

BlueMix to mainframe: deployment automation



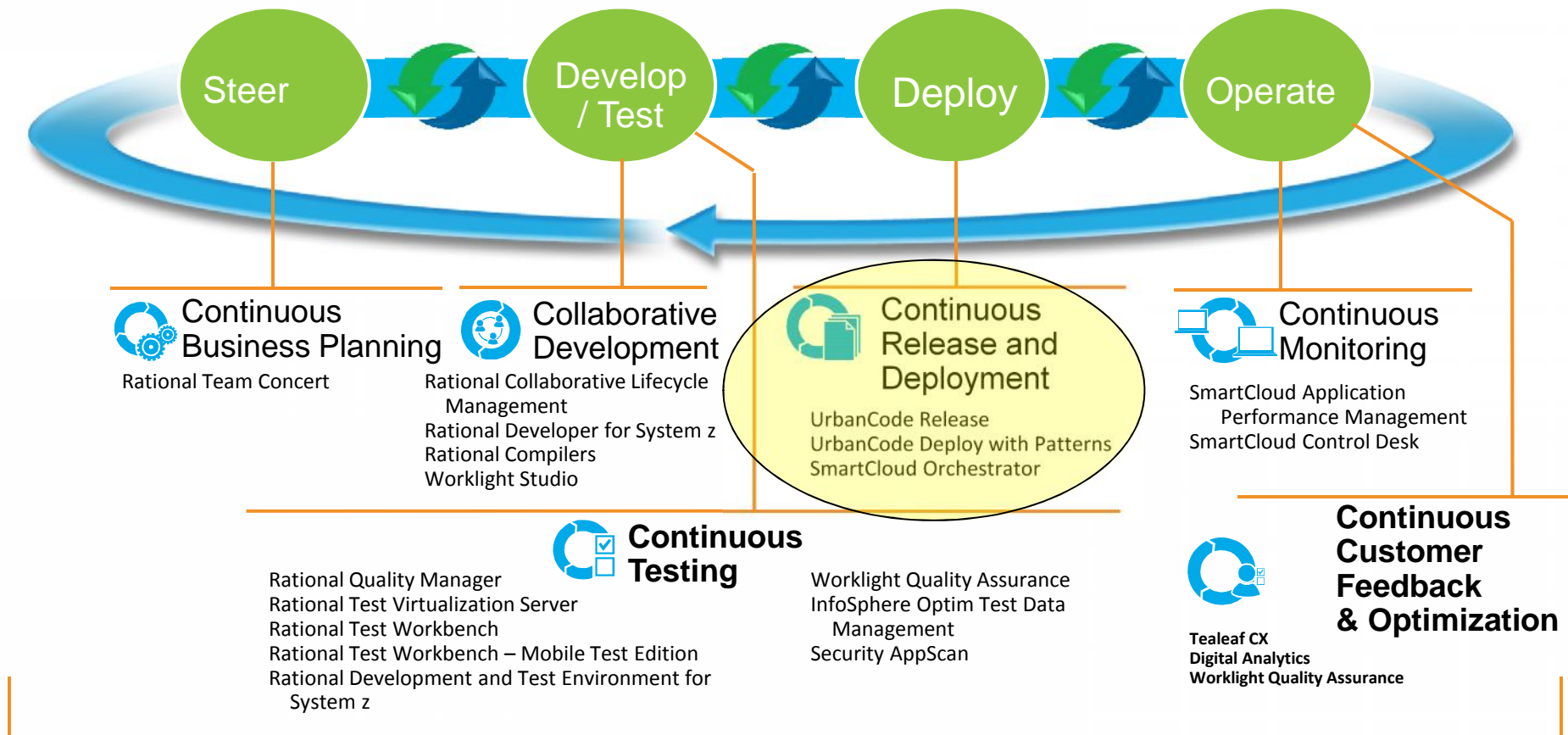
UrbanCode Deploy (UCD)

- 2:00 p.m. - Regi
- **BlueMix to mainframe: deployment automation for hybrid cloud**
- Because of market pressures, distributed and mainframe organizations must build and test applications more efficiently and economically. Organizations also need to deliver end-to-end applications quickly.
- Teams must implement code changes quickly, complete testing and deploy the application swiftly. However, based on prevailing mainframe delivery methods, it can take weeks or even months just to make simple module changes.
- This session provides an overview of DevOps solutions that can automate building, deploying and testing. These solutions can reduce manual effort and add repeatability and stability to the delivery process.

IBM DevOps – Broad set of DevOps capabilities



Address bottlenecks across the application delivery lifecycle



Bluemix DevOps services

| | | |
|---|---|---|
| Agile planning and tracking Application auto-scaling AppScan mobile analyzer Continuous delivery pipeline Git hosting | Mobile application security Mobile data Mobile quality assurance Monitor & analytics Push | RapidApps (beta) Server-side code Web IDE |
|---|---|---|

Delivery challenges with Infrastructure deployment



| Complex manual processes for deploying infrastructure lack repeatability and speed | Failures due to inconsistent development and production environments | Long and complex lifecycle for managing infrastructure | Managing large number of configurations for deploying to Hybrid Cloud |
|---|--|--|---|
| <p>Env. Request</p> <p>ADMIT ONE</p> <p>Provision VM</p> <p>ADMIT ONE</p> <p>Deploy Database</p> <p>ADMIT ONE</p> <p>Deploy App Server</p> <p>ADMIT ONE</p> | <p>Dev</p> <p>Prod</p> | <p>Application Changes</p> <p>Infrastructure Changes</p> | <p>Public</p> <p>Private</p> <p>Develop Public, Deploy Private</p> <p>Market test Workloads</p> <p>Cloud Bursting</p> |

How do we ensure that we deploy
What we want, **When** we want, **Where** we want!

- 11 Years Build, Release and Deployment Experience
- Global Customers
- Enterprise scalability, security, compliance and automation
- Training, consulting and implementation services
- Based in Cleveland, OH

“One key benefit of UrbanCode is how quickly it can be implemented and used for deployments.”

Gartner

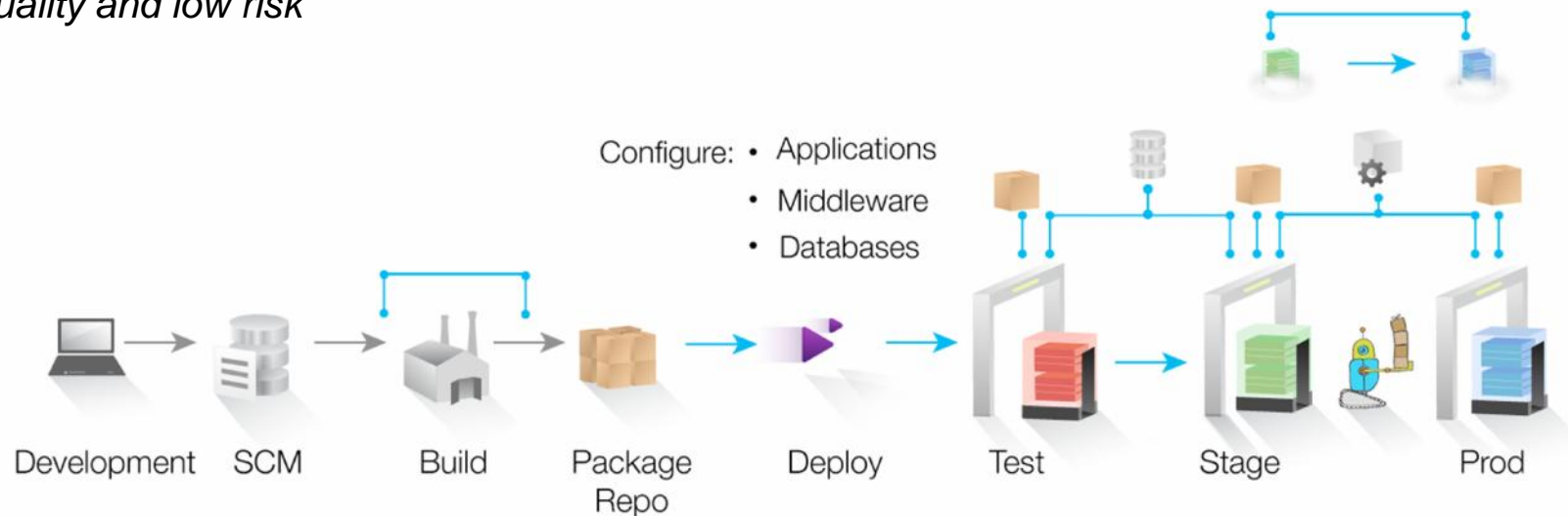


Investing in Deploy Automation ...



