



IBM **Bluemix**

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.

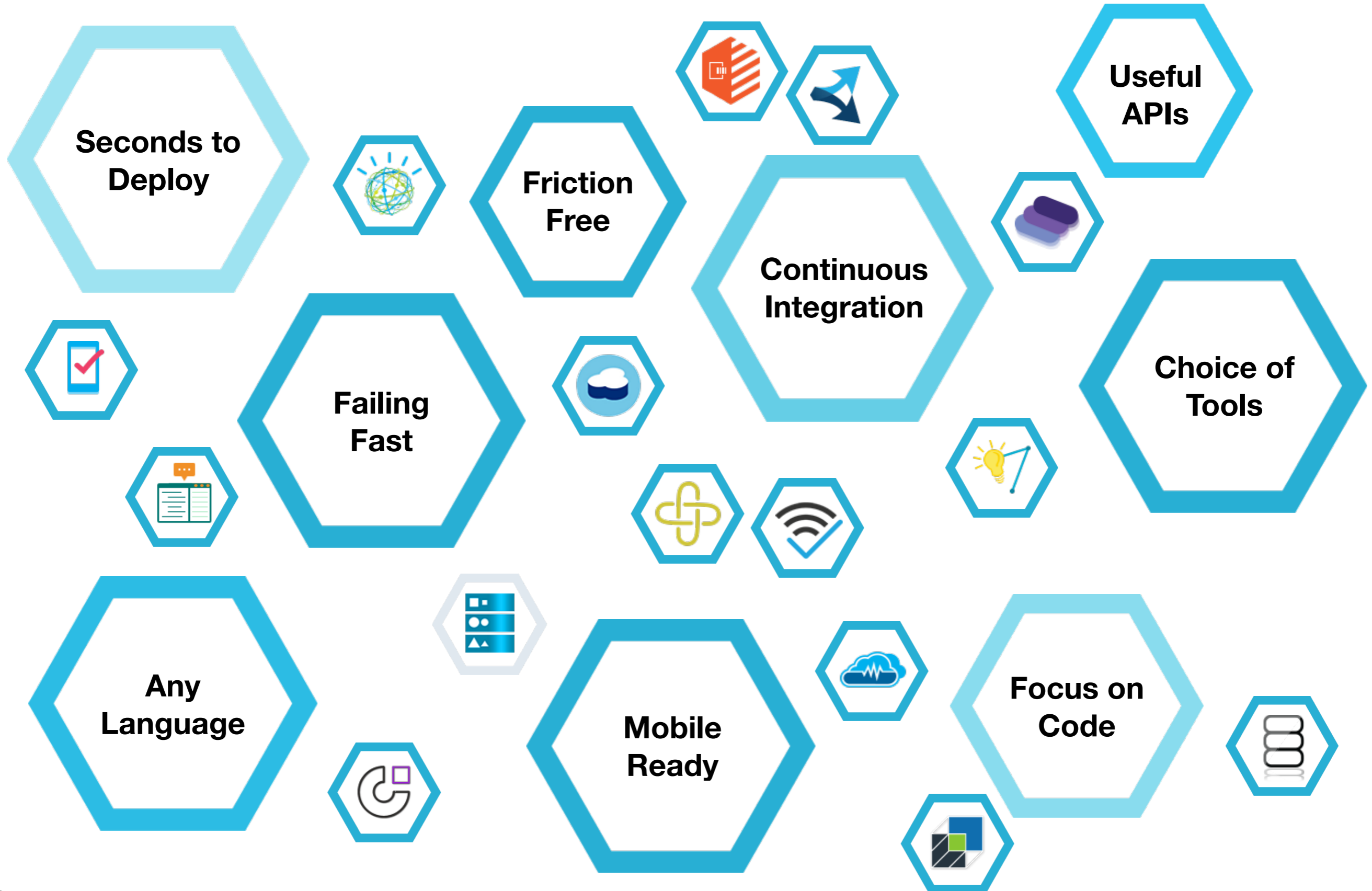
Cloud makes it possible

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

Code

Data

Runtime

Middleware

OS

Virtualization

Servers

Storage

Networking

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

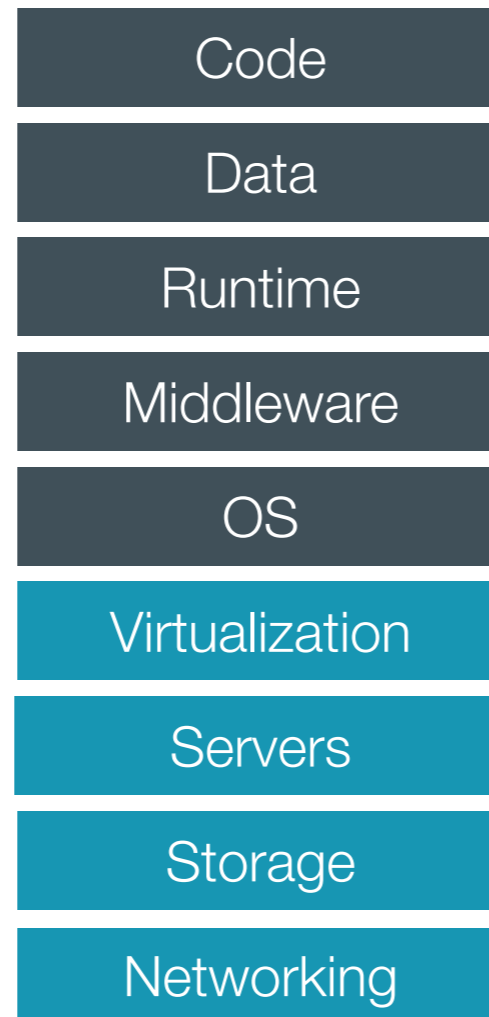
