



Red Hat



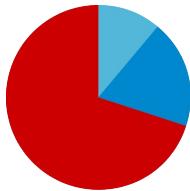
Microsoft Azure

Monoliths to microservices: App Transformation

Hands-on Technical Workshop

Moving existing apps to the cloud

Application modernization



Existing Apps

How much work required to rewrite?

Review
Analyze
Prioritize

Lift & Shift

Connect & Extend

Rip & Re-write

Repurchase

Retire

Retain as is

Smaller or frozen apps are candidates here

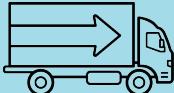
Highly scaled and high rate of change apps are candidates

Not a target

Patterns in modernizing workloads

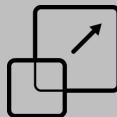
LIFT & SHIFT

- Containerize existing workloads
- Deploy them on a **PaaS**
- Keep external integrations and data on legacy
- Legacy applications have to be well written and suited



CONNECT & EXTEND

- Legacy remains intact
- New layer - new capabilities
- Deploy on **PaaS**
- New integration points between legacy and new layers (**Need for Agile Integration**)

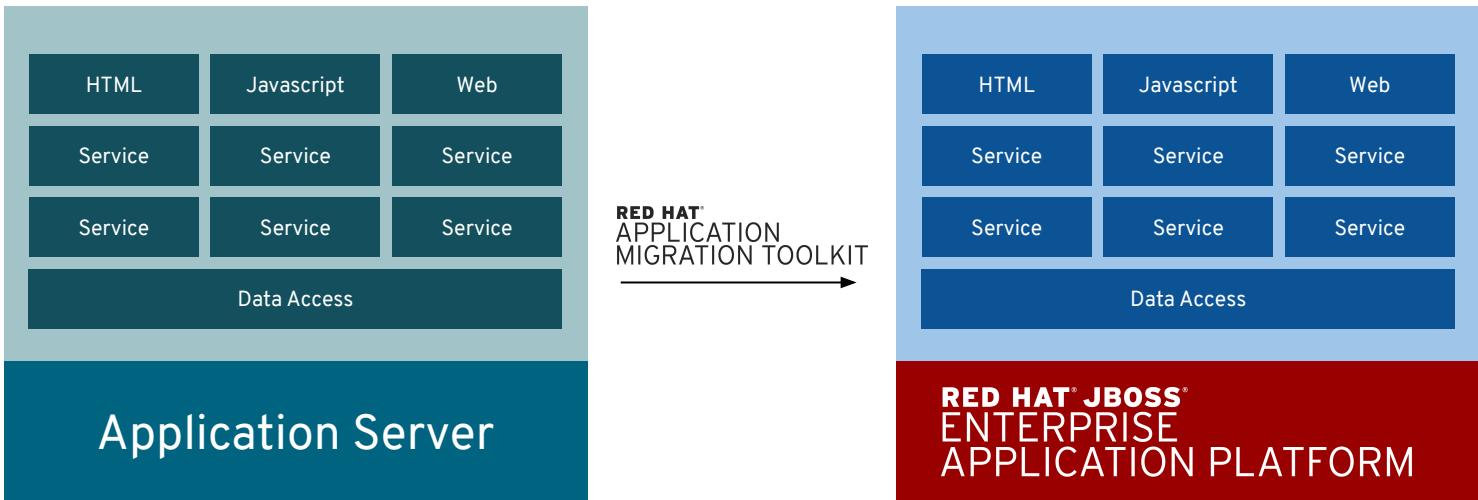


RIP & RE-WRITE

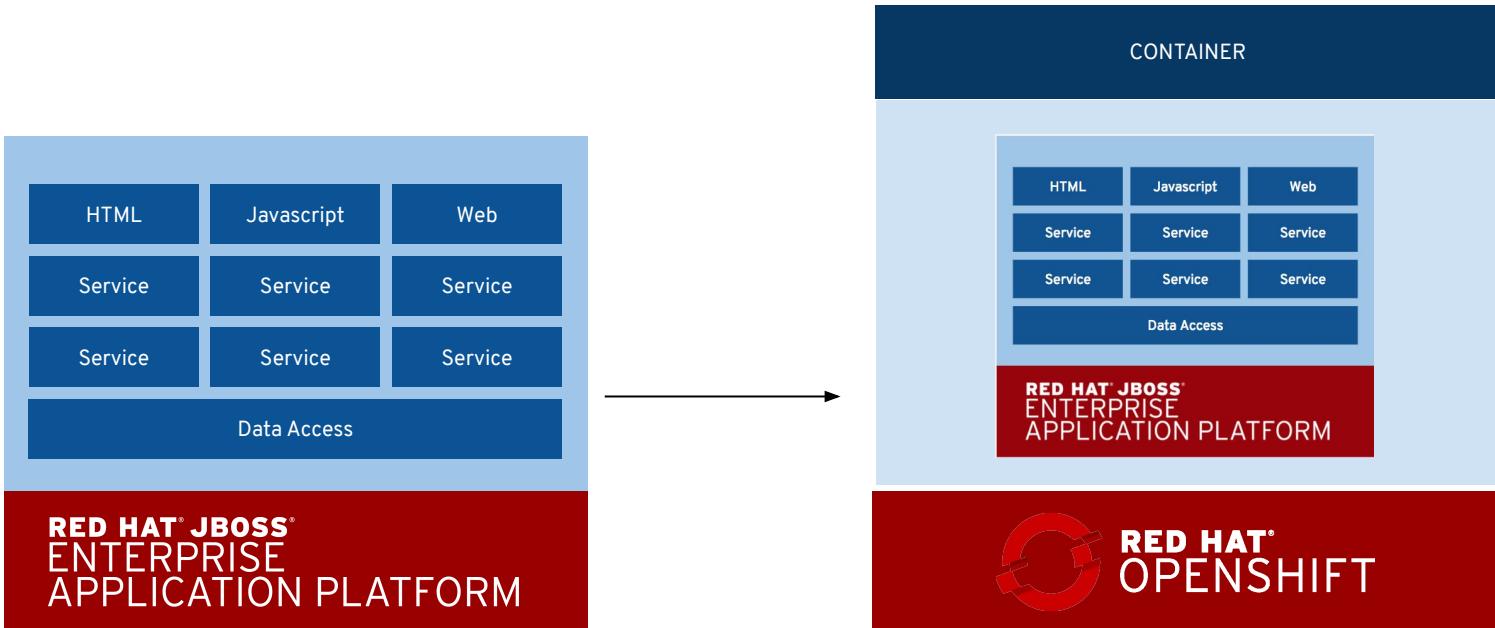
- Legacy is totally replaced
- New interfaces and data
- Use **PaaS** to run
- Some data and features can be re-wrapped, but mostly are retired.



Lift-and-shift monolith to cloud



Lift-and-shift monolith to cloud



Why migrate to JBoss EAP?

| Runtime ^{[1][2]} (framework) | Boot time server only | Boot time including app deployment | Memory usage without load | Memory usage under load | Measured ^[3] throughput |
|--|--------------------------|---------------------------------------|------------------------------|----------------------------|---------------------------------------|
| JBoss EAP (Java EE) | 2 - 3 sec | 3 sec | 40 MB | 200 - 400 MB | 23K req/sec |
| JBoss EAP (Spring) | 2 - 3 sec | 7 sec | 40 MB | 500 - 700 MB | 9K req/sec |
| JBoss WS/Tomcat (Spring) | 0 - 1 sec | 8 sec | 40 MB | 0.5 - 1.5 GB | 8K req/sec |
| Fat JAR (Spring Boot) | N/A | 3 sec | 30 MB | 0.5 - 2.0 GB | 11K req/sec |

Don't believe it? Try it out yourself <http://bit.ly/modern-java-runtimes>

[1] The microservice is a simple REST application.

