



Bluemix Overview

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Bluemix

IBM Cloud Platform



The rate of innovation is increasing

“Two guys in a Starbucks can have access to the same computing power as a Fortune 500 company.”

Jim Deters - Founder, Galvanize



Companies of all sizes have the ability to disrupt, or face the prospect of being disrupted.

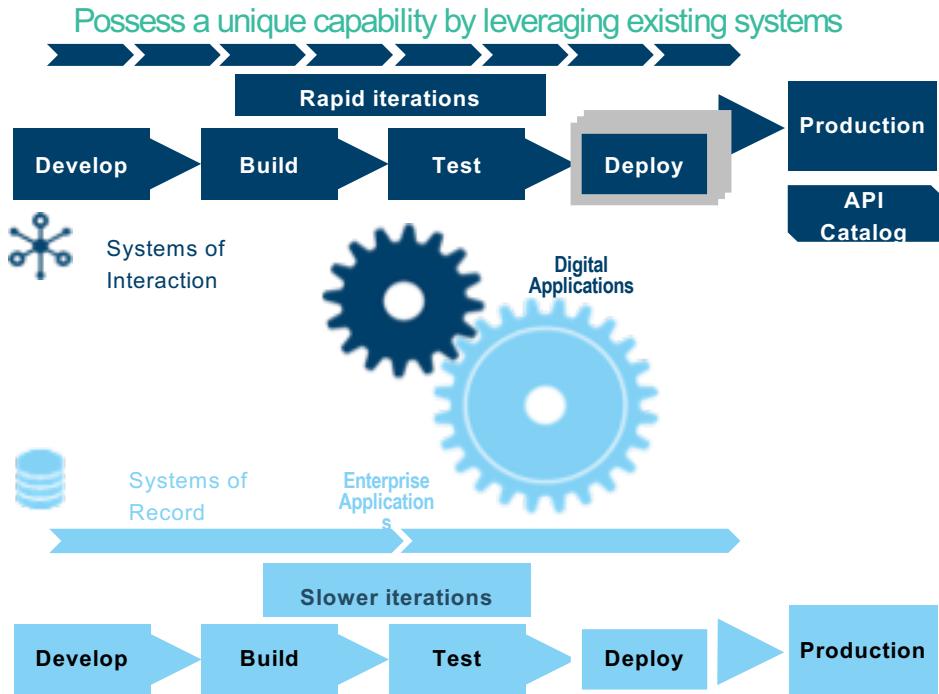
Successful business will be the ones that embrace change and innovation
and can transform at speed.



Bluemix: designed for speed and choice



Enterprises need instrumented, automated coordination to handle two-speed IT



Enterprises need to find a balance between IT & Innovation.

Disruption can occur when enterprises are slow to adapt

Enterprises have different requirements

- ❖ Application monitoring and logging
- ❖ Corporate Policies
- ❖ Regulations
- ❖ White Labelling
- ❖ LDAP Integration
- ❖ Security and Privacy

Bluemix will enable

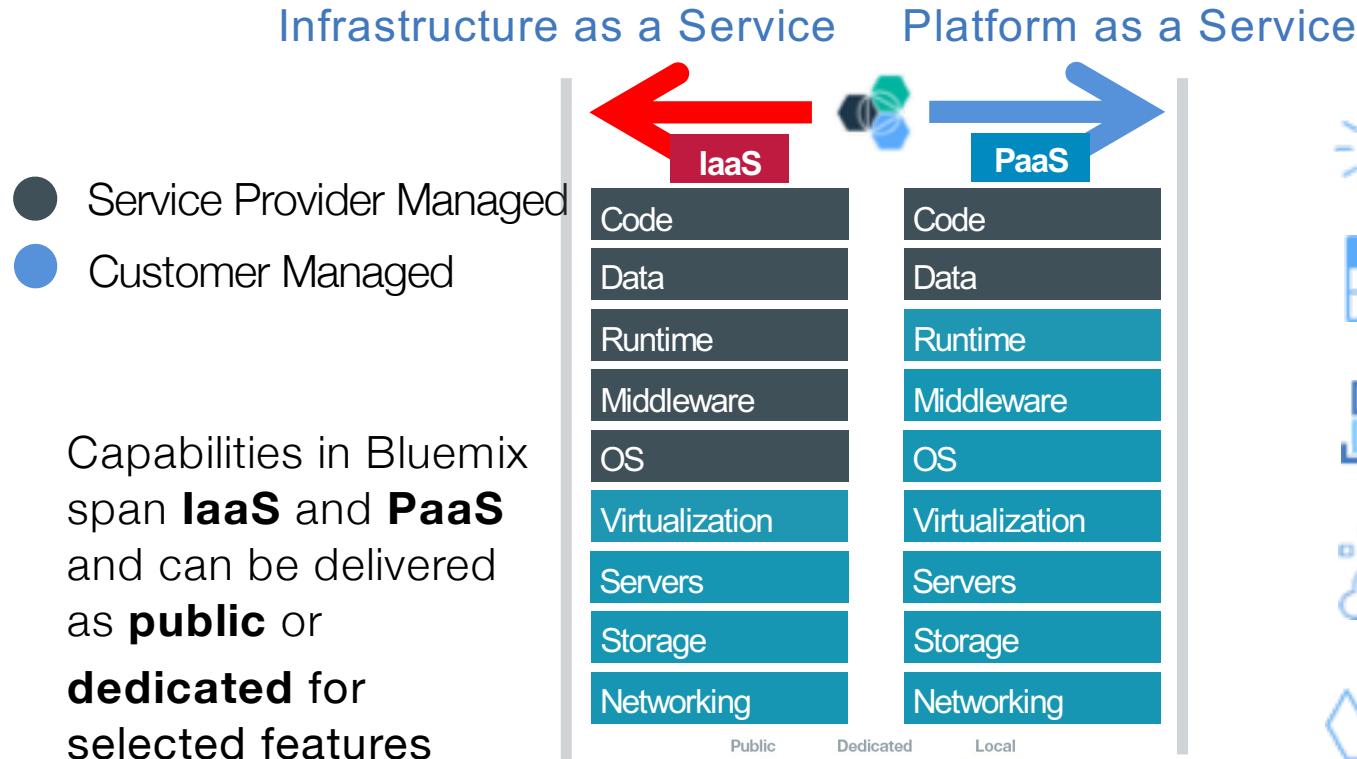


Cloud Deployment Models

IaaS, PaaS, SaaS



BlueMix cloud models: from IaaS to PaaS



Bluemix converged IaaS and PaaS administration



One
Experience

- Single landing page for all digital users (existing and new) to access the product (console.bluemix.net)
- The IBM Bluemix name covers both IaaS and PaaS
- One Global navigation for all users
- One catalog for all services for new users or people who have linked their accounts.
- Same look and feel for all services (theming, colors, page structure, etc)
- A single line of support is used for any Bluemix IaaS and PaaS services
- Single Blog, Single social accounts (one twitter account, for example)

One ID

- Single sign up for new users
- One set of terms and conditions for new users
- Migration path for existing customers to link accounts and accept additional terms

One Invoice

- Single billing for all services
- Bluemix branded invoices

Bluemix : the IBM Cloud Platform

Bluemix is an **open-standards**, cloud-based **platform** for **building, running, and managing applications**.

Build your apps, your way

Use the most prominent compute technologies to power your app: Cloud Foundry, Docker, OpenStack

Deploy and manage hybrid apps seamlessly

Get a seamless dev and management experience across a number of hybrid implementations options.

