

RED HAT PROCESS AUTOMATION MANAGER

TECHNOLOGY OVERVIEW

INTRODUCTION

Digital transformation projects present many technological and organizational challenges. A key challenge is developing modern, cloud-native applications that connect customers directly using automated business processes and decisions. Creating these applications requires a radical change in how software is built—moving away from traditional, IT-led software development to a process that lets both developers and business experts contribute directly to application logic.

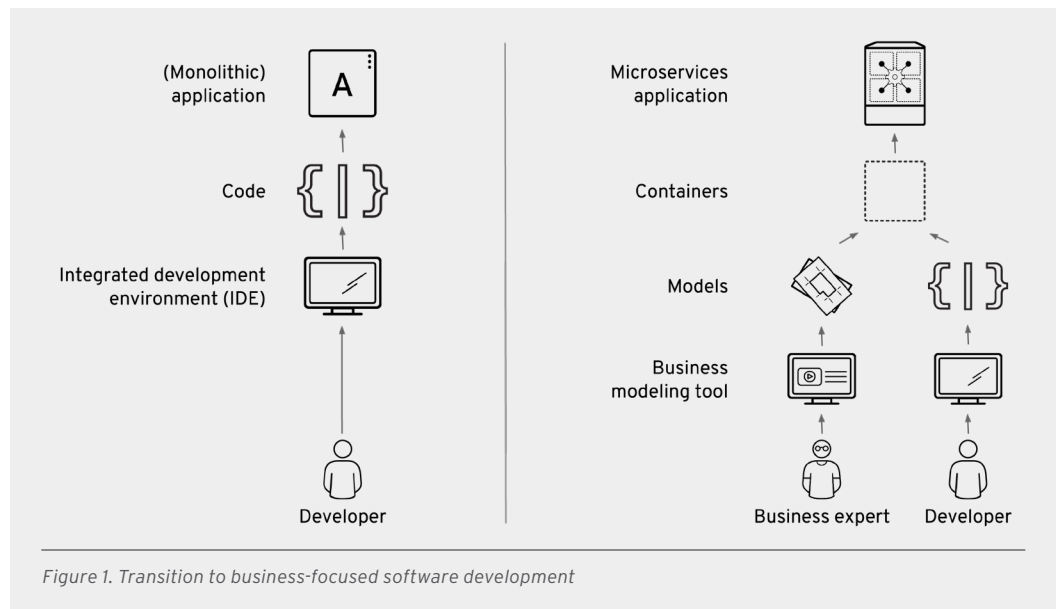


Figure 1. Transition to business-focused software development

In this new approach, business experts contribute knowledge to logic directly using models created with low-code technologies, such as business process management (BPM), business rules, robotic process automation (RPA), resource optimization, and intelligent analytics. To use this approach, new platforms are required to create business models and merge them with program code produced by developers, generating a scalable, secure, and maintainable application or microservice.

Red Hat's enterprise software portfolio includes a business modeling environment solution, Red Hat[®] Process Automation Manager, as well as a container-based development and deployment platform, Red Hat OpenShift[®] Container Platform. Together, these solutions help business users and developers collaborate as equal partners to create modern applications.



facebook.com/redhatinc
@redhat
linkedin.com/company/red-hat

redhat.com

BUILDING APPLICATIONS WITH RED HAT PROCESS AUTOMATION MANAGER

One of the main design objectives for Process Automation Manager is to help nontechnical users define and automate business processes without compromising flexibility or scalability. This solution uses a fully model-based approach to defining business processes, business data, and forms, as well as creating advanced dashboards for business activity monitoring (BAM).

PROCESS MODELING

Process Automation Manager is based on Business Process Model and Notation 2.0 (BPMN 2.0), a standard, simple notation for creating models of operational business processes. These models include the steps within a process, as well as decisions taken along the way. The process designer included in Process Automation Manager lets users easily see all the different paths and options a process can follow, depending on decisions made across its execution.