Introducing **UrbanCode**

Enabling clients to more rapidly deliver mobile, cloud, big data and traditional applications with high quality and low risk



Drive down cost

Remove manual effort and wasted resource time with push button deployment processes

Speed time to market

Simple, graphical process designer, with built-in actions to quickly create deployment automation

Reduce risk

Robust configuration management, coordinated release processes, audits, and traceability

IBM UrbanCode Deploy automates the deployment of applications, databases and configurations into development, test and production environments, helping to drive down cost, speed time to market with reduced risk.

IBM UrbanCode Release is an intelligent collaboration release management solution that replaces error-prone manual spreadsheets and streamlines release activities for application and infrastructure changes.

<https://developer.ibm.com/urbancode/products/>

Composite Applications



Re-usable Workflows



The “Where”

Environment Management



The “How”

The “What”



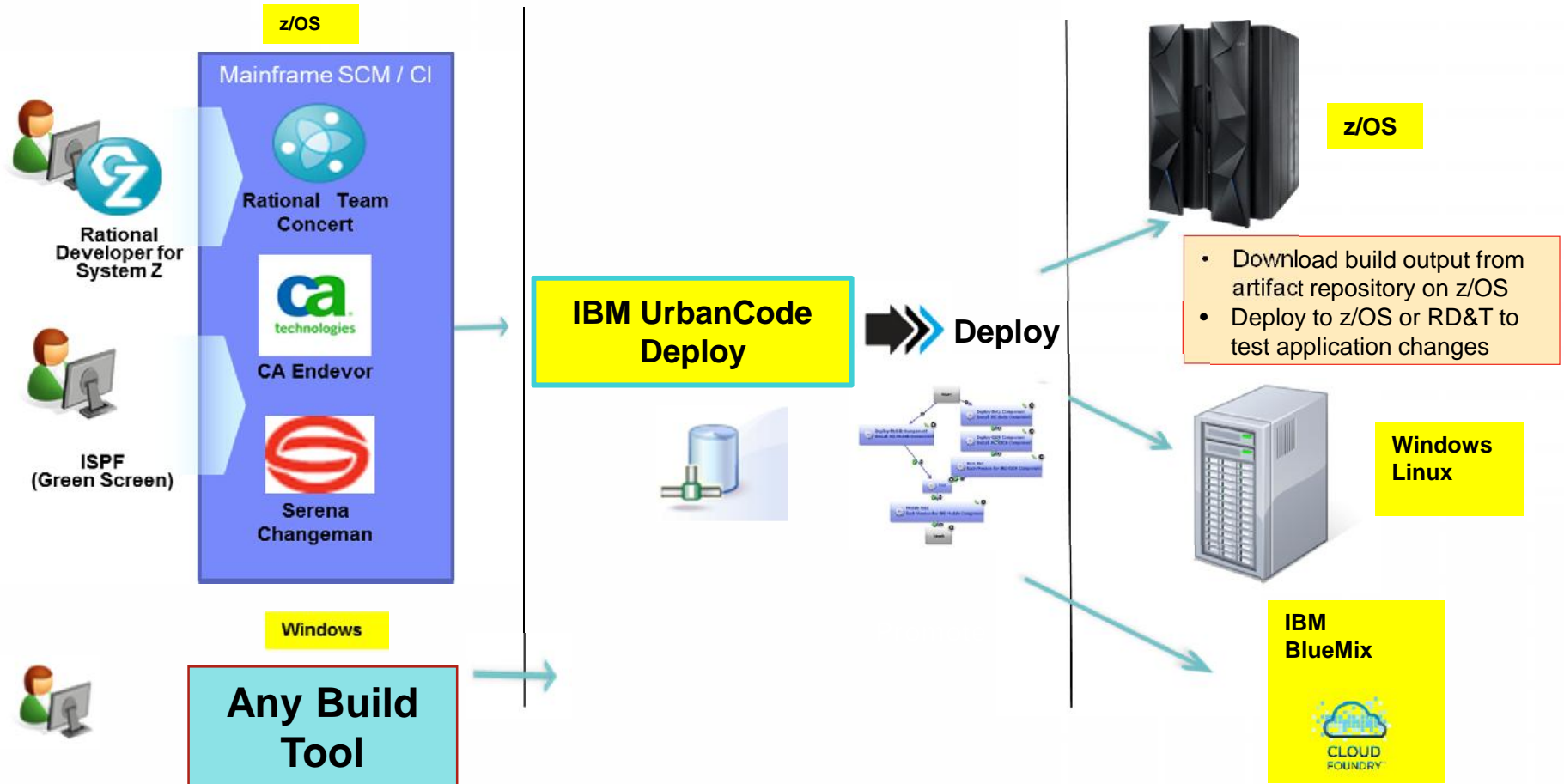
Components

Deployment Automation

Continuous Delivery for the Mainframe and Others



Capabilities to speed delivery of interdependent, multi-platform applications



- Provides a **unified solution** for continuous delivery of heterogeneous enterprise applications
- **Accelerate delivery** and reduces cycle time to develop/test multi-tier applications across heterogeneous environments and platforms
- **Reduce costs** and eliminate delays for delivering mainframe applications
- **Minimize risk** and improve productivity across disparate teams with cross-platform release planning

Model spaces and applications in UrbanCode Deploy



Resources | Resource Templates | Agents | Agents

Create Top-Level Group | Select All... | Actions

| <input type="checkbox"/> | Name |
|-----------------------------|--|
| | <input type="text" value="Resource Name"/> |
| :: <input type="checkbox"/> | ▼ Bluemix |
| :: <input type="checkbox"/> | ▼ bluemix-controller (View Agent) |
| :: <input type="checkbox"/> | ▶ danberg@us.ibm.com |
| :: <input type="checkbox"/> | ▼ mdelder@us.ibm.com |
| :: <input type="checkbox"/> | ▶ dev |
| :: <input type="checkbox"/> | ▼ prod |
| :: <input type="checkbox"/> | hello_world |
| :: <input type="checkbox"/> | HomesteadWebApp |
| :: <input type="checkbox"/> | ▼ test |
| :: <input type="checkbox"/> | hello_world |
| :: <input type="checkbox"/> | HomesteadWebApp |

What

Component: HomesteadWebApp

Created By: admin
Created On: 8/28/2014, 10:59 PM
Template: cloud-foundry-template
Used By: Homestead, Homestead Blue

Dashboard | Usage | Configuration | Calendar

| Version | Statuses |
|----------------------|--------------------------|
| <input type="text"/> | Statuses |
| 39 | |
| 38 | |
| 37 | |
| 36 | |

