JavaScript and IoT

with BB-8, Foosbuzz & more

Eric Yu, Performance Marketing Manager, IBM
Edward Lam, Technical Assistant, IBM

IBM

IBM **Bluemix**

The Digital Innovation Platform

IBM

Bluemix is...

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.

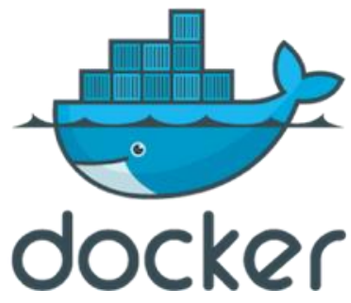
Flexible Pricing
Try compute options and services for free and, when you're ready, pay only for what you use. Pay as you go and subscription models offer choice and flexibility.

4 Compute Options

- Customer Managed
- Service Provider Managed

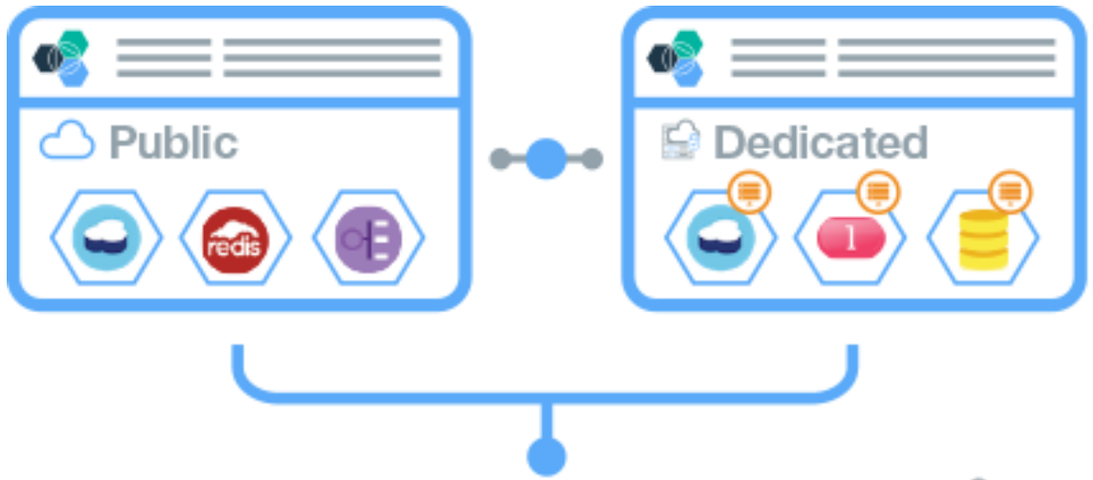
Infrastructure as a Service	Platform as a Service
Code	Code
Data	Data
Runtime	Runtime
Middleware	Middleware
OS	OS
Virtualization	Virtualization
Servers	Servers
Storage	Storage
Networking	Networking

Built on open technologies:



3 Deployment Options

1 | Public
Maximize on cloud economics and agility.



2 | Dedicated
Everything is dedicated and connected to you — agility of public cloud, yet feels like home.

Seamless Experience
Regardless of which combination you choose, you can expect a single, seamless experience.

3 | Local
Behind the firewall for the most sensitive workloads.

100+ prebuilt services

Choice

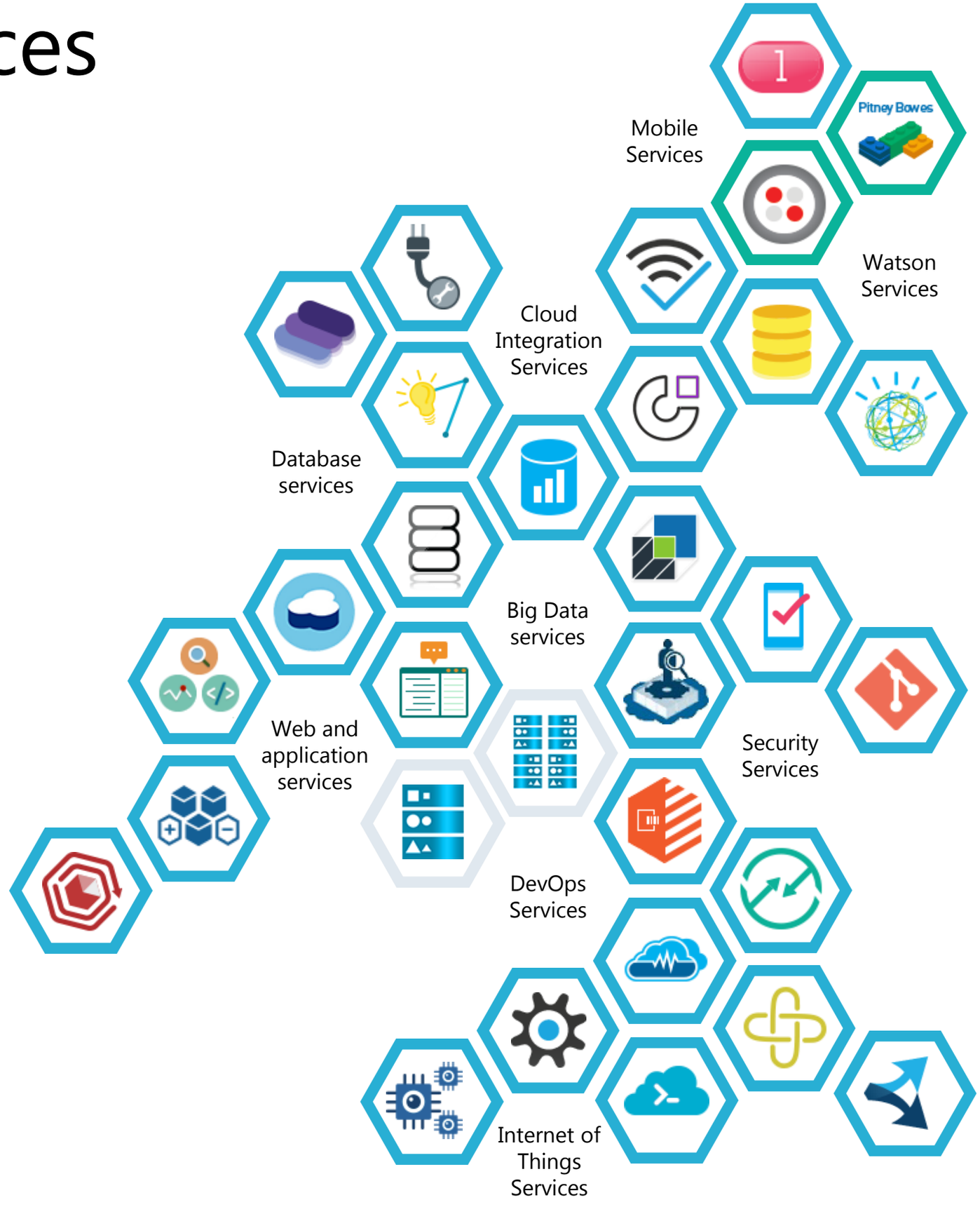
- Runtimes, services, and tooling up to you

Industry Leading IBM Capabilities

- Services leveraging the depth of IBM software
- Full range of capabilities

Completeness

- Open source platform and services
- Third party to enable key use cases



How does Bluemix work?

