

open data + cloud

John Arthorne
IBM Cloud Unit
[@jarthorne](#)

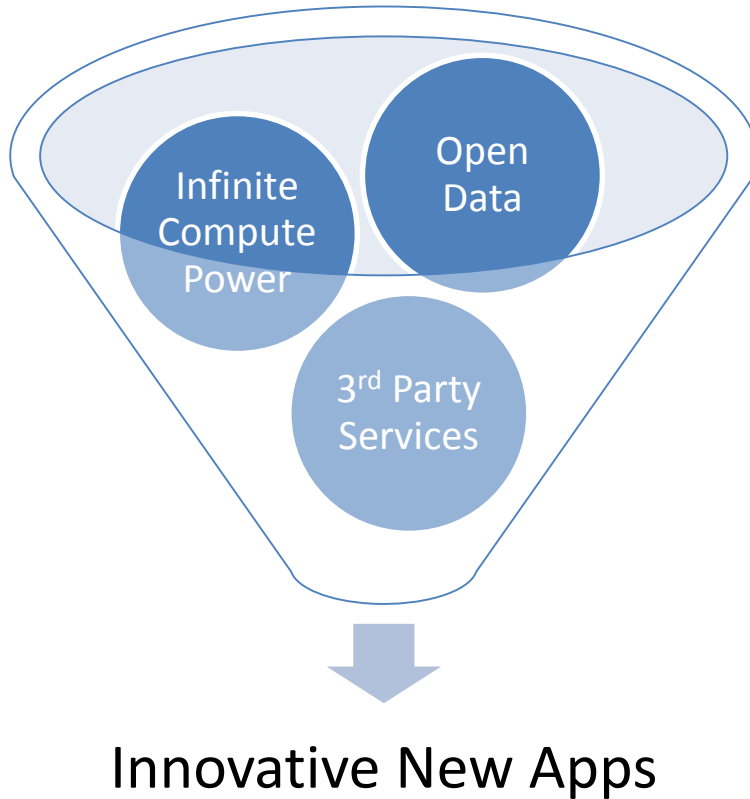


**“Two guys in a Starbucks
can have access to the
same computing power as
a Fortune 500 company.”**

Jim Deters - Founder, Galvanize



Open Data enables a new app ecosystem



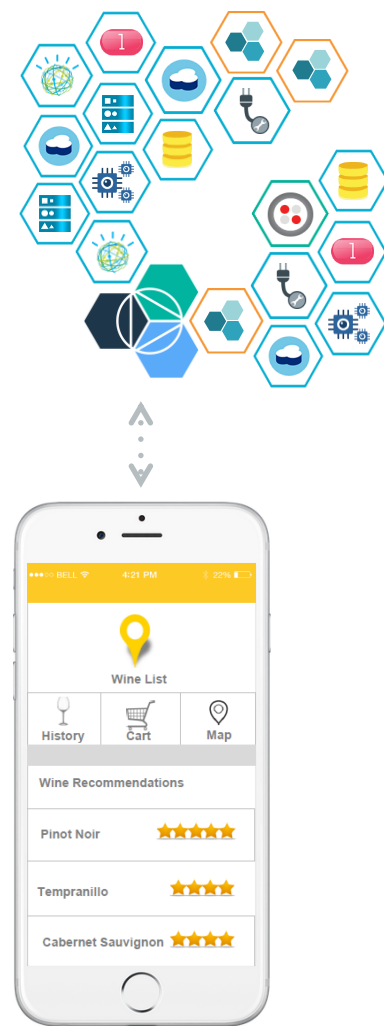
Purpose-built apps
can unlock new value
from open data sets



Consumers of technology have new expectations

Technology needs to be:

- Rapidly available
- Easy to use
- Mobile ready
- Portable across devices
- Quick to evolve
- Small and focused



Bluemix for digital innovation



Create, Deploy, Manage

Your applications in the cloud

GET STARTED FREE



Build modern apps that thrive on data

Tap into services such as mobile, Watson and Internet of Things to build apps that will exceed and define the next wave of user expectations



Easily & securely leverage your existing APIs, services and data

Move forward with real impact by leveraging the systems and processes your business runs on today



