

Infrastructure



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**EFFIZIENTE SOFTWARE-ENTWICKLUNG FÜR DIE
CLOUD MIT DEVOPS SERVICE UND PAAS**

**VON DER IDEE ZUM PRODUKTIVEN SYSTEM IN NUR WENIGEN
MINUTEN**

Poll

Ich kenne Cloud Foundry / Bluemix

- Gutes Verständnis
- Schon mal gehört
- Was ist das?

The app revolution

Fundamentally changing the way we interact with technology.

Apps are everywhere

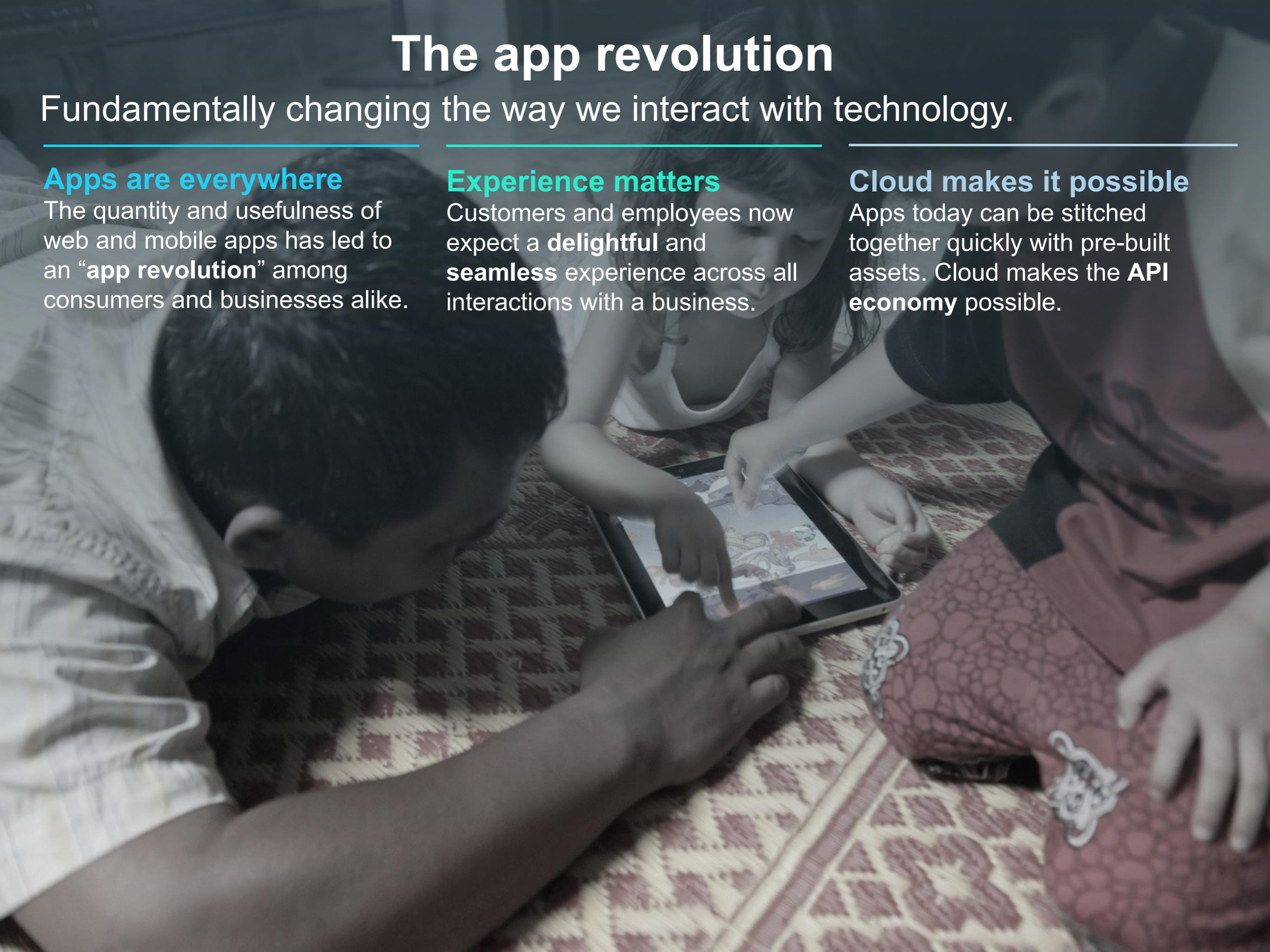
The quantity and usefulness of web and mobile apps has led to an “**app revolution**” among consumers and businesses alike.

Experience matters

Customers and employees now expect a **delightful** and **seamless** experience across all interactions with a business.

Cloud makes it possible

Apps today can be stitched together quickly with pre-built assets. Cloud makes the **API economy** possible.



App development is about speed and choice

Developers' expectations have evolved.



Timing is critical...

Today's apps must keep up with the speed of the app revolution.

● Customer Managed

Core IT



Benefits

Fully customizable.
Few limitations.
Necessary for some solutions.
Existing Investments.

Time Commitment

Weeks to setup and deploy.
Maintenance/upgrades of hardware and software.

Time to initial deployment

~ Weeks

~ Days

~ Minutes

Timing is critical...

Today's apps must keep up with the speed of the app revolution.

Customer Managed

Service Provider Managed

Infrastructure as a Service

Benefits

Most control in the cloud.
Necessary for some solutions.
Infrastructure managed by SP.

Time Commitment

Minutes to provision VM.
Time to configure software
and apps varies.
Maintenance/upgrades of OS,
middleware, runtime.



IBM SoftLayer

Time to initial deployment

Core IT

~ Weeks

~ Days

~ Minutes

Timing is critical...

Today's apps must keep up with the speed of the app revolution.

● Customer Managed

● Service Provider Managed

Platform as a Service

Benefits

Setup environments and deploy apps *very* quickly. Infrastructure and platform managed by SP.

Time Commitment

Minutes to setup and deploy. Focus on your apps and their data.