DevOps Tooling

urban{code}

+

Your Own Hosted Apps / Services

Catalog of Services that Extend Apps' Functionality

Web | Data | Mobile | Cognitive | Analytics | IoT | Security | Yours | +

Flexible Compute Options to Run Apps / Services

Instant Runtimes CLOUD FOUNDRY +

Containers docker +

Virtual Machines openstack +

Event-driven OpenWhisk +

Platform Deployment Options that Meet Your Workload Requirements

Bluemix Public | **Bluemix** Dedicated — Powered by IBM SoftLayer

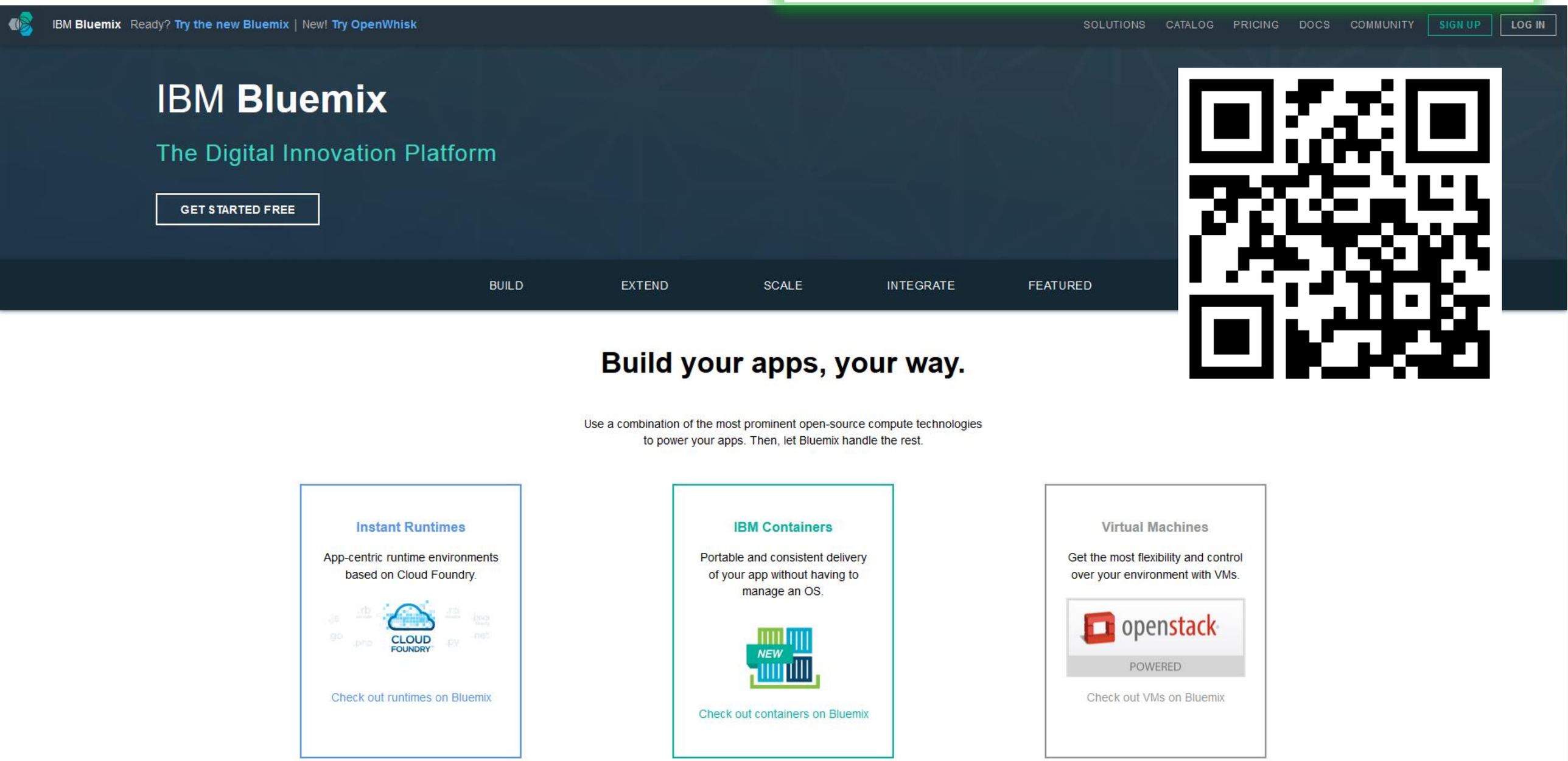
Bluemix Local* — In Your Data Center

Integration and API Mgmt

+

Let's take a look!