Scale more than just instances

Development, monitoring, deployment, and logging tools allow the developer to run and manage the entire application.

Layered Security

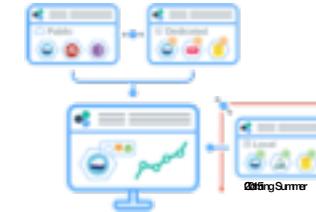
IBM secures the platform and infrastructure and provides you with the tools to secure your apps.

Extend apps with services

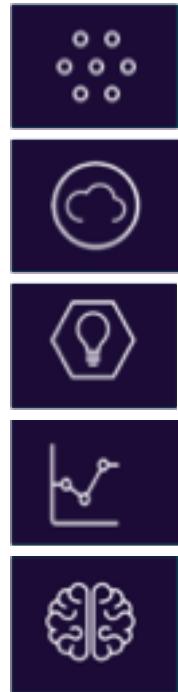
A catalog of IBM, third party, and open source services allow the developer to stitch an application together quickly.

Flexible Pricing

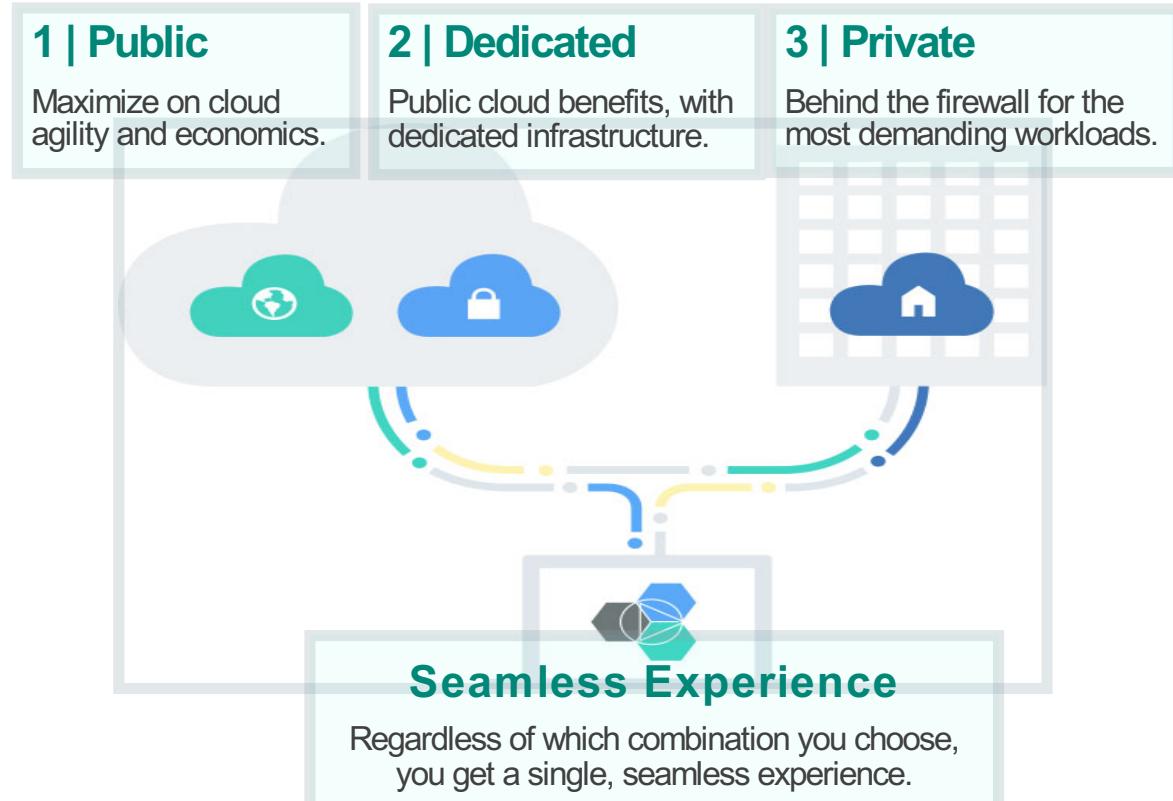
Try compute options and services for free and, when you're ready, pay only for what you use. Pay as you go and subscription models offer choice and flexibility.



IBM offers the complete spectrum of cloud deployment models



- Choice with consistency
- Hybrid integration
- DevOps productivity
- Powerful, accessible data and analytics
- Cognitive solutions



Bluemix Dedicated

Dedicated to you

A single tenancy environment that is dedicated to you – allowing you to satisfy regulatory and legal compliance

Focus on your Apps – Not Iron

Focus on building customer applications and services. IBM manages the platform and your dedicated services

Global Locations

Bringing you closer to your users with dedicated living in any SoftLayer data center around the globe

- Introducing IBM Cloud Private

Built on 4 Key Entry Points that Drive Enterprise Transformation



Rapid
Innovation



Differentiated
Integration



Investment
Leverage



Management and
Compliance

Enterprise grade. **Open** by design.

• IBM Cloud Private brings Cloud Native to the Enterprise



Rapid Innovation

Open Kubernetes-based container platform

Cloud Foundry for app dev and deployment

Integrated DevOps toolchain



Differentiated Integration

API management to unlock and integrate

Secure access to public cloud services
(AI, Blockchain)

Consistent experience across private/public



Investment Leverage

Containerized versions of IBM Middleware
(WebSphere, MQ, DB2, DSX and popular Open Source)

Prescriptive guidance to optimize workloads

Work with existing apps, data, skills, infrastructure



Management and Compliance

Core operational services including logging, monitoring, security

Flexibility to integrate with existing tools and processes

- Enterprise capabilities provide a foundation for business value



Rapid Innovation

- Speed** business innovation
- Rapidly** provision capacity to meet demand
- Open** container technology prevents vendor lock-in; choice of deployment



Differentiated Integration

- Connect** applications with data and services across all clouds securely
- Enhance** application intelligence with public cloud services, including Watson integration



Investment Leverage

- Reduced** cost of managing and upgrading your on-premises IBM middleware implementation
- Protects** existing investments, and **Leverages** existing skills
- Faster** time-to-market



Management & Compliance

- Security and control** of an untethered environment
- Integrated** set of management tools; flexibility to integrate with existing ones

A Cloud Native platform with Enterprise grade content



IBM Middleware, Data, Analytics and Developer Services

Cloud enabled middleware, messaging, databases, analytics, and cognitive services to optimize current investments while rapidly innovating



Core Operational Services

Simplify Operations Management, Security, and Hybrid integration
Provision infrastructure and apps across Multi-Cloud environments



Kubernetes-based Container Platform

Industry leading container orchestration platform across private, dedicated & public clouds



Cloud Foundry

For prescribed app development & deployment

Runs on existing IaaS:



Third Party alliances:

Dell Cisco NetApp Lenovo Canonical ...

Enterprise grade services for
Middleware, Data, Analytics, DevOps

Enterprise grade operations, across your Hybrid IT environment

Open by design, preventing vendor lock-in

Leverage existing investments

- **IBM Cloud Private transforms the way IT operations and developers work**



Todd

Operations / Admin

Responsible for infrastructure, security, and management of the environment.



Jane

Enterprise Developer

Responsible for modernizing existing applications and creating new Cloud Native Workloads.

