



# Easing into JBoss EAP Migrations: Red Hat Consulting & JBoss Cake

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Red Hat Consulting

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JBoss Cake



Migration Preparation



Red Hat Consulting Methodology & Advantages



Proven Results

# MIGRATION TOOLING

improves the speed and quality of the migration  
to ensure an on-time and successful migration



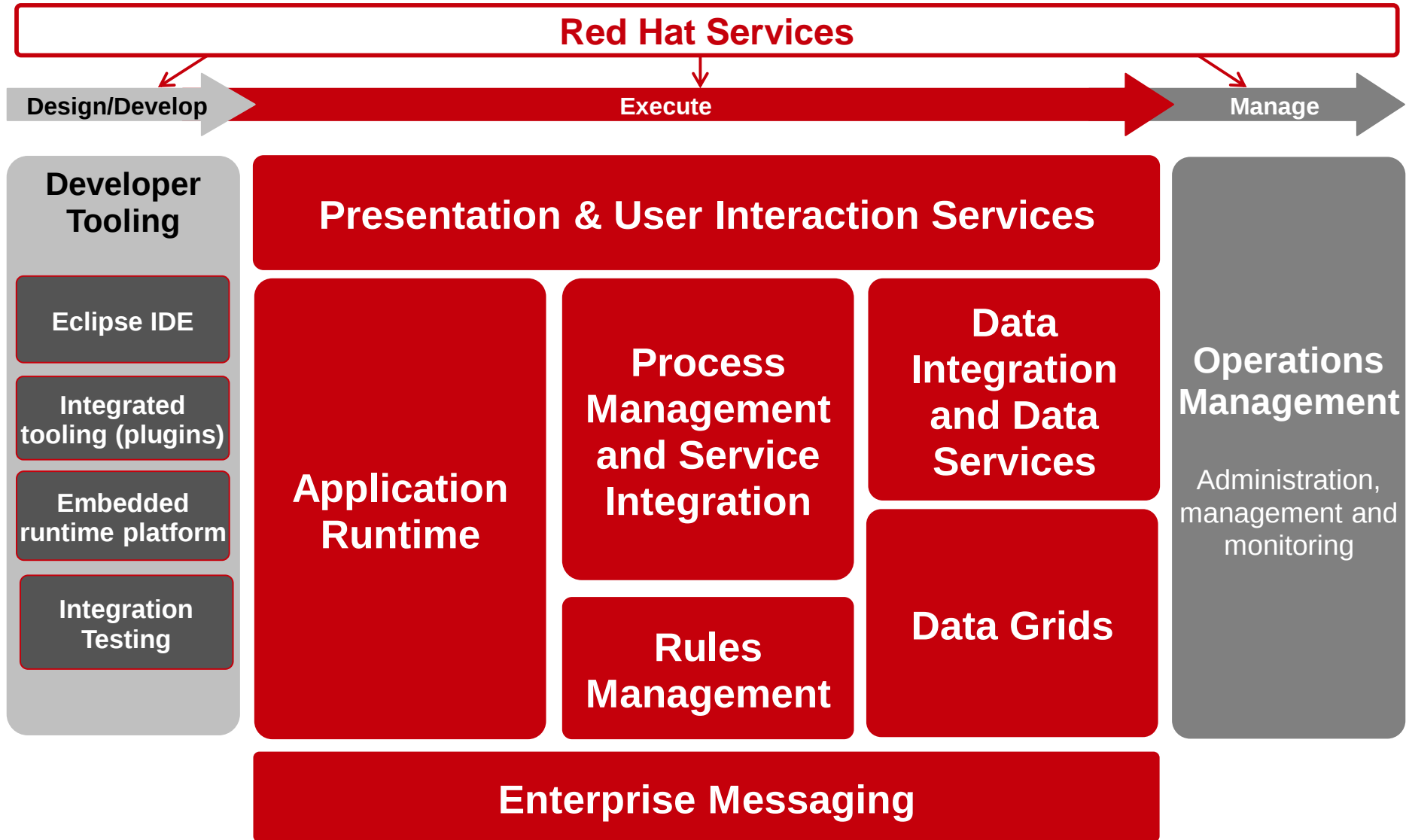
## JBoss Cake

- Background
- Features
- Software as a Service (SaaS)