~ Minutes

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.

Time to initial deployment

Core IT

~ Weeks

~ Days

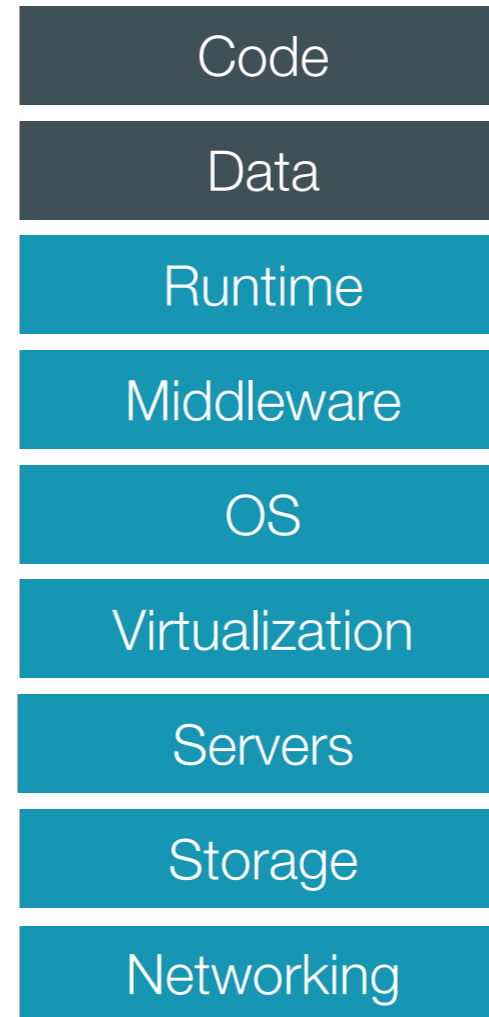
~ Minutes

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

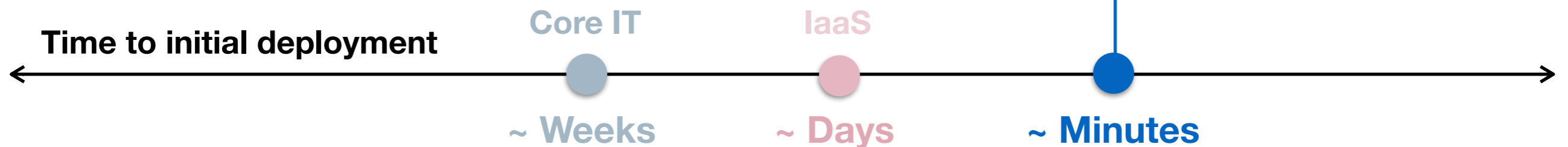
Setup environments and deploy apps *very* quickly. Infrastructure and platform managed by SP.