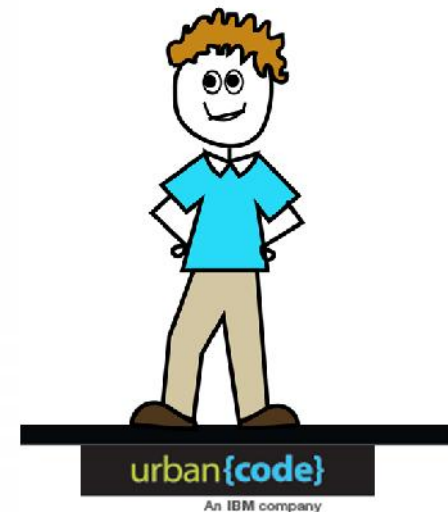
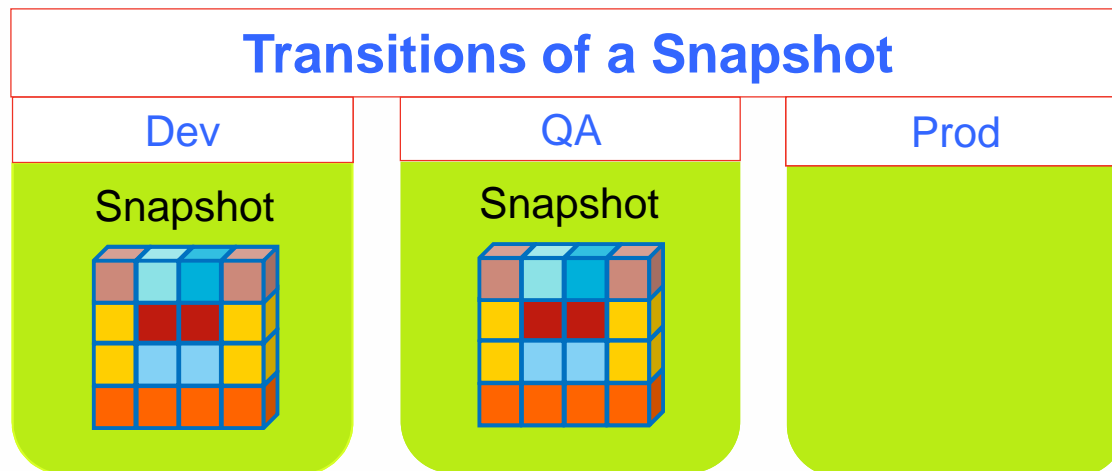
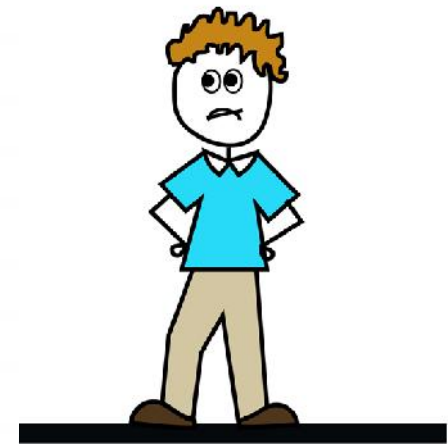
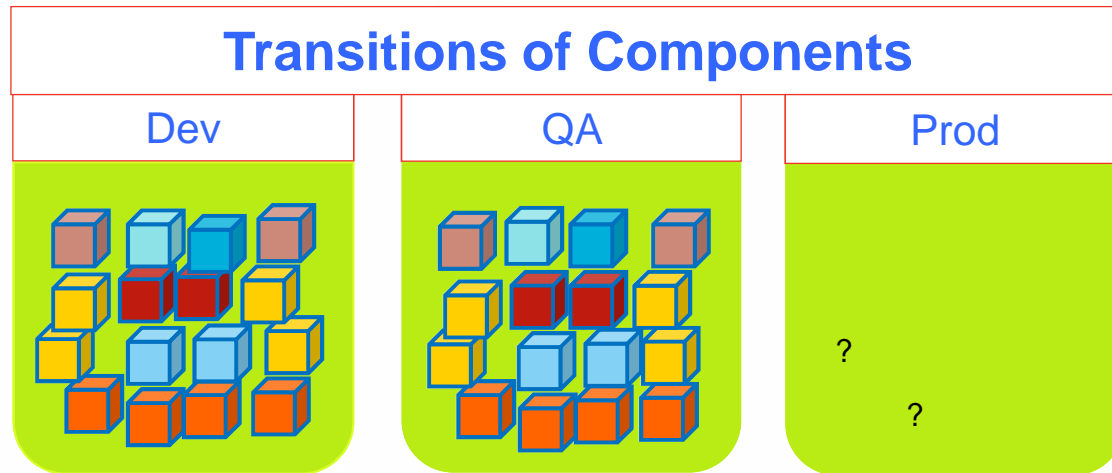
Components | Configuration | Processes | Changes

Create Process

| Process | Description |
|-----------------|---|
| blue_deploy | Deploy a new instance using a blue/green deployment strategy. |
| delete_deployed | Used to delete the old app when part of a blue/green strategy. |
| delete_old | Used to delete the old app when part of a blue/green strategy. |
| map_green_route | Map to the public route when used as part of a blue/green strategy. |
| mark active | Used as part of a blue/green deployment strategy. |

Where

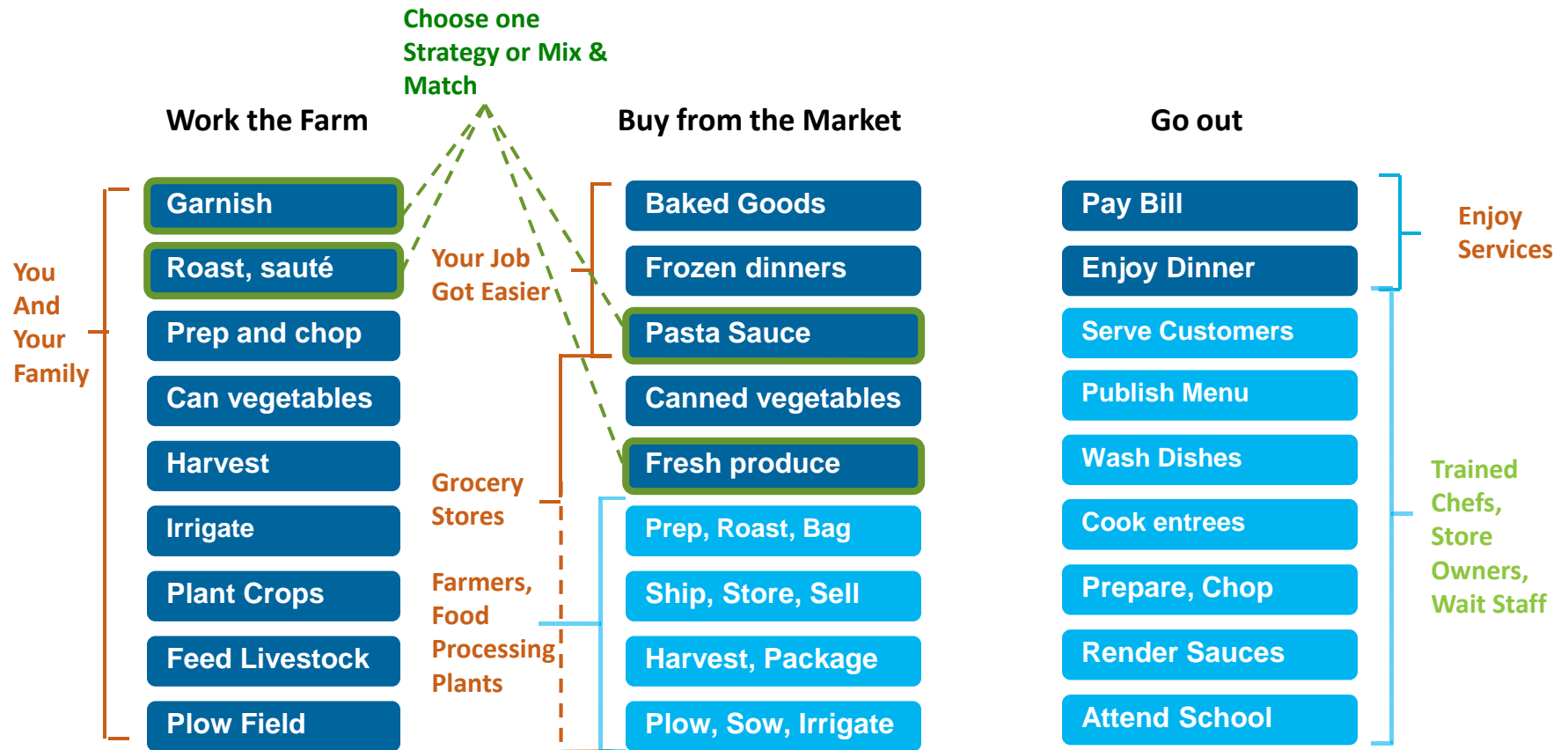
How



What's for dinner?