IBM Bluemix

Time to initial deployment

Core IT

~ Weeks

IaaS

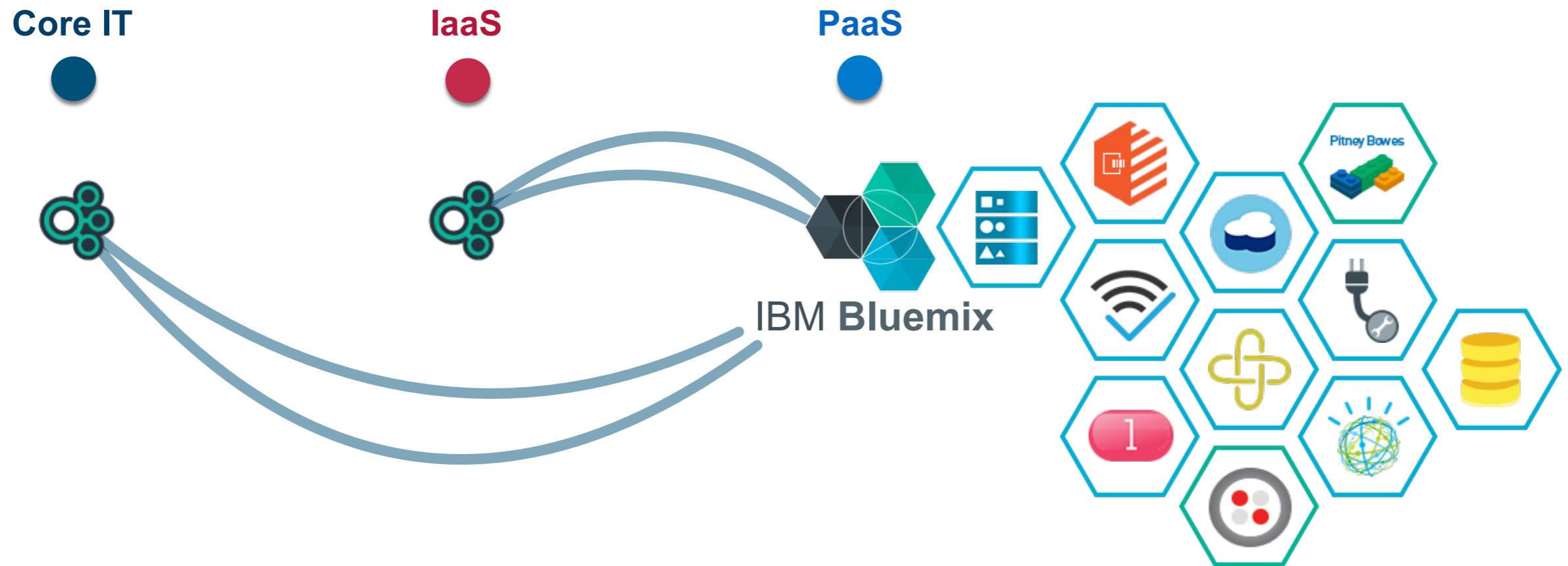
~ Days

~ Minutes



...so are all of your other investments

Leverage the power of Bluemix **without abandoning what you already use.**

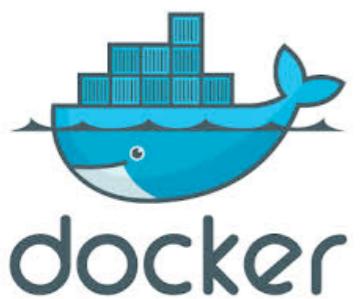
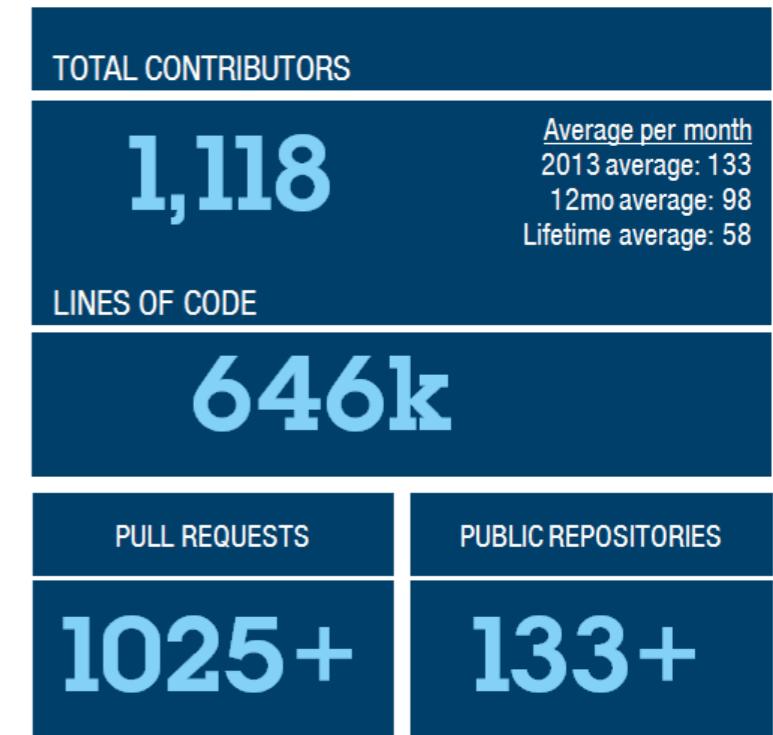
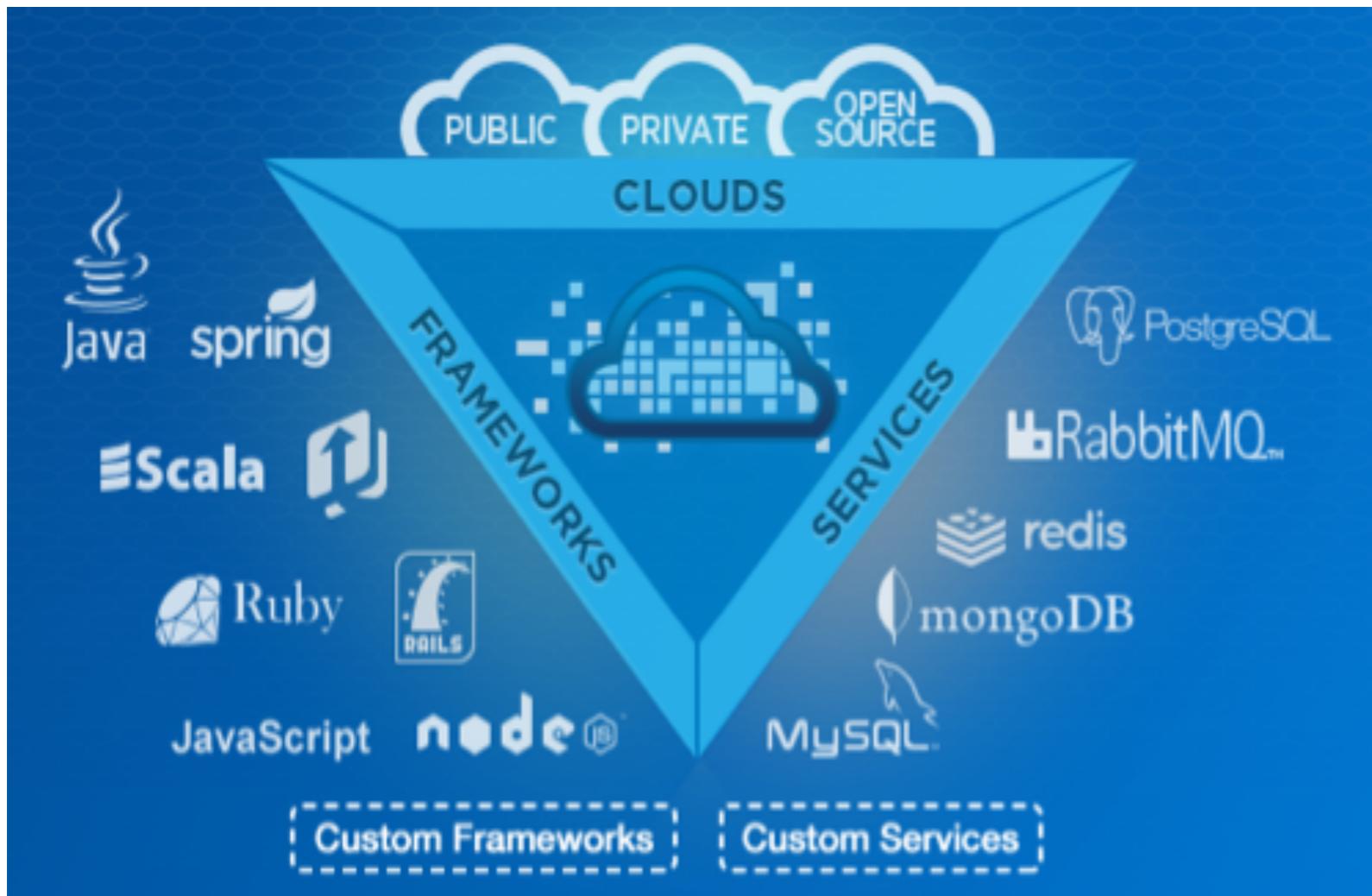