# JBoss Cake Coverage (Red)



## Your Organization's Current Infrastructure - 71 Instances

IBM WebSphere v6.0



x10

Oracle WebLogic 9.1



x8

IBM WebSphere v8.0



x2

Oracle WebLogic 11g



x30

IBM WebSphere v7.0



x10

Oracle WebLogic 10.0



x5

JBoss EAP 4.x



x2

Apache Tomcat 6.x



x4

## Your Organization's Future Infrastructure 50 Instances

JBoss EAP 6.x



x50

- Shows effort to migrate:
  - ✓ Vendor-specific code
  - ✓ Upgrading JDKs
  - ✓ Non-JMS messaging code
  - ✓ Identify web services
  - ✓ Identify EJBs
  - ✓ Does XSL transformations on XML files
  - ✓ Identify JMX code
  - ✓ Necessary upgrades to Hibernate, Spring, Struts, etc
  - ✓ Malformed XML files

- Shows hints to help developers with “Blacklisted” classes and code lines

- **Problem Code:**

```
com.tibco.matrix.java.annotations.WebMethod
```

- **Hint:**

```
Tibco specific annotation; replace with  
javax.jws.WebMethod
```

- **Problem Code:**

```
org.mule.umo.UMOMessage.getPayload
```

- **Hint:**

```
Mule specific; replace with  
org.apache.camel.Message.getBody(
```



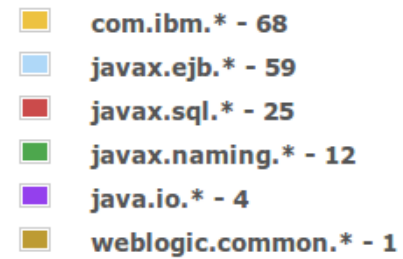
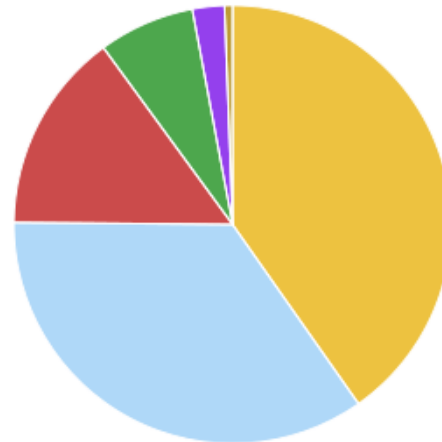
- Estimates Level of Effort in Hours for:
  - XML
  - Java
  - JSP
- Counts total code changes for “problem” code AKA Blacklisted Classes
  - Only a rough estimate, not based on difficulty