IBM Cloud private empowers both ***operations*** and ***developers*** to meet business demands:

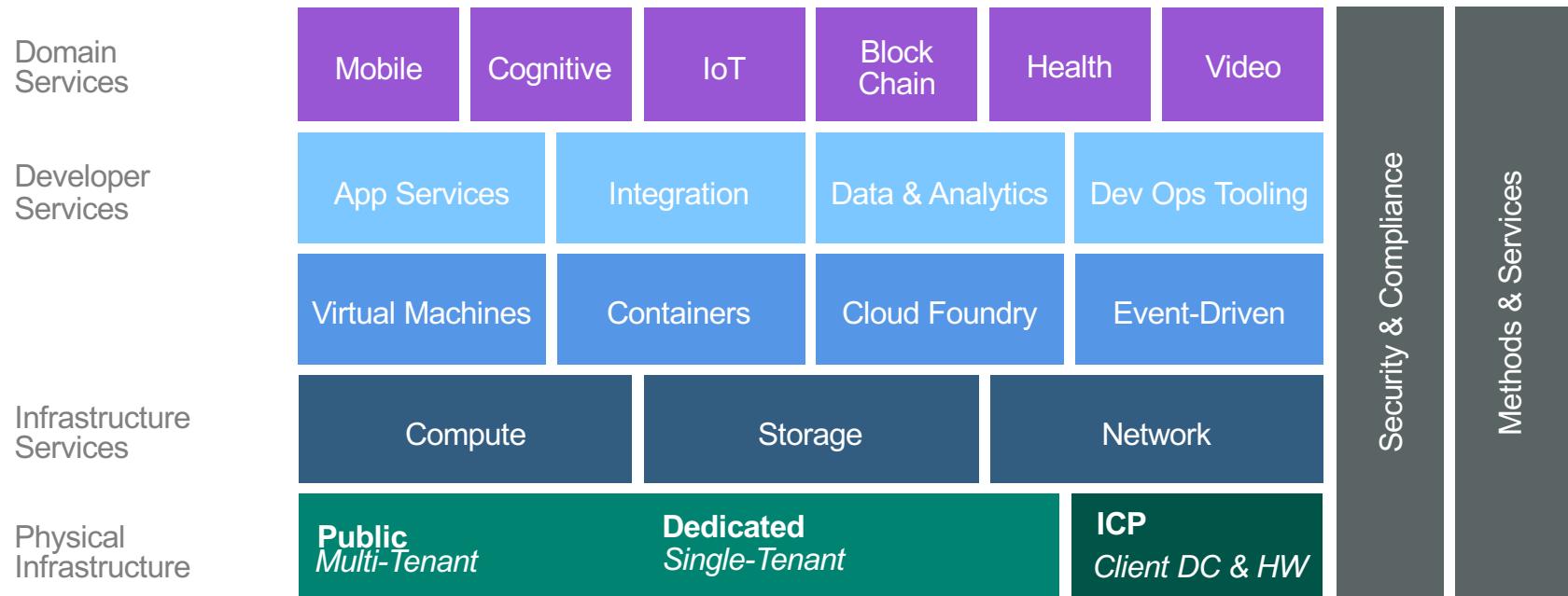
IT Operations and Administrators

- Quickly set up a modern, flexible, and compliant private cloud
- Integrate with existing management tools and processes

Developers

- Rapidly create new cloud-native applications, optimize existing ones, and securely connect their applications with data and services across all clouds

Bluemix Architecture & Design



Bluemix is underlined by four open compute technologies: **Cloud Foundry**, **Docker**, **OpenStack** and **OpenWhisk**. It extends each of these with a growing number of 130+ **services**, robust **DevOps tooling**, **integration** capabilities, and a seamless **developer experience**.



Bluemix Cloud Platform Compute Options

How to run your applications



Bluemix : the IBM Cloud Platform



Bare Metal

- *Dedicated Compute*
- *High Memory*
- *Intensive Disk I/O*

Virtual Servers

- *Isolation*
- *Familiar*
- *Full Operating System Control*

Containers

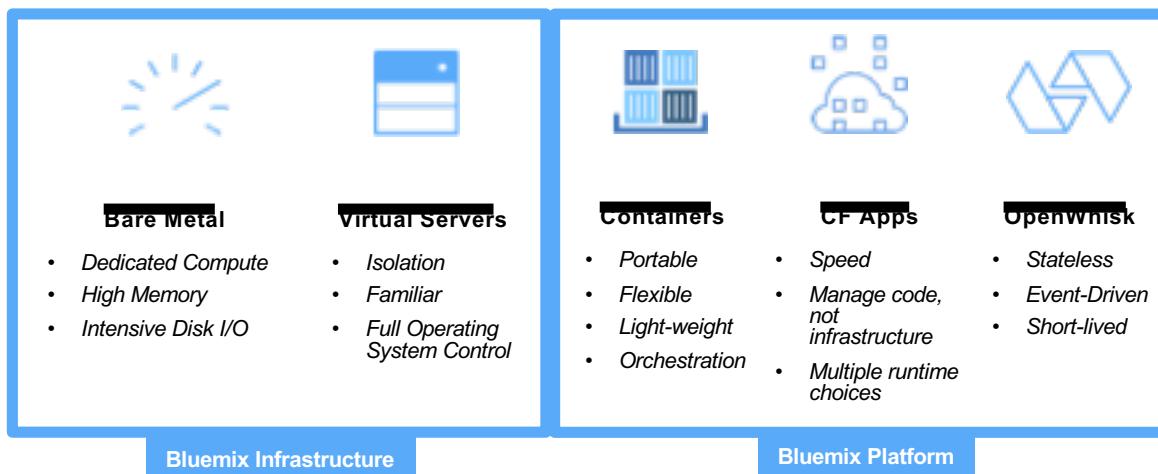
- *Portable*
 - *Flexible*
 - *Light-weight*
 - *Orchestration*
- *Speed*
 - *Manage code, not infrastructure*
 - *Multiple runtime choices*

CF Apps

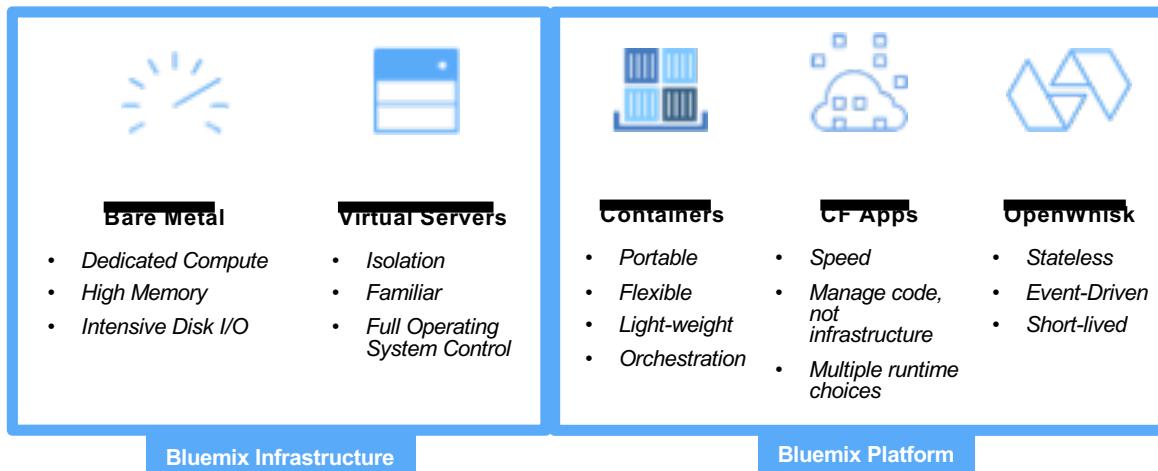
- *Stateless*
- *Event-Driven*
- *Short-lived*