Bluemix works
with the new IT.



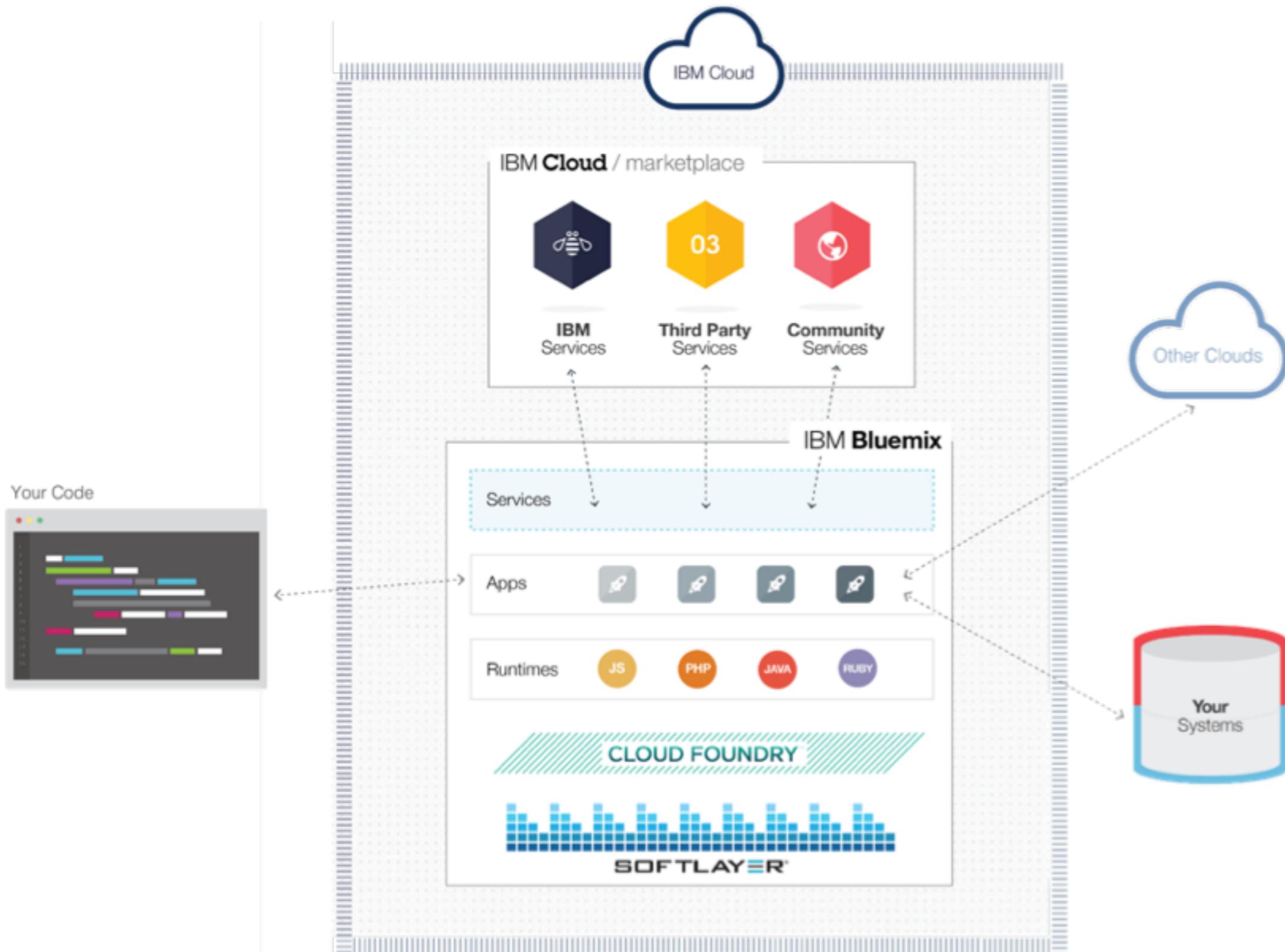
Embracing Cloud Foundry as an open source PaaS

Continuing our history of embracing and extending Open Source



How does Bluemix work?

