

# Application Modernization

Using Open Source Tools to Kick Start  
Modernization

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App Dev SSA

# When Business Makes Technical Decisions



We are moving *all* of our applications to the cloud. Everything written in the last 30 years needs to go.



**John Doe**  
CTO, Acme Unlimited



I found a new platform that is more secure, and with the new mandate we need to migrate workload. How long will that take?



**Burt Macklin**  
Business Leader, Acme Unlimited



We are moving *all* of our applications back on premise. That cloud bill was way more than we budgeted.



**Mantis Toboggan**  
CFO, Acme Unlimited

# Accelerate your journey to Kubernetes with the Konveyor Community

A community of people passionate about helping others modernize and migrate their applications to the hybrid cloud by **building tools to rehost, replatform, and refactor applications to run on Kubernetes & cloud-native technologies**



[www.konveyor.io](http://www.konveyor.io)



Report 2022

## State of Application Modernization

with the Konveyor Community



# The State of Application Modernization Report 2022

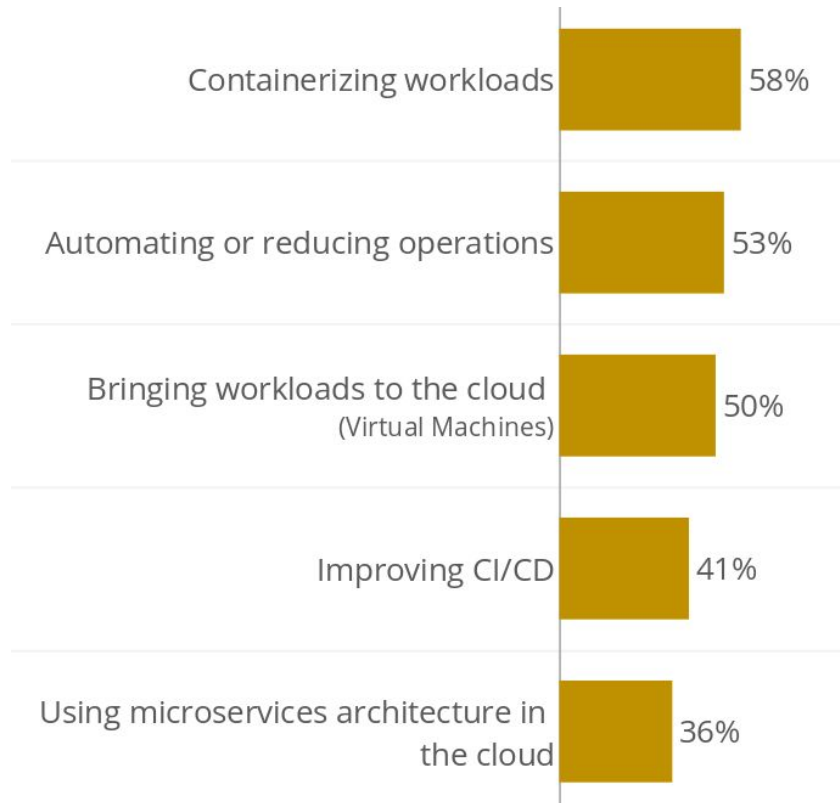
Learn why enterprises plan to modernize more than half of their existing applications to run on Kubernetes within the next year. And see how these 600 companies will approach the move, along with other key insights, to inform your modernization strategy.

**View the report**

**[konveyor.io/modernization-report](https://konveyor.io/modernization-report)**

# Application Modernization



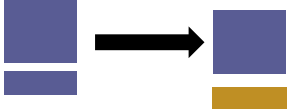
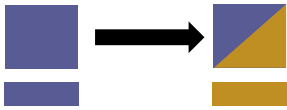
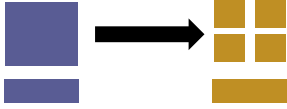