OpenWhisk

Bluemix : the IBM Cloud Platform



Bluemix Infrastructure (ex SoftLayer)

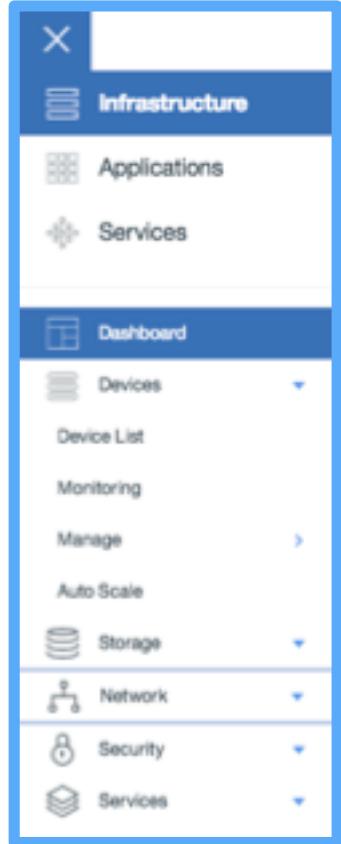


Bluemix Infrastructure

Bluemix Platform



Bluemix Infrastructure (ex SoftLayer)



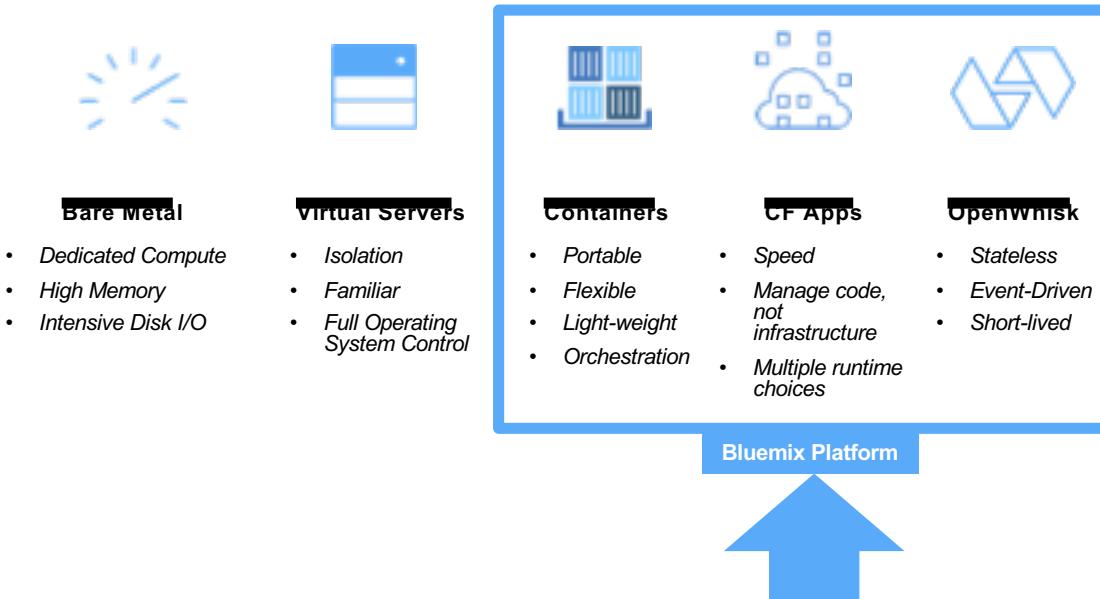
A web-based dashboard for IBM Bluemix Infrastructure. The top header shows 'Help', 'Contact', 'Notifications', 'Open Tickets', 'Philippe Thomas', 'IBM - KNOWLEDGE CENTER', and 'Log Out'. The dashboard features sections for 'Account Summary' (Current Balance \$0.00, Estimated Next Balance \$297.99, Current Payment Method Manual/Modify), 'Scheduled Maintenance & Updates' (May 2017 and June 2017 calendars), 'Order' (Icons for Devices, Storage, Network, Security, and Add-On Services), 'Tickets' (Open: 1, Awaiting Response: 0), 'Recent Updates' (Enabling Grace Period for IBMi Authentication, IMPORTANT NOTICE OF CHANGE IN BLUEMIX SERVICE DESCRIPTION TERMS, Billing date change, MONITORING: Network Monitor Alert (closed), MONITORING: Network Monitor Alert, MONITORING: Network Monitor Alert), and 'Account Snapshot' (Users: 1, Devices: 3, Open Tickets: 1, Active Domains: 0, DNS Forward Zones: 0, Private Images: 0, Subnets: 2, VLANs: 2). Red triangles point to the 'Storage' icon in the Order section and the 'Account Snapshot' table.

Containers

Flexibility and Light Weight



Bluemix Applications and Services



Bluemix Container Service



Bare Metal

- *Dedicated Compute*
- *High Memory*
- *Intensive Disk I/O*



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CF Apps

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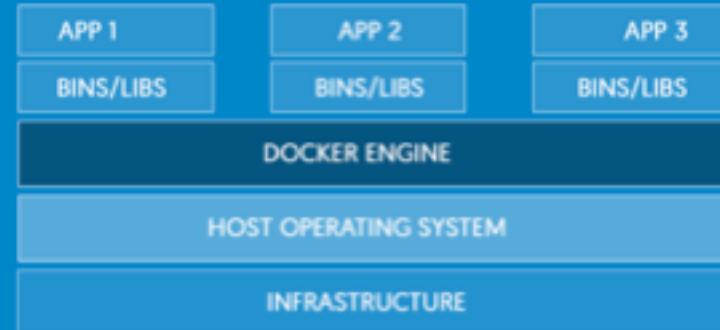
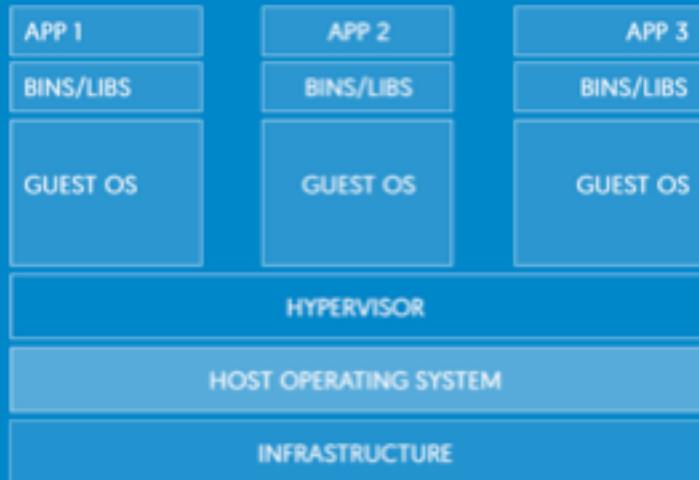


OpenWhisk

- *Stateless*
- *Event-Driven*
- *Short-lived*



What is Docker ?



Docker = Linux namespaces + cgroups + overlay file system + image format

IBM and Docker Partnership

- Strategic partnership announced December, 2014
 - <https://www-03.ibm.com/press/us/en/pressrelease/45597.wss>
- Partnership extended February, 2016
 - IBM initially only partner to resell and support Docker Datacenter
- Objective: Deliver next generation enterprise-grade, portable, distributed applications that are composed of interoperable Docker containers
 - Enables hybrid cloud use cases for the enterprise
- Initiatives Underway

IBM Software running on Docker Containers

The image shows two screenshots of the Docker Hub interface. The left screenshot displays a list of repositories under the 'ibmcom' organization, including ibmcom/mq, ibmcom/mqlight, ibmcom/libjava, ibmcom/datapower, ibmcom/websphere-liberty, and ibmcom/websphere-traditional. The right screenshot provides a detailed view of the 'ibmcom/websphere-liberty' repository, which is a public Docker image for the WebSphere Application Server for Developers Liberty. It includes sections for Repo info, Short Description (Official IBM WebSphere Application Server for Developers Liberty image), Full Description, and Supported tags and respective Dockerfile links. The supported tags listed are kernel, common, webProfile6, webProfile7, jeejee7, and beta.