[2] All runtimes are using their default settings

[3] The performance test was conducted with ApacheBench using 500K request with 50 users and keep-alive enabled.

Lab: Moving existing apps to the cloud

Goal for lab

In this lab you will learn:

- How to use lab environment for today
- How to migrate an existing legacy Java EE application (CoolStore) from Weblogic to JBoss EAP using **Red Hat Application Migration Toolkit**
- How to deploy the result to **OpenShift container platform** to create a *Fast Moving Monolith*
- Different alternatives to building and deploying an application

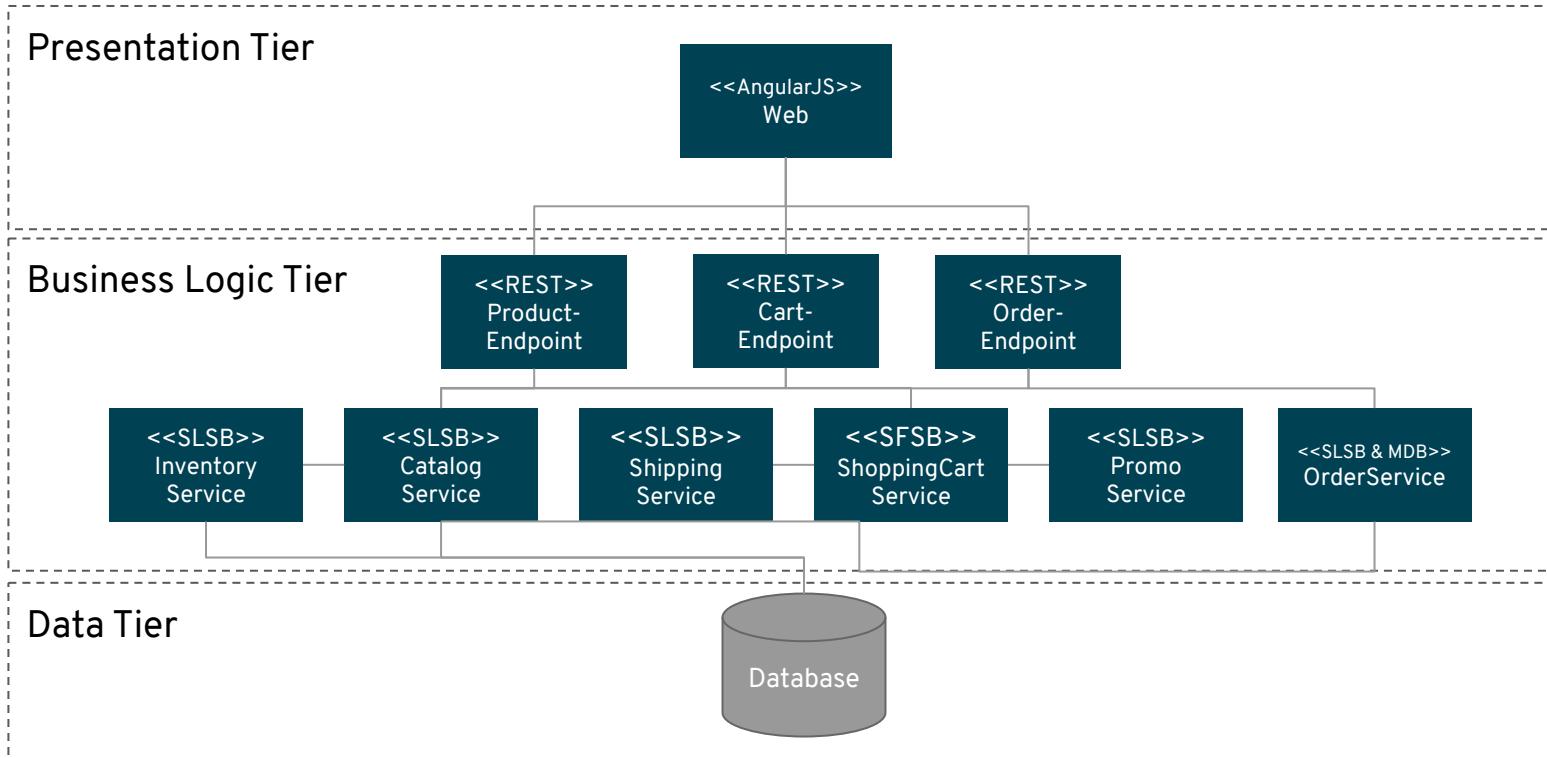
Coolstore application

Red Hat Cool Store Your Shopping Cart

Shopping Cart \$0.00 (0 item(s)) Sign In Unavailable
SSO has not been config

| | | |
|---|---|---|