Time Commitment

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

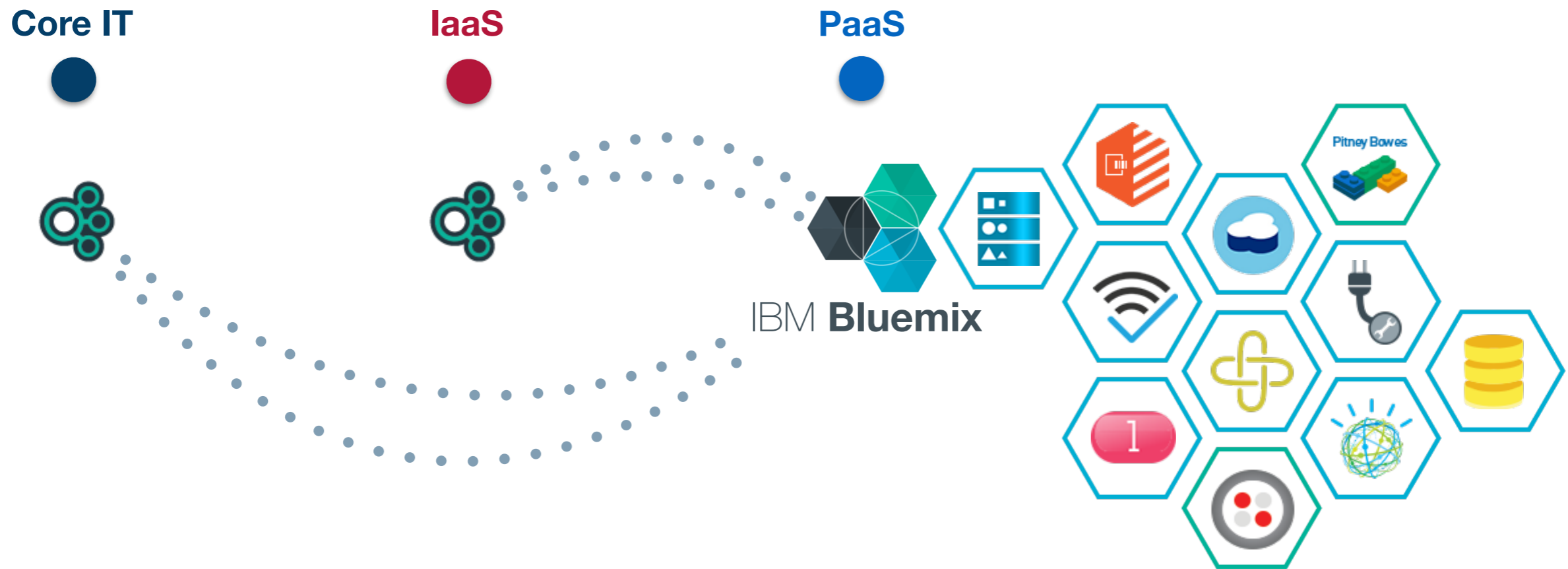


IBM **Bluemix**



...so are all of your other investments

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



Bluemix works
with the new IT.

What is Bluemix?

Bluemix is an **open-standard**, cloud-based **platform** for **building, managing, and running applications of all types** (web, mobile, big data, new smart devices, and so on).



Go Live in Seconds

The developer can choose any language runtime or bring their own. Zero to production in one command.

APIs and Services

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

On-Prem Integration

Build hybrid environments. Connect to on-premise assets plus other public and private clouds.

DevOps

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

Layered Security

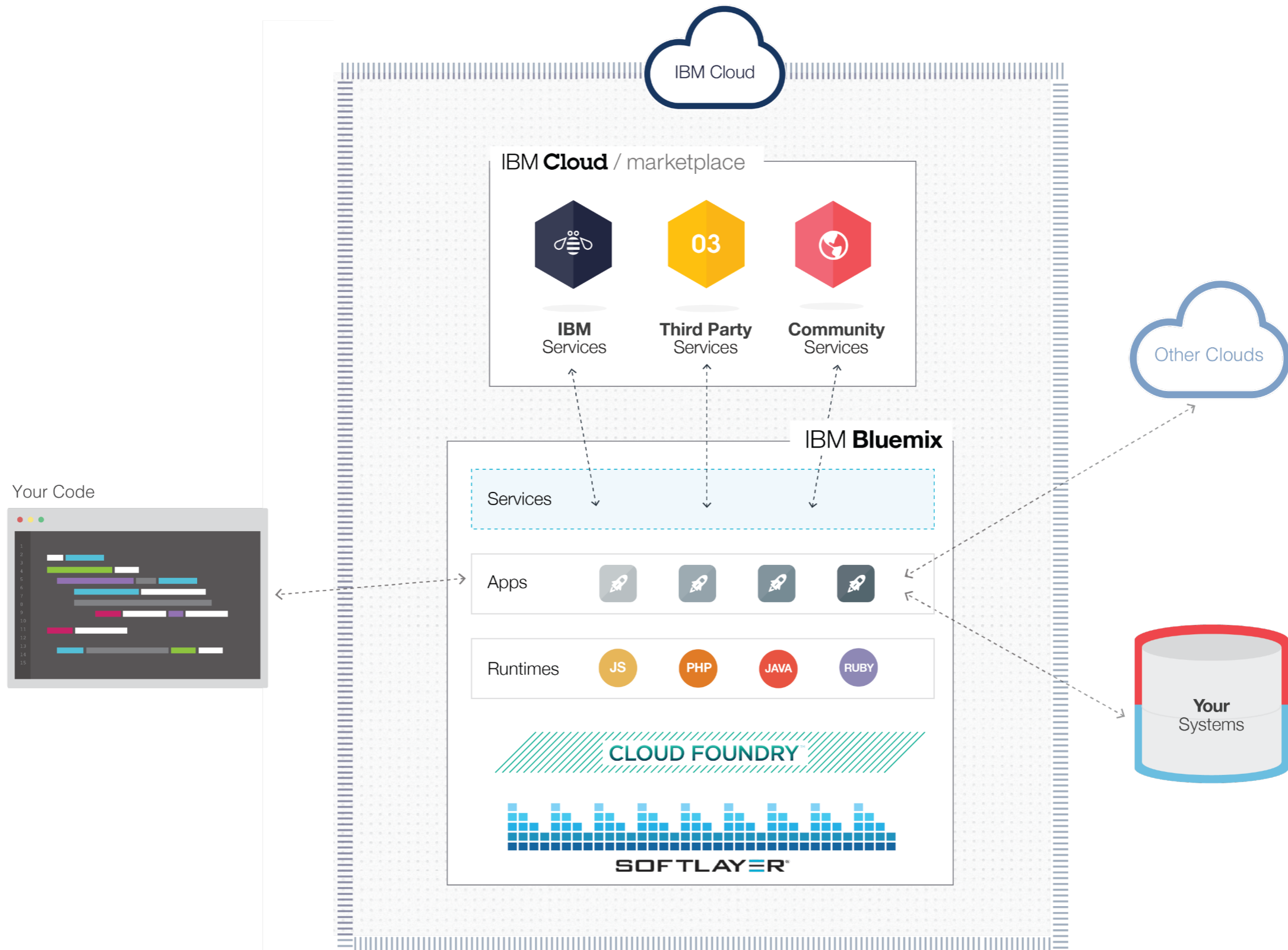
IBM secures the platform and infrastructure and provides you with the tools to secure your apps.