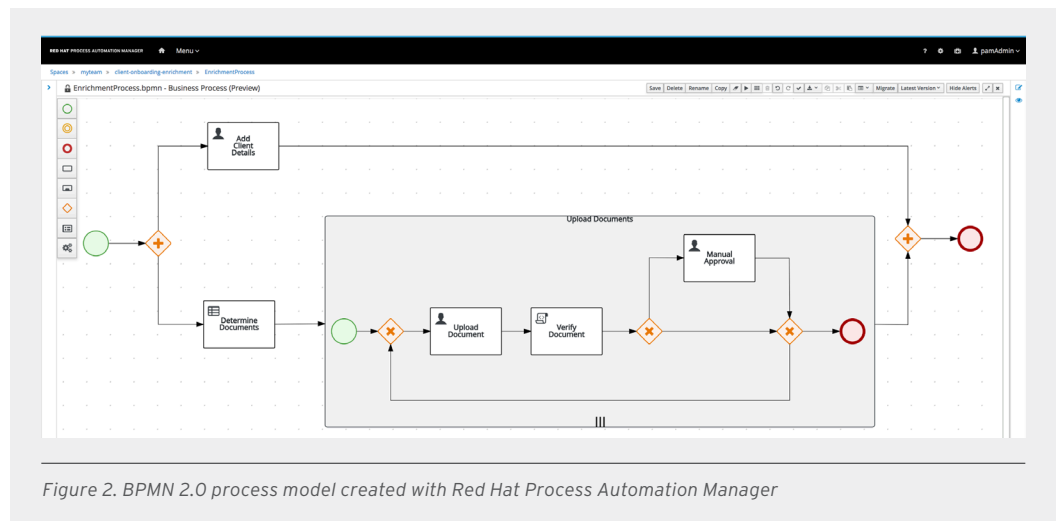
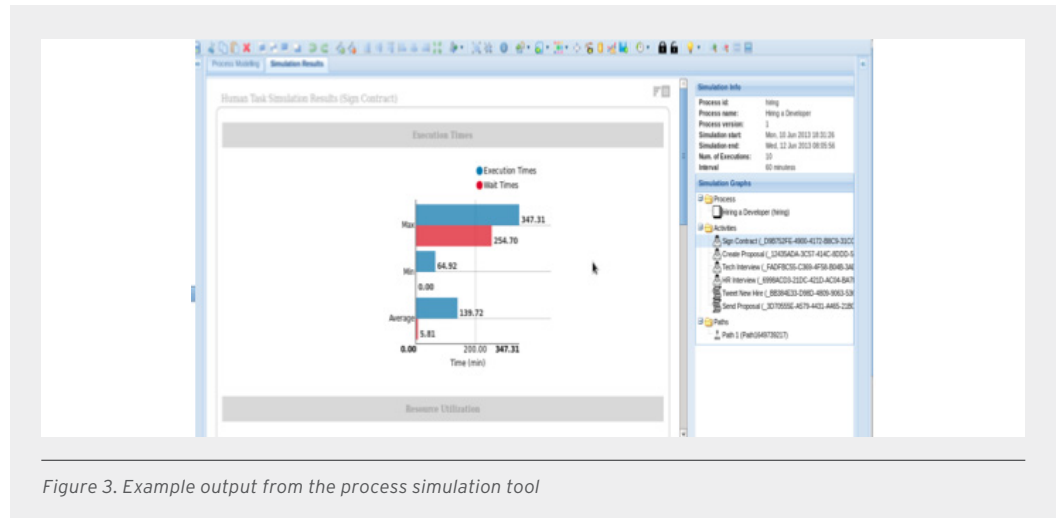


Figure 2. BPMN 2.0 process model created with Red Hat Process Automation Manager

Process Automation Manager goes beyond the BPMN standard to support dynamic case management, a less-structured approach to business processes suitable for use cases too complex to lay out all possible process paths in advance. In these scenarios, the modeling tools lets users describe typical steps taken, with the actual paths determined at runtime depending on the content of each case.

SIMULATION

Process Automation Manager includes a [Business Process Simulation \(BP-Sim\)](#)-compliant process simulation tool. Users can annotate a BPMN model with simulation data—such as expected time to perform a task or probability that a specific decision branch will be taken—and the tool will run multiple cases through the simulation scenario to produce detailed reports on expected process behavior.



DATA MODELING AND FORMS

To support process model inclusion in an executable application, Process Automation Manager provides tools for users to define all the artifacts needed for execution, including data items and the user interface for manual steps. Several scripting languages are also provided.