Bluemix **embraces** Cloud Foundry as an **open source Platform as a Service** and **extends** it with IBM, third party, and community built services.



Why are developers using Bluemix?

To **rapidly** bring products and services to market at **lower cost**



Go from zero to running code in a matter of minutes.

To **continuously deliver** new functionality to their applications



Automate the development and delivery of many applications.

To extend **existing investments** in IT infrastructure



Extend existing investments by connecting securely to on-premise infrastructure.

Bluemix works
with your apps.

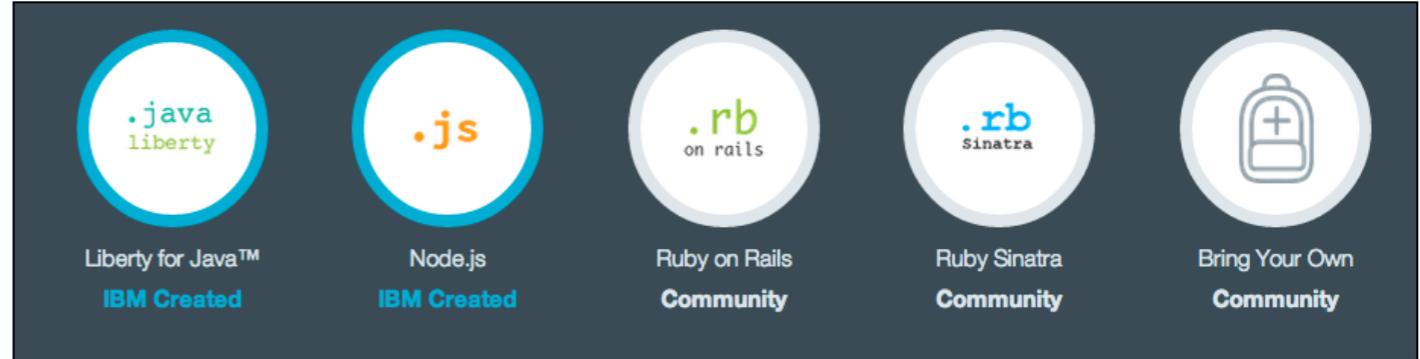


Run your apps in seconds

Zero to production in one command. Setup made simple.

No VM or middleware setup

- Provision runtimes in seconds
- Auto and manual scaling options



Multiple language support

- Java Liberty, JavaScript, and Ruby provided
- Bring any language from the community

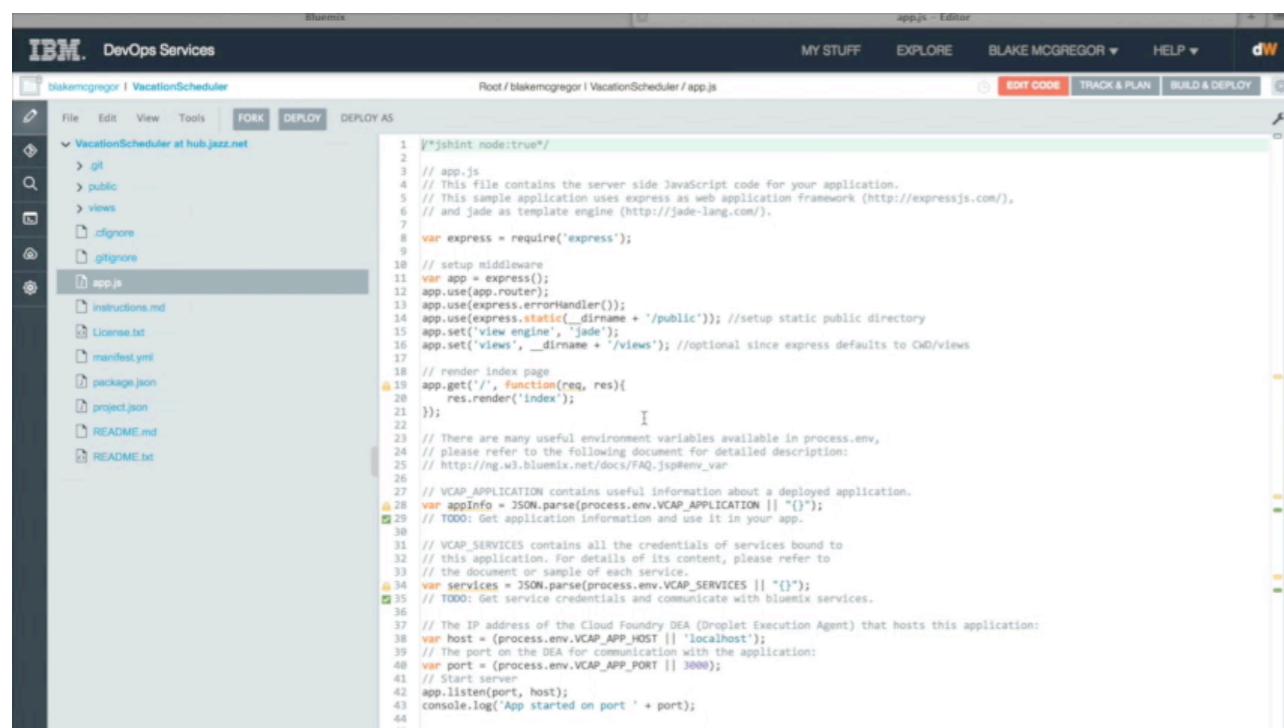
The screenshot shows the IBM Bluemix Catalog interface. At the top, there's a navigation bar with links for DASHBOARD, CATALOG, PRICING, DOCS, COMMUNITY, and a user account section. Below the navigation, there's a section for 'Boilerplates' with icons for Java DB Web Starter, Java Web Starter, Mobile Cloud, Node JS Web Starter, and Internet of Things Starter. A 'Node-RED Starter' option is also listed under 'Community'. In the 'Runtimes' section, there are icons for Liberty for Java (IBM), Node.js (IBM), Ruby on Rails (Community), Ruby Sinatra (Community), and Bring Your Code (Community). A tooltip for the Ruby on Rails icon states: 'Ruby on Rails: A simple Rails app that will get you up and running quickly!'. The overall theme is dark with blue and white accents.

Pick your own development tooling

Code wherever you work best. Deploy in seconds.

IBM provided

Fully integrated repository and web editor to deploy directly to Bluemix.