Repositories (112)

- ibmcom/mq
- ibmcom/mqlight
- ibmcom/libjava
- ibmcom/datapower
- ibmcom/websphere-liberty
- ibmcom/websphere-traditional

PUBLIC-REPOSITORY

ibmcom/websphere-liberty

Last pushed: 20 days ago

Repo info Tags

Short Description

Official IBM WebSphere Application Server for Developers Liberty image.

Full Description

Supported tags and respective Dockerfile links:

- kernel [\[+\] Dockerfile](#)
- common [\[+\] Dockerfile](#)
- webProfile6 [\[+\] Dockerfile](#)
- webProfile7 [\[+\] Dockerfile](#)
- jeejee7, latest [\[+\] Dockerfile](#)
- beta [\[+\] Dockerfile](#)

The images in this repository are a mirror of those in the [websphere-liberty](#) official repository.

For more information about this image and its history, please see [the relevant manifest file](#) (`Dockerfile`). This image is updated via [pull requests to the](#) `docker-websphere-liberty/official-images` [GitHub repo](#).



Bluemix Container Service

Think of **Docker Containers** as a lightweight virtual machine complete with everything your application needs: code, runtime, and any dependencies.

IBM Containers, built on **Docker** and running on **Bluemix**, provide a more efficient environment that enables faster integration and access to operations, DevOps, analytics, big data and security services.

With **IBM Containers**, developers have the flexibility to build once and move applications without the need to rewrite or redeploy their code. Create a complete portable environment and have it run in Bluemix or another supporting cloud environment

Choose how to manage your containers with IBM Bluemix® Container Service



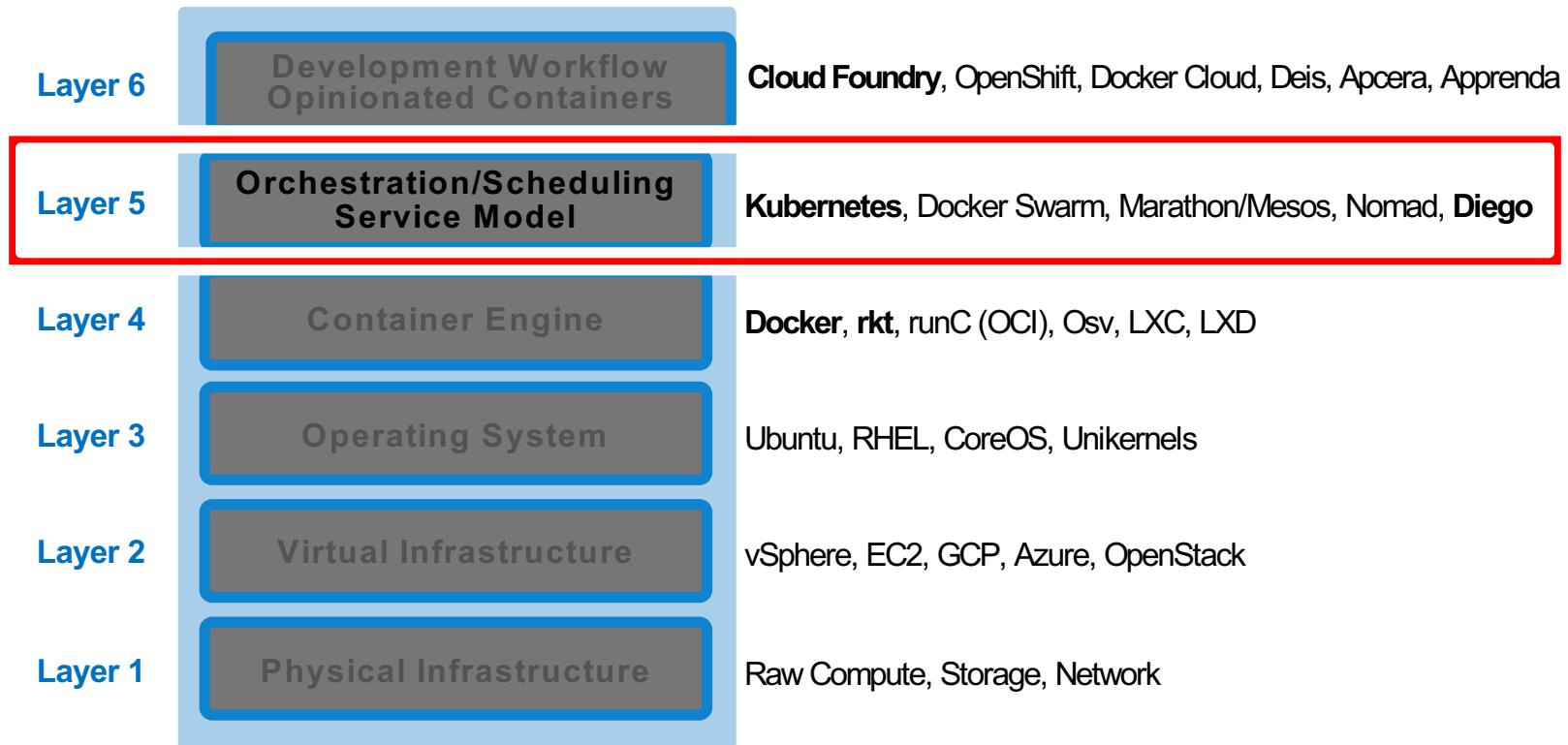
Kubernetes clusters: Manage your own cloud infrastructure, where you can use Kubernetes as an orchestration tool for the deployment, load-balancing, scaling, and monitoring of your containers.



Docker single and scalable containers: Use multi-tenant infrastructure to create single containers or container groups for your containerized apps.

The screenshot shows the IBM Bluemix dashboard with a sidebar on the left containing several categories: Apps, Services, Infrastructure, Dashboard, Cloud Foundry Apps, Containers, and Web and Mobile. The 'Containers' category is highlighted with a green bar at the top of its card, indicating it is the current active section. Each category has a corresponding icon next to its name.

Container Orchestration with Kubernetes



What is Kubernetes?

- Kubernetes is an open-source platform for automating deployment, scaling, and operations of application containers across clusters of hosts, providing container-centric infrastructure.
- Container orchestrator
- Runs and manages containers
- Supports **multiple cloud and bare-metal** environments
- Inspired and informed by Google's experiences and internal systems
- **100% Open source**, written in Go
- **Manage applications**, not machines
- Rich ecosystem of plug-ins for scheduling, storage, networking



Cloud Foundry Apps

Instant Runtimes



Cloud Foundry Apps



Bare Metal

- *Dedicated Compute*
- *High Memory*
- *Intensive Disk I/O*



Virtual Servers

- *Isolation*
- *Familiar*
- *Full Operating System Control*



Containers

- *Portable*
- *Flexible*
- *Light-weight*
- *Orchestration*



CF Apps

- *Speed*
- *Manage code, not infrastructure*
- *Multiple runtime choices*



OpenWhisk

- *Stateless*
- *Event-Driven*
- *Short-lived*



Cloud Foundry : Instant Runtimes



Cloud Foundry is an open source PaaS that lets developers focus on their application code and let the platform handle the rest (runtime, scaling, networking, operating system).