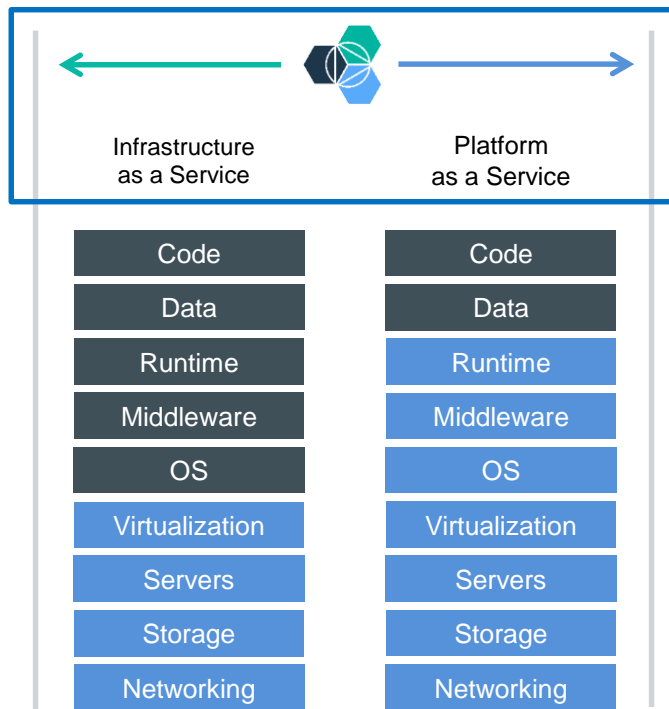
Foster a culture of continuous innovation & delivery

Use cloud services as a way to unleash the creativity within your company

Bluemix: Innovation at Speed

Capabilities in Bluemix now span **PaaS** and **IaaS** and can be delivered as a **public**, **dedicated**, or **on-premises** implementation.

- Customer Managed
- Service Provider Managed



Built on open technologies:



Broad range of IBM & 3rd Party Services

The screenshot displays the IBM Bluemix catalog interface. On the left is a dark sidebar with a navigation menu. The main area shows a grid of service tiles, each with an icon, name, and provider information. The services are organized into five main categories: Starters, Compute, Services, Integration, and Data & Analytics. A search bar is located at the top of the main area.

IBM Bluemix

DASHBOARD SOLUTIONS CATALOG PRICING DOCS COMMUNITY

ORIG: -- Type here to search

Starters

- Boilerplates

Compute

- Runtimes
- Containers

Services

- Watson
- Mobile
- DevOps
- Web and Application
- Integration
- Data & Analytics
- Security
- Business Analytics
- Internet of Things

Provider

- Beta
- My Org

Web and Application

Deliver new web and mobile apps

- Application Server on Cloud IBM BETA
- Business Rules IBM
- Data Cache IBM
- Message Hub IBM BETA
- MQ Light IBM
- Session Cache IBM

Integration

Extend existing investments and infrastructure

- Workflow IBM
- Workload Scheduler IBM
- CloudAMQP Third Party
- bxbrx Community
- IBM SoftLayer Queue Service Community
- Uptime Community

Data & Analytics

Essential data services; limitless possibilities

HELP ME PICK

- API Management IBM
- Cloud Integration IBM
- Secure Gateway IBM
- Apache Spark IBM BETA
- Cloudant NoSQL DB IBM
- dashDB IBM
- DataWorks IBM
- DB2 on Cloud IBM
- Elasticsearch by Compose IBM
- Geospatial Analytics IBM
- IBM Insights for Twitter IBM
- MongoDB by Compose IBM
- Object Storage IBM BETA
- Object Storage (v2) IBM BETA
- PostgreSQL by Compose IBM
- Predictive Modeling IBM BETA
- Redis by Compose IBM
- SQL Database IBM
- Streaming Analytics IBM BETA
- Time Series Database IBM
- ClearDB MySQL Database Third Party



Commerce



Open Data



Analytics



Watson



Security

Bluemix for open data

Aqua Hacking – Cloud and Open Data in Action

AQUAHACKING 2015 - *Ottawa River Summit*, brought together young computer enthusiasts – developers, and other digital professionals, to focus their attention on a series of concerns defined by the Ottawa River community.