https://console.ng.bluemix.net/

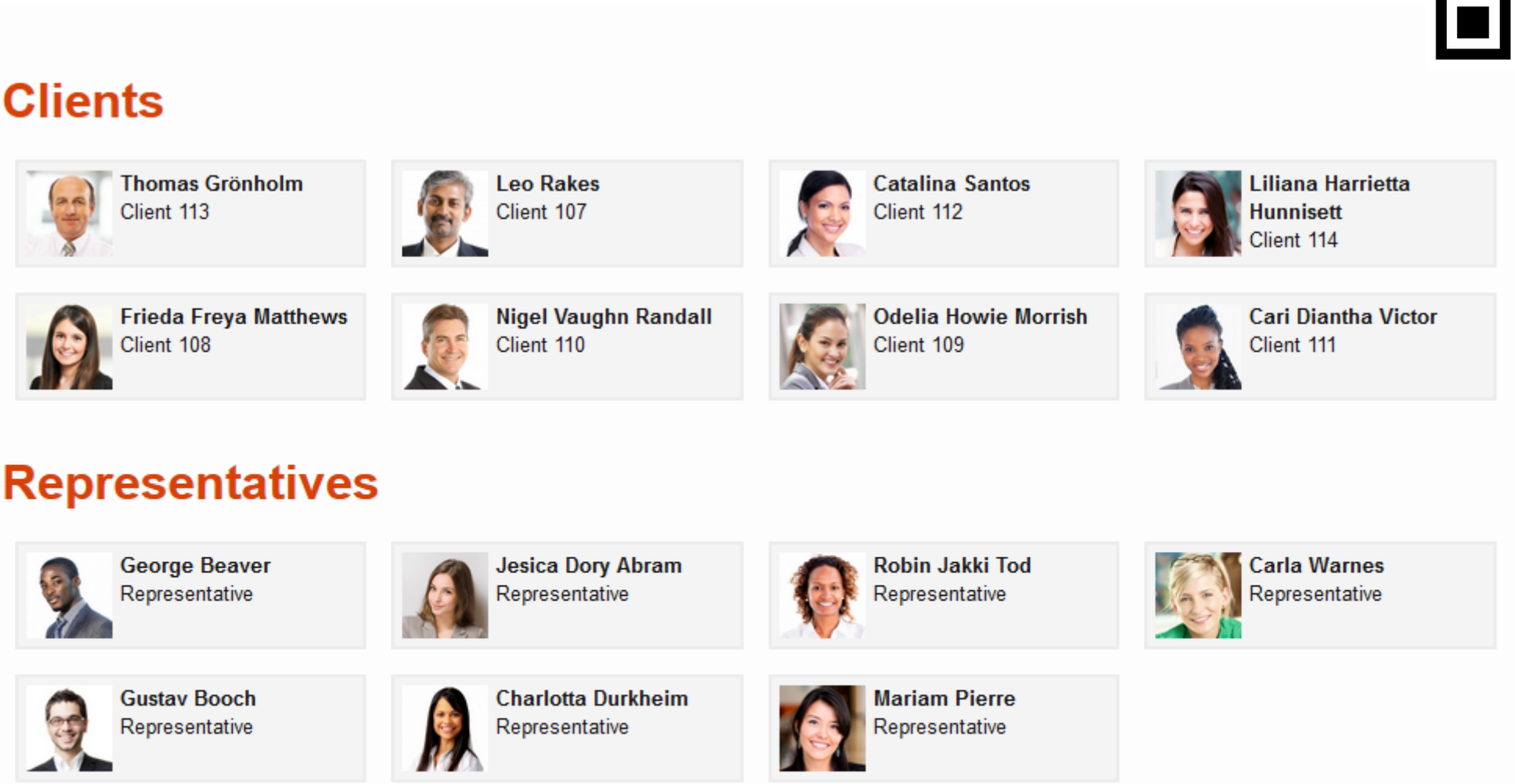


Bluemix Dev Blog: https://developer.ibm.com/bluemix/blog/

Watson Developer Cloud: https://ibm.biz/ibmdevcloud

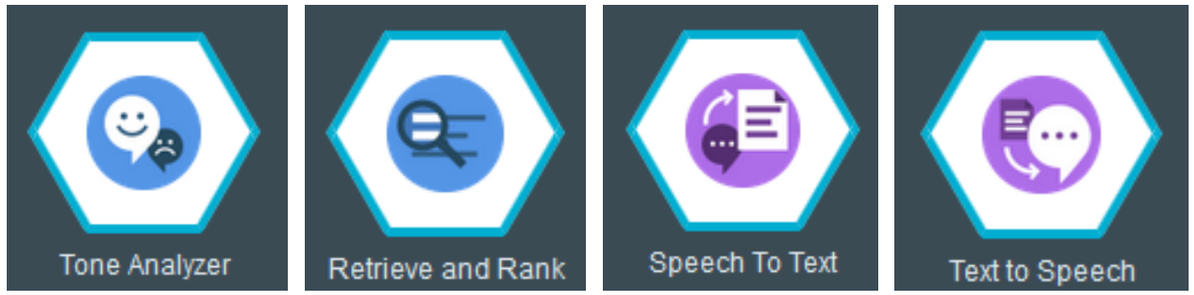
Investment Advisor

https://ibm.biz/investadvisor

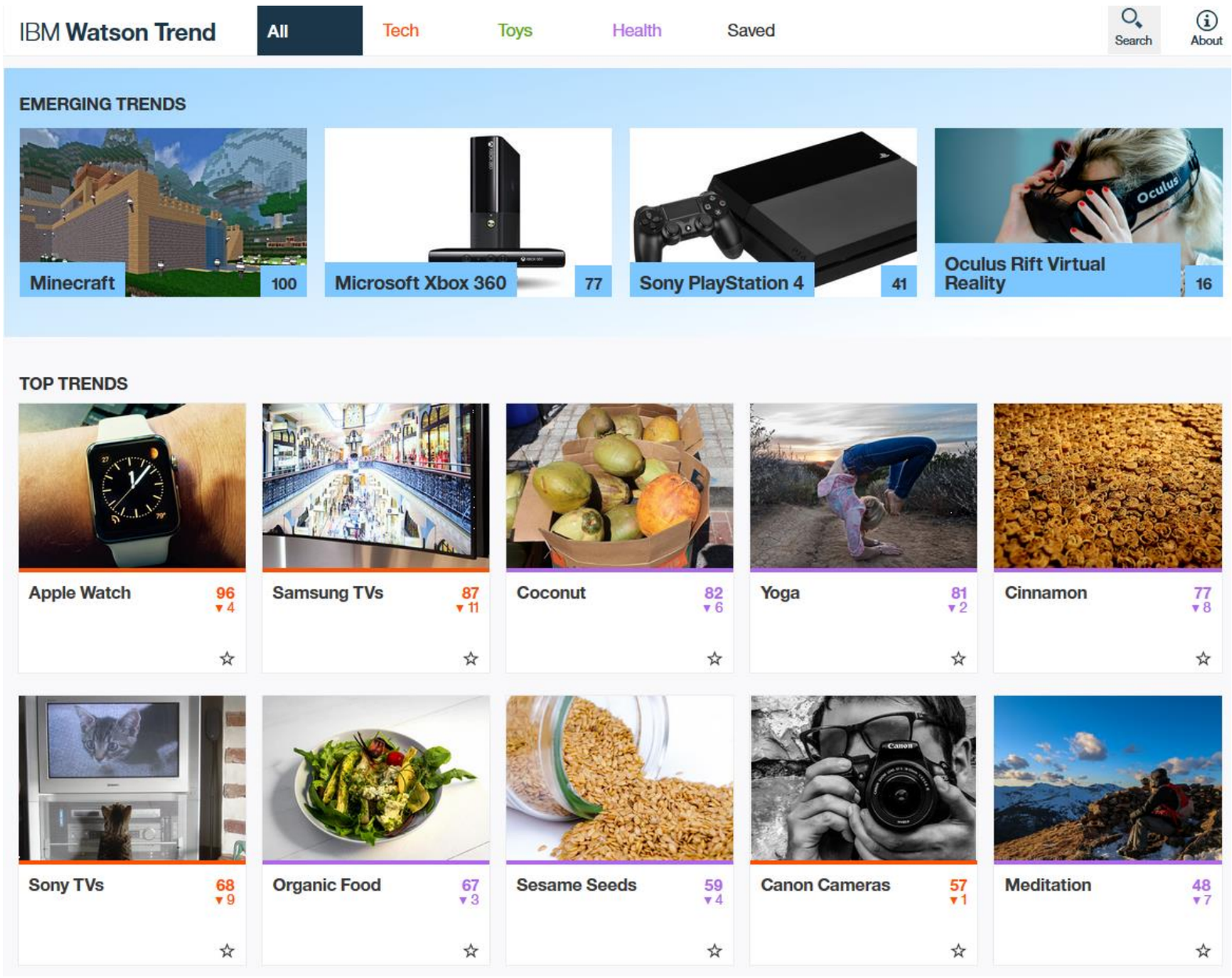


Code (GitHub): here

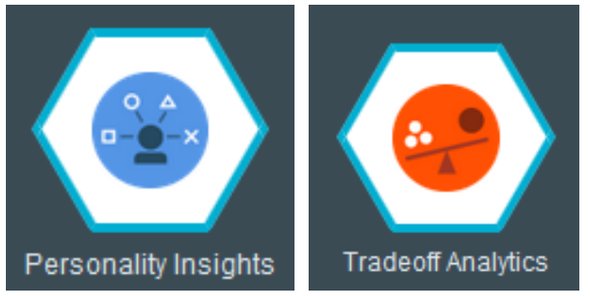
Watson Trend



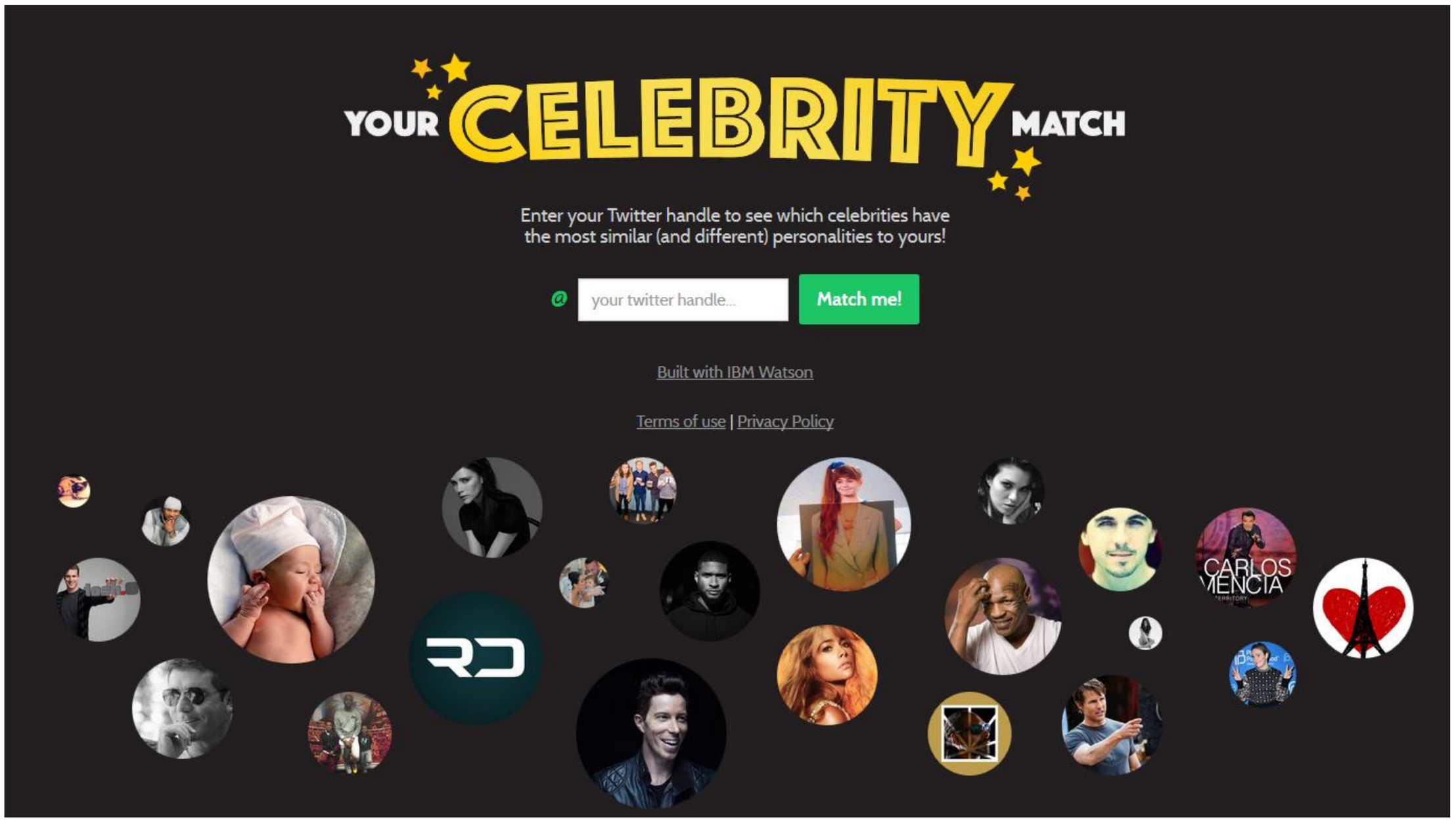
http://ibm.biz/watsontrendapi



Celebrity Match