| <p>Red Fedora</p> <p>Official Red Hat Fedora</p>  <p>\$34.99</p> <p>1 Add To Cart 736 left! ⬇️</p> | <p>Forge Laptop Sticker</p> <p>JBoss Community Forge Project Sticker</p>  <p>\$8.50</p> <p>1 Add To Cart 512 left! ⬇️</p> | <p>Solid Performance Polo</p> <p>Moisture-wicking, antimicrobial 100% polyester design wicks for life of garment. No-curl, rib-knit collar; special collar band maintains crisp fold; three-button placket with dyed-to-match buttons; hemmed sleeves; even bottom with side vents; Import. Embroidery. Red Pepper.</p>  |
|---|---|---|

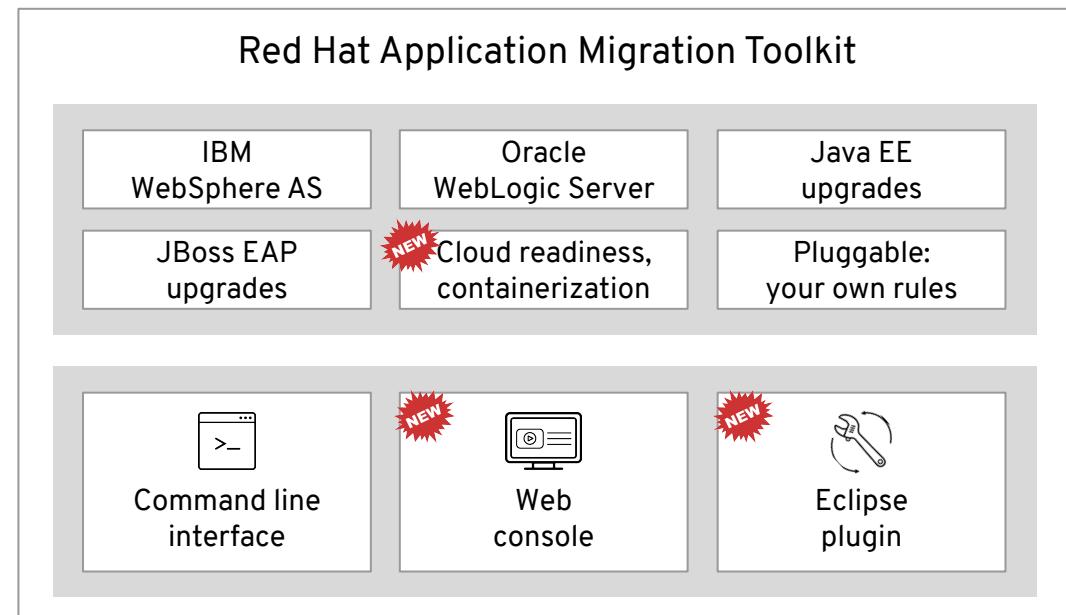
Coolstore application



RED HAT® APPLICATION MIGRATION TOOLKIT

Catalyze large scale application modernizations and migrations

- Automate analysis
- Support effort estimation
- Accelerate code migration
- Free & Open Source