Combined the power of open data with cloud computing to come up with innovative solutions to water problems.



50 developers on 12 teams built applications running on Bluemix cloud platform and using open data sets provided by Namara.io

Aqua Hacking – Aqua Radar

Lake Timiskaming at Ville-Marie
level: 5.13m at 09:40, Oct 19

Lake Timiskaming at Temiscaming
level: 5.02m at 09:35, Oct 19

Ottawa River below Temiscaming
level: 177.14m at 09:25, Oct 19

Ottawa River at Mattawa
level: 52.52m at 09:20, Oct 19

Ottawa River at Britannia
level: 57.76m at 12:00, Oct 19

Ottawa River at Hull
level: 41.26m at 09:00, Oct 19

Ottawa River at Terrasse-Vaudreuil
level: 21.39m at 12:30, Oct 19

Ottawa River water levels

6
5

Legend ⓘ

● 02je025

Max level

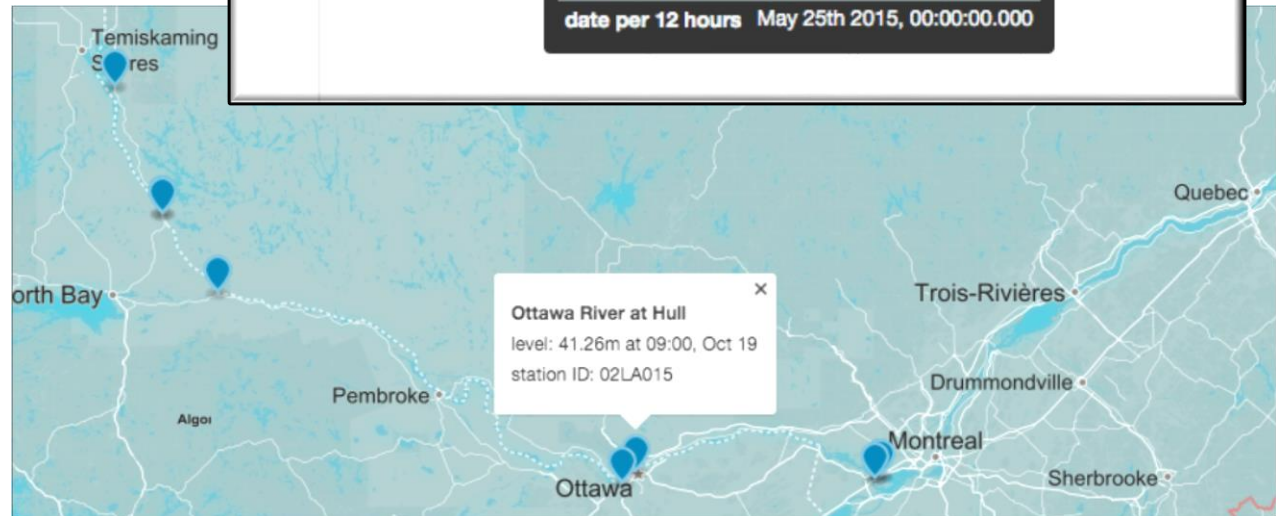
5.45

Top 12 stationID

02je025

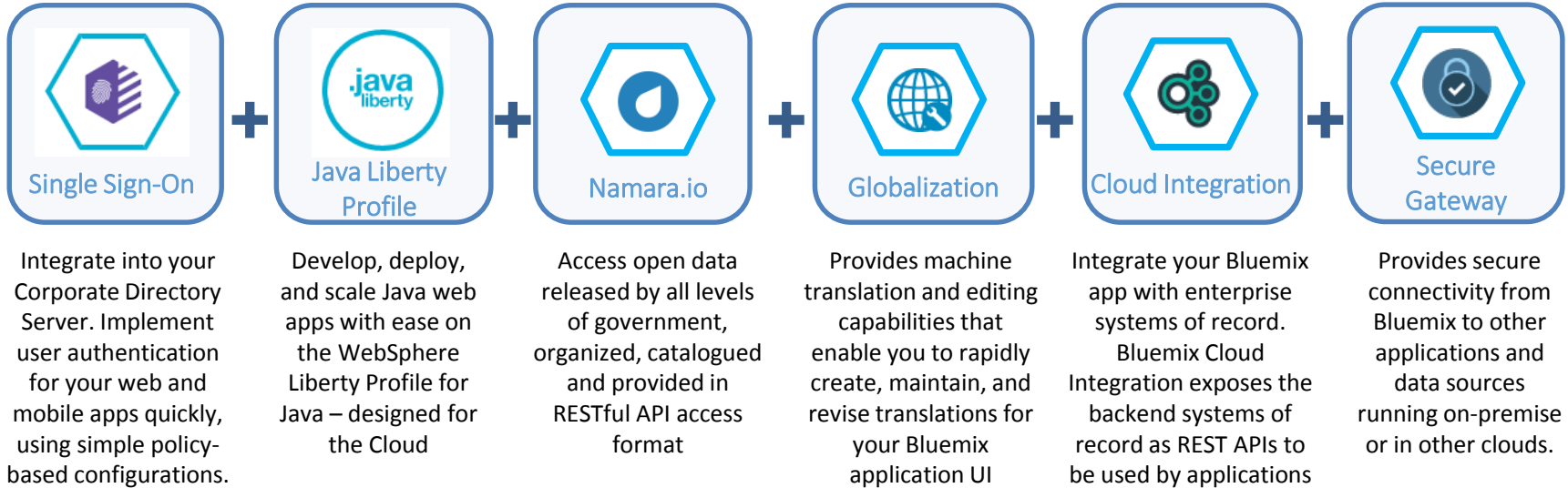
date per 12 hours

May 25th 2015, 00:00:00.000



Multi-lingual Portal for Government Data

Web Apps with Gov't Standards



Customer Service with Watson

Cognitive App for Natural Language Processing



Speech to Text

Capture the customers question by converting the human voice into the written word



Question and Answer

Interprets and answers user questions directly based on primary data sources (brochures, web pages, manuals, records, etc.) that have been selected and gathered into a body of data or 'corpus'.