Choose your ingredients to balance your goals – speed, quality, and customer satisfaction



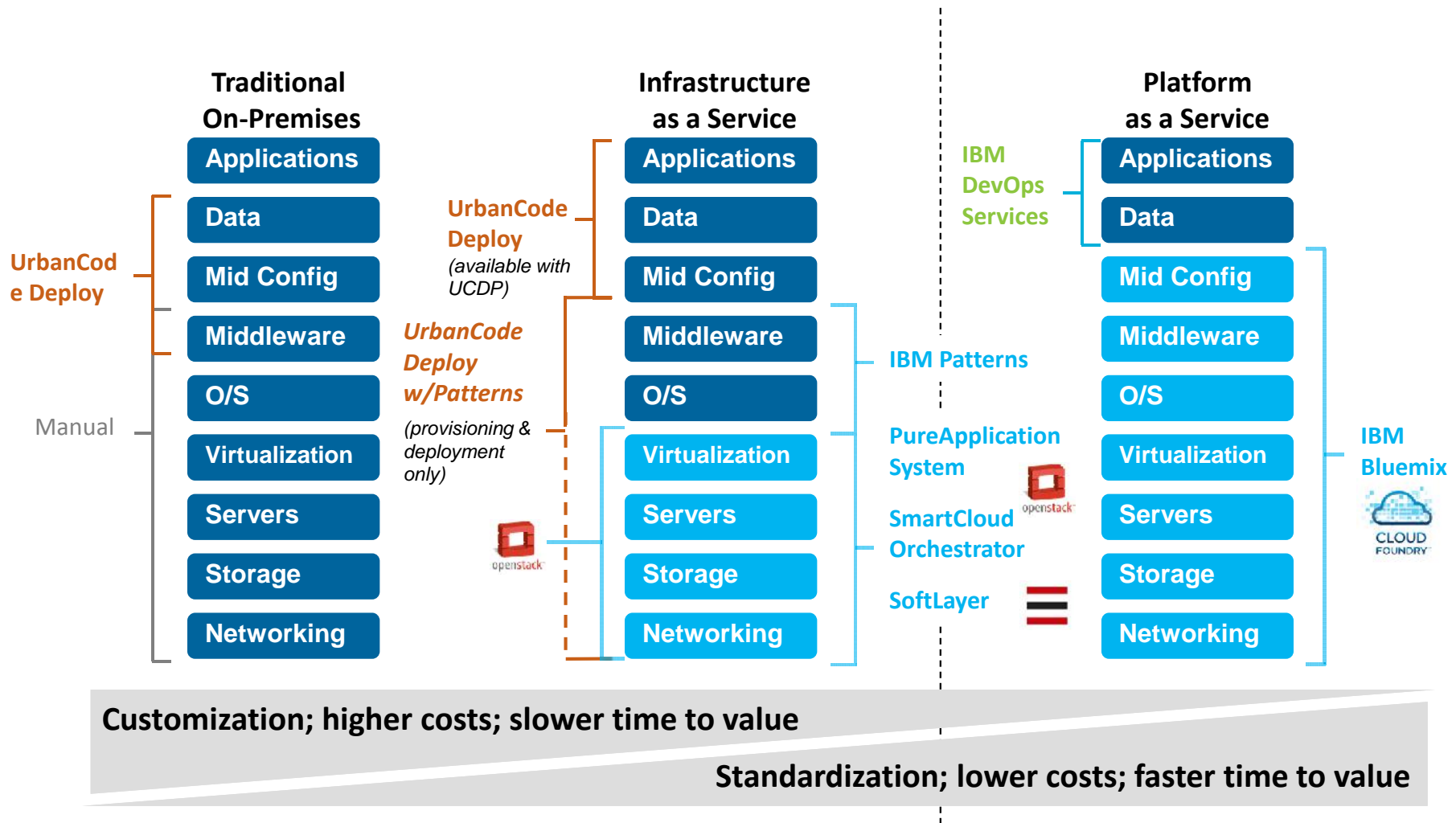
Customization; higher costs; slower time to value

Standardization; lower costs; faster time to value

DevOps and Cloud adoption



Automating for faster delivery with DevOps and Cloud



BlueMix - 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

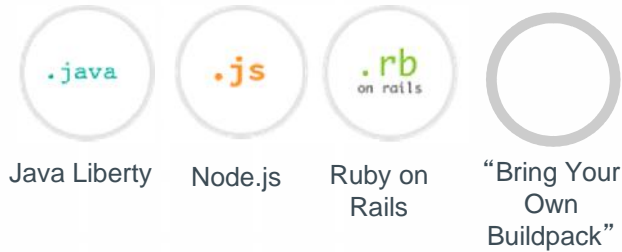


BlueMix - List of Cloud Platform Services



IBM, Open Source and Third Party APIs

Runtimes



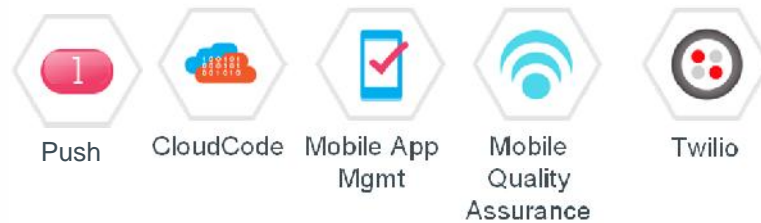
DevOps



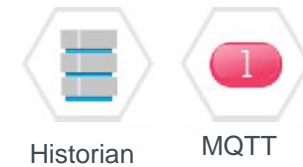
Data Management Services



Mobile Services



Internet Of Things



Web & App Application



Questions

The word "Questions" is written in a large, blue, 3D-style font. Each letter of the word is filled with a different photograph of a diverse group of people, including men and women of various ethnicities, in professional or clinical settings. The letters have a slight shadow beneath them, giving them a three-dimensional appearance.



Scenario : Application change is required

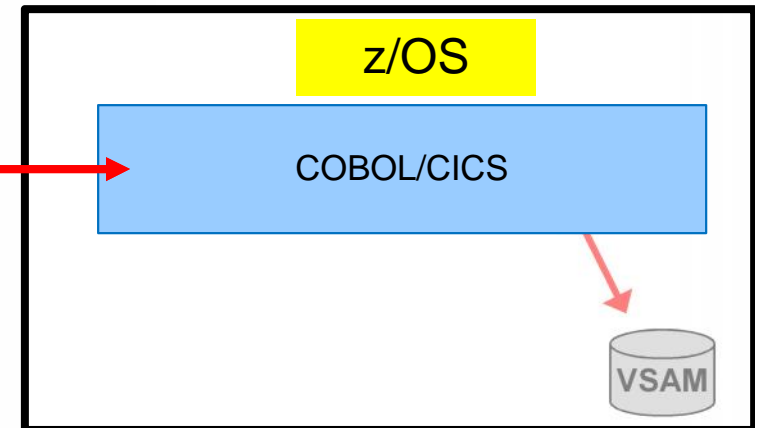
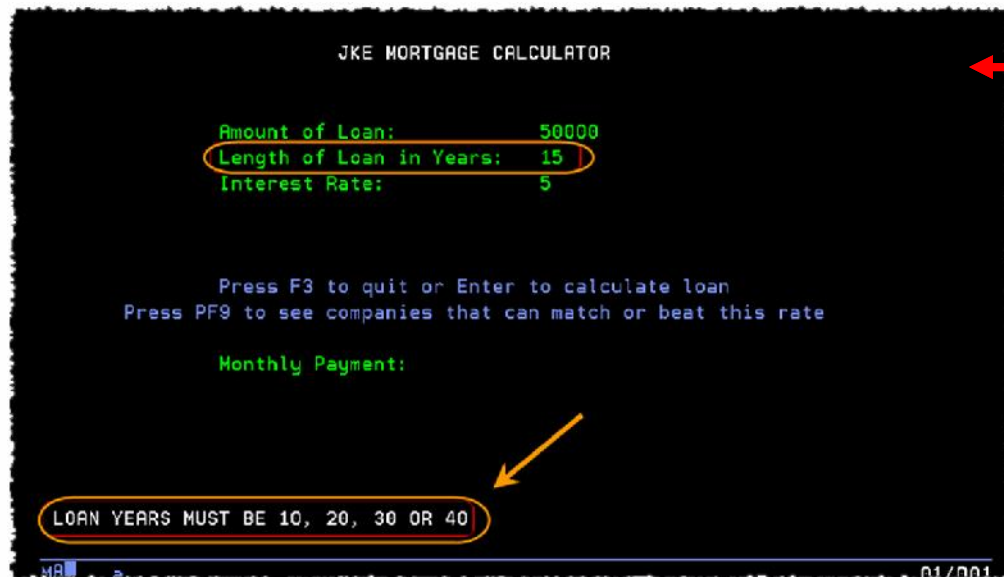