LAB: MOVING EXISTING APPS TO THE CLOUD

WEB: bit.ly/RH-MS-ARO-lab-guides
SLIDES (PDF): bit.ly/RH-MS-ARO-lab-slides

SCENARIO 1

MOVING EXISTING APPS TO THE CLOUD

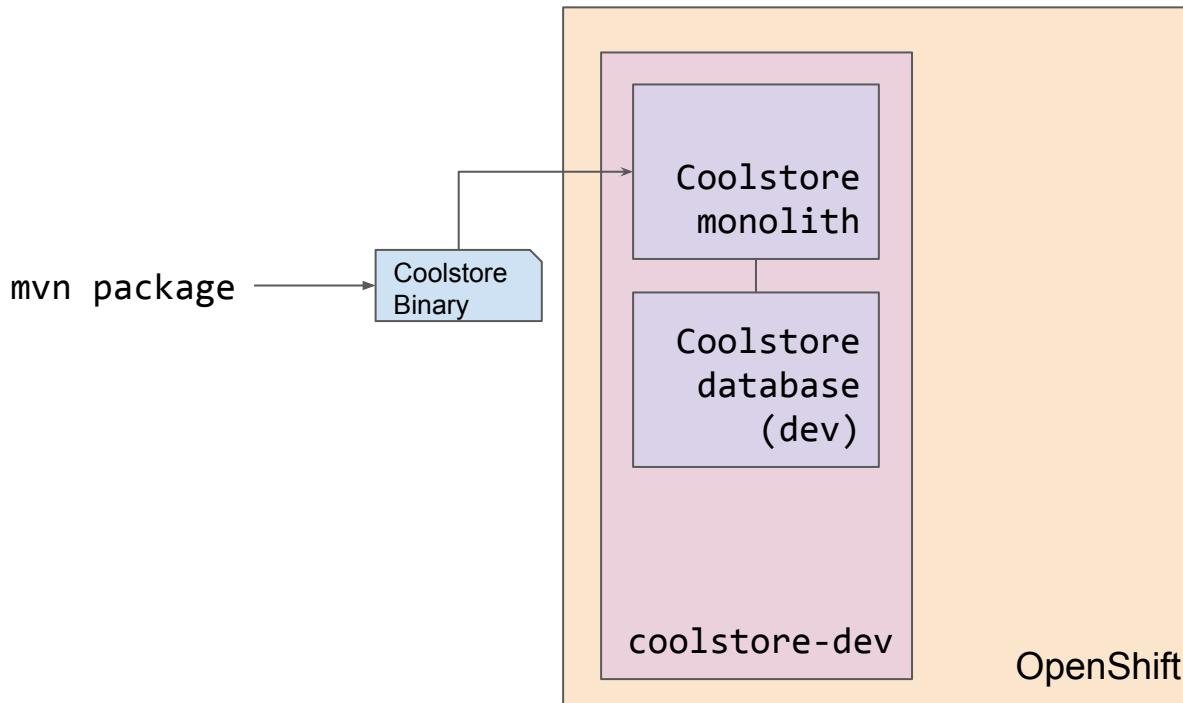
Wrap-up and discussion

Result of lab

In this lab you:

- Familiarized yourself with the Lab environment
- Migrated the CoolStore monolith from Weblogic to **JBoss EAP** using **Red Hat Application Migration Toolkit**
- Created a new development project on **OpenShift**
- Deployed the migrated app to OpenShift using a Template and a Binary Build
- In the next lab you will explore OpenShift deeper as a developer

Result of lab



Business value for app modernization

APPLICATION MODERNIZATION & MIGRATION (AMM)

VALUE FOR
CUSTOMERS

WITH EAP

16% gains in DEV. PRODUCTIVITY
64% LESS EXPENSIVE
481% ROI over 3 years
8 months PAYBACK of investment