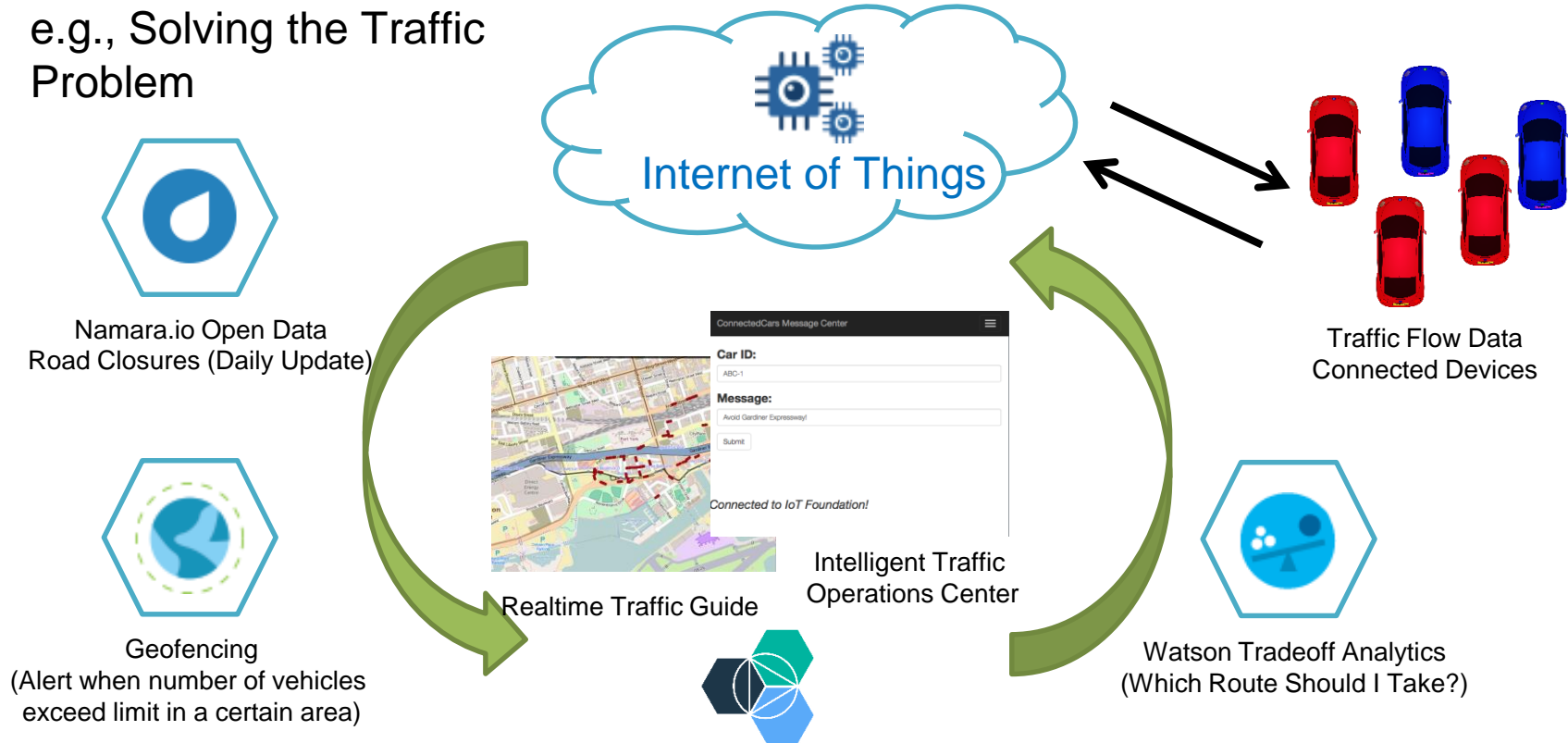


Text to Speech

Understands text and natural language to generate synthesized audio output complete with appropriate cadence and intonation. Supports six languages so far.

Implement Creative Solutions to Complicated Problems

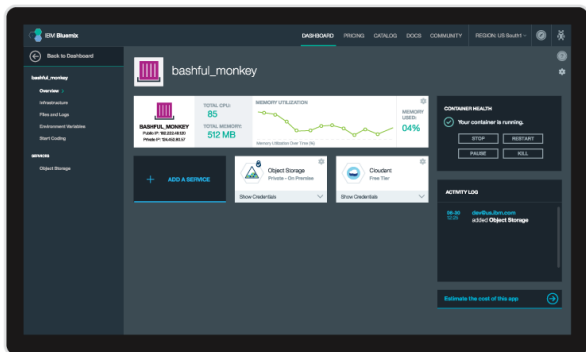
e.g., Solving the Traffic Problem



Bluemix in detail

The Bluemix Platform

Global // Hybrid // Open



Build modern apps
that thrive on data

Easily & Securely
leverage your
existing API's & Data

Optimize and
transform existing
apps

Foster a culture of
continuous
innovation & delivery

Core Platform

Global // Hybrid // Open



App Centric Compute

PaaS // Container // VM's



API's

IBM // 3rd Party // Yours



Data Driven App's

Watson // IoT // Big Data



Powered by Open

IaaS // PaaS // SaaS



Built for enterprise

Development // Integration // DevOps



Compute flexibility

Devs get to **choose** the level of **infrastructure abstraction** and **fine-tuned control** that suits their apps and services.

Instant Runtimes



The highest level of infrastructure abstraction. Focus on the app.

Containers



Powerful, but less resource intensive than VMs. Key to supporting hybrid portability.

Virtual Machines



Control all the way down to the operating system.

What's different about Bluemix?



- Extends Cloud Foundry with DevOps tooling, integration capabilities, and seamless app management
- Support for 7 key languages and the option to use a community buildpack.