http://ibm.biz/celebritymatch



Code (GitHub): here

Global Entrepreneur Program

Recommended for Tech Startups

IBM Global Entrepreneur Program for Cloud Startups

Widest range of Cloud services

Includes: Platform services, DevOps, virtualized, and hybrid environments

Connect with enterprise clients

Connect at events like Interconnect and Insight

Over 40 Innovation Centers worldwide

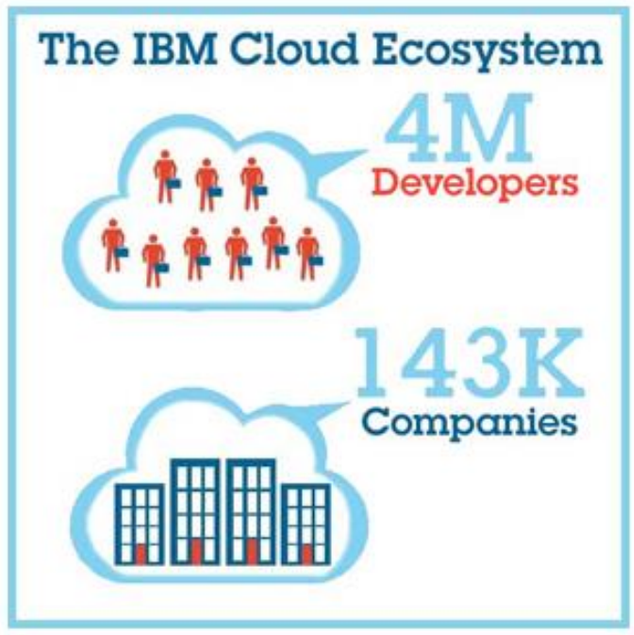
Extensive global network of local technical expertise

