Application Modernization & Migration to Red Hat JBoss Middleware and OpenShift

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FROM WHERE YOU ARE TO WHERE YOU WANT TO BE

The open technology to help you realize your vision

HYBRID CLOUD | MANAGEMENT | DEVOPS
CONTAINERS | APP DEVELOPMENT + INTEGRATION

redhat.com/opentech
AGENDA

- Why change?
- Our approach
- Customer stories
WHY CHANGE?
“By 2027, more than 75% of the S&P 500 will be companies that we have not heard of yet.”

Professor Richard Foster, Yale University
DIGITAL TRANSFORMATION

DIGITAL TRANSFORMATION

DISRUPTION

BUSINESS ADAPTS

CUSTOMER EMBRACE
BALANCING INNOVATION AND OPTIMIZATION

Here’s what your peers say are their top priorities and challenges

- Optimize the IT you have: GAIN EFFICIENCY
- Integrate apps, data, and processes: IMPROVE PRODUCTIVITY
- Add and manage cloud infrastructure: INCREASE AGILITY
- Build more modern applications: MOVE FASTER
TECHNICAL INITIATIVES

How do we run and build applications in the new world?
THE CIO DILEMMA
Business Expectations become IT Challenges

- Resources
- Time
- Budgets
- Maintain current portfolio
- Innovation, Differentiation, Growth

30% Run
30% Grow
70% Transform

Source: Graph created by Red Hat based on Gartner research. Potter, Kurt, Sanil Solanki, and Ken McGee, Run, Grow and Transform the Business IT Spending: Approaches to Categorization and Interpretation. Gartner G00308477, 27 June 2016
TYPICAL CUSTOMER LANDSCAPE TODAY

Where the journey starts ...

RUN
Brownfield

GROW
Greenfield

TRANSFORM

PHYSICAL
VIRTUAL

PRIVATE & PUBLIC
CLOUD

Complex & heterogeneous
Lack of common standards
Inconsistent automation & governance

TYPICAL CUSTOMER LANDSCAPE TODAY

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APPLICATION MODERNIZATION JOURNEY

One platform to support you today and tomorrow

RUN
Modernized brownfield

GROW
Greenfield

TRANSFORM

COMMON HYBRID APPLICATION INFRASTRUCTURE

MODERN APPLICATION CONCEPTS

- BETTER SOFTWARE ARCHITECTURE
- AGILE INTEGRATION
- STREAMLINE APPLICATION LIFECYCLE
- CONTINUOUS INNOVATION
MODERN APPLICATION CONCEPTS
Enhancing applications, platform & processes

**BETTER SOFTWARE ARCHITECTURE**
Future-proof applications

- Modularize
- “Fast moving monolith”
- Microservices
- Clean technical debt

**AGILE INTEGRATION**
Bridge old and new

- Decouple, expose & integrate APIs, services & applications
- Need hybrid-cloud-enabled integration platform

**STREAMLINE APPLICATION LIFECYCLE**
Speed up your business

- Accelerate time from idea to production
- Continuous Integration & Delivery (CI/CD)
- Automation & self-service
- Container technology

**CONTINUOUS INNOVATION**
Foster an agile culture

- Agile methodology
- DevOps principles
- Collaboration
IT’S ALL THERE: COMPLETE TECHNOLOGY STACK FOR HYBRID CLOUD
WHY CHANGE WITH RED HAT?
Solutions for today and the future

- Re-balance maintenance & innovation
- Reduce / avoid vendor lock-in, license models
- Increase operational efficiency
- Become more productive with lightweight tech
- Remove technical debt & risk
- Adopt agile methodologies, DevOps, or cloud
WHY MIGRATE?

Red Hat JBoss EAP migration benefits

Benefits experienced moving from IBM WebSphere and Oracle WebLogic to Red Hat JBoss EAP included:

- 39% shorter development time for new applications
- 43% gain in developer efficiency
- 89% less application development related downtime
- 79% less expensive than legacy platform
- 509% ROI over 3 years, payback of initial investment in less than 10 months after deploying the platform

Study available at “IDC - The business value of JBoss EAP”
WHY MODERNIZE?