- Docker as-a-service means no VMs to manage
- A repository of enterprise-grade images which are trusted and secure
- Enhanced performance and scalability
- Integrated monitoring, logging, networking, and storage



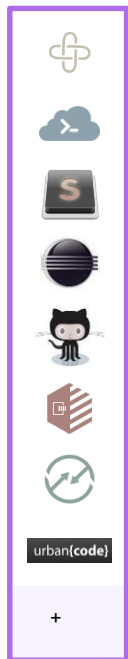
- Deploy and manage VMs consistently across public, dedicated, and private instances with a single dashboard.
- Connect to your own OpenStack infrastructure

How does Bluemix work?

Bluemix is built on 3 key open compute technologies: **Cloud Foundry**, **Docker**, and **OpenStack**.

It extends each of these with a growing number of **services**, robust **DevOps tooling**, **integration capabilities**, and a seamless **developer experience**.

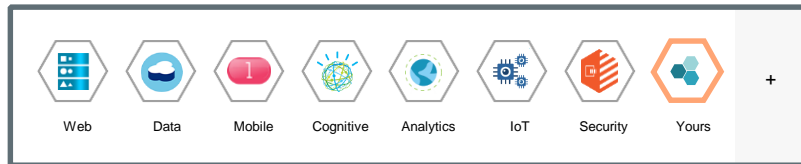
DevOps Tooling



Your Own Hosted Apps / Services



Catalog of Services that Extend Apps' Functionality



Flexible Compute Options to Run Apps / Services



Platform Deployment Options to meet Workload Requirements



Powered by IBM SoftLayer

In Your Data Center

Integration & API Mgmt



Built on the Highest Performing Cloud Infrastructure

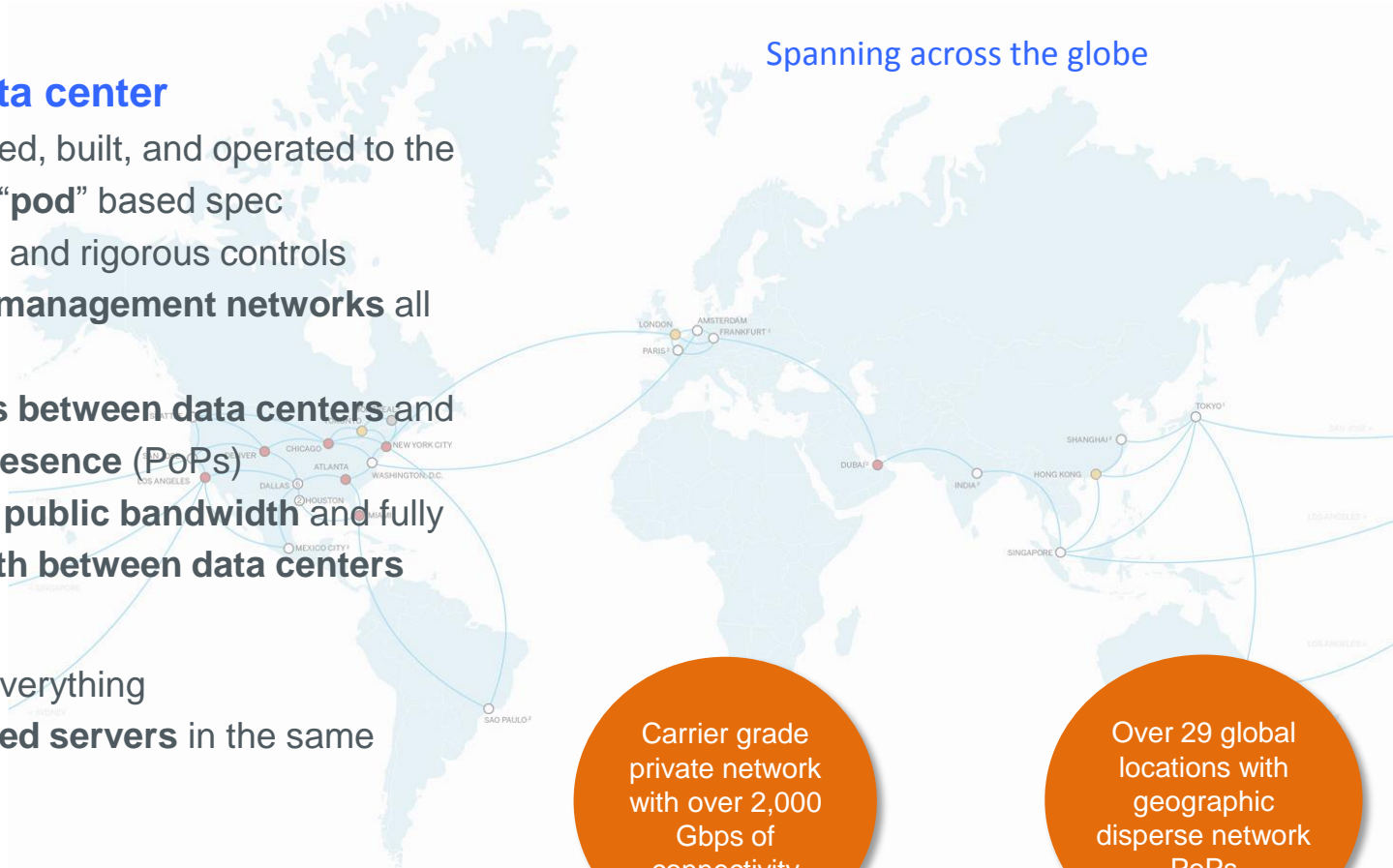
Spanning across the globe

A different kind of data center

- Every location designed, built, and operated to the **same standardized, “pod” based spec**
- **24/7 on-site security** and rigorous controls
- **Public, private, and management networks** all separate
- More than **2,000Gbps between data centers and network points of presence (PoPs)**