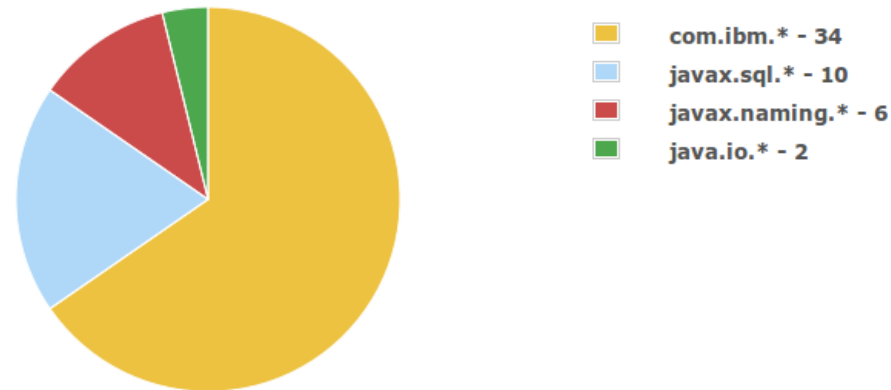


**83**  
Level of Effort

**167**  
Java Code Changes



RedHat.ear/APP-INF/lib/pricing.jar



Artifact	Known Effort	Highlights
<a href="#">META-INF/MANIFEST.MF</a>	0 Hours	Classification: Archive Manifest
<span style="color: red;">■</span> <span style="color: red;">■</span> <span style="color: red;">■</span> <span style="color: green;">■</span> <a href="#">com.redhat.nps.common.audit.dao.DataSourceBean</a>	Unknown	Warnings: 3 items ⓘ javax.sql.DataSource ⓘ javax.sql.DataSource ⓘ javax.sql.DataSource
<span style="color: green;">■</span> <span style="color: green;">■</span> <span style="color: green;">■</span> <span style="color: green;">■</span> <a href="#">com.redhat.nps.common.audit.dao.spring.NpsGuiSearchInputDao</a>	Unknown	Warnings: 2 items ⓘ javax.sql.DataSource ⓘ javax.sql.DataSource
<span style="color: green;">■</span> <span style="color: green;">■</span> <span style="color: red;">■</span> <span style="color: red;">■</span> <a href="#">com.redhat.nps.gui.statistics.support.JdbcStatisticManager</a>	Unknown	Warnings: 1 items ⓘ javax.sql.DataSource



## Blacklists

- [Import of 'weblogic.xml.schema.binding.Holder' at line 4](#)
- [Implementing interface 'weblogic.xml.schema.binding.Holder' at line 6](#)

```
01. package com.rhc.corp.nascsupport.services.holders;
02.
03. import com.rhc.corp.nascsupport.services.CreateEXAMPLEVoucher;
04. import weblogic.xml.schema.binding.Holder;
    • Import of 'weblogic.xml.schema.binding.Holder' at line 4
05.
06. public final class CreateEXAMPLEVoucherHolder implements Holder {
    • Implementing interface 'weblogic.xml.schema.binding.Holder' at line 6
07.
```

text pop-up



```
84.      conn = DriverManager.getConnection(dbProperties.getProperty("claim.db.url"), dbProperties.g
```

- Usage of 'java.sql.DriverManager.getConnection(Undefined, Undefined, Undefined)' at line 84

Move to a JCA Connector unless this class is used for batch processes, then refactor as necessary.

The JCA connector allows the application server to manage the database connections instead of the application handling them directly

- Increases performance
- Reduces/eliminates connection leaks
- Easily monitored



- Download JBoss Cake from the Customer Portal
  - [access.redhat.com](https://access.redhat.com)
  - Will be available for all Red Hat customers





```
JBoss Cake SaaS Future Demo
File Edit View Search Terminal Help
[emily@emily ~]$ java -jar cake-cli.jar -javaPkgs com.redhat:com.rhc -input /home/cake/sampleArchive.ear -username ebrand@redhat.com -password *****
```

- Run JBoss Cake locally using the downloaded JAR
  - All information stays local
  - Never upload any deployment artifacts

# MIGRATION PLANNING

Enables your organization to move to JBoss with ease and without the surprises and pain points normally expected in migrations



## Migration Preparation

- Main Goals
- Knowledge Preparation
- Project Planning

- Migrations Can Entail Moving From
  - WebLogic, WebSphere, Tomcat
  - JBoss AS Community, JBoss EAP 4 or 5
- Main Goals
  - ✓ Non-proprietary code
  - ✓ Platform agnostic
  - ✓ Upgrade frameworks
  - ✓ Increase speed and reliability
  - ✓ Ease of management
  - ✓ Create standards to be implemented throughout the organization



- Bring together your
  - Source code
  - Deployment Artifacts (EARs/WARs)
  - Application architecture
  - Interfacing applications
  - Current/desired app & web server architecture
- Run all applications through Cake, it will identify:
  - Largest, most convoluted applications
  - Average size applications
  - Smallest, most basic applications