Red Hat OpenShift Container Platform benefits

Benefits experienced introducing Red Hat OpenShift:

- Fast Return on Investment (ROI)
- High increase in business productivity
- More features developed
- Faster development life cycle
- Increased developer productivity

Study available at “IDC - The business value of Red Hat OpenShift”
SOME CUSTOMERS
Application Modernization and Migration

Sprint
UnionBank
Roche
Miles & More

verizon
SFR
CenturyLink
Government of the Netherlands

Allianz
BMW
The University of North Carolina at Chapel Hill
Volvo
TATA
sky
EXTRADE
SVC
KeyBank
SBB
OUR APPROACH
OPPORTUNITIES FOR CHANGE

Application Modernization and Migration

**CORE MIGRATION**
- Application Servers
- ESB & Integration Platforms
- BPM & Decision Management
- Application Infrastructure

**EXISTING & NEW WORKLOADS**

**MODERNIZATION INITIATIVES**
- Better Software Architecture
- Agile Integration
- Streamline Application Lifecycle
- Continuous Innovation

**ENABLING BUSINESS VELOCITY**
## CORE PLATFORM MIGRATION

**Source & target platforms**

### Application Server

**FROM:** IBM WebSphere, Oracle WebLogic, Glassfish, Apache Tomcat, JBoss AS Community, Oracle Coherence

**TO:**
- JBoss Enterprise Application Platform
- JBoss Web Server
- JBoss Data Grid

### ESB & Integration Platforms

**FROM:**
- TIBCO, JCAPS, Sonic ESB, Mule ESB
- Software AG WebMethods, Oracle ESB
- IBM Message Broker, Cordys EBS

**TO:**
- JBoss Fuse
- JBoss Data Virtualization
- JBoss A-MQ

### BPM & Decision Management

**FROM:**
- IBM WODM / ILOG, IBM BPM, Appian, TIBCO ActiveMatrix, Pega, Bonita, Oracle BPM Suite, Oracle Business Rules

**TO:**
- JBoss BPM Suite
- JBoss BRMS

### Application Infrastructure

**FROM:**
- Mainframe to Linux/Java, bare metal
- Unix/Solaris/Windows to linux, virtualization, hardware storage solutions

**TO:**
- Red Hat Enterprise Linux, Red Hat Virtualization, Red Hat Cloud and Containers (OpenShift, OpenStack, CloudForms), Ansible Tower, Red Hat Storage (Ceph, Gluster) ...
COMBINE OPPORTUNITIES

... to super-power your business and adopt a state-of-the-art IT landscape

**CORE MIGRATION**
- Application Servers
- ESB & Integration Platforms
- BPM & Decision Management
- Application Infrastructure

**MODERNIZATION INITIATIVES**
- Better Software Architecture
- Agile Integration
- Streamline Application Lifecycle
- Continuous Innovation
HOLISTIC APPROACH
Scope of a modernization / migration

Application Code

Infrastructure
hardware, storage, virtualization, operating system, JVM, application container

Processes & Governance
application lifecycle, build, configuration, deployment, provisioning, DevOps, environments, test, integration, continuous *, monitoring

Knowledge
APPRAOCH

Key good practices

Information sharing based on a central collaborative platform
- Simplified knowledge transfer, with least effort approach: no issue solved twice.

Reuse, automate, standardize as much as possible
- Infrastructure, deployments, tests, dependencies, stages, processes, management
- Transform: Red Hat Application Migration Toolkit
- Define: Red Hat Developer Suite, Cloud, Containers, System management.

Efficient, proven, pragmatic methodology
- As few changes as possible to get a running functionally identical application
- Holistic portfolio approach for green and brown fields
- Scaling through a factory delivery model
METHODOLOGY
Iterative, managed service, factory scale up.

DISCOVER
Explore and discuss options

DESIGN
Define strategy, analyze, prove technology and business case

DEPLOY
Scale & execute
METHODOLOGY
Iterative, managed service, factory scale up.

- In-depth AS-IS analysis (catalog)
- TO-BE definition (rationalize)
- Risks identification
- Plan next steps, provide rough estimates and strategy
METHODOLOGY
Iterative, managed service, factory scale up.
Catalyze large scale application modernizations and migrations

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

<table>
<thead>
<tr>
<th>Red Hat Application Migration Toolkit</th>
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<tbody>
<tr>
<td>IBM WebSphere AS</td>
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<tr>
<td>Oracle WebLogic Server</td>
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<tr>
<td>Java EE upgrades</td>
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<td>JBoss EAP upgrades</td>
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<td>Cloud readiness, containerization</td>
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<td>Pluggable: your own rules</td>
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- Command line interface
- Web Console
- Eclipse plugin
Web Console: manage projects and applications
Web Console: issue type analysis and support for effort estimation
Web Console: examine hints and introspect application source code
METHODOLOGY
Iterative, managed service, factory scale up.