A data modeling tool provides a simple drag-and-drop mechanism for defining the data items accessed by a process. These items could be as simple as a single variable—such as the price of a product—or as complex as an entire document, such as an insurance application.

Two tools are available for user interface design:

- **For simple HTML forms**, a form builder provides a quick way to lay out form content, input fields, and basic validation.
- **For more complex user interaction**, including on mobile devices or standard browsers, Red Hat has partnered with Entando to integrate Entando Digital Experience Platform (DXP) with Red Hat Process Automation Manager. This user experience design tool includes widgets specially designed for use with Process Automation Manager. Users can create complex, multipart forms that automatically retrieve task lists, data values, documents, and other process information, then generate visually rich graphs and charts. Interfaces created with Entando DXP are responsive to provide a consistent user experience.

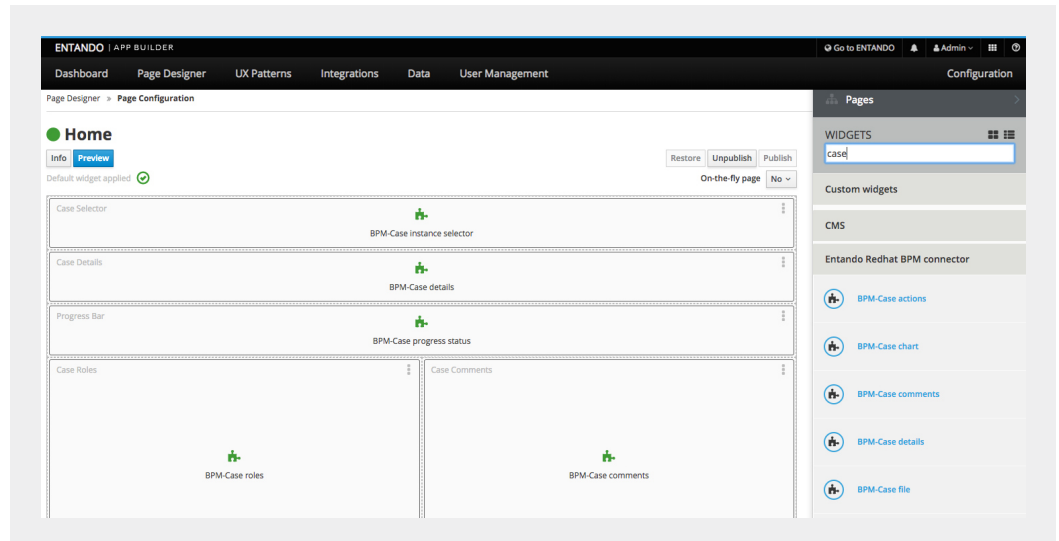


Figure 4. Designing a form with Entando Digital Experience Platform (DXP)

DECISION MODELING

Process Automation Manager offers two primary mechanisms for modeling business decisions:

- **Decision tables** provide an easy-to-use, spreadsheet-like mechanism for defining the business rules that govern a decision.
- A **guided rule editor** provides a powerful approach for modeling more complex decisions via a high-level rule language.

