DevOps
for Bluemix

Presented by
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Agenda

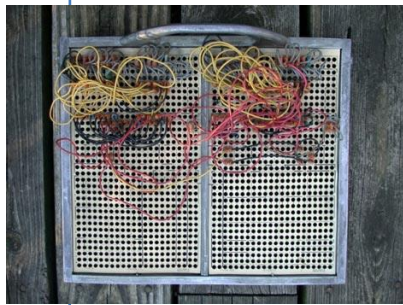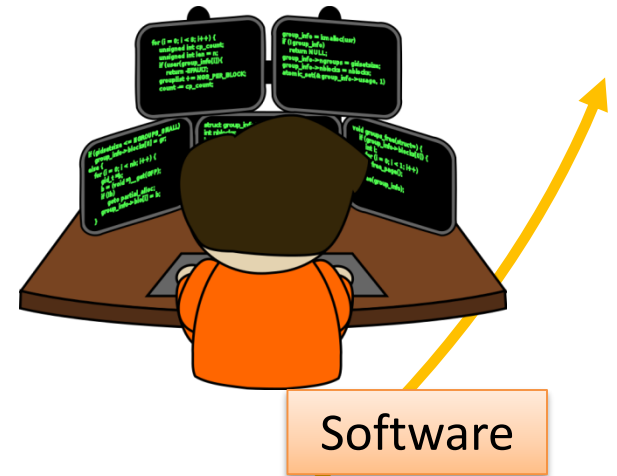| |
|---|
| **Defining DevOps** |
| DevOps in Practice with Bluemix |
| The DevOps Impact with Bluemix |

History of Development and Operations

- In the beginning, Development and Operations were typically performed by the same person.

- As time went on, that changed, and Development and Operations separated.

Software

Admin

What is DevOps?

- **DevOps** is a software development method that stresses collaboration between Software Developers (*Development*) and Information Technology professionals (*Operations*).

- The term "DevOps" is a contraction of the terms Development ("Dev") and Operations ("Ops") in the context of common tools used to deliver software solutions.