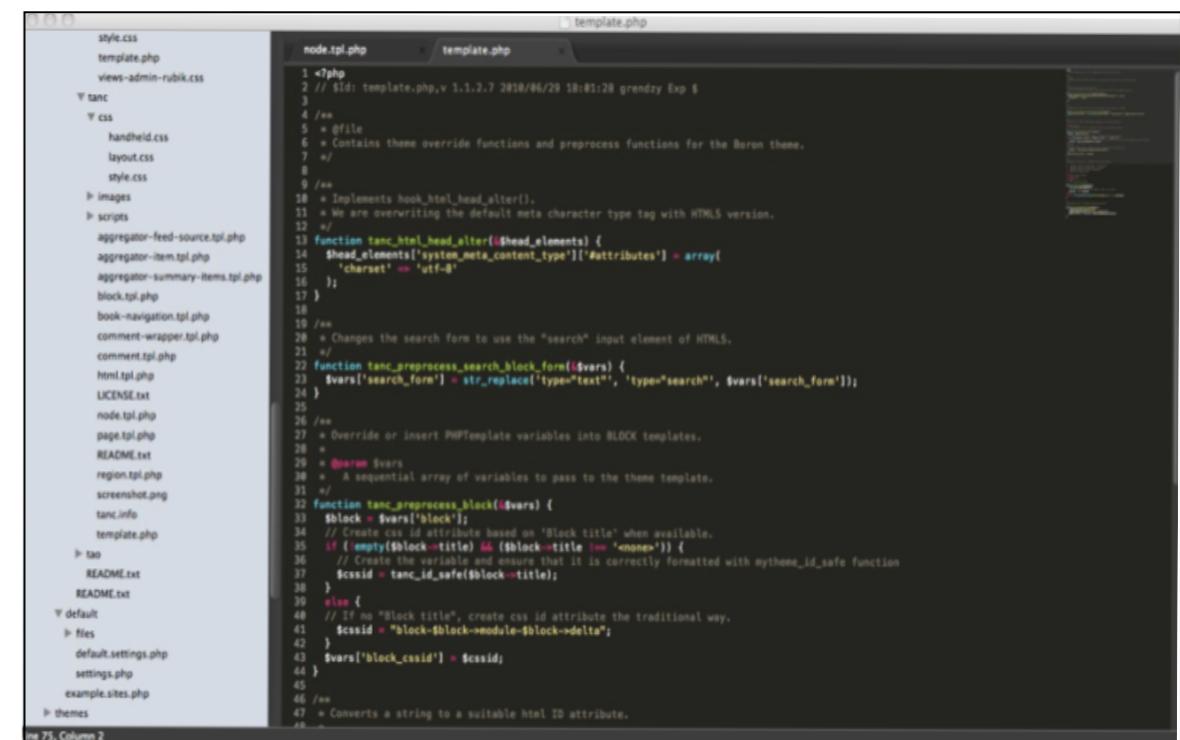


The screenshot shows the IBM DevOps Services interface. The top navigation bar includes 'MY STUFF', 'EXPLORE', 'BLAKE MCGREGOR', 'HELP', and tabs for 'EDIT CODE', 'TRACK & PLAN', and 'BUILD & DEPLOY'. Below the navigation is a file tree for the 'VacationScheduler' application, which contains files like .gitignore, .gitignore, app.js, instructions.md, License.txt, manifest.yml, package.json, project.json, README.md, and README.txt. The main area displays the contents of 'app.js'. The code is as follows:

```
1 //jshint node:true
2
3 // app.js
4 // This file contains the server side JavaScript code for your application.
5 // This sample application uses express as web application framework (http://expressjs.com/),
6 // and jade as template engine (http://jade-lang.com/).
7
8 var express = require('express');
9
10 // setup middleware
11 var app = express();
12 app.use(app.router);
13 app.use(express.errorHandler());
14 app.use(express.static(__dirname + '/public')); //setup static public directory
15 app.set('view engine', 'jade');
16 app.set('views', __dirname + '/views'); //optional since express defaults to CWD/views
17
18 // render index page
19 app.get('/', function(req, res){
20   res.render('index');
21 });
22
23 // There are many useful environment variables available in process.env,
24 // please refer to the following document for detailed description:
25 // http://ng.w3.bluemix.net/docs/FAQ-jsp#env_var
26
27 // VCAP_APPLICATION contains useful information about a deployed application.
28 var appInfo = JSON.parse(process.env.VCAP_APPLICATION || "{}");
29 // TODO: Get application information and use it in your app.
30
31 // VCAP_SERVICES contains all the credentials of services bound to
32 // this application. For details of its content, please refer to
33 // the document or sample of each service.
34 var services = JSON.parse(process.env.VCAP_SERVICES || "{}");
35 // TODO: Get service credentials and communicate with bluemix services.
36
37 // The IP address of the Cloud Foundry DEA (Droplet Execution Agent) that hosts this application:
38 var host = (process.env.VCAP_APP_HOST || 'localhost');
39 // The port on the DEA for communication with the application:
40 var port = (process.env.VCAP_APP_PORT || 3000);
41 // Start server
42 app.listen(port, host);
43 console.log('App started on port ' + port);
44
45
```

Use your own

Use your editor (e.g. Sublime, Eclipse) and deploy through the Cloud Foundry command line.



The screenshot shows a terminal window with two panes. The left pane is a file browser showing a directory structure with files like style.css, template.php, views-admin-rubik.css, tanc, and node.tpl.php. The right pane is a code editor showing the contents of 'template.php'. The code is as follows:

```
1 <?php
2 // $Id: template.php,v 1.1.2.7 2010/06/29 18:01:20 grendz Exp $
3
4 /**
5 * @file
6 * Contains theme override functions and preprocess functions for the Boron theme.
7 */
8
9 /**
10 * Implements hook_html_head_alter().
11 * We are overwriting the default meta character type tag with HTML5 version.
12 */
13 function tanc_html_head_alter(&$head_elements) {
14   $head_elements['system_meta_content_type']['#attributes'] = array(
15     'charset' => 'utf-8'
16   );
17 }
18
19 /**
20 * Changes the search form to use the "search" input element of HTML5.
21 */
22 function tanc_preprocess_search_block_form($vars) {
23   $vars['search_form'] = str_replace('type="text"', 'type="search"', $vars['search_form']);
24 }
25
26 /**
27 * Override or insert PHPTemplate variables into BLOCK templates.
28 */
29 /**
30 * A sequential array of variables to pass to the theme template.
31 */
32 function tanc_preprocess_block($vars) {
33   $block = $vars['block'];
34   // Create css id attribute based on 'Block title' when available.
35   if (!empty($block->title) && ($block->title != '<none>')) {
36     // Create the variable and ensure that it is correctly formatted with mytheme_id_safe function
37     $cssid = tanc_id_safe($block->title);
38   }
39   else {
40     // If no "Block title", create css id attribute the traditional way.
41     $cssid = "block-$block->module-$block->delta";
42   }
43   $vars['block_cssid'] = $cssid;
44 }
45
46 /**
47 * Converts a string to a suitable html ID attribute.
48 */


```

Bluemix Demo.