Flexible Pricing

Try services for free and pay only for what you use. Pay as you go and subscription models offer choice and flexibility.

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.

www.bluemix.net

All the instant services, runtimes, and infrastructure you need to **push your ideas into the present.**

The screenshot displays the IBM Bluemix Catalog interface. At the top, there is a navigation bar with links for DASHBOARD, CATALOG (highlighted), PRICING, DOCS, and COMMUNITY. A user profile for blake.mcgregor@us.ibm.com is visible on the right. Below the navigation is a search bar with a dropdown menu set to 'Starters' and a search icon. Filter options for 'IBM', 'Third Party', 'Community', and 'Experimental' are shown below the search bar. A breadcrumb trail reads 'Starters // Choose a package of sample code and services, or start from scratch'. The main content area is divided into two sections: 'Boilerplates' and 'Runtimes'. The 'Boilerplates' section includes: Java DB Web Starter (IBM), Java Web Starter (IBM), Mobile Cloud (IBM), Node JS Web Starter (IBM), and Internet of Things Starter (Community). The 'Runtimes' section includes: Liberty for Java™ (IBM), SDK for Node.js™ (IBM), Ruby on Rails (Community), Ruby Sinatra (Community), and Bring Your Code (Community).

IBM Bluemix Catalog

DASHBOARD CATALOG PRICING DOCS COMMUNITY blake.mcgregor@us.ibm.com

Search Starters Type here to begin

IBM Third Party Community Experimental

Starters // Choose a package of sample code and services, or start from scratch

Boilerplates

Get started with a new app, now

- Java DB Web Starter IBM
- Java Web Starter IBM
- Mobile Cloud IBM
- Node JS Web Starter IBM
- Internet of Things Starter Community
- Node-RED Starter Community

Runtimes

Run an app in the language of your choice

- Liberty for Java™ IBM
- SDK for Node.js™ IBM
- Ruby on Rails Community
- Ruby Sinatra Community
- Bring Your Code Community

Bluemix works
with your apps.