- DevOps brings together Development and Operations to create solutions that are:
  - Rapid
  - Repeatable
  - Consistent
  - Flexible
  - Scalable
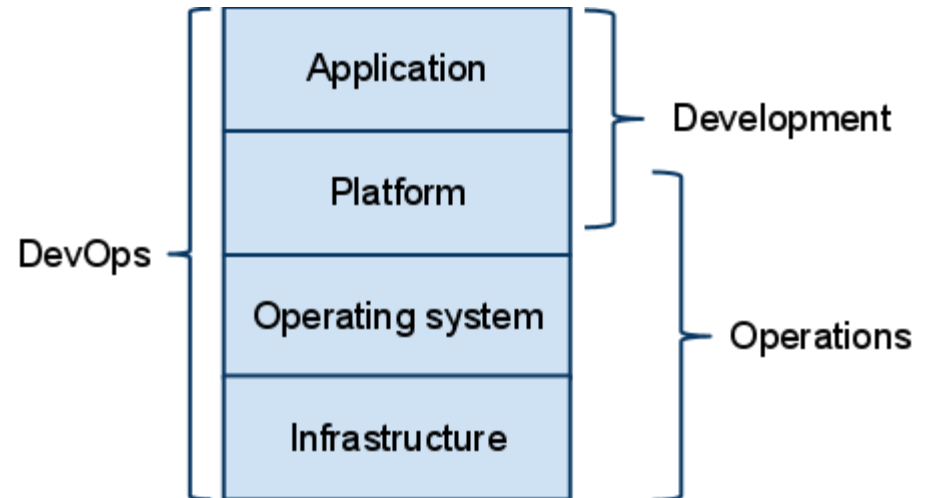
Solution production: The Legacy Model
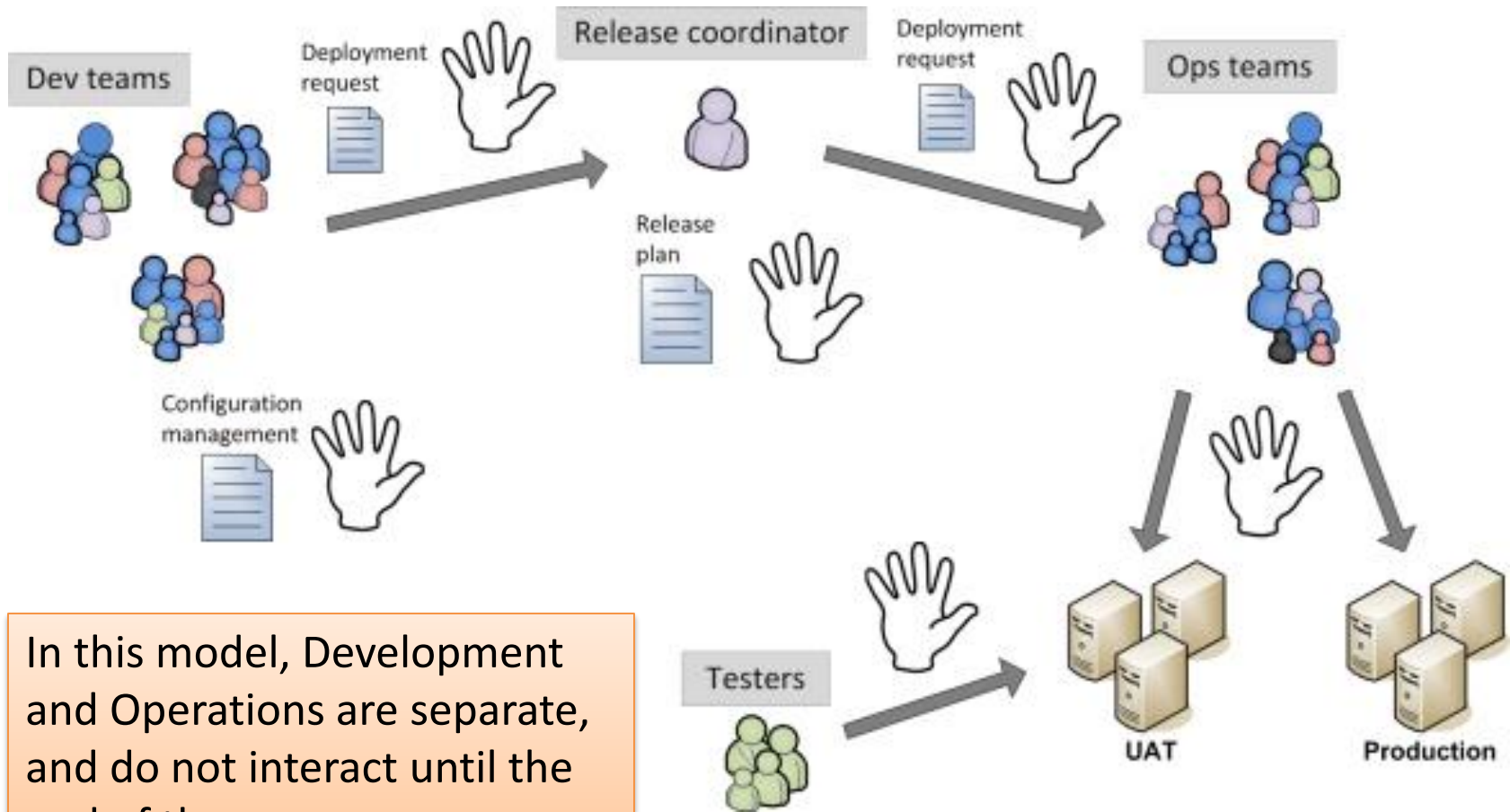
In this model, Development and Operations are separate, and do not interact until the end of the process.

Pre-DevOps processes – Some Estimates

- Operations First:

    – Charter / Fund: *2 weeks to 3 months*

    – Acquire Infrastructure (CAPEX): *6 weeks to 6 months*

    – Integrate Infrastructure (OPEX): *4 weeks to 8 weeks*

    – Dry runs, validation, acceptance testing (OPEX): *2 weeks to 4 weeks*

- Development Second:

    – Workstation → SCM

    – SCM → Dev

    – Dev → Test

    – Test → Stage, Prod

> A new project can take between 6 and 18 months before release 1.0 is in production!

- Issues: Consistency, Speed, Reliability & Governance Process alignment

    – Patch Level / Security,

    – Demand, Scale to Max Peak

    – Release schedules per Quarter / Year

Issues with the Legacy Model

- Your customers find major defects.
  - Major defects take a long time to fix.

- You cannot do anything until you have everything.
  - Legacy model leads to unique infrastructure dependencies.

- People do not talk to each other.
  - This leads to broken processes and overbearing governance.

- Even if you are "agile," the delivery process is still broken.
  - Going live still takes as long as ever.

