A Design Approach to Bridge DevOps and Business Automation

Ron Murhammer | ron@redhat.com
NA Business Automation Services Lead

David Bush | dbush@redhat.com
Business Automation Architect

May 2, 2017
Background
BPM And DevOps Share Founding Fathers?!

- Walter A. Shewhart
  - Statistical Process Control
- W. Edwards Deming
  - Lean Manufacturing & 14 Points (Out Of Crisis)
- Jack Welch
  - Six Sigma & Quality Movement
- Peter Drucker
  - Decentralized Decision Making & The Knowledge Worker
- Melvin Conway
  - Conway’s Law
Two Paths, Same Goals

High Quality Software at a Low Cost Through Continuous Improvement

Business Automation CI/CD & DevOps
Modern Application Development

Cloud Native
- Easier to develop
- Requires fewer skills
- Requires less time
- Easier to change

Microservices
- Easier to change
- Less expensive to operate

Containers
- Easy deployment
- Repeatable deployment

#redhat #rhsummit
Modern Business Automation

Orchestrate
- Between systems of record
- Collaboration between knowledge workers

Automate
- Manual Tasks
- Decisions
- Intelligence

Enable
- Business users to develop applications (low-code app-dev)
DevOps Stages

- plan
- code
- build
- test
- release
- deploy
- operate

DevOps

Continuous Delivery

Continuous Integration

Agile Development

collaboration
Business Automation Stages

1. **Ad hoc** - undefined processes/decisions
2. **Defined** - repeatable, manual processes/decisions
3. **Automated** - efficient processes/decisions but static
4. **Intelligent** - evolving and customized processes/decisions
Modern Approach
Modern Approach: Design Model

Apply the best practices from modern software development (agile, CI/CD, etc) to business automation can help organizations add rigorous engineering practices while eliminating additional risk.
Design Choices

MODEL BUSINESS LOGIC
- Guided editing
- Integrated development environment (IDE)
- Document-based generation
- Spreadsheets

VERSION ARTIFACTS
- Central version control
- Standalone version control

BUILD PACKAGE
- Central build server
- Standalone build server

STORE PACKAGE
- Central binary repository
- Standalone binary repository

DEPLOY PACKAGE
- Management console
- Application resources
- Push runtime
- Polling runtime

EXECUTE BUSINESS LOGIC
- Short-lived embedded sessions
- Short-lived remote sessions
- Long-lived embedded sessions
- Long-lived remote sessions
Collaboration Across The Business and IT

Business analysts

Authorsing, design and simulation tools for business users

Developers

Authorsing tools for developers

Real-time data and event feeds

Event processor

Business process manager

Rule engine

Repository

Business logic definitions

BAM dashboards

Business data

Enterprise applications

Web services

Java

Business users

Business users
Example Architecture

Source Artifact Repository (Git)

Commit -> fetch

Build Environment
- Jenkins
- Maven

JBoos EAP

tag

deploy

dependencies

fetch

Maven Repository
- Nexus

JBoss EAP

dependencies

deploy

dependencies

fetch

Runtime Environment
- Business Process Runtime
  - Container
  - KIE-Server

JBoss EAP

deploy

Back-end Systems
- BPMSuite Runtime DB
- BPMSuite Audit DB

Container

_authoring environment_
When Can I Use It?
### Endless Use Cases Across All Industries

#### Banking
- Loan Organization
- Credit Decisioning
- Sales Advisory
- Payments
- Accounting

#### Insurance
- Claims Processing
- Underwriting
- Quoting
- Rating
- Commissioning

#### Capital Markets
- Automated Trading
- Trade Order Mgmt
- Accounting
- Compliance KYC/AML

#### Public Sector
- Claims Processing
- Entitlement Calc.
- Benefit Calc.
- Fraud Detection
- Screening

#### Telecom
- Offer Configuration
- Order Mgmt
- Fraud Detection
- Loyalty Programs
- Network Monitoring

#### Transportation
- Promotions Mgmt
- Loyalty Programs
- Customer Service
- Billing
- Contract Mgmt

#### Retail
- Recommendations
- Campaign Mgmt
- Order Mgmt
- Pricing

#### Manufacturing
- Order Mgmt
- Billing
- Contract Mgmt
Solid Business Automation Foundation

Red Hat technologies cover processes, decisions, complex event processing, and resource constraints.
Intelligent Applications
Take things to the next level!

- Data Analytics
- Data Mining
- Process Mining
- Machine Learning
- Robotics
- Neural Networks
- Optimization (OptaPlanner)
- ...
Self Learning Human Task

- Can work with decision tasks
  - Attributes of the process support the decision
  - Known set of decision results or numeric result
- Learns over time
- Once threshold is met the machine learning model takes over
- Ongoing training with random examples
Automated Audit Selection

- Instead of hard-coded rules
  - Reduce unneeded audits
  - Transactions slip through just under the line
- Use clustering
  - Common transactions flow through
  - Unusual transactions get caught
Self Learning Business Rules

- Automatically determine the importance and values of facts
- Have a feedback loop to indicate if a rule is less effective in its environment

Example: Automated financial application approval
BPM in a Microservices World

- Traditionally, business process management (BPM) programs have focused on standardization and continuous improvement—programs that require discovery, modeling, and analysis prior to implementation, which can result in long lead times. Today, businesses are less tolerant of long implementations and need to react quickly to changing customer expectations.

- Red Hat® JBoss® BPM Suite can be integrated into a microservice architecture to support frequent deployments, multiple concurrent versions, and flexible scaling. This helps businesses quickly react to disruptive technologies and social changes—and avoid outdated business models that can become obsolete in months rather than decades.

How Do I Get Started?
Red Hat Discovery Session!
Free half-day to day long interactive session with Red Hat Subject Matter Experts.

- CAPTURE your vision, challenges, and opportunities
- IDENTIFY relevant solutions and approaches
- CREATE an action plan for success
Recommended Summit Sessions

Wednesday

- 10:15am - Thyssenkrupp: Workforce Optimization with Business Resource Planner and OpenShift
- 10:15am - Preview BPM Suite 7 And meet the brains behind it
- 11:30am - Migrating TD Bank’s monolithic Java EE application to a microservices architecture
- 3:30pm - End to End BPM: From process modeling to execution with Signavio and Red Hat
- 4:30pm - Deep dive on case management
- 4:30pm - Decisions at a fast pace: scaling to multi-million transactions/second at Amadeus
Recommended Summit Sessions

Thursday

- 10:15am - How business automation is driving operational transformation at Citi
- 10:15am - Case management applications with BPM
- 11:30am - Advanced Drools
- 11:30am - Using BPM Suite in a reactive architecture with microservices deployed in Docker containers and managed in Amazon ECS (EC2 Container Service)
- 3:30pm - Dawn of the citizen developer: Low-code application development made easy in JBoss BPM Suite & BRMS 7
THANK YOU

plus.google.com/+RedHat
linkedin.com/company/red-hat
youtube.com/user/RedHatVideos
facebook.com/redhatinc
twitter.com/RedHatNews