WITH OPENSHIFT

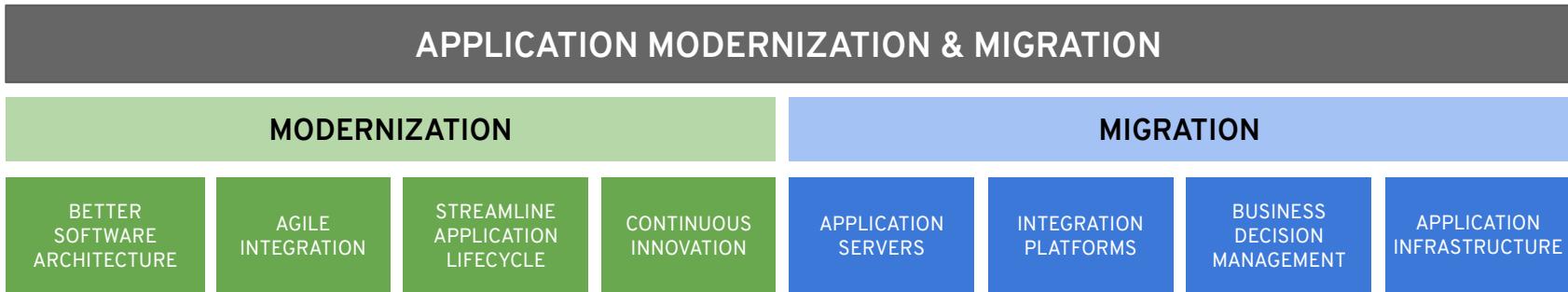
38% infrastructure SAVINGS
66% FASTER app delivery
8 months PAYBACK

Sources:

Consulting services data: Red Hat
IDC "[The business value of JBoss EAP](#)", 2018
IDC - "[The business value of Red Hat OpenShift](#)", 2017

The umbrella

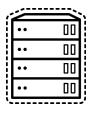
Value goes beyond cost



Customer value beyond cost - Digital transformation



RE-BALANCE MAINTENANCE AND INNOVATION



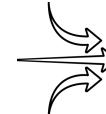
DECREASE COMPLEXITY, INCREASE EFFICIENCY