- Any problems lead to finger pointing.
  - Development and Operations are not able to operate as one team.
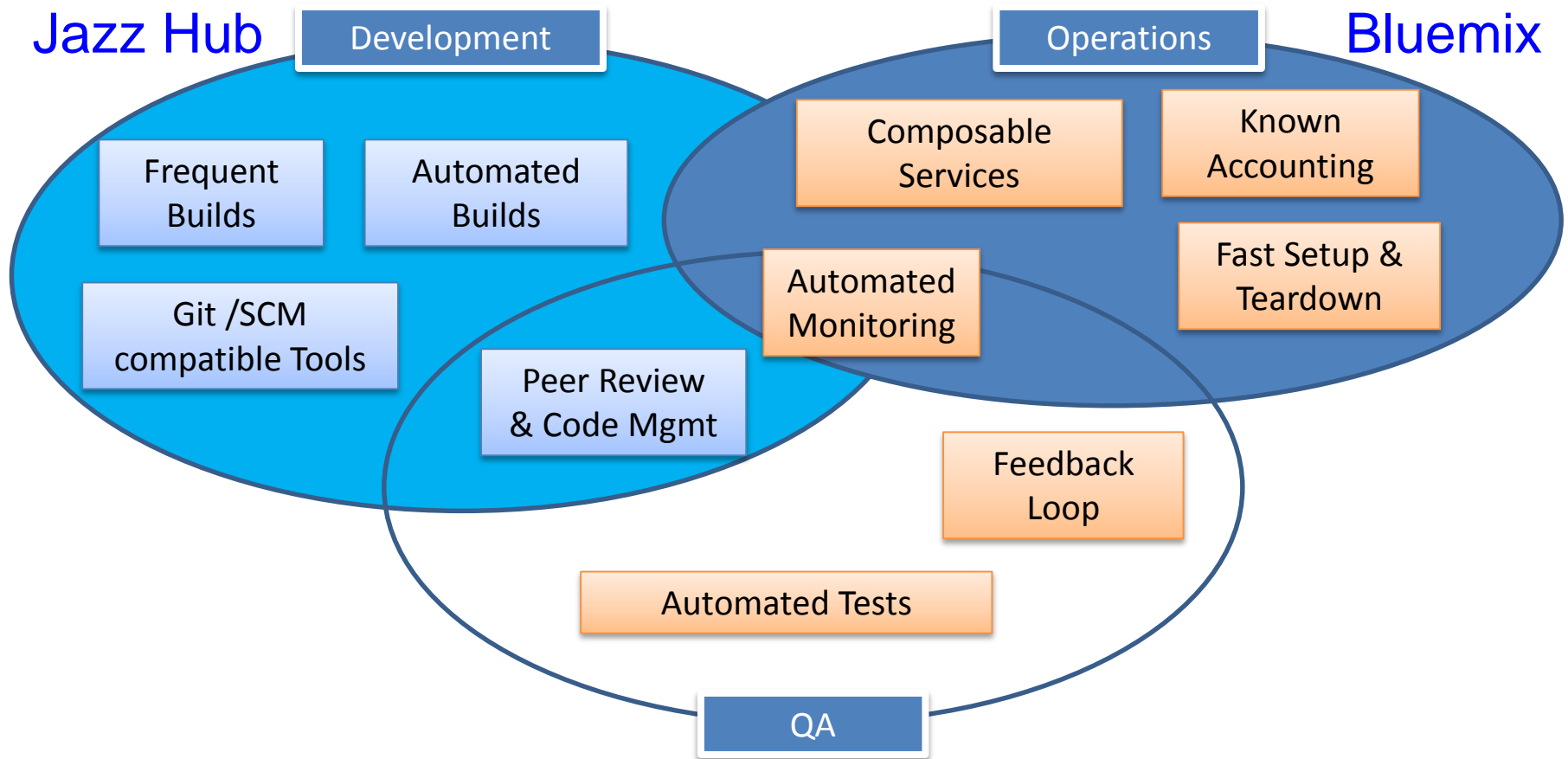
Theme

Defining DevOps

DevOps in Practice with Bluemix

The DevOps Impact with Bluemix

DevOps and IBM Cloud Platform - Bluemix – a winning Combo

Jazz Hub

Development

Operations

Bluemix

Frequent Builds

Automated Builds

Composable Services

Known Accounting

Git /SCM compatible Tools

Automated Monitoring

Fast Setup & Teardown

Peer Review & Code Mgmt

Feedback Loop

Automated Tests

QA

- Infrastructure and Services are more consistent and predictable.
- Build / deploy processes are typically done outside of the bastion of enterprise.
- Provisioning is fast – and on-demand with known Accounting

DevOps Solutions commonly leveraged in Bluemix:

Scalable Web sites for mobile or desktop
Mobile apps using backends as a server component for information
Mobile application front-end using Cloud Scale Database
Leverage Pre-written Enterprise Class Analytic Services

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
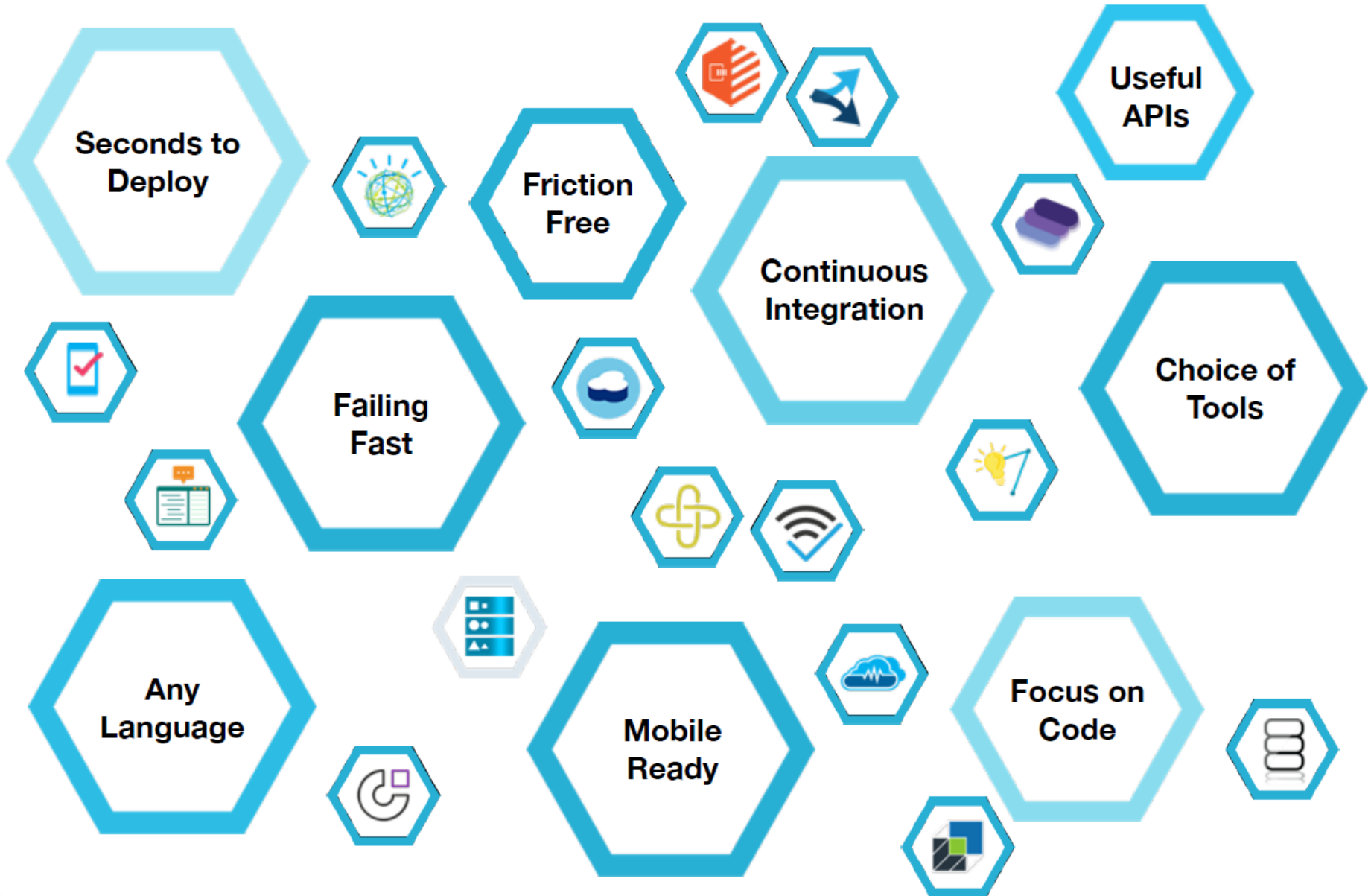
Mobile Back Ends