Cloud credits to eligible startups

Up to $120K USD: Most cloud credits in the industry

Go-to-market and mentor advice

Eligible startups get resources and support with IBM Global Entrepreneur



1
3 * up to $120K *based on meeting eligibility requirements and qualification levels*

Program Details & Benefits

- **Program Period:** 12 months
- **Up to $120K USD cloud credits toward Bluemix and SoftLayer as-a-service platforms**
  - help you bring your solution to market quickly and allow you to scale securely
- **Go-to-Market Support**
  - Attend networking events, compete in global startup competitions, and gain access to premiere offers to assist with your core business needs
- **Business Mentorship & Services**
  - Attend a local event, meet expert mentors, corporate executives and serial entrepreneurs who will help guide you along the startup journey
- **Technical Support**
  - Consult in-person or virtually with technical experts who will guide you through applying IBM Cloud technology to your ideas and help you migrate from your existing infrastructure or platform

Program website: https://developer.ibm.com/startups/

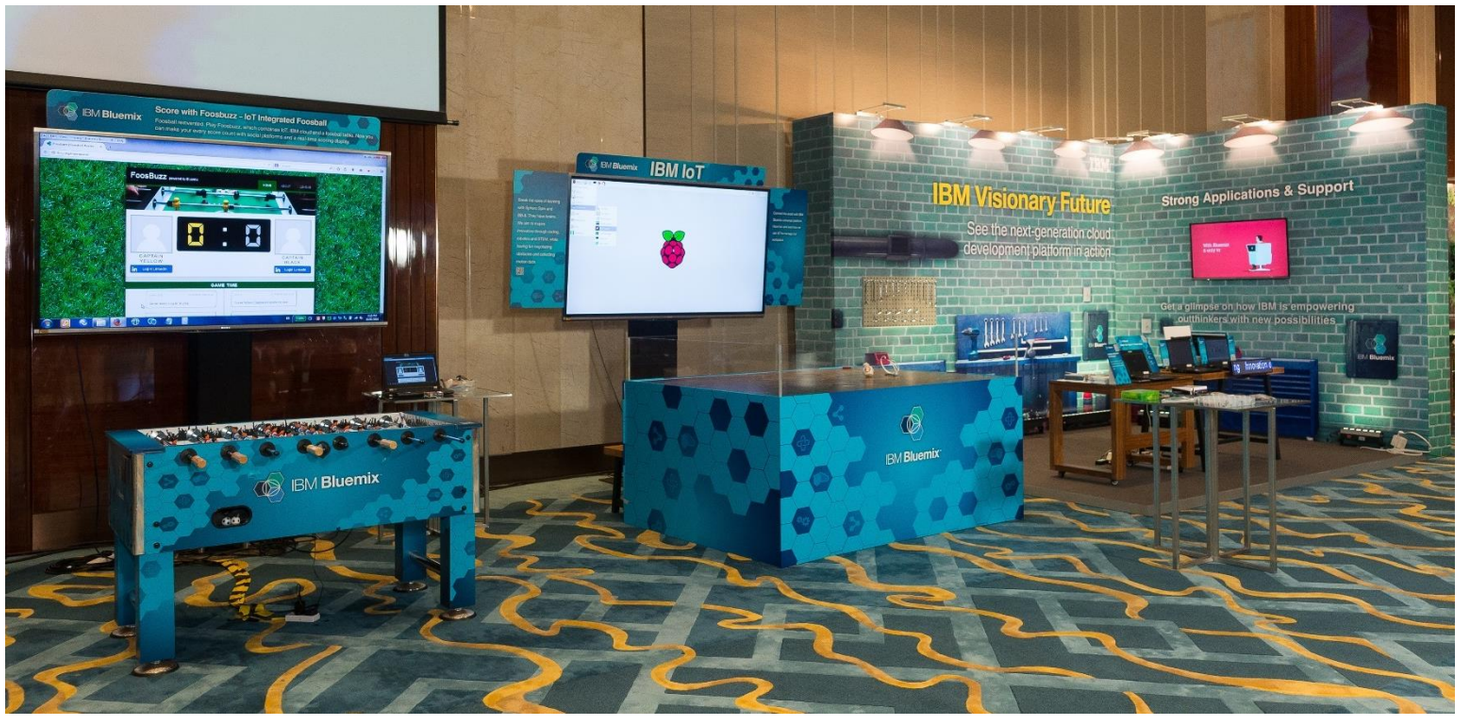
Foosbuzz

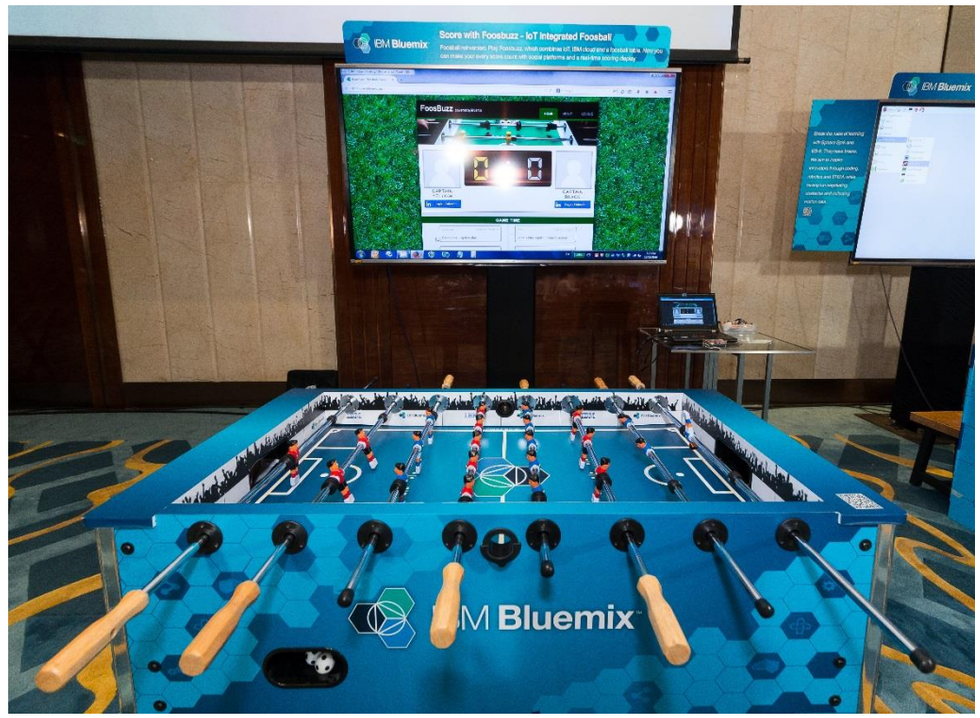
Powered by Bluemix

IBM

Background

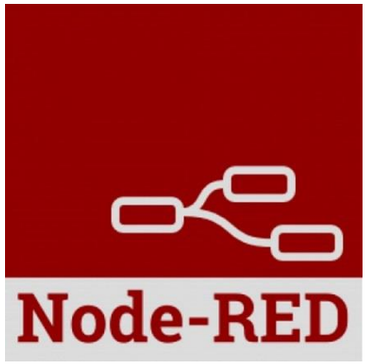
http://ibm.biz/foosbuzz

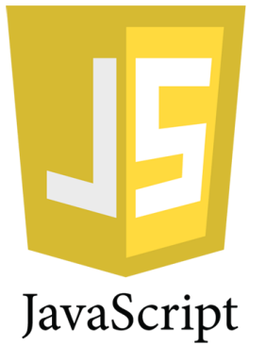


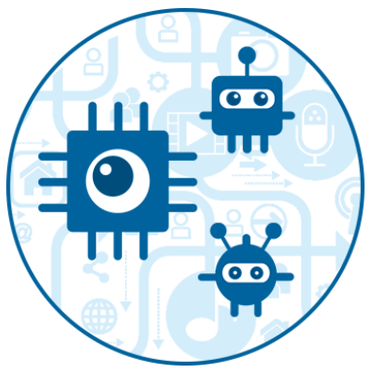


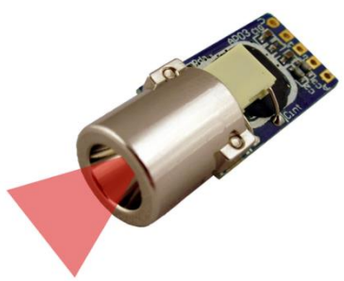
Deployed Services & Hardware