Run your apps in seconds

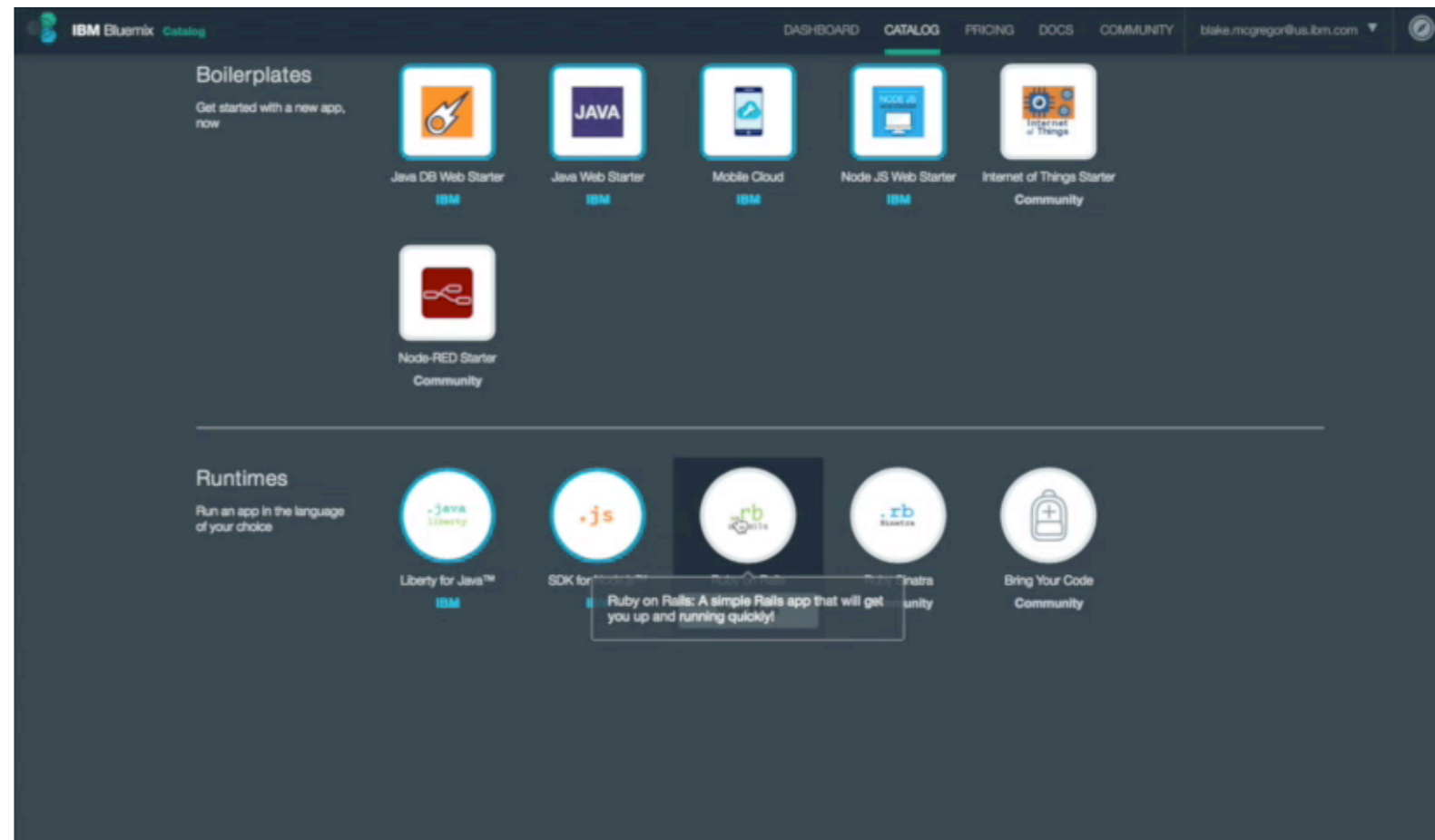
Zero to production in one command. Setup made simple.