# Intro Spreadsheet

Application Name	Rating	Cake Hours	SME	Testing Contact	Production Date	Comments
Retirement App			Last, First	Last, First	11/11/2013	
Accounting App			Last, First	Last, First	11/11/2013	
Order System			Last, First	Last, First	11/11/2013	
HR App			Last, First	Last, First	12/12/2013	
Website			Last, First	Last, First	12/12/2013	
New Customer Web App			Last, First	Last, First	12/12/2013	

- ✓ What is the current JDK version?
- ✓ Does the application use JMS or proprietary messaging?
- ✓ How does the application interface with other applications?
- ✓ What versions of open source or proprietary frameworks is the application on?
- ✓ What versions of EJBs does the application have within it?



## Internal Team & Application Questions

- Are there Subject Matter Experts (SMEs) for each application?
- Build Process: Are there a lot of application server-specific Ant/Maven build tasks?
- Is it a self-contained WAR or EAR (deployment artifact)?
- What are your current testing standards?
  - Regression, JUnit, Load & Performance, etc
- What is the testing support staff availability?



# Spreadsheet

Application Name	Rating	Cake Hours	SME	Testing Contact	Production Date	Comments
Retirement App	Easy	15	Last, First	Last, First	11/11/2013	Few JSPs, no frameworks, JDK5
Accounting App	Hard	350	Last, First	Last, First	11/11/2013	Custom Log Framework, JDK4, Large
Order System	Medium	125	Last, First	Last, First	11/11/2013	Axis2, JDK5, Hibernate, Log4j, Large
HR App	Hard	500	Last, First	Last, First	12/12/2013	IBM MQ APIs, JDK1.4, 50 MDBs
Website	Medium	150	Last, First	Last, First	12/12/2013	Axis2, Spring, JDK5, Large App
New Customer Web App	Easy	15	Last, First	Last, First	12/12/2013	Few JSPs, no frameworks, JDK5

ID	Task Name	Start	Finish	Duration	May 2013				Jun 2013				Jul 2013			
					5/5	5/12	5/19	5/26	6/2	6/9	6/16	6/23	6/30	7/7	7/14	7/21
1	Retirement App	5/1/2013	5/15/2013	2.2w	██████████											
2	Accounting App	5/1/2013	6/14/2013	6.6w	████████████████████				██████████							
3	Order System	6/3/2013	7/5/2013	5w					████████████████████							
4	HR App	5/1/2013	7/26/2013	12.6w	████████████████████				████████████████████				████████████████████			
5	Website	6/3/2013	7/5/2013	5w					████████████████████							
6	New Customer Web App	5/1/2013	5/15/2013	2.2w	██████████											

- Create a project plan based on spreadsheet
- After using JBoss Cake and delving into the code bases
  - Testing takes roughly the same amount of time
- Ensure all necessary resources will be available during this time

# RED HAT CONSULTING

Has the expertise to deliver and enable business solutions that leverage industry best practices and the advantages of Red Hat technology to transform your enterprise



## Methodology

- Planning Process
- Strategies to Scale
- Migration Program Approach

## Full migration

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- Hand the code and the current application server structure to Red Hat to redesign and migrate
- Deliver the working code and servers back to the team with a document specifying the changes