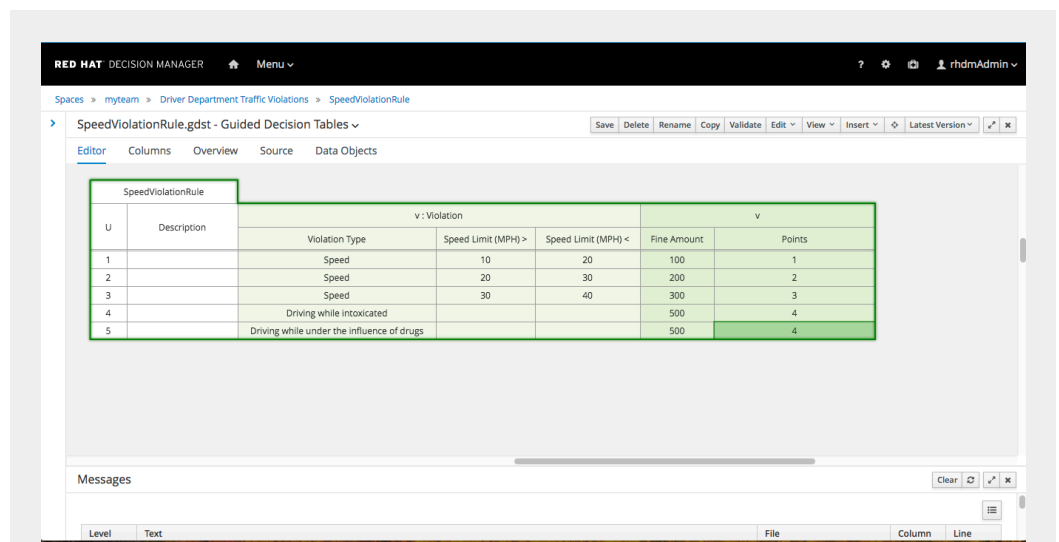


Figure 5. Red Hat Process Automation Manager decision table editor

To evaluate rules at runtime and automate business decisions, Process Automation Manager includes Drools 7, a highly scalable, forward- and backward-chaining inference engine capable of efficiently processing massive rule and data sets.

As an alternative to decision tables and rule languages, the OMG has defined the Decision Model and Notation (DMN) standard as a way to represent the logic of a business decision. Unlike BPMN, DMN includes execution semantics, and a valid and complete DMN model can be directly included in an application. Process Automation Manager offers native support for executing DMN models, without requiring conversion of DMN XML files to to an intermediate rules format. It includes full runtime support for DMN 1.1 models at conformance level 3, as defined by the [OMG DMN specification](#), ensuring that any valid DMN1.1 model can be properly executed.

DASHBOARD CREATION

Process Automation Manager provides an advanced web-based component that lets users drag and drop graphics to create sophisticated dashboards focusing on specific data. These dashboards can contain indicators that are connected to data sources in disparate systems. With customization, business users can easily create a view of key performance indicators (KPIs) needed for agile decision making.