Create apps quickly with prebuilt services

A full range of capabilities to suit any great idea.

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



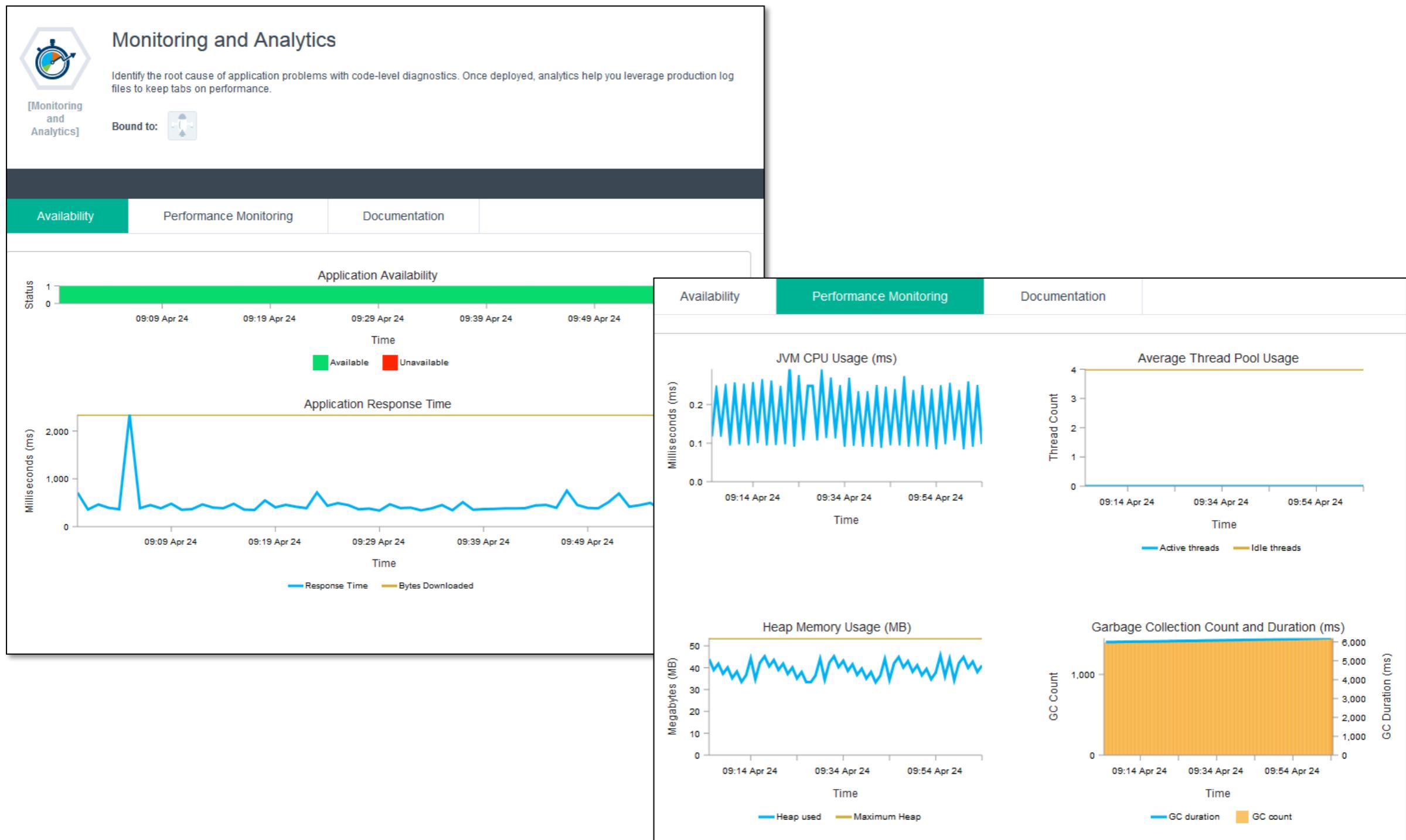
List of Cloud Platform Services

IBM, Open Source and Third Party APIs



Built in monitoring

Integrated diagnostics for detailed application behavior



Scaling

Fully integrated environment for deploying and managing your application

The screenshot shows the IBM Codename Bluemix Dashboard for the 'Sales Assistant' application. The top navigation bar includes 'Dashboard' and 'Catalog'. On the left, a sidebar menu lists 'Sales Assistant', 'OVERVIEW' (selected), 'PUSH NOTIFICATIONS', 'MAM', 'DATA', and 'CLOUD CODE'. The main content area displays the 'Sales Assistant' application icon, its status as 'Green' (healthy), and its 'Space: Dev'. Below this are download links for 'iOS SDK' and 'Android SDK'. A modal window is open, prompting to 'Copy API Key for TestApp below:' with the key 'qwyCNUICtqkDU7FaBG8LbRHaBC134kl' and a 'COPY' button. The 'Services' section contains cards for 'Push Notifications' (with 1 instance, ID 'push-oigre8'), 'Mobile Application Management' (mam-e7ehf7e), 'Mobile Data' (data-v321u), and 'Cloud Code' (cloudCode-vjture9). Each service card includes 'Quick Docs' and 'Sample Code' sections with code snippets and copy buttons.