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

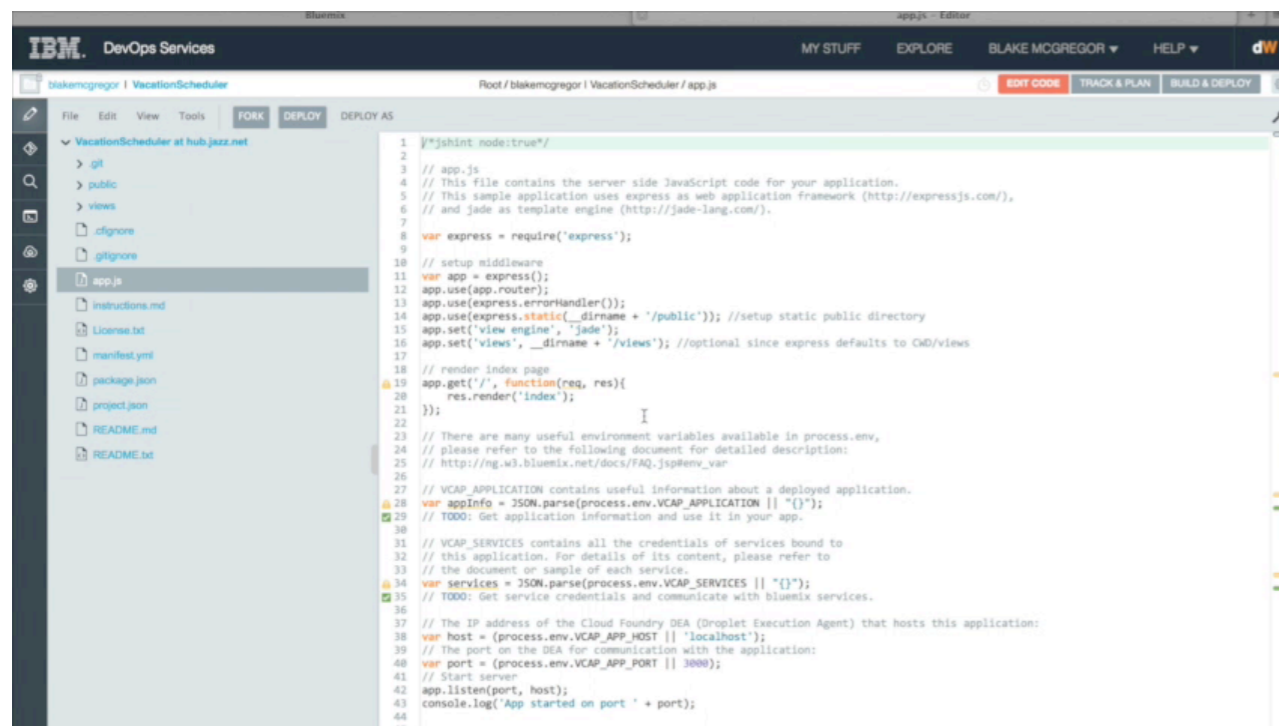


Pick your own development tooling

Code wherever you work best. Deploy in seconds.

IBM provided

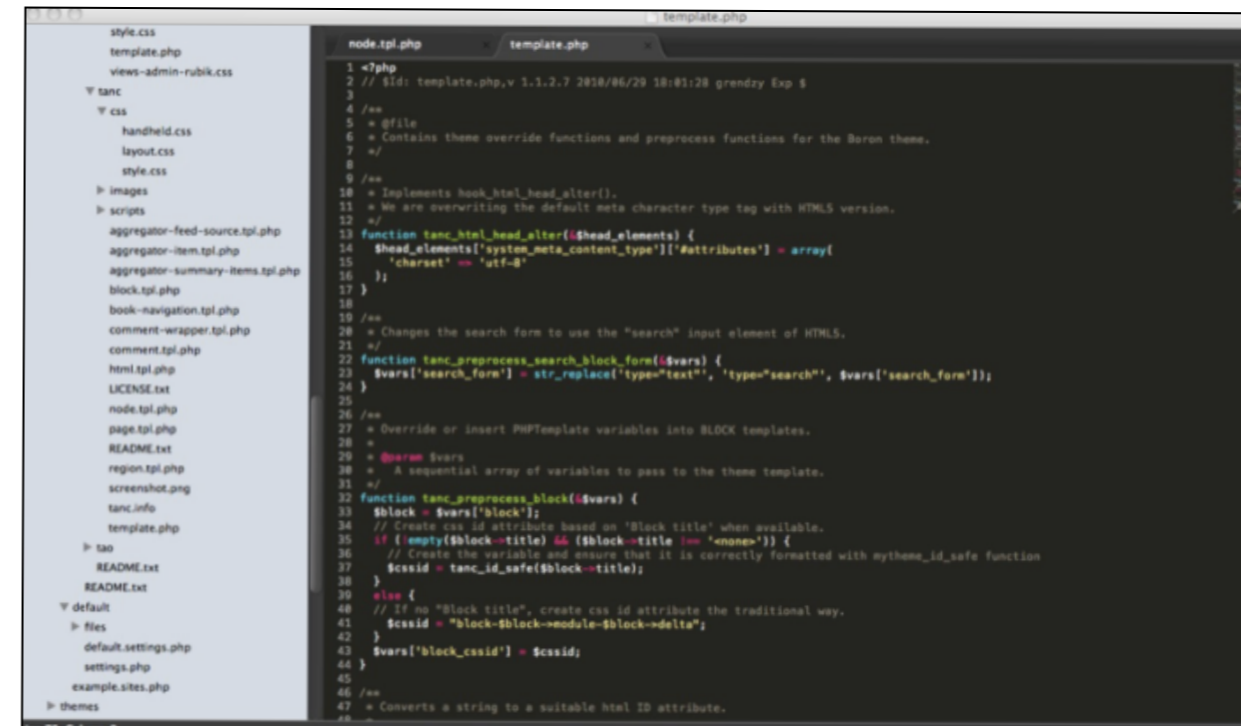
Fully integrated repository and web editor to deploy directly to Bluemix.



```
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.ibm.com/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.