- **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

App development is about speed, choice & experience
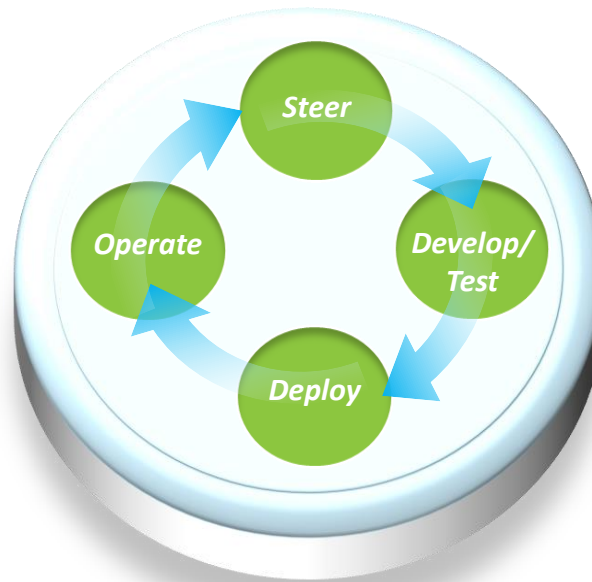
Developers' expectations have evolved.

- Seconds to Deploy
- Friction Free
- Continuous Integration
- Useful APIs
- Failing Fast
- Choice of Tools
- Any Language
- Mobile Ready
- Focus on Code

Demo

IBM DevOps Services + Bluemix Elements

1. Team collaboration

Jazz SCM*

Hosted Git

4. . Application Management and monitoring

Monitoring & Analytics

Steer

Operate

Develop/ Test

Deploy

2. Flexible tooling Choice

eclipse

Web IDE

Optional Mobile Quality Assurance

Agile Planning

3. Autoscaling & Logging

Plus Security Scanning

AppScan

Automated Deployment

Additional Continuous Integration

13

Advantage DevOps + 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.

Customer success stories - DevOps Services for Bluemix

RETAIL

Had a mobile shopping experience that was catalog only and not optimized for mobile nor high-performing enough. Needed to create an engaging mobile shopping experience.

Solution

Quickly create friendly mobile solution with:
- IBM Worklight
- WebSphere Commerce
- **IBM DevOps services for Bluemix™**

Measured Results/benefits

IBM DevOps services for Bluemix helped the team start the project quickly and collaborate more effectively.

- Concept to prototype in 1 week
- In-market in 3 months

Transportation

Needed a Mobile App quickly for their ops team providing status while serving 400,000 customers. Needed to securely connect to their on-premise data to get real time info.

Solution

Quickly built a mobile app leveraging **IBM DevOps services for Bluemix™**

Measured Results/benefits

IBM DevOps services for Bluemix helped the team start the project quickly and collaborate more effectively.

- From idea to fully functional production app in 2 weeks (compared to 4 months)
- Secure access to on-premise data

Summary

Dev Ops on Bluemix – a Winning Combo

Theme

Defining DevOps

DevOps in Practice with Bluemix

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Why Use DevOps + IBM Cloud Platform - 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.

30 Day Free Trial of IBM Cloud Platform (Bluemix)

•Trial attributes

– Limit: 2GB of runtime and 20 services, 500 routes

– Customer elects to try via product UX , Required to create an account, but not enter a credit card

– Receives the same support as the pay as you go standard model

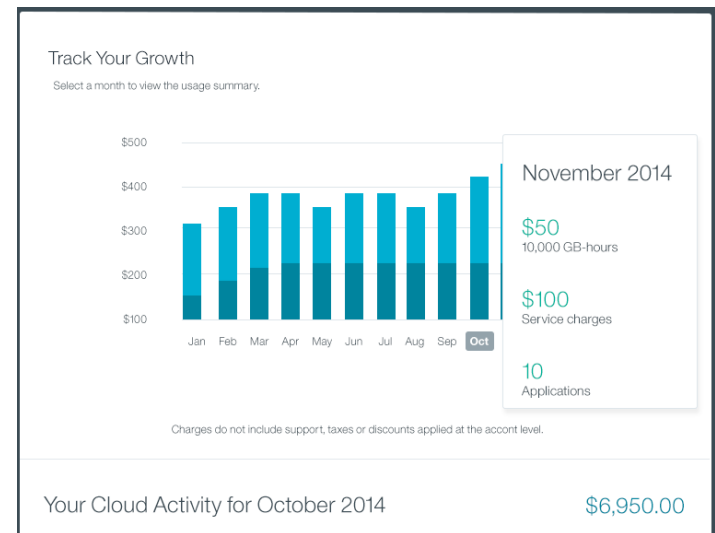**Perpetual access for light use: Experiment, development, small production**

Cloudant

VERSION	PUBLISH DATE	AUTHOR	TYPE
1.2	Jan 12, 2014	Bob Raymond	Service

Select Plan

DESCRIPTION

Cloudant's distributed database as a service (DBaaS) allows developers of fast-growing web and mobile apps to focus on building and improving their products, instead of worrying about scaling and managing databases on their own.

