups with auto-scaling and load balancing against a target cloud
- Manages operations by using a dashboard or CLI and API
- Enables you to view VM information, such as instance ID, IP, CPU, memory, or disk resources and status of VM
- Supports OpenStack project deployments and scales both horizontally and vertically

IBM Bluemix

Dashboard SOLUTIONS CATALOG PRICING DOCS COMMUNITY

### Create a Virtual Machine

Virtual machines can be connected to public or private clouds.

Select the VM Cloud to use:  Initial instances:   Assign public IP addresses

VM Sizes Available	Size	Memory	CPUs	Disk
<input checked="" type="checkbox"/>	m1.small	1.5 GB	1 CPUs	10 GB
<input type="checkbox"/>	m1.medium	3.1 GB	2 CPUs	20 GB

The free Beta plan for public virtual machines includes 8 instances, 8 vCPU, 12 GB of memory, 200GB of block storage, and 4 public IP addresses.

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LAUNCH HORIZON DASHBOARD

Launch VM from Image

Image to launch:

IBM image default user ID:

Name your VM group:

Choose VM size:

SSH Key:

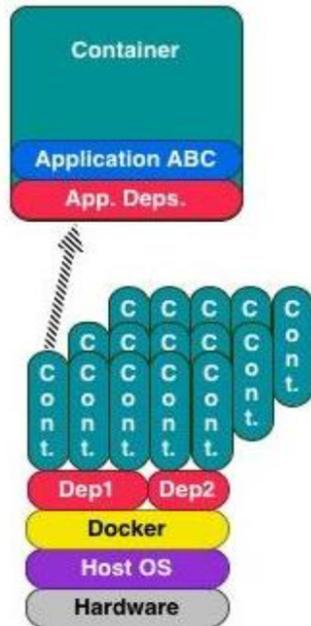
Network:

CREATE

IBM Bluemix PaaS provides support for virtual machines as a beta feature that is available in selected regions.

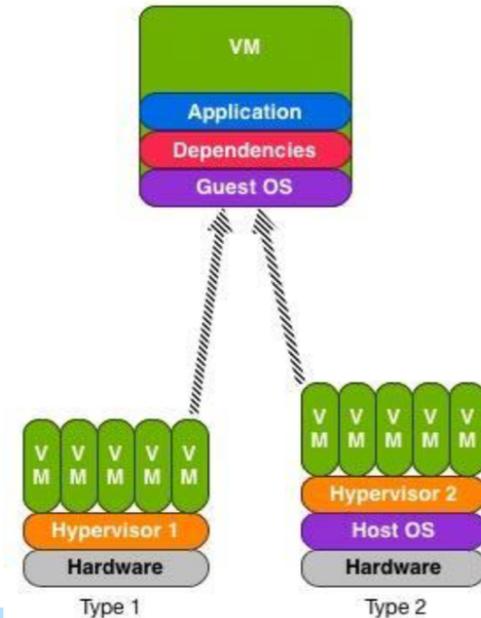
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# Deploying to the cloud in a repeatable way



## Containers and VMs

Understanding both technologies



### Container approach

#### Build

- Software stack can be individually packaged

#### Deploy

- Software stack in a Docker container can be easily moved between deployment environments

#### Change

- Recompose software into new stacks

#### Value

- Built-on-the-cloud applications
- Loosely coupled, elastic architectures

### Virtualization approach

#### Build

- Package the (guest) operating system
- Add required files and programs

#### Deploy

- This entire “package” can be moved and reconfigured across different physical machine

#### Change

- Change details of the software within the virtual machine and then create a new virtual machine

#### Value

- Traditional cloud-enabled workloads



# The Bluemix tour

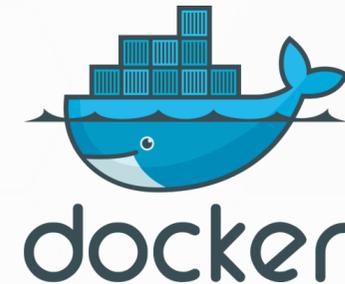
## Demo of the Virtual Machines

[ibm.biz/Bluemix2015](http://ibm.biz/Bluemix2015)



## Related links

- IBM Bluemix  
<https://console.ng.bluemix.net/>  
<https://console.eu-gb.bluemix.net/>
- IBM Bluemix documentation: “Virtual machines”  
[https://www.ng.bluemix.net/docs/virtualmachines/vm\\_index.html](https://www.ng.bluemix.net/docs/virtualmachines/vm_index.html)
- IBM Bluemix documentation: “IBM Containers”  
[https://www.ng.bluemix.net/docs/containers/container\\_index.html](https://www.ng.bluemix.net/docs/containers/container_index.html)
- Docker containers  
<https://www.docker.com/>
- Cloud Foundry  
<https://www.cloudfoundry.org/>





# Sei una startup? IBM ti aiuta a crescere con il cloud



## Se la tua startup...

- ha meno di 5 anni
- è privata
- utilizza il cloud
- non è un rivenditore IBM
- fattura meno di un milione di euro/anno

## ...allora IBM ti offre

- 1000\$/mese per 12 mesi per l'utilizzo di **SoftLayer**, lo IaaS di IBM
- 1000\$/mese per 12 mesi per l'utilizzo di **Bluemix**, il PaaS di IBM
- attività di mentoring e networking
- supporto tecnico di esperti
- visibilità su scala globale mettendoti in contatto con investitori

Per maggiori informazioni vai al sito [Gep4Cloud](http://Gep4Cloud) oppure contatta [ornella\\_beggiato@it.ibm.com](mailto:ornella_beggiato@it.ibm.com)

Free trial Bluemix: [ibm.biz/Bluemix2015](http://ibm.biz/Bluemix2015)





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**...allora IBM ti offre**

utilizzo gratuito di **Bluemix**, il PaaS di IBM, fino al 30/04/2016

è necessario:

- lasciare il tuo indirizzo email
- attivare il tuo account entro il 31/12/2015

Per maggiori informazioni sui programmi IBM per le Università vai al sito [IBM Academic Initiative](http://ibm.biz/Bluemix2015)

Free trial Bluemix: [ibm.biz/Bluemix2015](http://ibm.biz/Bluemix2015)