z/OS Application Bug

The Only valid length of loan **must be 10, 20 30 or 40 years.**

Currently the length could be **between 1 and 40 years..**

A message should reflect this new enhancement



•Existing COBOL/CICS/BMS application

Scenario : Application change is required



z/OS COBOL program Bug

The Only valid length of loan **must be 10, 20 30 or 40 years.**

Currently the length could be **between 1 and 40 years..**

Fixes: zOS: A message should reflect this new enhancement

Mobile : A drop down should allow only 10,20,30,40

```
JKE MORTGAGE CALCULATOR - 12/15/2012

Amount of Loan:          180000
Length of Loan in Years: 30
Interest Rate:           8.2

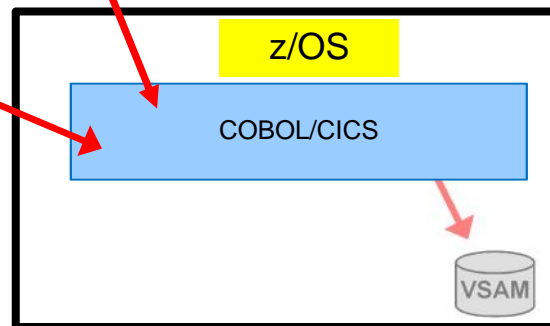
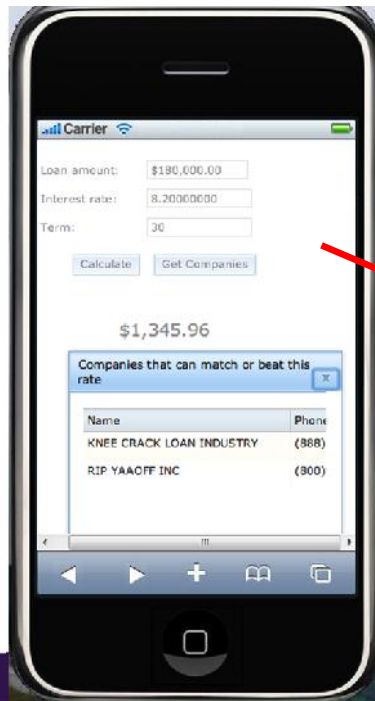
Press F3 to quit or Enter to calculate loan
Press PF9 to see companies that can match or beat this rate

Monthly Payment:                1,345.96
```



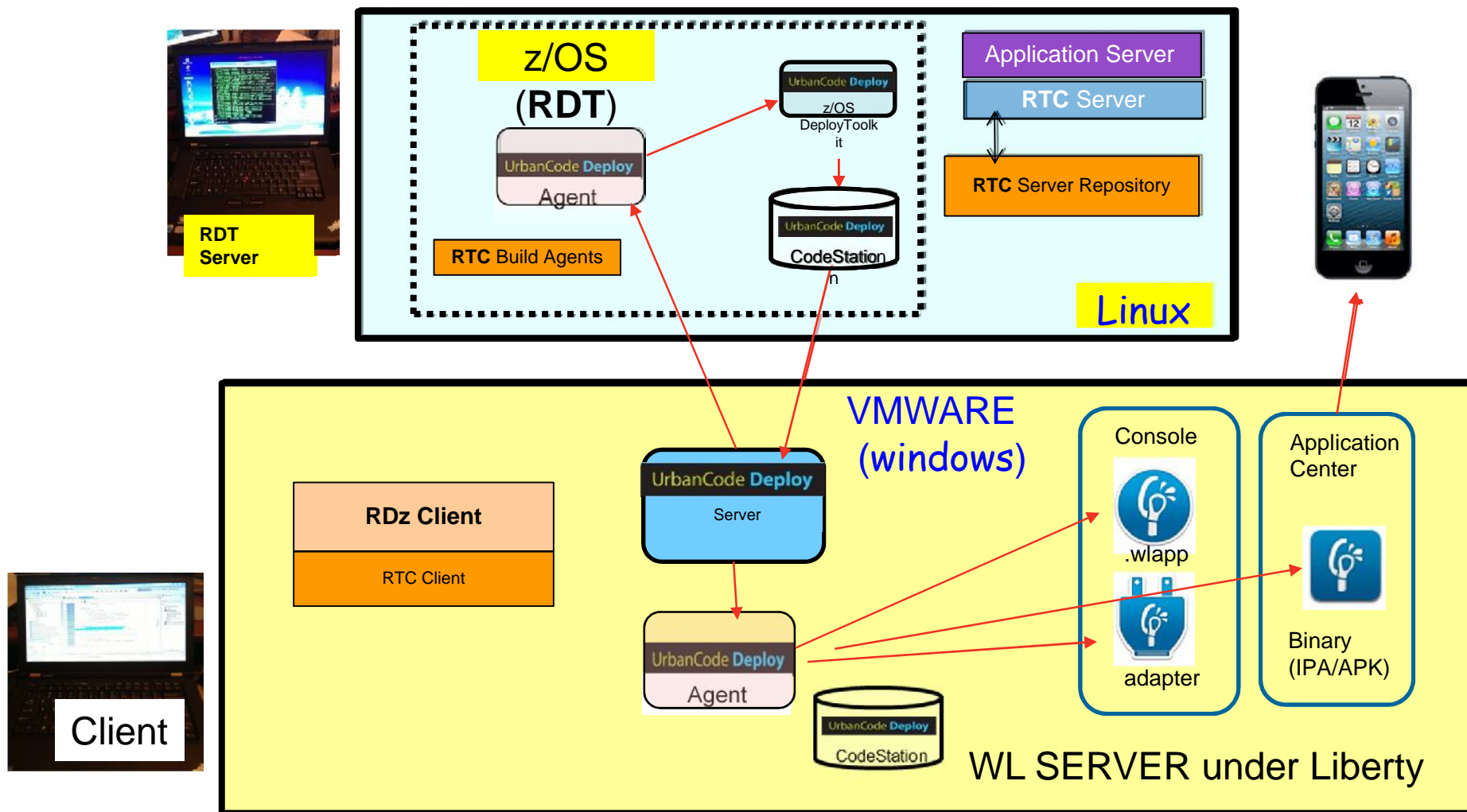
```
Better Mortgage Rates

Company          Phone Number  Interest Rate  Monthly Payment
KNEE CRACK LOAN INDUSTRY (888)123-4444  6.9            1,191.51
RIP YAOFF INC    (800)968-6933  7.2            1,227.92
```

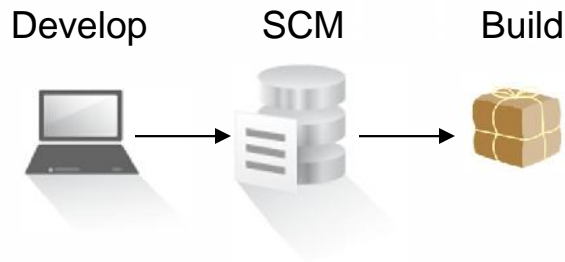


Existing COBOL/CICS/BMS application

UC Deploy – Demo architecture



Create and Build Application



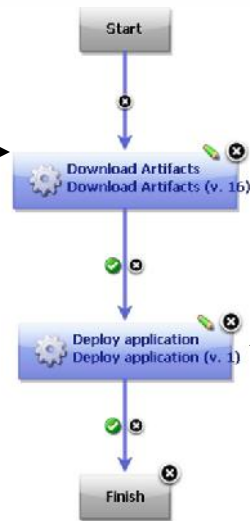
Deploy Application



CodeStation



Process



Use Application



Emulators, Simulators, or Devices



Mobile back-end



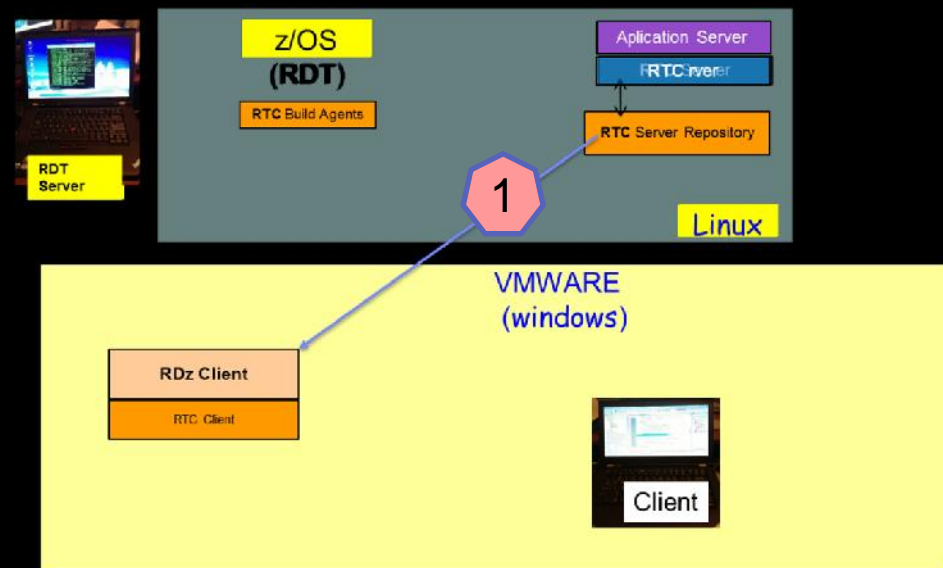
Thanks to:
Joel Cayne, MSc
Rational Mobile Tool:
IBM Canada Lab