- **Unmetered inbound public bandwidth** and fully **unmetered bandwidth between data centers**

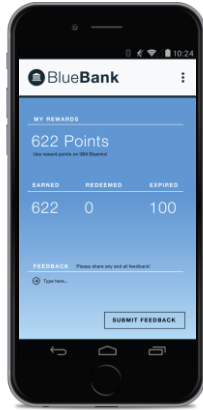
Entirely automated

- **SoftLayer API** controls everything
- **Bare metal** and **virtualized servers** in the same platform

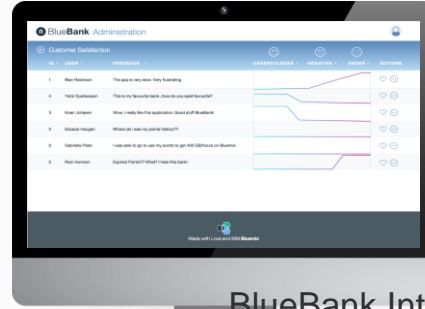


Hybrid Customer Example

BlueBank Customer Loyalty App



Syndicated



BlueBank Internal
Application



More openness and choice than ever before

Bluemix avoids vendor lock in. You choose how you build, deploy, and manage your apps. Bluemix make in infrastructure available.

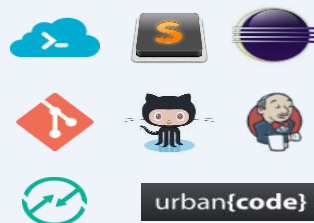
Compute

Choose the level of **infrastructure abstraction** based on your app's architectural needs.



Dev Tooling

From editors to source code management to continuous delivery, you can **use Bluemix' powerful tooling** or easily **bring your own**.



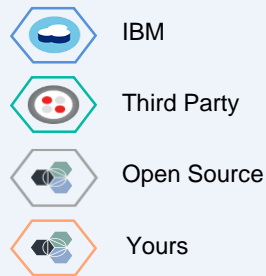
Location

Deploy apps to Bluemix **Public** (in a growing number of geos), your own **dedicated cloud** Bluemix, or one that runs **within your data center (Local*)**.



Services

Pick from a catalog of **IBM, third party, open source, or your own** services to extend your apps.



What are customers doing with Bluemix

Startups

- Instantaneous productivity
- Start small, grow infinitely
- Sophisticated, consumable services
- Marketplace



Enterprises

- Enterprise Fit
- Differentiating Content
- Cultural Transformation
- Path to a new way to work





THANK YOU

QUESTIONS?