Bluemix extends Cloud Foundry with a number of managed runtimes and services, enterprise-grade DevOps tooling, and a seamless overall developer experience.

A screenshot of the IBM Bluemix Catalog interface. The top navigation bar includes 'IBM Bluemix Catalog', 'Catalog', 'Support', and 'Account'. On the left, there's a sidebar with 'All Categories' and sections for 'Infrastructure', 'Compute', 'Storage', 'Network', and 'Apps'. Under 'Apps', there are links for 'Cloud Foundry Apps', 'Containers', and 'Web and Mobile'. The main content area shows several runtime options with icons and brief descriptions:

- Liberty for Java™**: Develop, deploy, and scale Java web apps with ease. IBM WebSphere Liberty Profile is a highly efficient Java EE server.
- SDK for Node.js™**: Develop, deploy, and scale server-side JavaScript®/Node.js™ apps with ease. The IBM SDK for Node.js™ provides a fast, reliable, and efficient environment for building real-time web and mobile applications.
- ASP.NET Core**: Develop, deploy, and scale ASP.NET Core web apps with ease.
- Runtime for Swift**: A Kitura based server application that you can use as a starting point to get your own Kitura application.
- XPages**: Develop, deploy, and scale IBM XPages applications with ease. The IBM XPages runtime provides a powerful and flexible platform for building rich, dynamic web applications.
- Go**: Develop, deploy, and scale Go web apps with ease.

A screenshot of the Cloud Foundry Apps interface. It features a sidebar with 'X', 'Apps', 'Services', 'Infrastructure', 'Dashboard', and a 'Cloud Foundry Apps' section. The 'Cloud Foundry Apps' section contains icons and labels for 'Containers' and 'Web and Mobile'. This interface represents the extended capabilities of Cloud Foundry provided by Bluemix.

What is Cloud Foundry ?

Cloud Foundry is the industry's Open PaaS and provides a choice of clouds, frameworks and application services. As an open source project, there is a broad community both contributing and supporting Cloud Foundry.



Run your app in seconds

No VM or middleware setup

- Provision runtimes in seconds
- Auto and manual scaling options

Multiple language support

- Java Liberty, JavaScript, Ruby, Go, PHP, python provided
- Bring any language from the community thru **Buildpacks**
- List of Buildpack examples :

The image shows a grid of nine buildpacks, each with a logo, name, brief description, and a 'Community' button.

Liberty for Java™ Develop, deploy, and scale Java web apps with ease. IBM WebSphere Liberty Profile.	SDK for Node.js™ Develop, deploy, and scale server-side JavaScript® apps with ease. The IBM Node.js runtime.	ASP.NET Core Develop, deploy, and scale ASP.NET Core web apps with ease.
Runtime for Swift A Kitura based server application that you can use as a starting point to get your Swift application up and running.	XPages Develop, deploy and scale IBM XPages applications with ease. The IBM XPages runtime.	Go Develop, deploy, and scale Go web apps with ease.
PHP Develop, deploy, and scale PHP web apps with ease.	Python Develop, deploy, and scale Python web apps with ease.	Ruby Develop, deploy, and scale Ruby web apps with ease.
Tomcat Develop, deploy, and scale Tomcat web apps with ease.		

<https://github.com/cloudfoundry-community/cf-docs-contrib/wiki/Buildpacks>

Cloud Foundry : Create an App with 2 clicks

IBM Bluemix Catalog

View all

Create a Cloud Foundry App

Node.js Cloudant DB Web Starter

Use the Cloudant NoSQL DB service with the "SDK for Node.js™" runtime.

View Docs

VERSION	1.2
TYPE	Boilerplate
REGION	United Kingdom

App name: **MyApp** 

Host name: **MyApp** 

Domain: **eu-gb.mybluemix.net**

Selected Plan:

SDK for Node.js™	Cloudant NoSQL DB
Default	Lite

Develop, deploy, and scale server-side JavaScript apps with ease. The IBM SDK for Node.js™ provides enhanced performance, security, and serviceability.

Need Help? Contact Bluemix Sales

Estimate Monthly Cost
Cost Calculator

Create

OpenWhisk

Serverless, Stateless



OpenWhisk



Bare Metal

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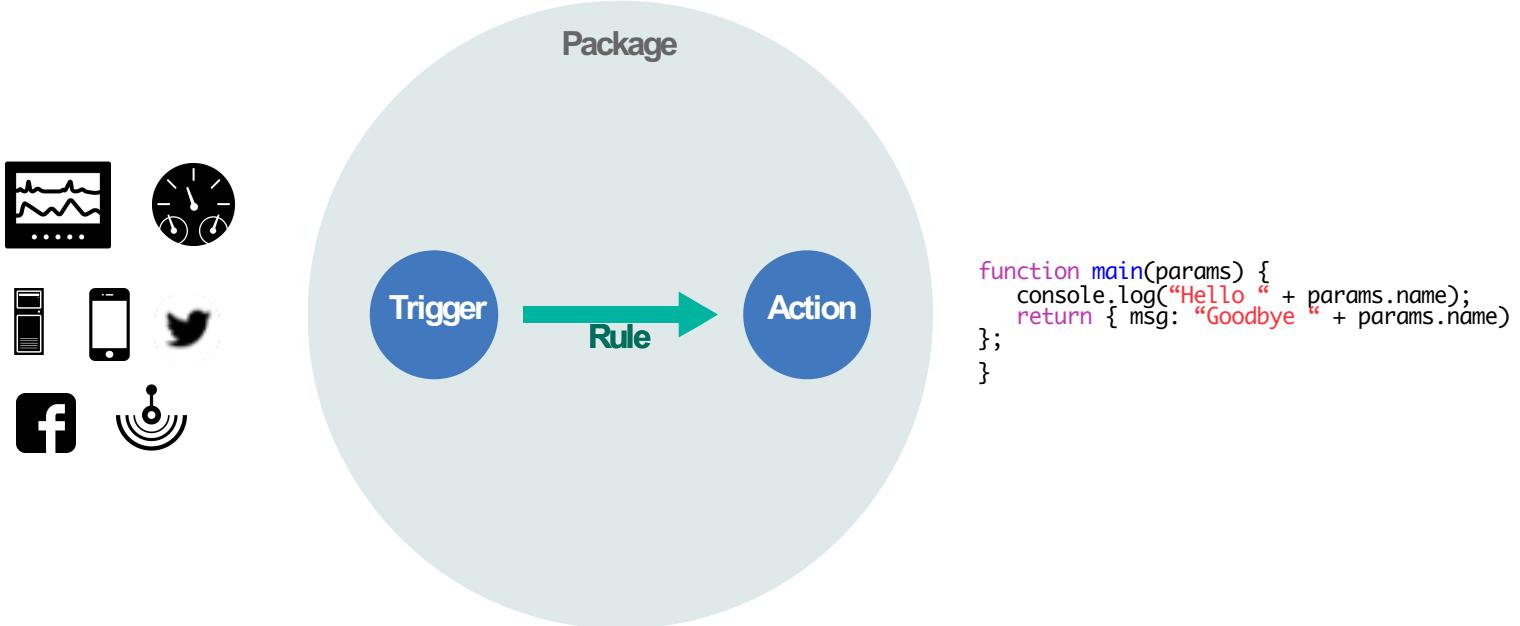