Plans

Usage	Cost
Data volume GBs/ month	$1.00 per GB / month
Heavy HTTP requests PUTs, POSTs, DELETEs	$0.015 per 100
Light HTTP requests GETs. HEADs	$0.015 per 500

Free Allowance
No charge if your usage is under $5.00 USD

Free tier (e.g. < 50 GB, 500 runtime hours, etc)
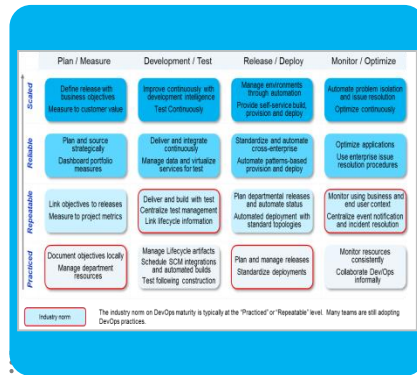
Prices in US Dollars. Change currency

Calculate My Costs

Log in or create an account to use this service.

Make your Choice - Maturity Model for DevOps Adoption

A maturity model approach: identify pain points, assess current capabilities, produce a heat map of focus areas, and establish a roadmap for execution

Identify key pain points in the delivery process

Assess current capabilities using the DevOps maturity model

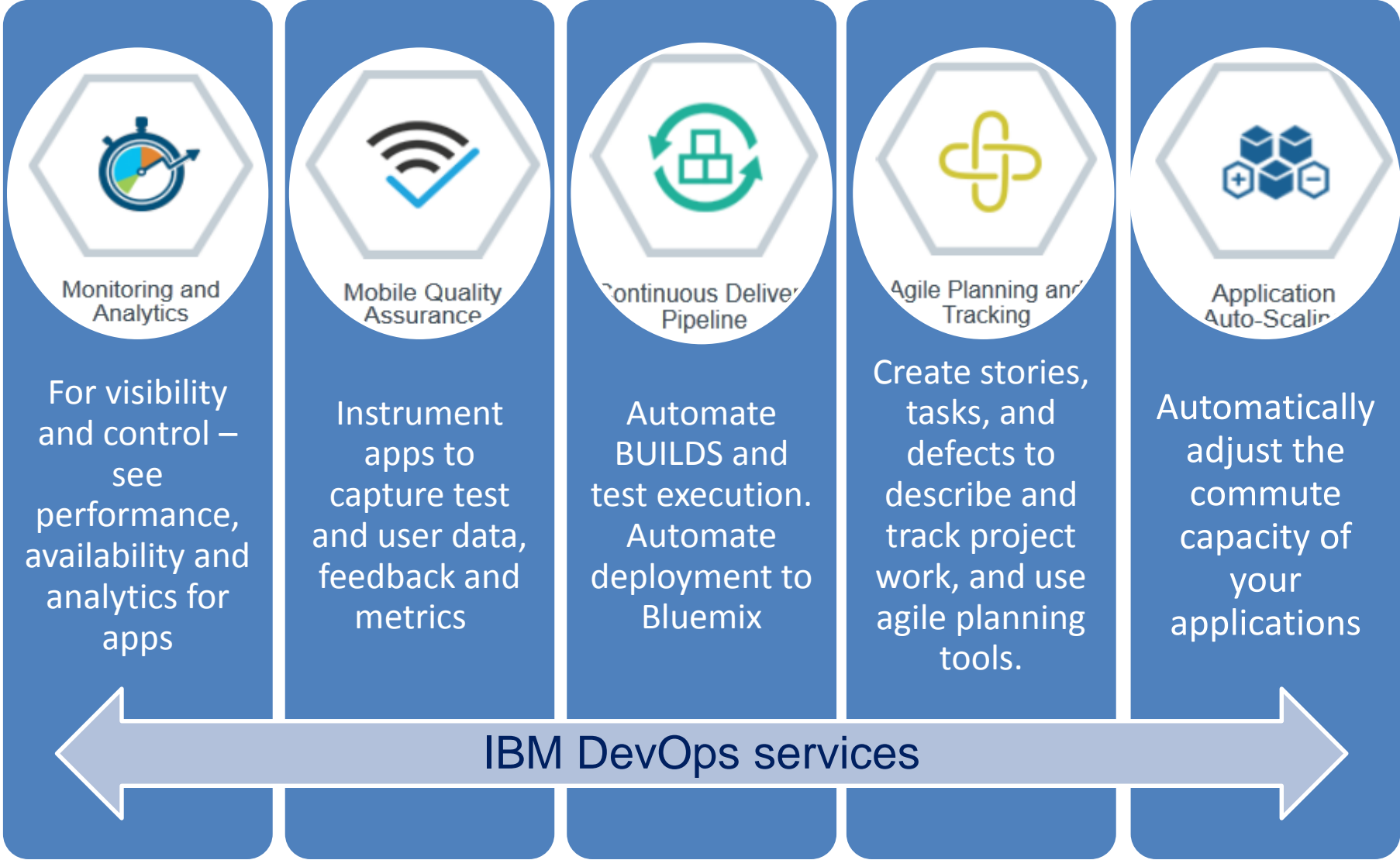Produce heat maps of capability gaps and areas of improvement to determine priority