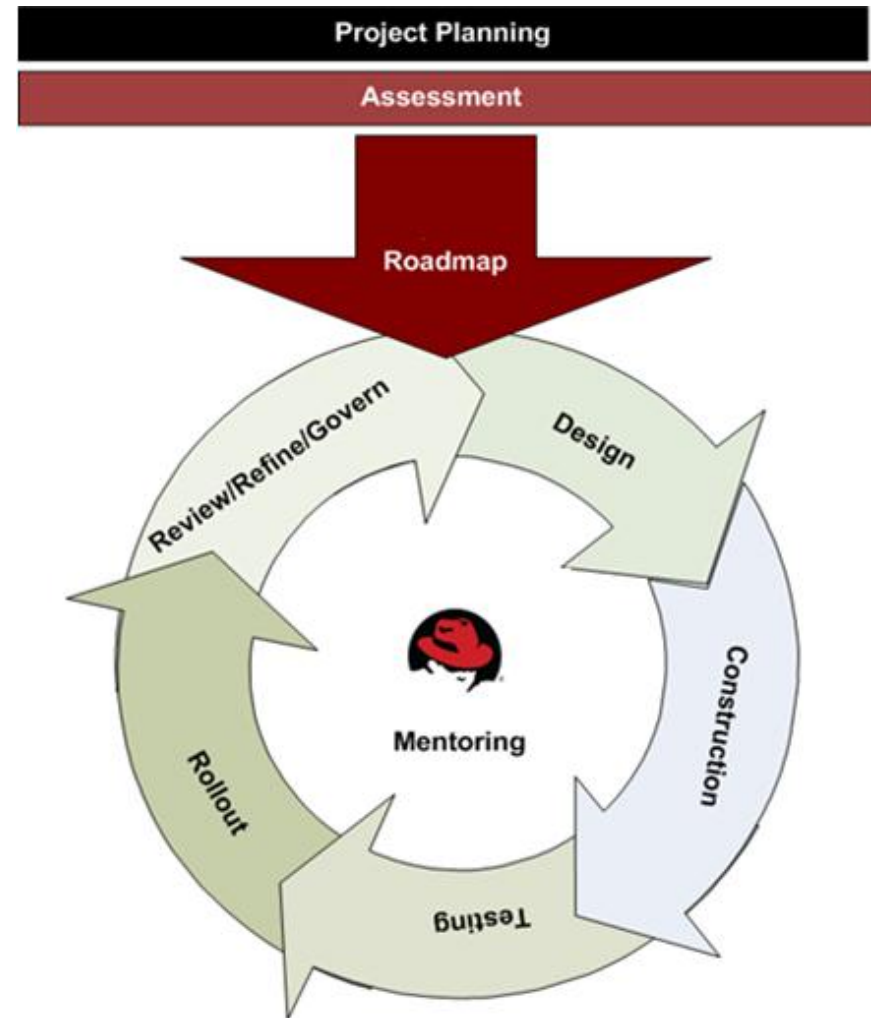
## Hybrid

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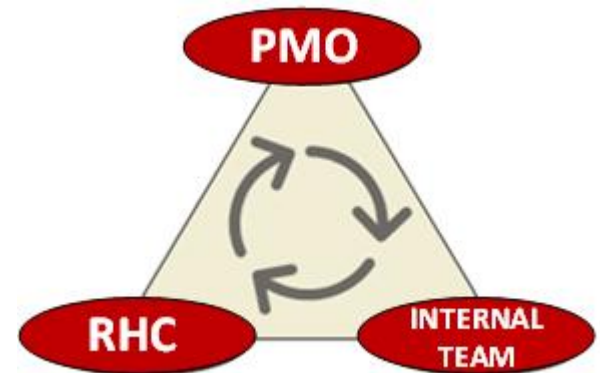
- Create foundational migration strategy
- Establish Reference Architecture
- Augment Migration Teams with SME Expertise
- Mentor Migration Teams