Update Application

z/OS Developer:

Change existing code and deploy DEV environment

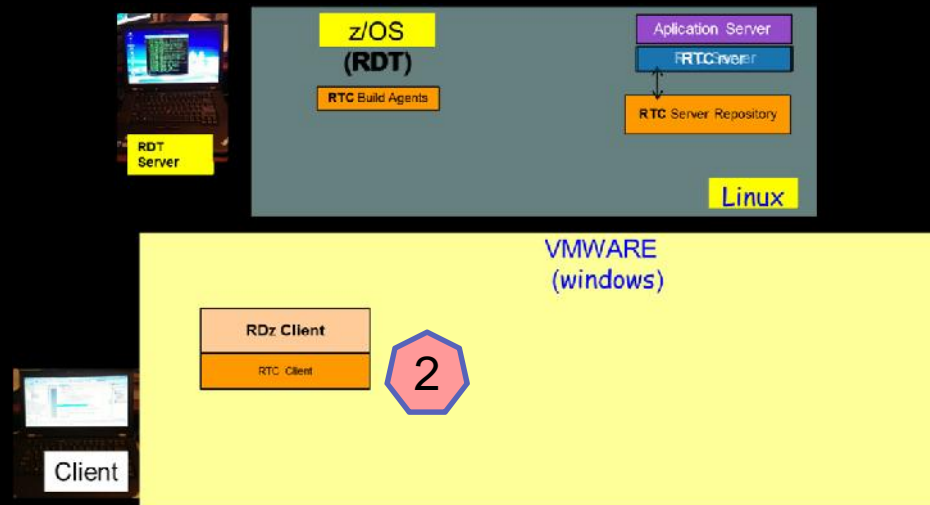
1. Use **RTC** to load the COBOL source code to **RDz**
2. Use **RDz** to make the COBOL changes on **JKEMPMT** and **JKENBRVL**.
3. Use **RTC** to perform a build that creates the z/OS loadlib members and push to **UrbanCode Deploy** on Windows



z/OS Developer:

Change existing code and deploy DEV environment

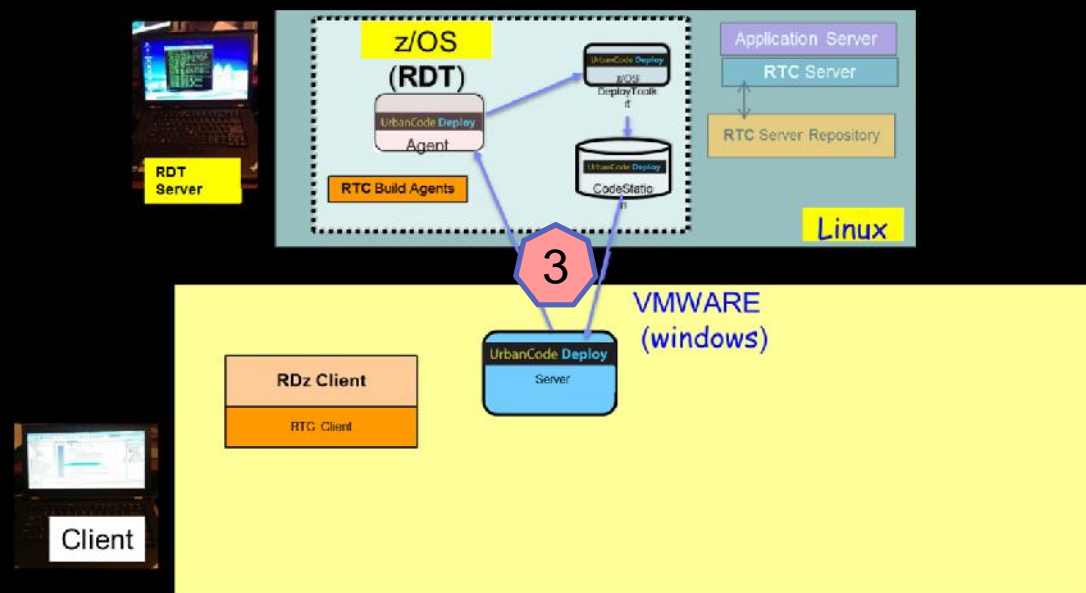
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z/OS Developer:

Change existing code and deploy DEV environment

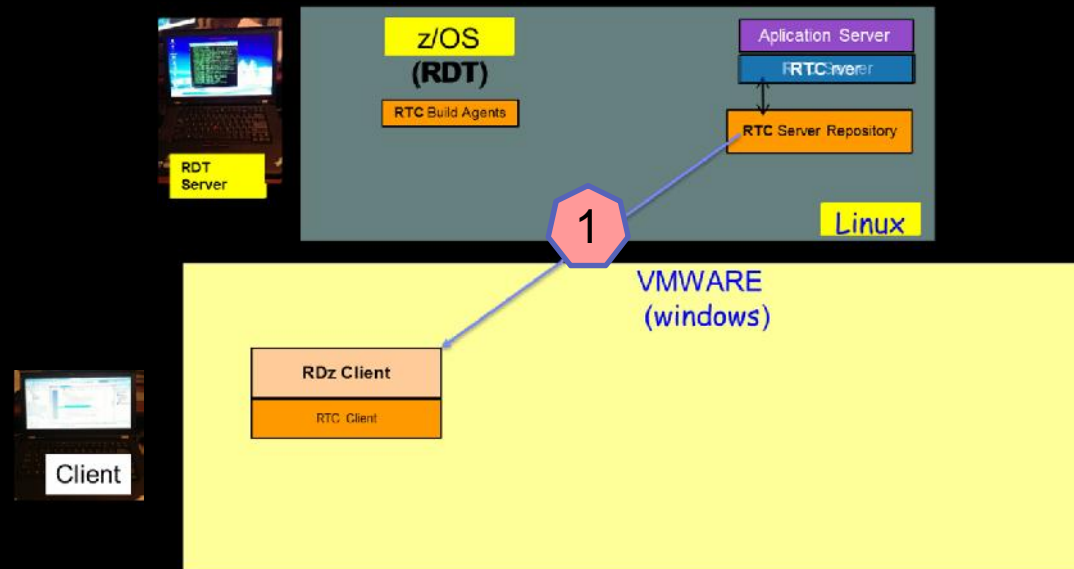
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Worklight Developer:

Change existing code and deploy DEV environment

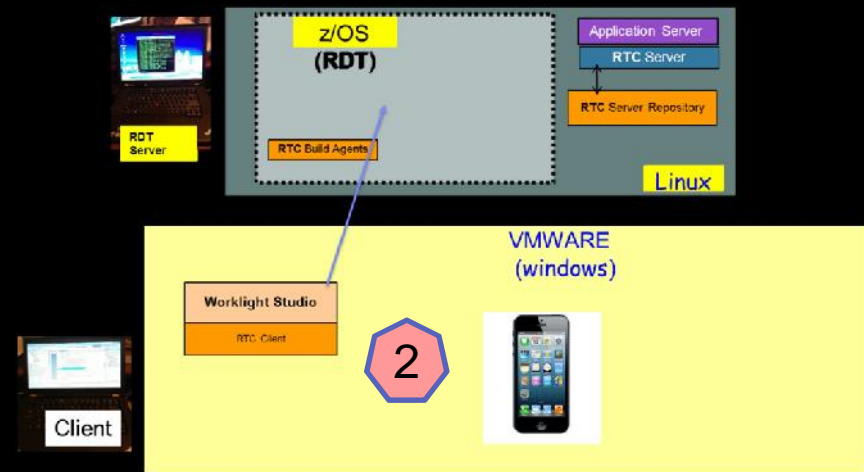
1. Use **RTC** to load the Worklight source code to **Worklight Studio**
2. Use **Worklight Studio** to make the Worklight changes on **HTML** and **Java Script**.
3. Use **RTC** to perform a Windows build that push to **UrbanCode Deploy** on Windows