Establish a roadmap with milestones and execution timelines

Backup

DevOps for Bluemix + On Prem

Application Type	Pace of Release and Team	Infrastructure & Cost Model	Solution
Need to transform your complex on premise IT. Heterogeneous platforms including Mobile, J2EE, .NET	Large teams, distributed, high process rigor, consider security, regulatory compliance, audits.	Central IT , Strong IT backbone, "Extended enterprise" with public IaaS and virtual private clouds, allocated CAP EX for Key IT initiatives.	CLM /Urban Code/ Service Virtualization
Also, building Mobile Cloud or Build data Apps connected to on premise systems to go after new markets?	Also, have Small teams in LOBs , move quickly, low ceremony, highly integrated teams, developers, designers, growth hackers, data scientists.	LOB, Convert CapEx to OpEx on Mobile/Cloud/Big data projects, prefer convenience of development and delivery over granular control of infrastructure	**+** IBM Bluemix DevOps Solution

IBM DevOps Services on IBM Cloud Platform - Bluemix

Monitoring and Analytics

For visibility and control – see performance, availability and analytics for apps

Mobile Quality Assurance

Instrument apps to capture test and user data, feedback and metrics

Continuous Delivery Pipeline

Automate BUILDS and test execution. Automate deployment to Bluemix

Agile Planning and Tracking

Create stories, tasks, and defects to describe and track project work, and use agile planning tools.