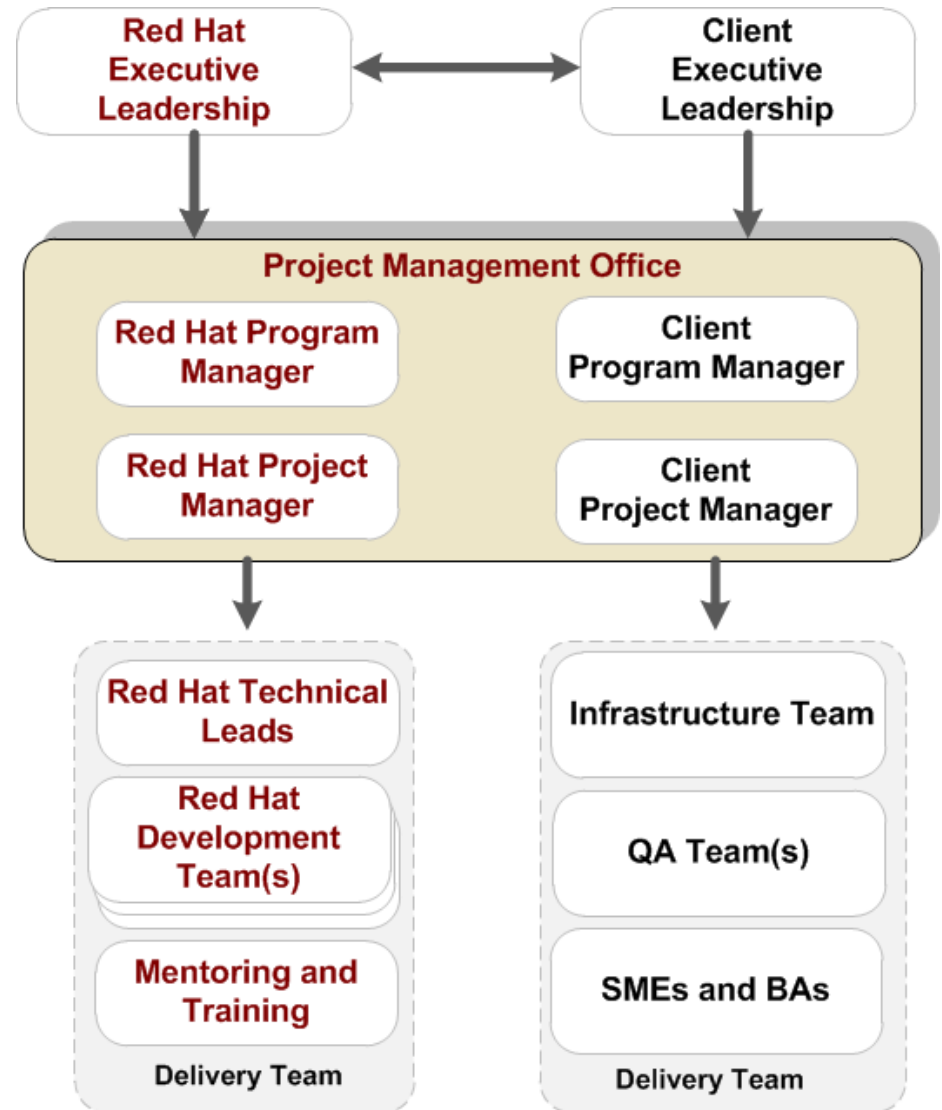
- Standardized, Repeatable Project Approach
- Top-Down and Bottom-Up
- Up-Front Risk and Analysis
- Iterative, Incremental Delivery
- Early Organizational Buy-In
- Cost Savings and Value Drives Delivery



- Red Hat-Led Program Management Office (PMO)
  - Leads assessment and scheduling
  - Coordinates communications and approach
  - Actively manages and mitigates risks
  - Provides overarching technical guidance
  - Obtains commitment from internal cross-functional teams
- Red Hat Consulting Team
  - Mitigates risk of high-visibility projects
  - Creates Reference Documentation
  - Creates Template Artifacts
  - Works with internal team side-by-side



- Involve executive leadership
- Create Project Management Office
- Develop strategy for
  - Technical Leads
  - Development Team
  - QA Team
  - Infrastructure Team
  - Subject Matter Experts
  - Business Analysts
- Mentoring throughout project



# RED HAT CONSULTING

WILL WORK WITH YOUR UNIQUE REQUIREMENTS  
TO HELP YOU REALIZE YOUR STRATEGIC VISION



## Advantages

- Philosophy
- Benefits

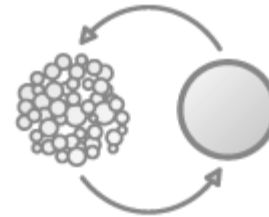


redhat.