OpenWhisk

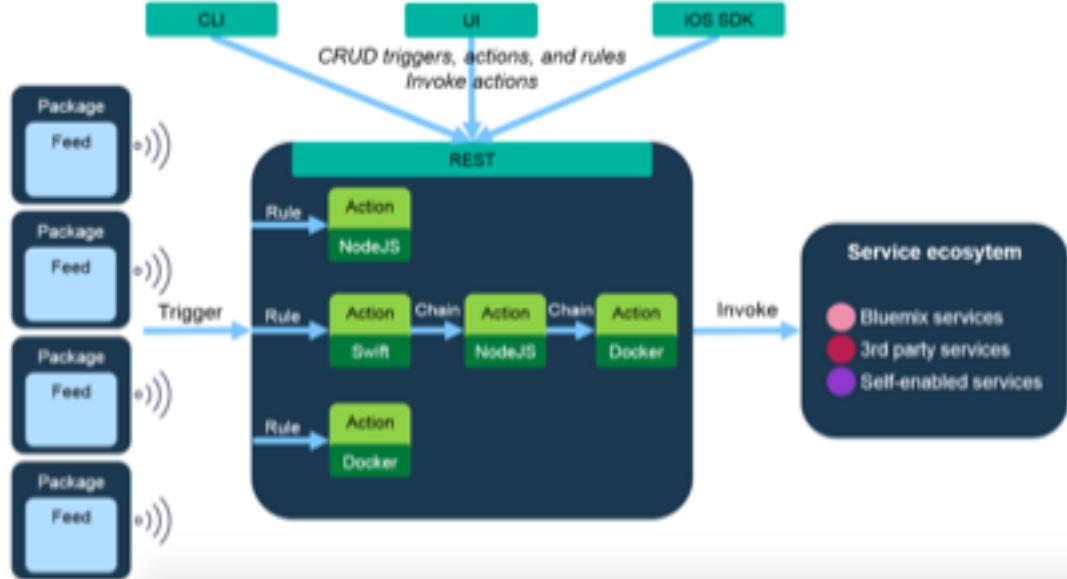
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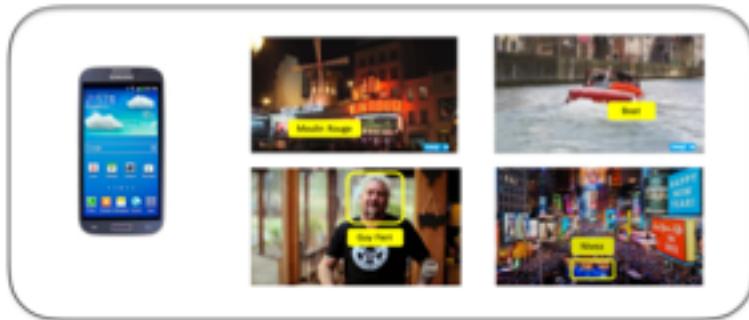
OpenWhisk Concepts (Serverless Model)



OpenWhisk



Dark Vision : a good example



1. User uploads video from mobile device
2. Cloud (Watson services) analyze frames to detect products, objects, faces, text
3. Use results to deliver improved navigation, recommendations, search



Built with IBM Bluemix, OpenWhisk, Watson

https://www.youtube.com/watch?v=1telMpkl_Sg



Bluemix Services

Services are cloud middleware solutions available for any applications running with any compute option



Create apps quickly with prebuilt 130+ services

Compute	Watson	DevOps	Beta & Analytics	Network	Memcached
<ul style="list-style-type: none"> Bare Metal Server Cloud Foundry Applications IBM Bluemix Container Service IBM Cloud Schematics IBM OpenWhisk Public Virtual Server (Hourly) Public Virtual Server (Monthly) 	<ul style="list-style-type: none"> Conversation Discovery Document Conversion Language Translator Natural Language Classifier Natural Language Understanding Personality Insights Retrieve and Rank Speech to Text Text to Speech Tone Analyzer Visual Recognition 	<ul style="list-style-type: none"> Dedicated GitHub Enterprise Active Deploy Auto-Scaling Automated Accessibility Tester Availability Monitoring BlastMeter Cloud Event Management Continuous Delivery Continuous Release DevOps Insights Digital Content Checker Globalization Pipeline Hipchat IBM Alert Notification IBM Runbook Automation Integration Testing Kool Load Impact New Relic Product Insights - Log Management 	<ul style="list-style-type: none"> Working with data Accem-API Apache-Spark BigInsights for Apache Hadoop BigInsights for Apache Hadoop (Subscription) Cassandra Managed MySQL, Database Cloudant NoSQL DB Compose Enterprise Compose for Elasticsearch Compose for redshift Compose for MongoDB Compose for MySQL Compose for PostgreSQL Compose for RedisHQ Compose for Redis Compose for RemnuxDB Compose for SolrDB Cupena Insights dashDB for Analytics Data Connect Data Science Experience Decision Optimization ElephantSQL Geospatial Analytics IBM DB2 on Cloud IBM Graph IBM Master Data Management on Cloud IBM Watson Machine Learning Information Server on Cloud IBM Infinispan IBM Insights for Twitter IBM LIFT Namaste Catalog Redis Cloud RediSearch PaaS Edge Loan Analytics Streaming Analytics TinyQuery 	<ul style="list-style-type: none"> Cloud NetScaler VPN Dedicated Load Balancer Direct Link Cloud Exchange Direct Link Colocation Direct Link Network Service Provider Domain Name Service iPsec VPN Local Load Balancing Subnets/Ps VLAN Private Network (VPN) VLAN Spanning Vyatta Gateway Appliance 	<ul style="list-style-type: none"> CloudFront CloudNet for Developers Intelligent Traffic API Mapbox Maps Memcached Cloud Message Hub Mosaic Nemo Piwik Paid PubHub Quo Security SendGrid Session Cache Simple�푸드 Statice Unison Video Transcoder Workload Scheduler XpertRule Decision Automation
<ul style="list-style-type: none"> Analytics for Apache Spark Starter Conversational Agent Starter IBM XPages Web Starter IoT for Electronics Starter Java Cloudant Web Starter Java Workload Scheduler Web Starter LoopBack Starter Node-RED Starter Node.js Cloudant DB Web Starter Ruby Sinatra Starter StrongLoop Arc Starter Watson IoT Platform Starter 	<ul style="list-style-type: none"> Internet of Things 	<ul style="list-style-type: none"> AT&T Flow Designer AT&T IoT Data Plans AT&T M2X Car Diagnostic API Context Mapping Driver Behavior Internet of Things Platform Internet of Things Workbench IoT for Automotive IoT for Electronics IoT for Insurance IQP IoT Code-Free App Development XpertRule Decision Automation for node-RED 	<ul style="list-style-type: none"> Activity Tracker Adaptive Security Manager (ADM) App ID Application Security on Cloud FortiGate Security Appliance Hardware Firewall Hardware Firewall (Dedicated) IBM Identity Mixer Key Protect Passport Single Sign-On SSL Certificates 	<ul style="list-style-type: none"> Building cloud-native projects Working with Mobile Client Access App ID Kinesis Mobile Analytics Mobile Foundation Push Notifications Twinkie Cloud Twitter 	<ul style="list-style-type: none"> Web and Mobile
<ul style="list-style-type: none"> Historical Instrument Analytics Instrument Analytics Investment Portfolio Predictive Market Scenarios Simulated Historical Instrument Analytics Simulated Instrument Analytics 	<ul style="list-style-type: none"> APIs 	<ul style="list-style-type: none"> APIs from Pitney Bowes Apprenda Cloud Platform Blockchain box Business Rules Cloud Automation Manager CloudMQP Diffusion Cloud from Push 	<ul style="list-style-type: none"> API Connect API Harmony App Connect Product Insights Rocket Machine Gun 	<ul style="list-style-type: none"> Integrate 	

Monitor your apps in real time

Availability Performance Monitoring Log Analysis Events

Application Availability

Availability (%) 100.0 (?)