Worklight Developer:

Change existing code and deploy DEV environment

1. Use **RTC** to load the Worklight source code to **Worklight Studio**
2. Use **Worklight Studio** to make the Worklight changes on **HTML** and **Java Script**.
3. Use **RTC** to perform a Windows build that push to **UrbanCode Deploy** on Windows

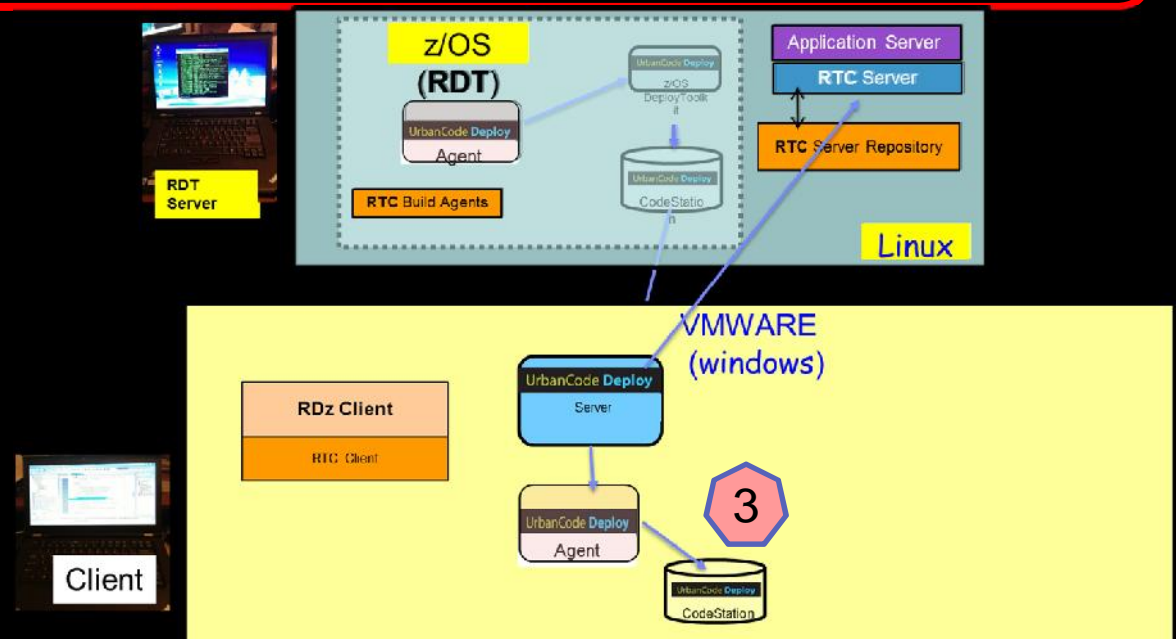


Worklight Developer:

Change existing code and deploy DEV environment

Use **RTC** to load the Worklight source code to **Worklight Studio**

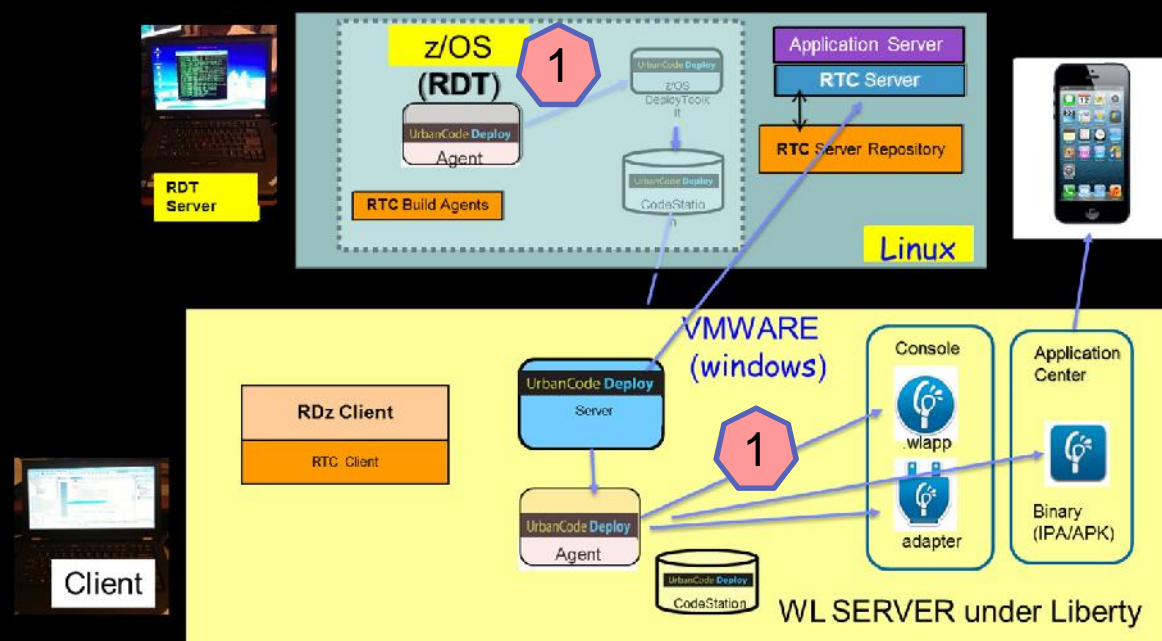
1. Use **Worklight Studio** to make the Worklight changes on **HTML** and **Java Script**
2. Use **RTC** to perform a Windows build that push to **UrbanCode Deploy** on Windows



Release Engineer:

Deploy z/OS (CICS) and Windows (Worklight Server) components to the DEV environment

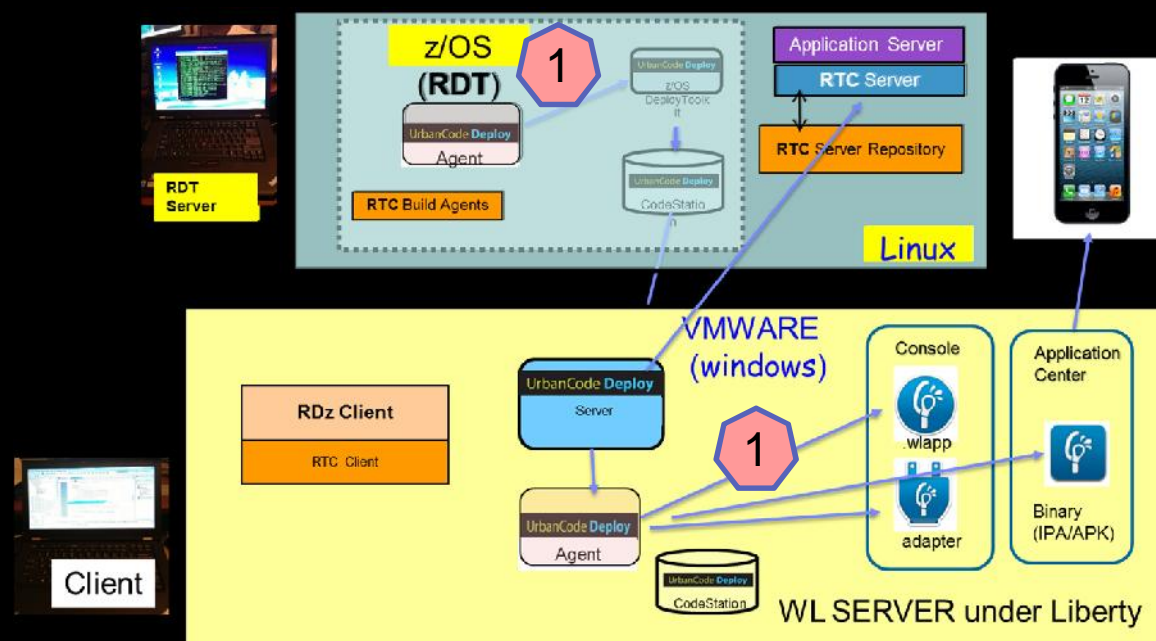
1. Go to **UrbanCode Deploy Server** and run the deploy at DEV level
2. Verify that the change has been made on **CICS** and **Worklight Server**



Release Engineer:

Deploy z/OS (CICS) and Windows (Worklight Server) components to the DEV environment