## So You Can:



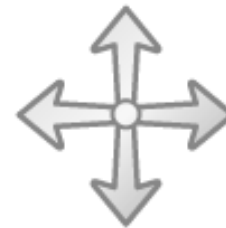
Optimize  
your infrastructure



Develop the solutions your  
lines of business need

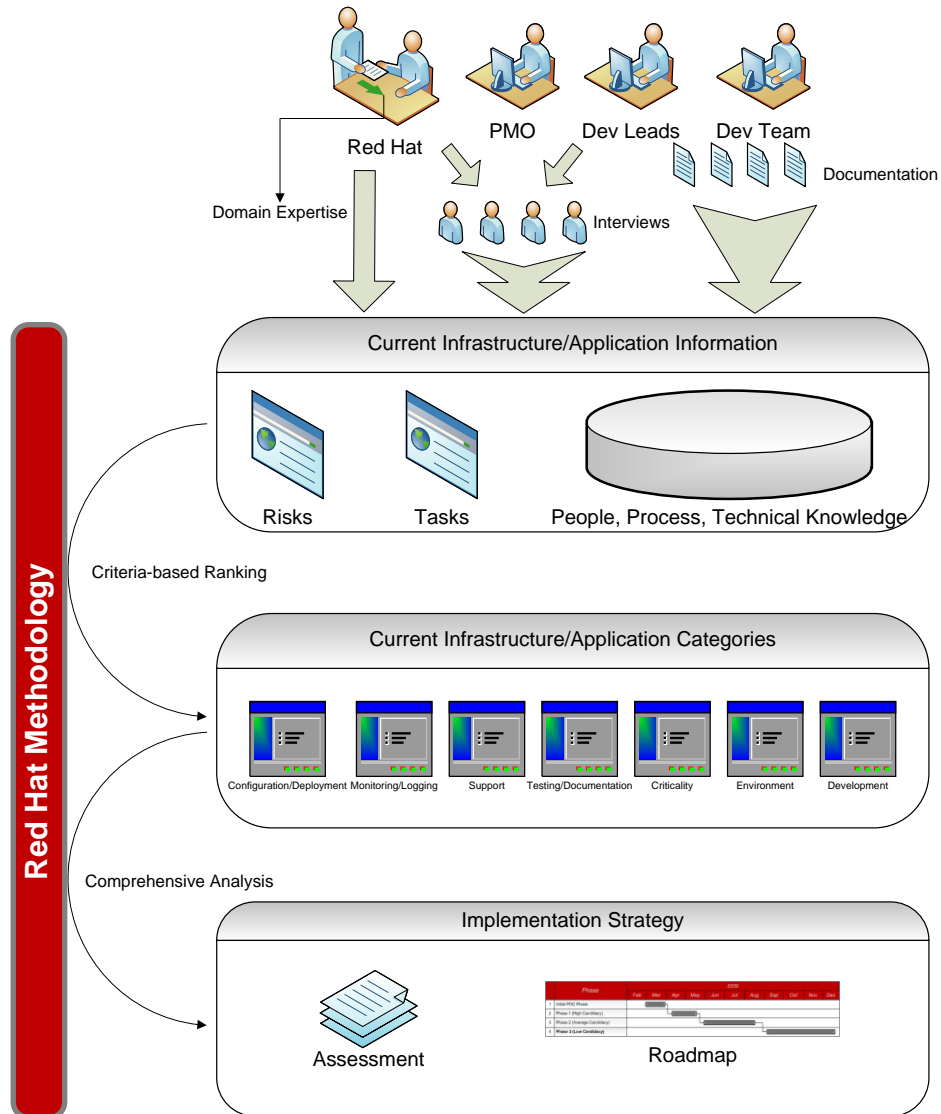


Free up spend to make more  
strategic investments



Increase your agility  
and flexibility

- Industry-leading Services Experts
- Experienced Implementation Team
- Direct Reach Back to Support and Engineering
- Increased Velocity
- Reduced Risk
- Mentoring and Training
- Integrated Delivery Team
- Rapid Customer Independence





## Proven Results

**RED HAT CONSULTING EMPOWERS CUSTOMERS AROUND  
THE GLOBE TO ACCELERATE THEIR INNOVATION**





# Client Snapshot

## OVERVIEW

Tired of paying exorbitant licensing and maintenance fees for proprietary middleware, Sprint looked to Red Hat Consulting to help migrate over 100 diverse, mission-critical applications, guide and mentor Sprint IT personnel to develop Sprint-specific standards, and to design a future-state architecture.