Single Dashboard

Single view of application health, usage and status

Health and Monitoring

Integrated monitoring and diagnostics with the ability to add on features such as code level tracing

Scaling

Ability to scale the application by adding new runtime instances

Integrate Into Existing Applications

Security connect to and leverage data from your existing systems



API Management



Cast Iron Integration



Secure Connector



Data Mapper



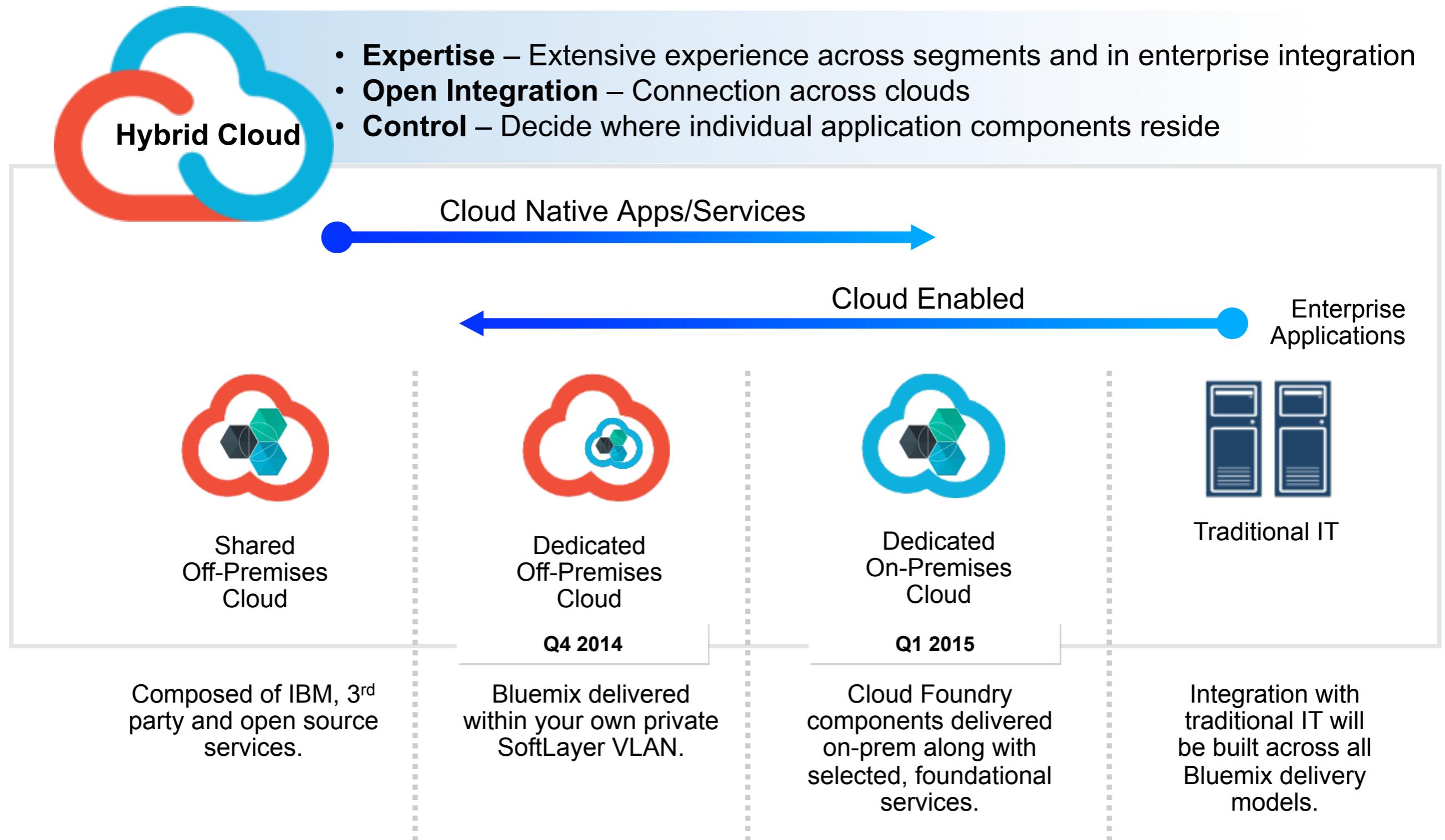
Private API Catalog

The screenshot shows the Cast Iron Integration interface. It features a flow editor at the top with nodes for 'Database', 'Transformation', and 'Credit Check'. Below this is a 'Sources' section with a table of fields like birth_day, birth_month, birth_year, first_name, last_name, and soc_sec_num. A 'Transformations' section shows mappings between these fields and parameters like birthDate, firstName, lastName, and ssn. The 'Targets' section shows the 'checkCredit' method being used. At the bottom, there are tabs for 'Canvas' and 'Documentation'.

The screenshot shows the IBM Codename: BlueMix Dashboard. A modal window is open for creating a new API. The title is 'Customer Address'. The description says: 'This API provides access to on-premise data, specifically a lookup of the address where a customer purchase was made.' Below this is a 'Create an API' button. The 'Resources' section contains a 'Get' method with a description: 'This will retrieve the store address where the customer's purchase was made'. It includes a table for parameters, request code (JavaScript), and response code (JSON). At the bottom are 'Cancel' and 'Create API' buttons.

Public cloud is just the beginning for Bluemix

Introducing “Borderless Bluemix”



Global rollout

A customer anywhere in the world can deploy to a regional datacenter and receive a consistent bill for IBM and 3rd party services.