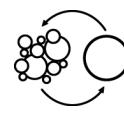
REDUCE / AVOID VENDOR LOCK-IN, INFLEXIBLE LICENSE MODELS



INCREASE SPEED & BECOME MORE PRODUCTIVE

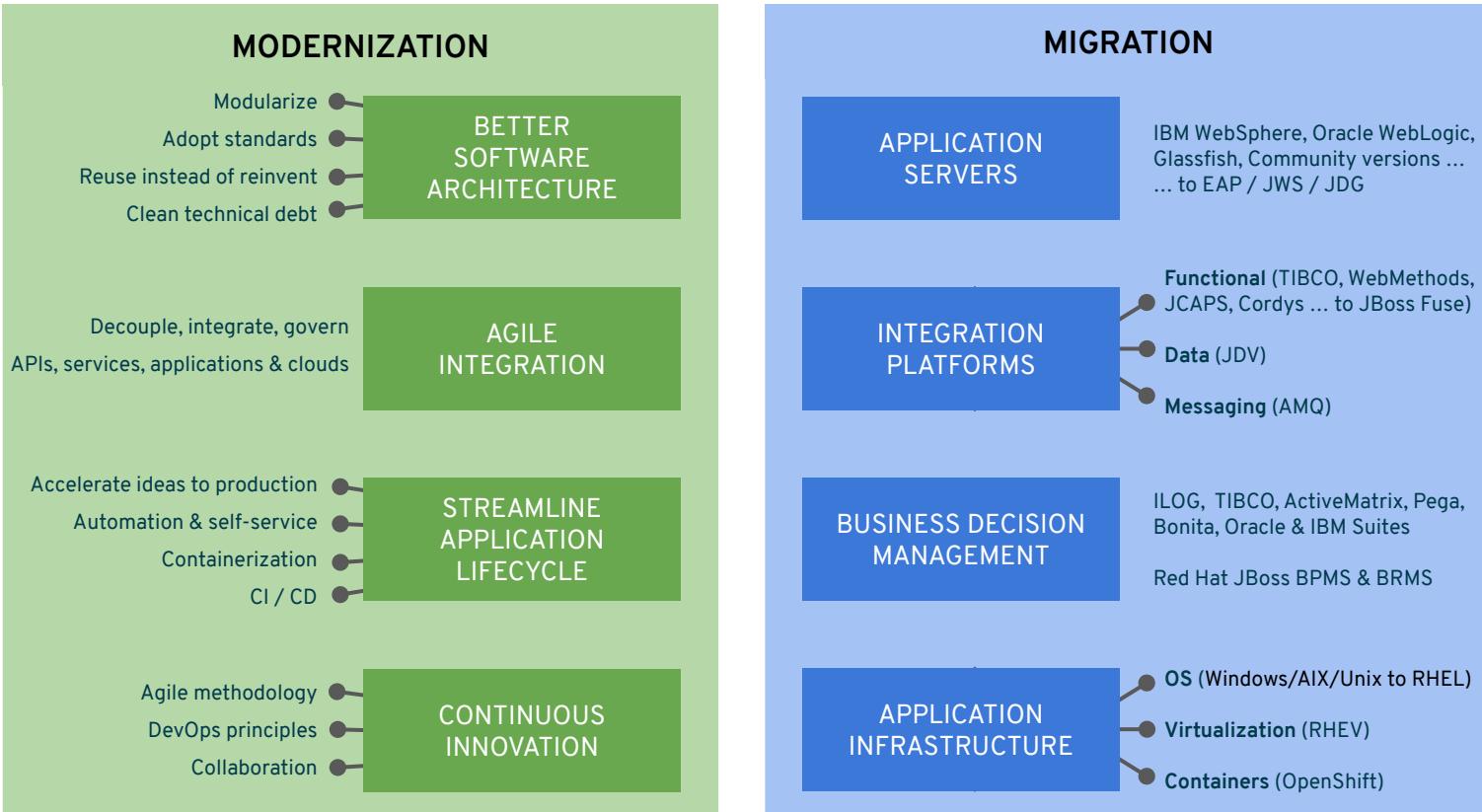


REMOVE TECHNICAL DEBT & RISK



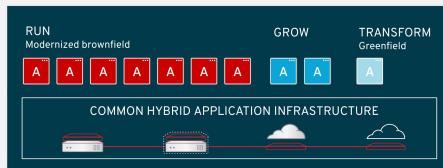
ADOPT AGILE METHODOLOGIES, DEVOPS

APPLICATION MODERNIZATION & MIGRATION

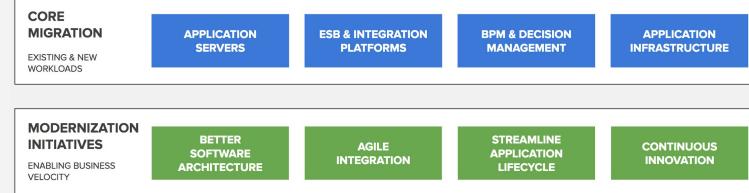


Red Hat application migration & modernization program

Red Hat provides the most comprehensive technologies, tools and services to support you
TODAY and TOMORROW



COMBINE TRANSFORMATION



Migration → Modernization
Making old apps new again ← Modern app development

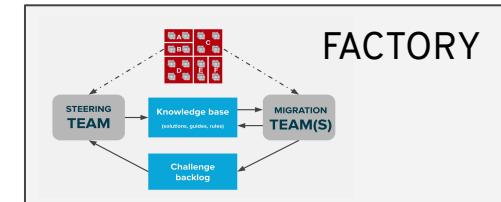
BENEFITS



APPROACH



FACTORY



Application modernization customers



Government of the Netherlands



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL



Read more at <https://www.redhat.com/en/success-stories>

Jumpstart your modernization with Red Hat Open Innovation Labs

MODERNIZE TRADITIONAL APPS

- Extend applications
- Optimize applications
- Scale applications
- Expose to orchestration