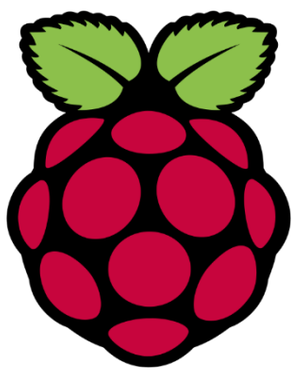
- **Bluemix**
  - NodeJS
  - Node-Red
  - IoT Foundation
- **Raspberry Pi 2**
- **Infra-red sensors**
- **Button**



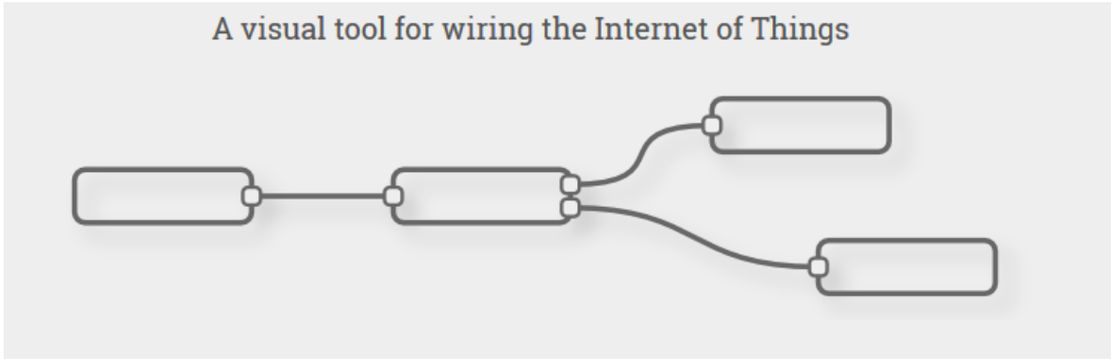








Node-Red

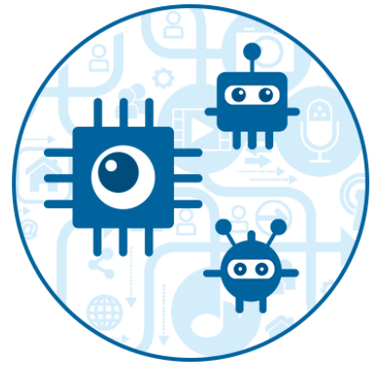


- A tool for wiring together hardware devices, APIs and online services in new and interesting ways
- Provide browser-based flow editor that makes it easy to wire together flows
- Built on Node.js
- Flows created are stored using JSON which can be easily imported and exported for sharing with others

Details: http://nodered.org/

Node-Red Starter on Bluemix:
https://console.ng.bluemix.net/catalog/starters/node-red-starter/

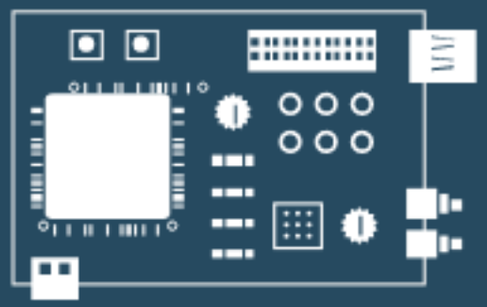
IoT Foundation



- Fully managed, cloud-hosted service that makes it simple to derive value from IoT devices
- Start with your device, be it a sensor, a gateway or something else with IoT Foundation recipes to get it connected and start sending data securely up to the cloud using the open, lightweight MQTT messaging protocol
- Set up and manage your devices using your online dashboard or IBM secure APIs, so that your apps can access live and historical data fast

Details: http://www.ibm.com/cloud-computing/bluemix/internet-of-things/

Explore IoT: http://discover-iot.eu-gb.mybluemix.net/#/play



Your device or gateway

We start with your device, be it a sensor, a gateway or something else.
To find out how to get it connected, search our recipes.