- Standard, proven, modular, repeatable, pragmatic methodology
- Step by step, low risk and highly efficient; no “big bang”
- Scale up with partners or client’s staff
- It all starts with a “discovery session”
Eclipse plugin: task list, inline hints, support for code changes
FACTORY DELIVERY MODEL

Project team structure & collaboration strategy

**STEERING TEAM**

Client / Red Hat / Partners
- Project managers,
  technical leads & specialists

**Knowledge base**
(solutions, guides, rules)

**CHALLENGE BACKLOG**

**MIGRATION TEAM(S)**

Client / Factory partners
- Developer team(s)

Applications

Client / Red Hat / Partners
- Project managers,
  technical leads & specialists

**FACTORY DELIVERY MODEL**

Knowledge base (solutions, guides, rules)

Challenge backlog

Client / Factory partners
- Developer team(s)
QUICK COMPARISON
DIY vs. Red Hat Methodology

MANUAL COST ASSESSMENT

CHECK OUT the source from version control
DETERMINE vendor-specific code
DETERMINE vendor-specific configuration
DETERMINE provided/consumed services
FIND referenced resources (DB/JMS/JMX)
FIND anti-patterns

40 HOURS / APPLICATION

RED HAT APPROACH

CHECK OUT
DETERMINE
DETERMINE
FIND
FIND

Design
Assess
Prove
Pilot
Plan

3-8 WEEKS
+ YOU HAVE A PLAN IN PLACE
+ TECHNICAL RISKS IDENTIFIED & TESTED
CUSTOMER STORIES
CUSTOMER STORIES

Two main discussions

- Migration
- Modernization

- Making old apps new again
- Modern app development
#1 MIGRATION TO MODERNIZATION

Public sector

## Business challenges

- High IBM license fees
- Very long time-to-market for applications
- High operations overhead (manual processes, lack of flexibility, high turnaround times for server delivery)
- Highly heterogeneous platforms and frameworks
- 250+ applications

## Solution

- Code and application server migration to JBoss EAP on RHEL
- Adoption of agile and DevOps good practices
- Integration platform consolidation around JBoss Fuse on RHEL
- Application containerization to OpenShift Container Platform

## Result

- Dramatic cost reduction
- Shorten application delivery time
- Flexible, modernized application delivery approach
- Decreased server turnaround time (from 2 weeks to 2 minutes)
- Retooled to standard, vendor agnostic technology
#2 MODERNIZE NEW AND EXISTING

Automotive sector

**Business challenges**
- Challenging self-hosting (application life-cycle processes, service window, down time, issue reproduction)
- Applications rebuilt for each staging environment
- several days to deploy an application update
- Usage of very heterogeneous frameworks, languages, versions
- 650+ applications, 500+ virtual machines

**Solution**
- Core platform for existing and new applications (microservices)
- Hybrid OpenShift Container Platform setup
- Provisioning with Ansible Tower
- Java EE and application server migration
- Adoption of DevOps practices

**Result**
- Time-to-market reduced by orders of magnitude
- Reduced costs, technical debt and lock-in
- Improved operational flexibility (hybrid cloud, standards)
  - consistency across environments
  - updating, patching processes
  - scaling and bursting capabilities
SUMMARY
Red Hat provides the most comprehensive technologies, tools and services to support you TODAY and TOMORROW.

**Approach**
- **Discover**
  - Explore
- **Design**
  - Assess
  - Prove
  - Pilot
  - Plan
- **Deploy**
  - Scale

Migration ➔ Modernization
Making old apps new again ➔ Modern app development

**Combine Transformation**
- **Core Migration**
  - Application Servers
  - ESI & Integration Platforms
  - BPM & Decision Management
  - Application Infrastructure
- **Modernization Initiatives**
  - Better Software Architecture
  - Agile Integration
  - Streamline Application Lifecycle
  - Continuous Innovation

**Benefits**

**Factory**
- **Software Team**
  - Knowledge base
  - Support services
- **Development Team(s)**
  - Challenge sharing

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#redhat #rhsummit
NEXT STEPS

- Talk to your Red Hat representatives
- Request a discovery session
- Download the Red Hat Application Migration Toolkit

Contact us: thartwig@redhat.com & mzottner@redhat.com
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THANK YOU

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