1. Go to **UrbanCode Deploy Server** and run the deploy at DEV level
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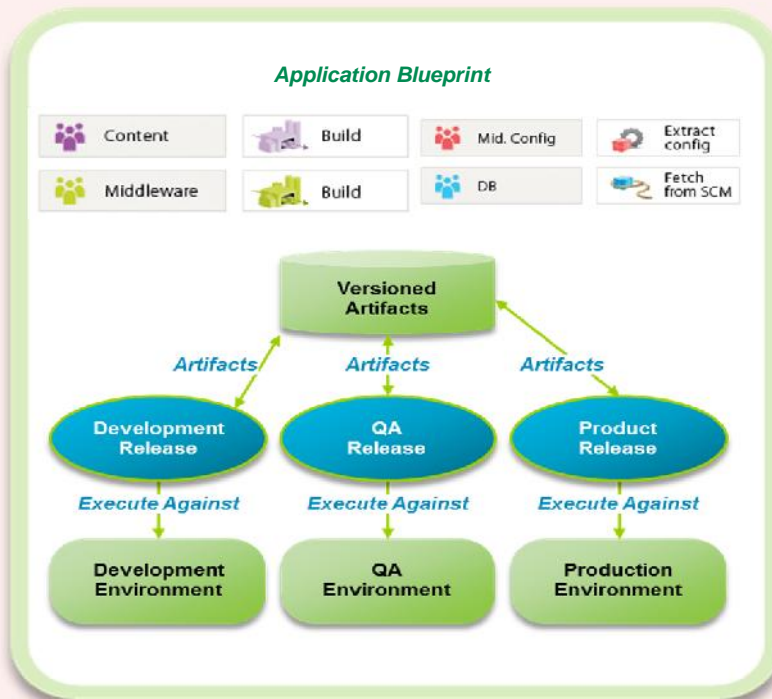


- Automated software release and deployment **reduces errors**
- Push-button deployments **improves productivity** for developer and operations
- Built-in best practices provides for **faster time-to-market**
- Enforced Security and traceability ensures **compliance and auditability**

Rapid solution delivery and test provisioning



Deliver test environments in minutes



urban{code}

An IBM company

IBM UrbanCode Deploy
IBM UrbanCode Release
IBM SmartCloud Orchestrator

Enabling you to...

- Provision consistent images for test environments, reduce rework, and speed redeploy of application changes
- Quickly deploy multiple test instances in minutes versus hours or days
- Support mainframes using zLinux and z/OS applications
- Orchestrate and automate the deployment and management of applications, middleware configuration, and databases, including Bluemix

THANK
YOU

The words "THANK YOU" are rendered in large, white, 3D-style block letters. Each letter is filled with a different photograph of a diverse group of IBM employees. The photos show people of various ethnicities, ages, and genders, many of whom are smiling or looking towards the camera. The background of the photos varies, showing office environments and server racks.

ibm.com/devops

END

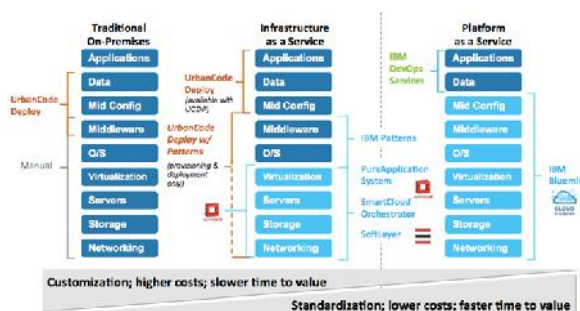
- Remaining Slides are Optional

- Integrate your Continuous Integration process directly into your delivery pipeline for all kinds of applications
 - Mobile
 - Bluemix or Platform as a Service
 - Midtier and Cloud
 - Mainframe
- Create snapshots of battle-tested configurations for components across all platforms and promote the entire snapshot through each successive phase of the pipeline
- Always know what version is deployed where, and avoid those pesky late-stage integration problems by “shifting left” and integrating against production like environments, earlier in the process
- Decouple teams with traditionally high dependencies through service virtualization, allowing each team to make progress and integrate in a predictable way

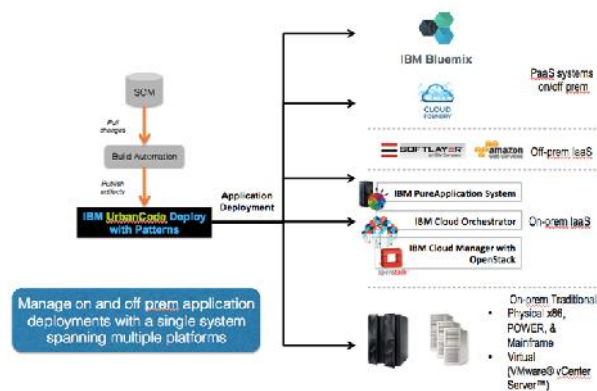
- Integrate your Continuous Integration process directly into your delivery pipeline for all kinds of applications
 - Mobile
 - Bluemix or Platform as a Service
 - Midtier and Cloud
 - Mainframe
- Test and promote components together as a snapshot (across all platforms!)
- Know (don't guess!) what version is deployed where, when, and by whom
- Use service virtualization to enable midtier and mainframe teams to work at their own pace

"Success is not delivering a feature; success is learning how to solve the customer's problem."

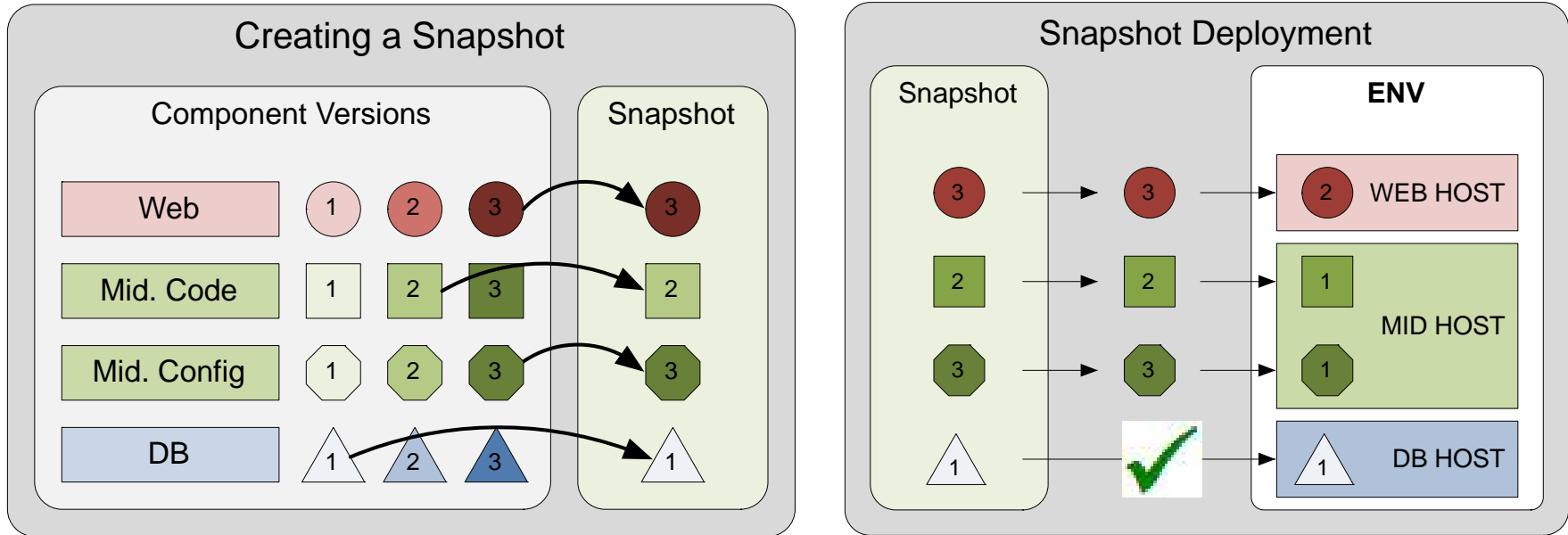
- Mark Cook



- **Continuous Deployment** across runtimes – Platform as a Service, Infrastructure as a Service, Hybrid Cloud
- **Deploying to IBM OpenStack (Infrastructure as a Service)**
- **Deploying to Bluemix (Platform as a Service)**
- **Integrating your Continuous Integration toolchain** to achieve Continuous Deployment
- **Managing your releases** across the breadth of applications



Snapshots – A Version of the App



- Snapshot environments that pass tests
- Snapshots contain deployables and config
- They help with:
 - ✓ Automation, Audit, and Visibility