Geo Rollout Schedule

2014 - 2nd Half

London

2015 - 1st Half

Additional USA

Asia Pacific

Additional European

South America

Leverage IBM SoftLayer global presence



New and compelling content

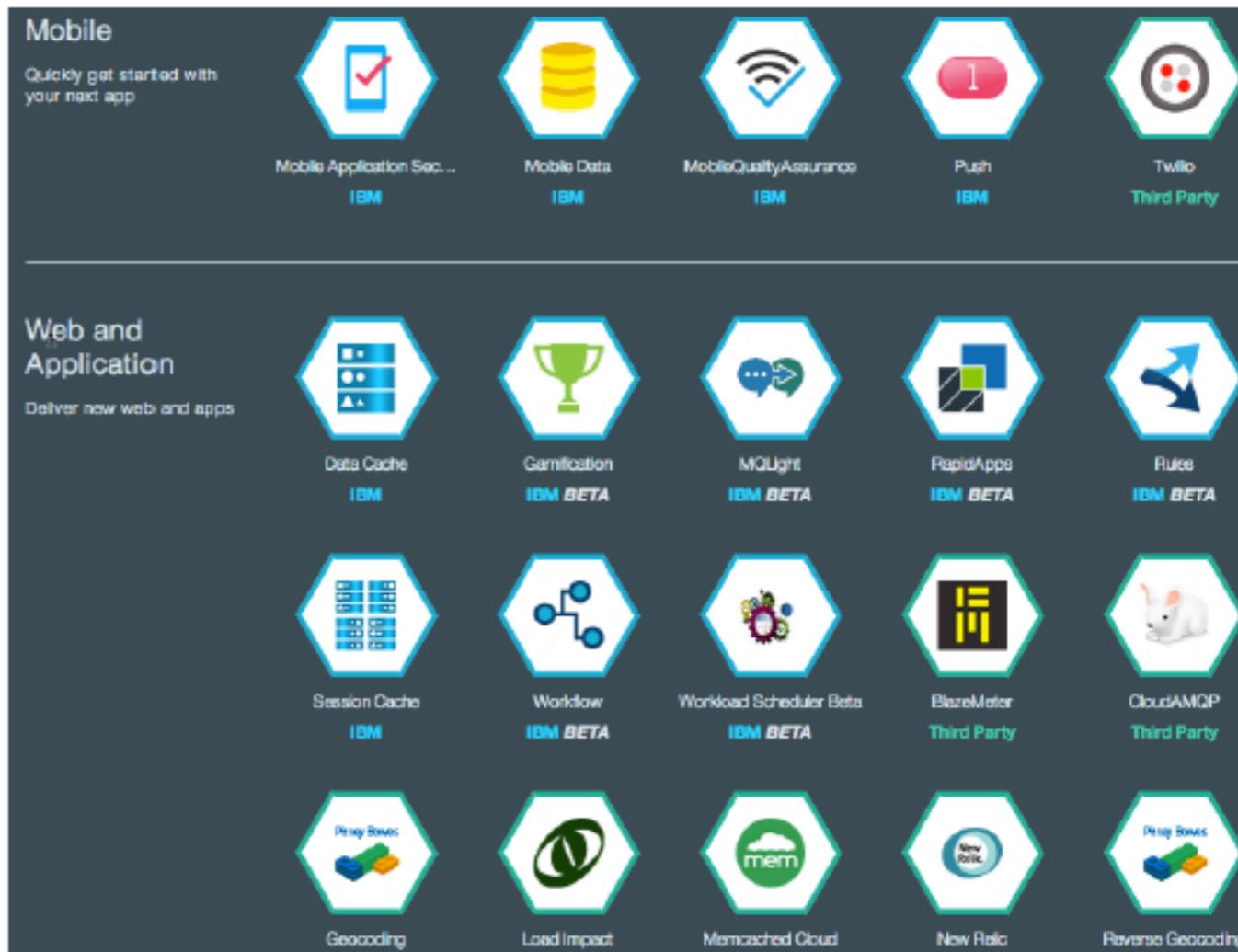
Bluemix provides a set of compelling services and bundles that can allow developers to rapidly build compelling mobile and web applications.

New Services and Runtimes

- Mobile Customer Experience (CX)
- Trusteer Mobile Risk Engine API
- Node-RED
- Predictive Modeling
- Qradar SaaS w/APIs
- Threat Intel and Reputation APIs
- Xtify
- Aspera
- Preinstalled PHP, Go and Python
- Strong Pipeline or 3rd Party Services
- Exposing select Softlayer IaaS capabilities
 - SoftLayer object store
 - File System as a Service
 - CDN, VPN, Compute
- .Net (for dev/test)

Updates to Existing Services

- Significant enhancements in existing services



Bluemix works
in the world today.

Core use cases

What 30,000 beta applications have told us.

Web Applications

- Enabling **online experiences in the physical store** for retail
- Leverages BlueMix for data collection APIs and dashboards
- Reduction of **infrastructure setup from days to minutes** by moving off of a pure IaaS

APIs and On-Prem Integration

- Providing APIs that are **integrated into the BlueMix experience**
- Leveraging **existing on premise databases and technologies**
- Building mobile applications that connect to on-prem data via Bluemix

Mobile Back Ends

- **Back end services replacing custom code** hosted on IaaS (e.g. Push Notification)
- Cloud Code for **offloading business logic** from the mobile client
- Integrated into iOS and Android native applications using **BlueMix SDK**

Analytics and Reporting

- Embed **IBM Cognos business intelligence** content into apps
- Use **IBM Analytics Warehouse** to store and analyze business data
- Gain immediate **visibility and control** over app **performance** and availability

Bluemix works
within your budget.

Sign up in minutes. Pay for what you use.

Cloud based pricing models to serve developer needs.

Friction free adoption

- **30 day trial** - designed to allow testing of an entire application on the platform
- **Free tier for every service** - encourages experimentation of new services for applications already running on Bluemix

Multiple Commitment Models

- **Pay as you go** - optimized for flexibility, no term commitment
- **Subscription** - term based optimized for cost, discounted from pay as you go rates

Self Service

- Zero to coding in **less than 5 minutes**
- **Credit card** over the web in many countries – or through your IBM rep



We are building a foundation for long-term growth and success through global relationships and community

Bluemix Meetup Groups



There are now **69** meetup groups with more than 4,200 members.



Bluemix Garage



Become **innovation partners** for IBM clients through rapidly building successful apps

Implement **IBM Design Thinking** with lean startup for business and product innovation

Use **highly disciplined agile development practices**: pair programming & test driven development & continuous deployment

Make Bluemix Garage a **focal point for marketing activities** that showcase Bluemix to developers

200 days of Bluemix



13,000+ attendees

2,000+ companies

90+ cities around the world



Online Community



2,976 Facebook Likes and **6.7M people reached**

2,713 followers and **#bluemix is averaging 921k impressions a day**

1,700+ questions answered in Bluemix dev2dev



Take part in a free one-day Bluemix Workshop to get started!



Link to sign up: <http://www-304.ibm.com/events/idr/idrevents/detail.action?meid=16628>

More Information

IBM Redbook (8 pages): <http://www.redbooks.ibm.com/abstracts/redp5011.html?Open>

Bluemix Videos: https://www.youtube.com/results?search_query=ibm+bluemix

100+ sample applications (with links to source code):
http://www.ibm.com/developerworks/views/global/libraryview.jsp?topic_by=BlueMix&ibm-search=Search

Bluemix Documentation: <http://www.ng.bluemix.net/docs>

Bluemix Blog: <https://developer.ibm.com/bluemix/blog/>

Public Bluemix projects on GitHub: <https://github.com/search?q=bluemix&ref=cmdform>

Register and try it for yourself: <http://www.bluemix.net>



THANK YOU!