```
style.css
template.php
views-admin-rubik.css
tanc
  css
    handheld.css
    layout.css
    style.css
  images
  scripts
    aggregator-feed-source.tpl.php
    aggregator-item.tpl.php
    aggregator-summary-items.tpl.php
    block.tpl.php
    book-navigation.tpl.php
    comment-wrapper.tpl.php
    comment.tpl.php
    html.tpl.php
    LICENSE.txt
    node.tpl.php
    page.tpl.php
    README.txt
    region.tpl.php
    screenshot.png
    tanc.info
    template.php
  tao
    README.txt
  README.txt
  files
    default.settings.php
    settings.php
    example.sites.php
  themes
node.tpl.php
template.php
1 <?php
2 // $id: template.php,v 1.1.2.7 2018/06/29 18:01:28 grendry 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 * @param $vars
30 *   A sequential array of variables to pass to the theme template.
31 */
32 function tanc_preprocess_block($vars) {
33   $block = $vars['block'];
34   // Create css id attribute based on 'Block title' when available.
35   if (!empty($block->title) && ($block->title != '<name>')) {
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
```

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



Integrate with your on-premise applications

Securely connect to and leverage data from your existing systems.



Secure Connector



API from On-Premise



Cast Iron Integration



**Data Orchestration
(Future)**



**Embedded Private
API Catalog
(Future)**

The screenshot shows the IBM API Manager console. The top navigation bar includes 'DASHBOARD', 'CATALOG', 'DOCS', and 'COMMUNITY'. The main content area is titled 'Create an API' and shows the configuration for an API named 'Customer Address'. The description states: 'This API provides access to on-premise data, specifically a lookup of the address where a customer purchase was made.' Under the 'Resources' section, there is a single resource named 'Get store address' with version 'Version 1'. The resource description is: 'This will retrieve the store address where the customer's purchase was made'. Below this, a table lists parameters:

| Parameter | Type | Required |
|-------------|---------|---|
| address_id | String | <input checked="" type="checkbox"/> Yes |
| customer_id | Integer | <input checked="" type="checkbox"/> Yes |
| extra_info | String | <input type="checkbox"/> No |

Below the table, there is a 'Request Code' section with a code block:

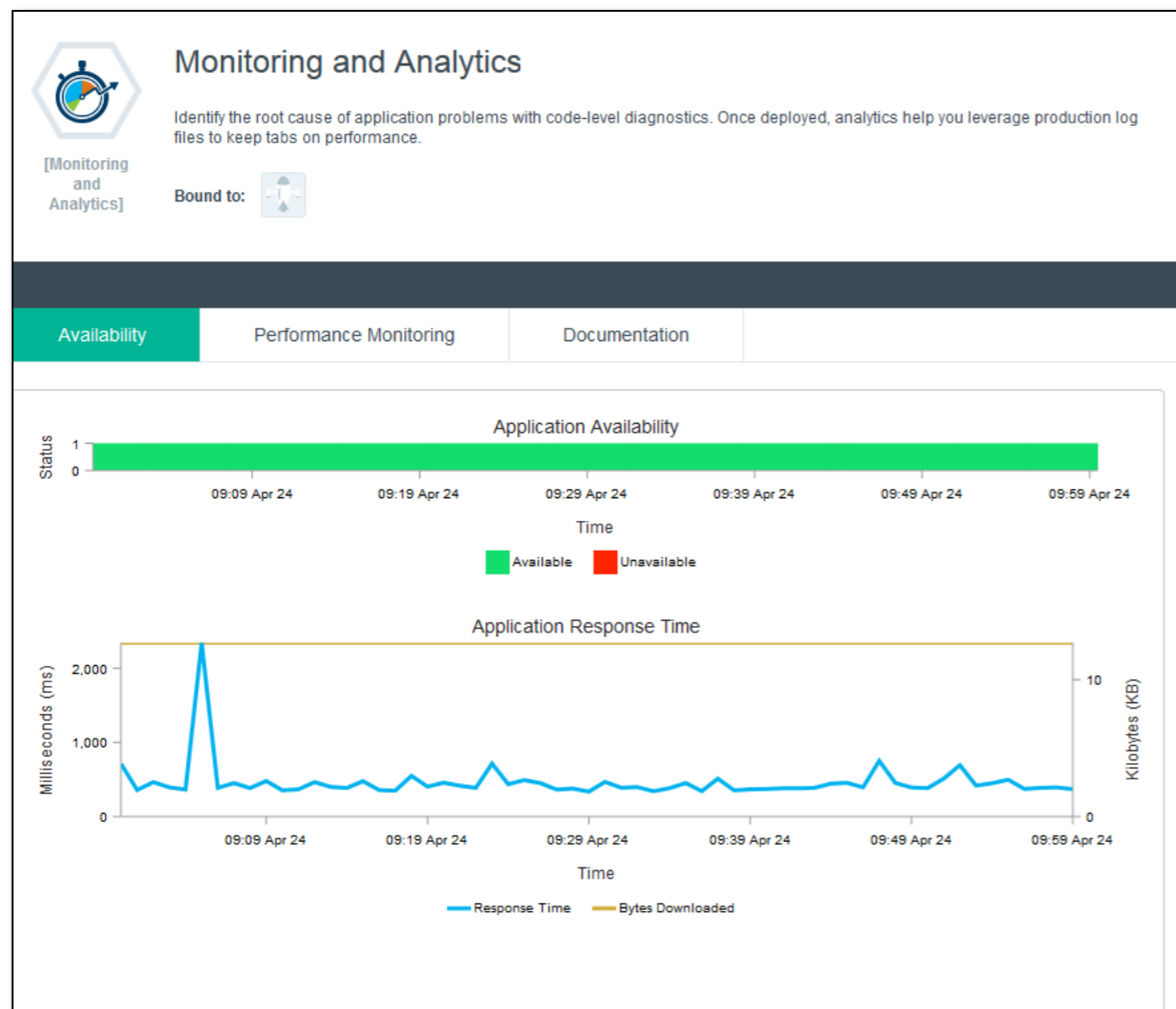
```
function (requestNumber, value, exception) {
  if (value) {
    processResponse(value);
  } else {
    processError(exception);
  }
}
```

And a 'Response Code' section with a code block:

```
{ "status_code": 200,
  "status_txt": "OK",
  "data": ... }
```

Monitor your apps in real time

Integrated diagnostics for detailed application behavior.



Security without the headache

You focus on your apps and their data. IBM manages the rest.

Exploiting IBM portfolio of capabilities

- Leveraging SoftLayer and IBM hosting experience
- Adheres to rigorous IBM security standards:
 - Defense in depth*
 - Intrusion protection/ penetration testing*
 - Data isolation in virtualized components*
 - Automated patch management*

Tools to secure your apps

- SSO for multiple applications and social logins
- Appscan for web and mobile to detect vulnerabilities

Developer's Focus

Code

Data

Runtime

Middleware

OS

IBM's Focus

Virtualization

Servers

Storage

Networking

Bluemix works

right now.

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

Companies using Bluemix today

Value realized in days, not months.



Retail

Reduction of operations **costs by 30%** - focusing on apps and code, not infrastructure.



Hospitality

MQA service **reduced defect resolution time** by up to **300%**.
Mobile push service allowed customer to **avoid writing custom code**.



Transportation

From **zero to implementing** a mobile app from a database on premise in **15 days**.



Healthcare

Increases time to market for new customer delivery by **35%**.



Retail

Selected IBM as a **strategic partner** for building engaging apps.



Technology

Deployment of new customer from **2 days to 30 seconds**.

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

Begin your free trial

Create an  IBM id to get started.

[Already have an IBM id?](#)

Primary email address

First name

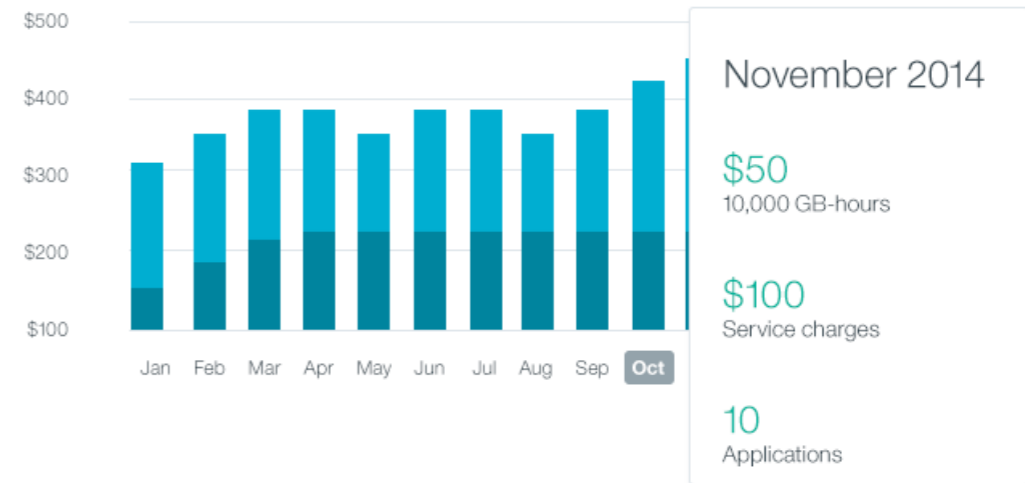
Last name

Create password

Re-enter password

Track Your Growth

Select a month to view the usage summary.



Charges do not include support, taxes or discounts applied at the account level.

Your Cloud Activity for October 2014

\$6,950.00

Bluemix works

Start a free trial today.