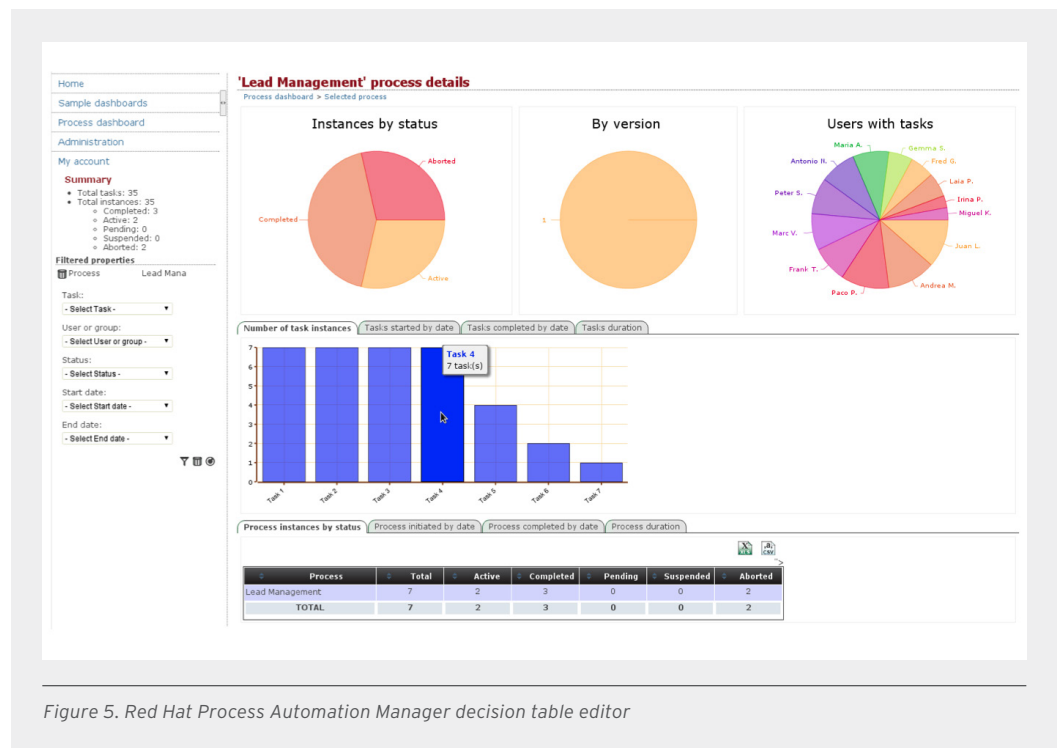


Figure 5. Red Hat Process Automation Manager decision table editor

ABOUT RED HAT

Red Hat is the world’s leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

NORTH AMERICA
1 888 REDHAT1

**EUROPE, MIDDLE EAST,
AND AFRICA**
00800 7334 2835
europe@redhat.com

ASIA PACIFIC
+65 6490 4200
apac@redhat.com

LATIN AMERICA
+54 11 4329 7300
info-latam@redhat.com



facebook.com/redhatinc
@redhat
linkedin.com/company/red-hat

Copyright © 2018 Red Hat, Inc. Red Hat, Red Hat Enterprise Linux, the Shadowman logo, OpenShift, and JBoss are trademarks or registered trademarks of Red Hat, Inc. or its subsidiaries in the United States and other countries. Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

redhat.com
#F12362_0518

INTEGRATION

Applications that automate business processes and decisions do not operate in isolation. They must connect to systems of record and exchange data with other applications and data sources.

Applications built with Process Automation Manager can interact with external services and systems via a rich set of RESTful application programming interfaces (APIs). Its modeling tools include simple mechanisms to define such interactions.

Additionally, Process Automation Manager is designed to work seamlessly with other products in the Red Hat Middleware portfolio, such as Red Hat Fuse, when other interaction mechanisms are required—for example, Internet of Things (IoT) devices or enterprise resource planning (ERP) and customer relationship management (CRM) applications.

AUTOMATION

Process Automation Manager supports a DevOps approach to application development and deployment, including integration with Red Hat OpenShift Container Platform for this purpose.

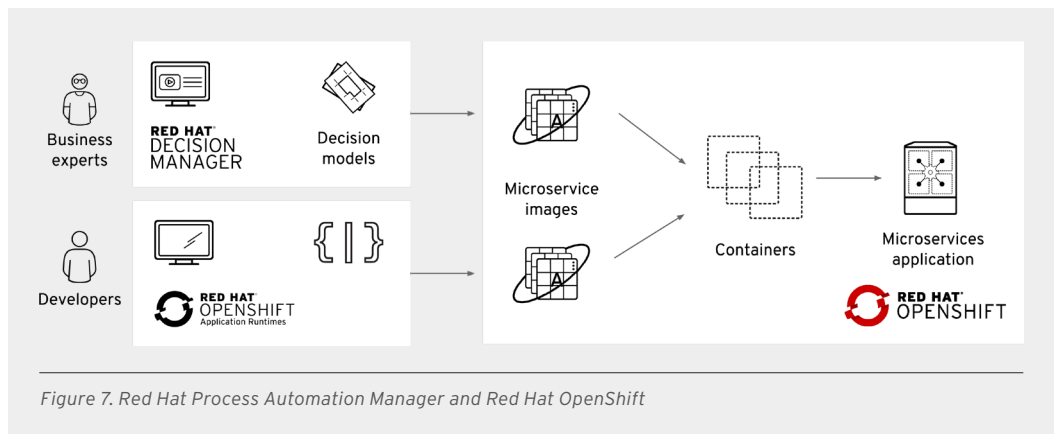


Figure 7. Red Hat Process Automation Manager and Red Hat OpenShift

Models created with Process Automation Manager can be inserted directly into the OpenShift source-to-image (S2I) pipeline in the same way as program code from other development tools. OpenShift will lead models through a full continuous integration and delivery (CI/CD) pipeline, combining them with container images to produce executable microservices for deployment in a private, public, or hybrid cloud.

This approach uniquely lets business users create microservices or entire applications using the same governance mechanisms as those used by IT developers. As a result, business and IT teams can work together to build the new cloud-native applications needed for digital transformation

SUPPORT YOUR BUSINESS PROCESS PROJECTS

Red Hat’s extensive global partner network can help you support process and rules projects. Red Hat partners are certified in Process Automation Manager, as well as BPM approaches, business rules implementation, and system integration.

To learn more, contact Red Hat or find a partner at redhat.com/partners.