MQTT & HTTP

Your device data is sent securely up to the cloud using
the open, lightweight MQTT messaging protocol or HTTP.

IBM Watson IoT Platform

This is the hub of all things IBM IoT. This is where you can
setup and manage your connected devices so that your
apps can access their live and historical data.

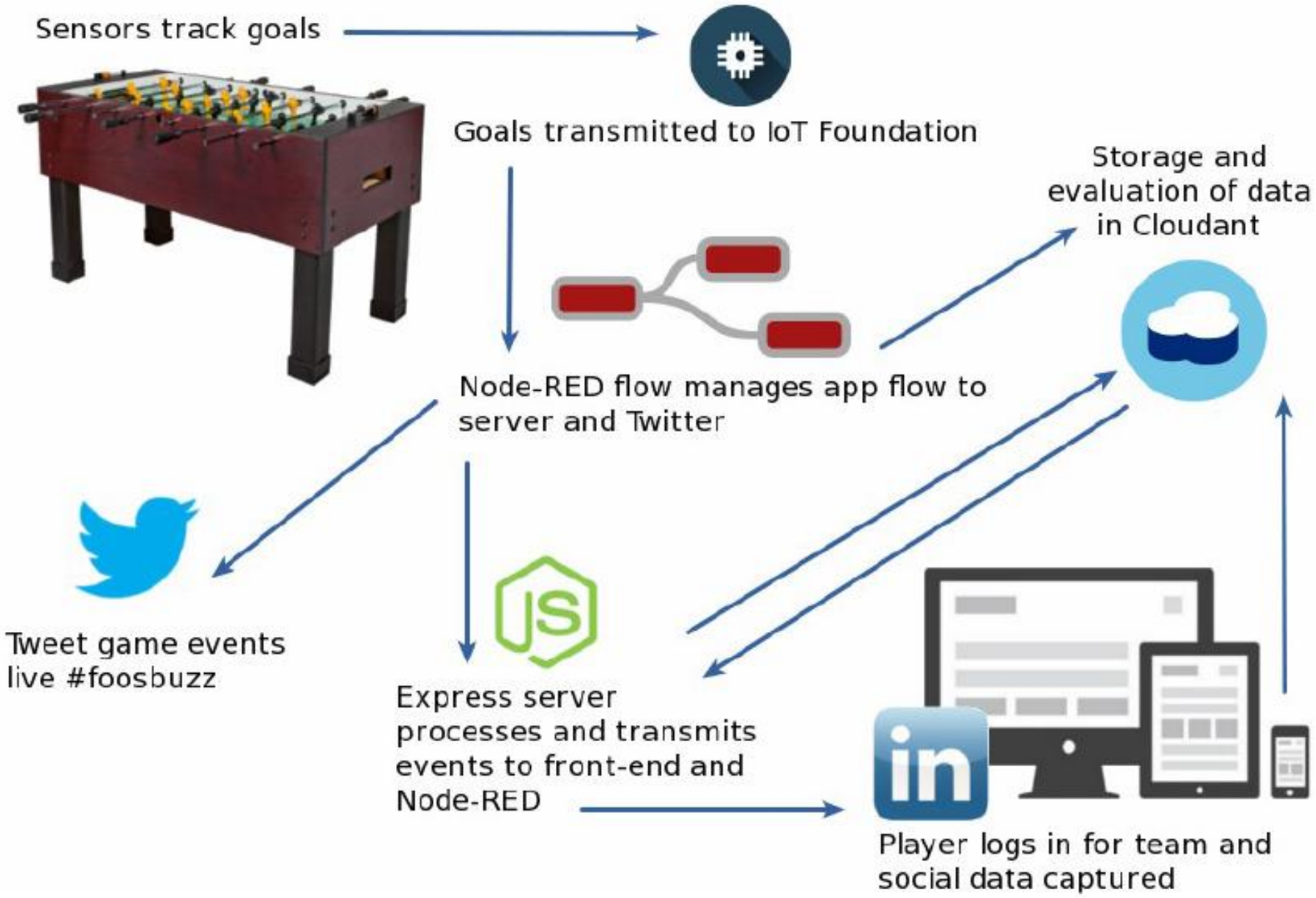
REST & Real-time APIs

Use our secure APIs to connect your apps
with the data coming from your devices.

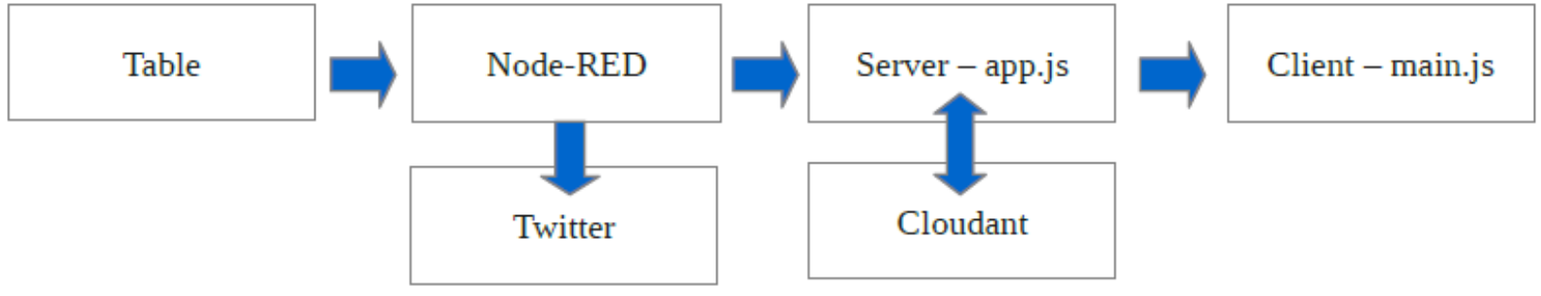
Your application and analytics

Create applications within IBM Bluemix, another cloud,
or your own servers to interpret the data you now have access to!