Time: 10:00 Aug 08, 10:05 Aug 08, 10:10 Aug 08, 10:15 Aug 08, 10:20 Aug 08, 10:25 Aug 08

Legend: Available (Green), Unavailable (Red)

Application Response Time

Average response time (ms): 137.8 | Average deviation (ms): 0.0 (?)

Time: 10:00 Aug 08, 10:05 Aug 08, 10:10 Aug 08, 10:15 Aug 08, 10:20 Aug 08, 10:25 Aug 08

Legend: Response time (ms) (Blue), 95th percentile (ms) (Orange)

Mapped application route: http://localhost:8080/metrics/test

Availability Performance Monitoring Log Analysis Events

Slowest Requests

Method	URL	Response Time (ms)	Request Count
GET	/route	1	400
GET	/test	0	400
POST	/route	0	400
GET	/	0	1

Throughput and Response Time (?)

Time: 10:00 Aug 08, 10:05 Aug 08, 10:10 Aug 08, 10:15 Aug 08, 10:20 Aug 08, 10:25 Aug 08

Legend: Request/sec (Blue), Response time (ms) (Orange)

CPU Usage

Time: 10:00 Aug 08, 10:05 Aug 08, 10:10 Aug 08, 10:15 Aug 08, 10:20 Aug 08, 10:25 Aug 08

Memory Usage

Time: 10:00 Aug 08, 10:05 Aug 08, 10:10 Aug 08, 10:15 Aug 08, 10:20 Aug 08, 10:25 Aug 08

Security without the headache

- Drawing on **deep understanding of today's security threats**, IBM Bluemix and SoftLayer provide a complete solution that will **protect critical web apps, data, and processes** throughout their lifecycle.
- **Adheres to rigorous IBM security standards:** Defense in depth, Intrusion protection/penetration testing, Data isolation in virtualized components, Automated patch management

Activity Tracker
Capture, store, and visualize your Bluemix cloud activities
IBM Beta

App ID
Add authentication to your apps, and host user profile information so you can build
IBM

Application Security on Cloud
A robust, practical security vulnerability assessment for your web applications.
IBM

Key Protect
An app-independent service for protecting, managing, and generating keys.
IBM

Single Sign On
Implement user authentication for your web and mobile apps quickly, using simple
IBM

Adaptive Security Manager (ASM)
Frictionless Adaptive Multi-Factor Authentication
Third Party

Actively Pursuing Security Certifications for Platform and Services:



IBM Watson Services

The screenshot shows the IBM Bluemix Catalog interface. At the top, there's a navigation bar with 'Philippe THOMAS's Account | US South | https://bluemix.net | 265' and links for 'Catalog', 'Support', and 'Account'. On the left, a sidebar lists 'All Categories' and sections for 'Infrastructure', 'Apps', and 'Services'. Under 'Services', 'Watson' is selected, and its sub-categories include 'Data & Analytics', 'Internet of Things', 'APIs', 'Network', 'Storage', 'Security', 'DevOps', 'Application Services', and 'Integrate'. The main content area displays a grid of Watson services:

Service	Description	Status
AlchemyAPI	An AlchemyAPI service that analyzes your unstructured text and image content.	IBM
Conversation	Add a natural language interface to your application to automate interactions with your end users.	IBM
Document Conversion	Converts a HTML, PDF, or Microsoft Word™ document into a normalized HTML, JSON, or XML document.	IBM
Language Translation	Translates text from one language to another for specific domains.	IBM Deprecated
Language Translator	Translate text from one language to another for specific domains.	IBM
Natural Language Classifier	Natural Language Classifier performs natural language classification on question texts.	IBM
Personality Insights	The Watson Personality Insights derives insights from transactional and social media data to identify personality traits.	IBM
Retrieve and Rank	Add machine learning enhanced search capabilities to your application.	IBM
Speech to Text	Low-latency, streaming transcription.	IBM
Text to Speech	Synthesizes natural-sounding speech from text.	IBM
Tone Analyzer	Tone Analyzer uses linguistic analysis to detect three types of tones from communications: emotion, social, and analytical.	IBM
Tradeoff Analytics	Helps make better choices under multiple conflicting goals. Combines smart visualization and machine learning.	IBM
Visual Recognition	Find meaning in visual content. Analyze images for scenes, objects, faces, and other content.	IBM
Cognitive Commerce™	Cognitive Commerce is a service provided by Cognitive Scale.	Third Party
Cognitive Graph	Cognitive Graph is a service provided by Cognitive Scale.	Third Party

<https://www.ibm.com/watson/developercloud>

Watson Visual Recognition

IBM Watson Developer Cloud Services Docs Watson Home Community

Visual Recognition

Visual Recognition uses deep learning algorithms to analyze images that can give you insights into your visual content. You can explore image libraries, understand an individual image, and create custom classifiers for specific results that are tailored to your needs.

Try Train

Try the service

Choose a sample image or upload your own image (max 2MB) to try out Visual Recognition.



[Choose a sample image](#) [Upload your own image](#)

Watson sees...



JSON [?]

Class	Score
animal	1.00
dog	1.00
pet	1.00
yellow	0.99
green	0.99
grass	0.99



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 Eclipse Orion Web IDE A browser-based IDE for web and cloud development. IBM	 Git Repos and Issue Tracking IBM hosted repos and issue tracking based on GitHub Community Edition. IBM	 GitHub Store and manage code in a social way. Third Party
 Jenkins Build, deploy and automate any project. Third Party	 JIRA Manage projects and track issues. Third Party	 Nexus Store build artifacts in your Nexus repository. Third Party
 PagerDuty When major issues arise, send alerts and get alerts. Third Party	 Rational Team Concert Manage your team and resources. IBM Experimental	 Sauce Labs Automate continuous integration testing for your project. Third Party
 Slack Coordinate and collaborate on your project. Third Party	 SonarQube Inspect the quality of your code. Third Party	 UrbanCode Deploy Gain insights into deployments that are done by UrbanCode Deploy. IBM Beta
 Other Tool Create a custom integration with any tool.		

Pipelines

IBM Bluemix DevOps

sample-devops-tutorial-3a-1479479639996 | Delivery Pipeline

Build > Run Unit Tests > Deploy to Test > Run Tests - Performance & Scale > Deploy to Prod > Add Stage

The screenshot shows a delivery pipeline named "sample-devops-tutorial-3a-1479479639996". The pipeline consists of five stages:

- Build:** Last commit by Philipp Muell (Update 504236), NPM 1.
- Run Unit Tests:** Last build: Mage Build / Job: NPM 1, NPM 1, Linting: Passed, Unit Tests: Passed.
- Deploy to Test:** Last build: Mage Build / Job: Charging 1, Charging 1.
- Run Tests - Performance & Scale:** Last build: Mage Build / Job: NPM 1, NPM 1, BlueGreen Deploy: Passed, Source Lab Test: Passed.
- Deploy to Prod:** Last build: Mage Build / Job: Charging 1, Charging 1.

An "Add Stage" button is located on the right side of the pipeline.