# Sprint<sup>®</sup>



CUSTOMER SINCE

# 2004

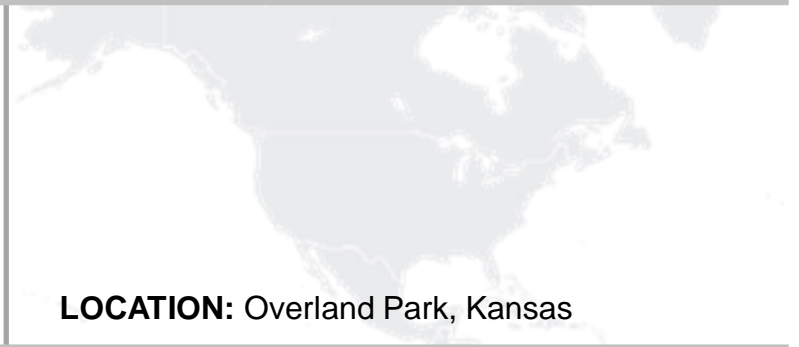
TELECOMMUNICATIONS  
INDUSTRY

- Saved \$4 million annually in licensing and maintenance fees
- Improved developer productivity
- Reduced time-to-market of Sprint products

**“The standards that Sprint has created with Red Hat Consulting have provided our applications with the fundamental enterprise architectural framework that will allow them to have more flexibility and less dependency on expensive, closed-source technologies in the future.”**

**JAMIE WILLIAMS**  
DIRECTOR OF IT MIDDLEWARE, SPRINT

**LOCATION:** Overland Park, Kansas







# Client Snapshot

## OVERVIEW

Existing proprietary middleware platform was complex to manage, not performing and scaling as expected and expensive to maintain. The architecture team decided to investigate alternatives that could be deployed that would better meet their needs.



CUSTOMER SINCE

**2006**

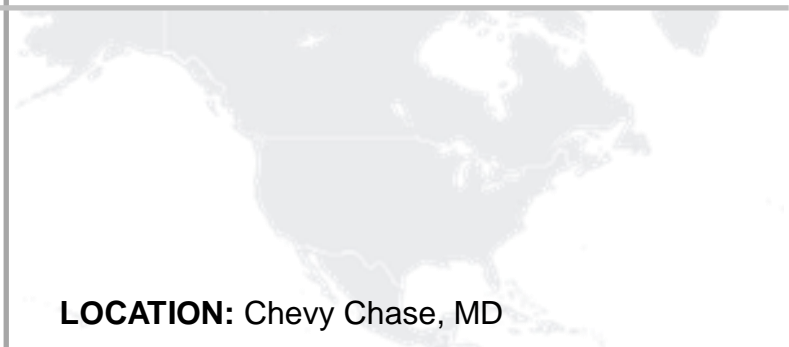
INSURANCE  
INDUSTRY

- Migrated 890 CPUs to JBoss
- Reduced their Total Cost of Ownership by more than 30%
- Increased throughput by 3X
- Decreased overall resource utilization in their environment from 50% to less than 10%

**“Red Hat support for our project was absolutely outstanding with every step we took...Geico achieved significant cost savings upwards of \$7 million dollars.”**

**JESS REED**  
CHIEF INFORMATION OFFICER, GEICO

**LOCATION:** Chevy Chase, MD



**EXPERTS  
KNOWLEDGE  
EXPERIENCE  
NETWORK**





**THANK YOU**

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Red Hat Consulting

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