Architecture

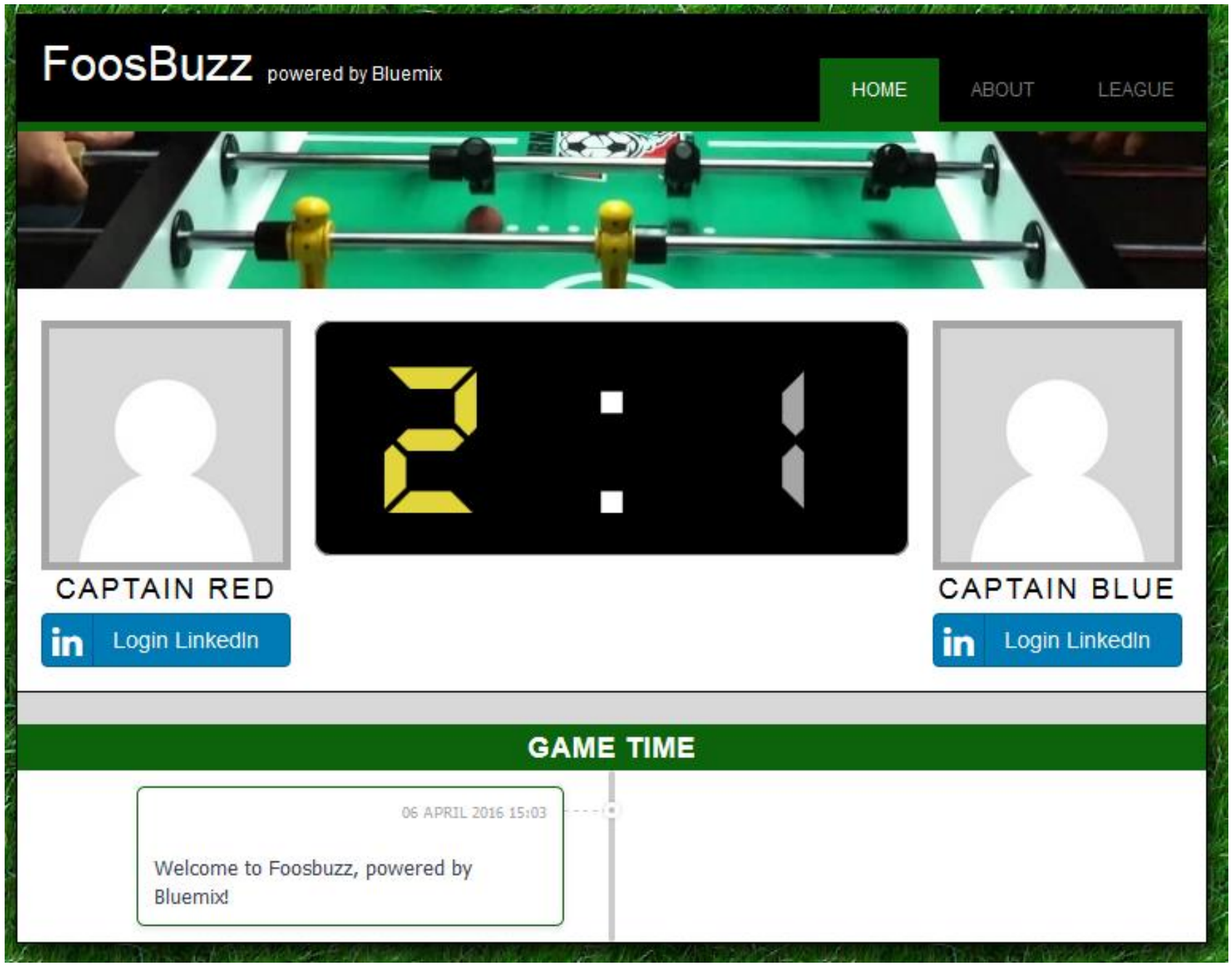


Workflow



Demo

http://fbnjs.mybluemix.net/



Control BB-8

With Emotiv Insights

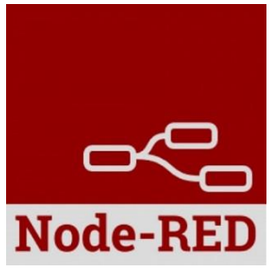
IBM

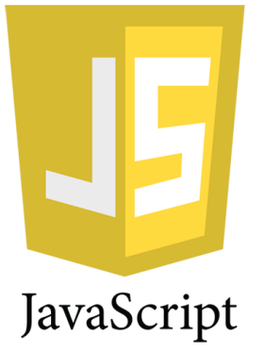
Background

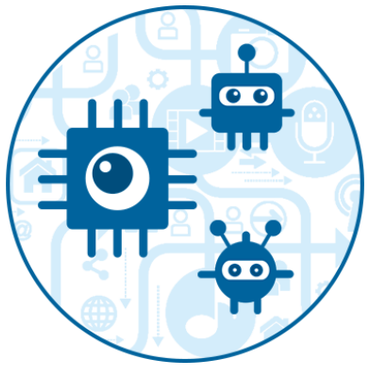
http://ibm.biz/bluemixbb8

Deployed Services & Hardware

- **Bluemix**
  - Java/Python IoT Libraries
  - Node-Red
  - IoT Foundation
- **Raspberry Pi 2**
- **BB-8 / Sphero Sprk**
- **Emotiv Insights**
  - Emotiv Full SDK
- **Windows 8+ /Ubuntu 14+ device**
- **Watson APIs**
  - Speech to Text
  - Sentiment Analysis



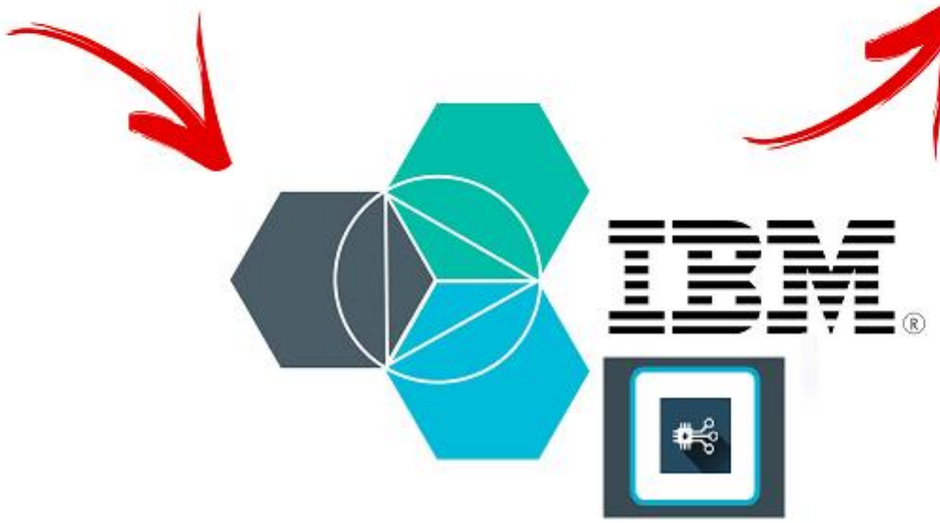




Architecture

Bluetooth® SMART

Bluetooth® SMART



Demo

Move

Use joystick to move the BB8

MOVE IT!

Color

Click the red block to choose the color you want to change, then click CHANGE IT.

CHANGE IT!

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