Application Auto-Scaling

Automatically adjust the commute capacity of your applications

IBM DevOps services

What it really means

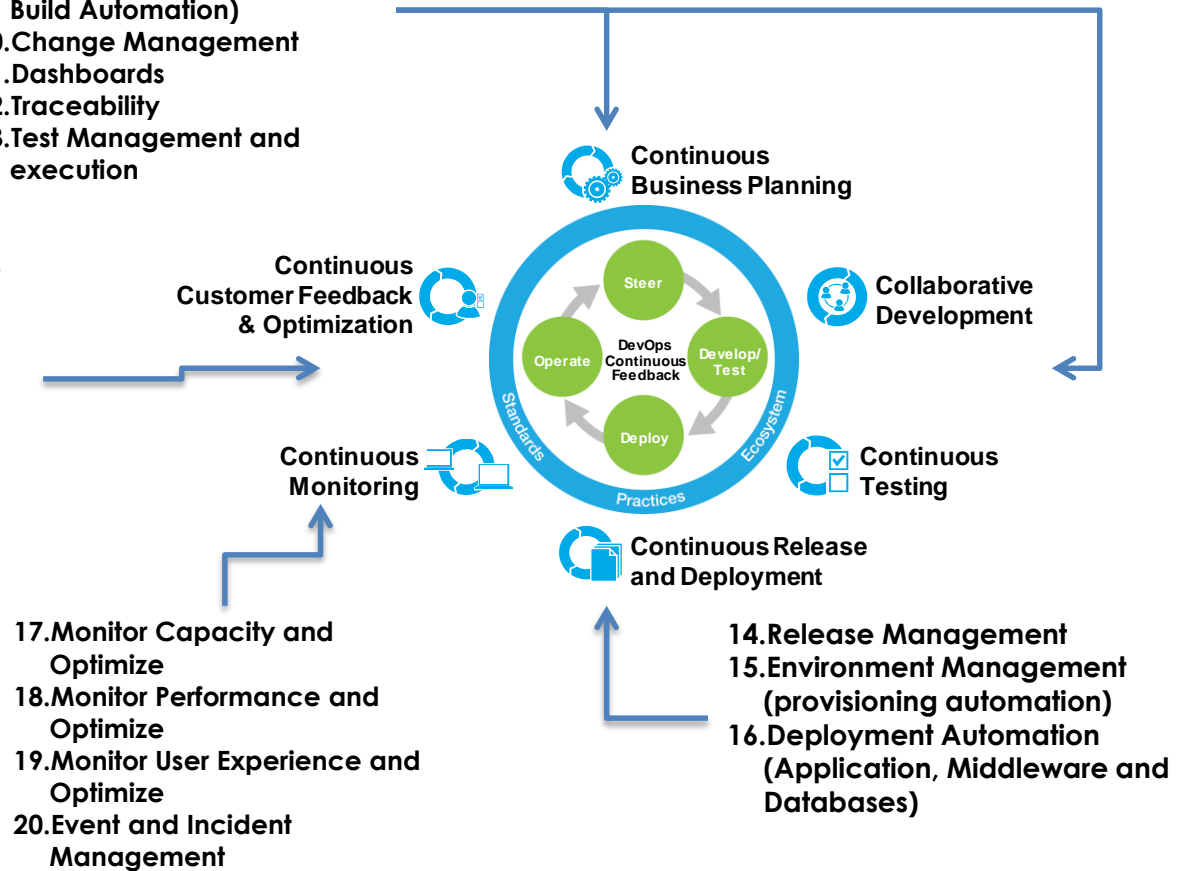| Service Name	What it does – features	Business Value
GIT Hosting	Easily add Git Repo to your Bluemix Application and auto-deploy changes via Git Push.	Use any of your favorite tools like Eclipse, xCode, Android Studio, Visual Studio, Sublime or other editor to write and share code and push changes.
Web IDE	1. Integrated Source code editor. 2. Smart features including content assist for CSS, HTML, and JavaScript. 3. Syntax highlighting and code validation 4. Editing features for coding quickly, including keyboard shortcuts, and bracket and block-comment auto-completion 5. Key-bindings for vi and emacs users.	1. Easily import your source code 2. Add Git Integration to your Bluemix Application, your code changes made via Web IDE are auto-deployed. 3. Copy a file by dragging it to a new directory
Planning & Tracking	1. Manage your work, Track all changes, collaboration 2. Create and share plans, 3. Dashboards and taskboards	1. Achieve disciplined software delivery and respond rapidly to business needs. Easily adopt Agile practices 2. Plans become accessible to everyone & dynamically reflect team position/direction. Create individual plans, track progress & balance work load. Drive critical changes as a result of continuous feedback 3. Know state of team project, without having to ask

What these changes really mean (contd.)

Service Name	What it does – features	Business Value
Mobile Quality Assurance	1. Over the Air Build Distribution 2. In-app Bug Reporting 3. Automated Crash Reporting 4. User Feedback and Sentiment Analysis	1. Get changes to testers as soon as available. 2. Submit defects in seconds from device 3. Aggregated crash logs from pre-production and production environments automatically. 4. Feedback straight from customers, and mine ratings & reviews for actionable insights
Continuous Delivery Pipeline	1. Automated Build & test Support. 2. Configure Ant builds, Grunt builds and automated unit tests. 3. Track changes, build artifacts and test completion. 4. Configure Builder with Continuous Integration & select Deployer to configure app deployment options. 5. Automated Multi-stage/Multi-step deployment support.	1. Configure build engine to compile & run source within Git repositories. 2. Once configured, builds automatically triggered when source code changes are contributed. 3. Drill into build to view build logs, view work items included in a build, download the artifacts that were produced from the build, and view the test execution. 4. Once configured, any successful build will trigger a push of the Application to Bluemix 5. You can now configure a Deployer to deploy built packages to one or more spaces in Bluemix, enabling you to construct a pipeline for software delivery

IBM DevOps Capabilities Map

6. Release Planning
7. Collaborative Development
8. Configuration Management
9. Build Management (Requires Integration with Build Automation)
10. Change Management
11. Dashboards
12. Traceability
13. Test Management and execution

1. Capture, Analyze & Prioritize Business Requirements
2. Project Planning
3. Measure to Project Metrics
4. Traceability
5. Dashboard portfolio measures

Continuous Business Planning

Continuous Customer Feedback & Optimization

Collaborative Development

Continuous Monitoring

Continuous Testing

Continuous Release and Deployment

DevOps Continuous Feedback
Steer
Develop/Test
Deploy
Operate

Standards
Ecosystem
Practices

17. Monitor Capacity and Optimize
18. Monitor Performance and Optimize
19. Monitor User Experience and Optimize
20. Event and Incident Management

14. Release Management
15. Environment Management (provisioning automation)
16. Deployment Automation (Application, Middleware and Databases)