INNOVATION ACCELERATED

DEVELOP CONTEMPORARY APPS

- Develop on PaaS environment
- Transform how you design and develop apps
- Adopt lean and agile principles
- Master DevOps practices



COLLABORATION

Space to work,
innovate, and discuss



RESIDENCY

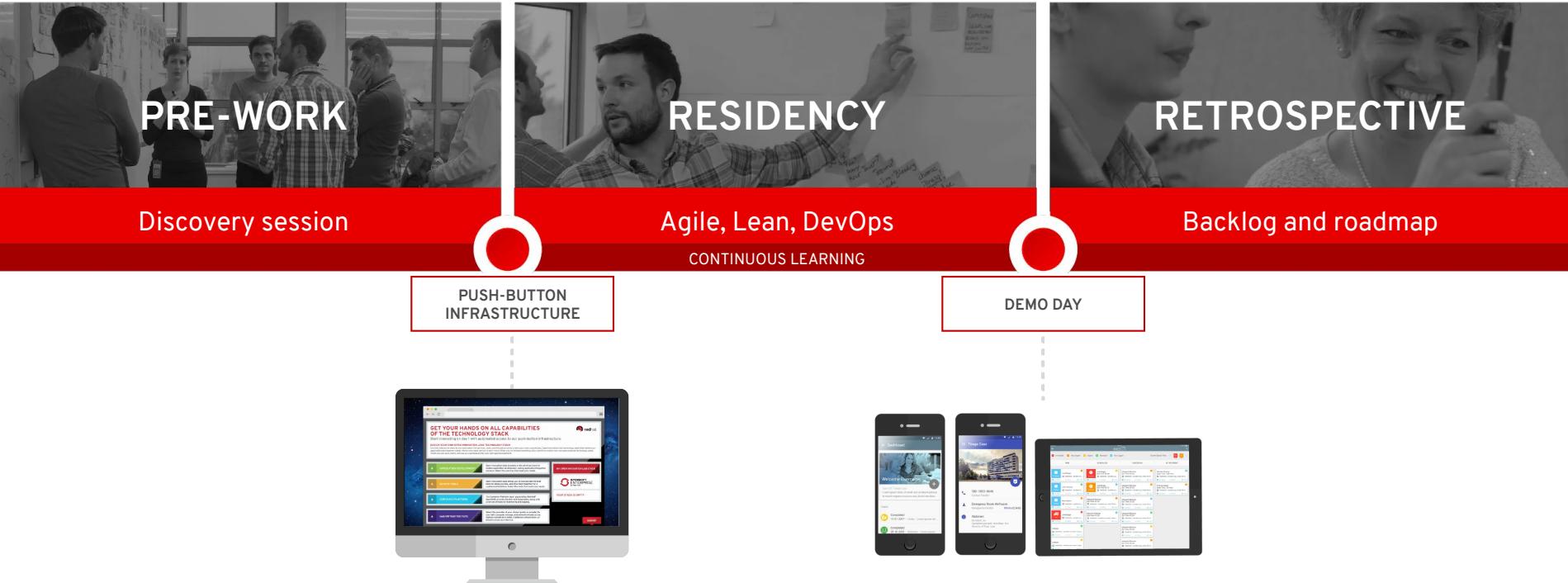
An eight-week accelerated
teaming engagement



COMMUNITY INCUBATION

Communities
supporting innovation

Innovation Labs process



Drive a culture of innovation

Through a space that fosters collaboration



INNOVATE ANYWHERE

- Purpose-driven
- Collaborate and make
- Network and share
- Flex and adapt
- Rejuvenate and connect

Thank you



LinkedIn: linkedin.com/company/red-hat
YouTube: youtube.com/user/RedHatVideos
Facebook: facebook.com/redhatinc
Twitter: twitter.com/RedHatNews
Google+: plus.google.com/+RedHat



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Facebook: facebook.com/microsoftazure/
Twitter: twitter.com/azure
Azure Friday: channel9.msdn.com/Shows/Azure-Friday
Azure | Channel 9: channel9.msdn.com/Blogs/Azure