Ways companies define modernization



Top reasons for modernization

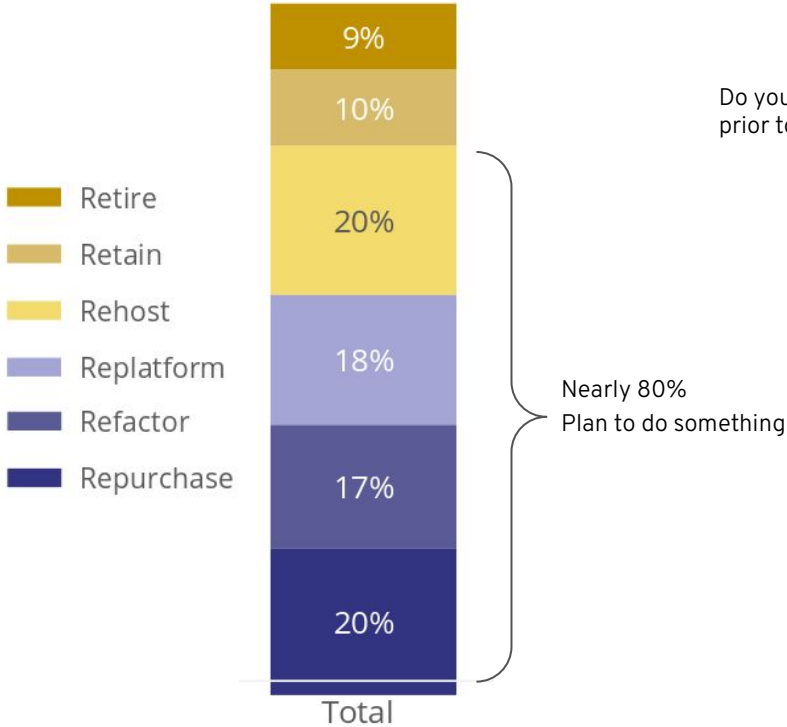


# Modernization Strategies

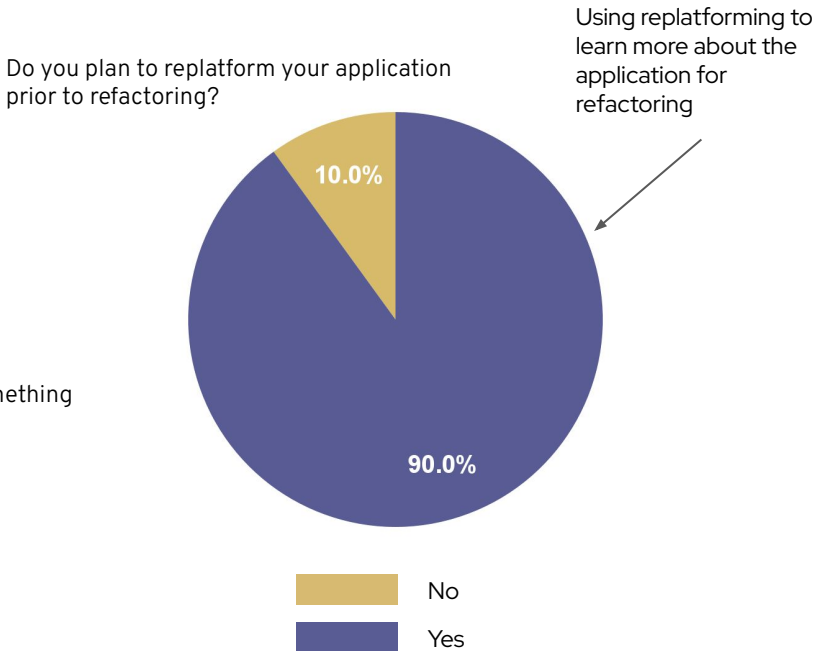
Action	Definition / Example	
Retire	Sunsetting the application.	
Retain	Continue running the application as-is.	
Rehost	Migrating an application as-is to a new platform. Example: Migrating virtual machines as is to a new virtualization platform.	
Replatform	Making optimizations to the application that do not require re-architecture or significant code changes in order to achieve business or technical benefits. Example: Migrating an application into a container in order to standardize application delivery and day-2 operations across application teams.	
Refactor	Changing how an application is developed and/or architected, typically to be more cloud-native Example: Strangling a monolith into microservices.	
Repurchase	Moving to SaaS or Replacing portions of an application with as a service offerings Example: Consuming Kafka as a Service within an existing application.	

# How to Modernize?

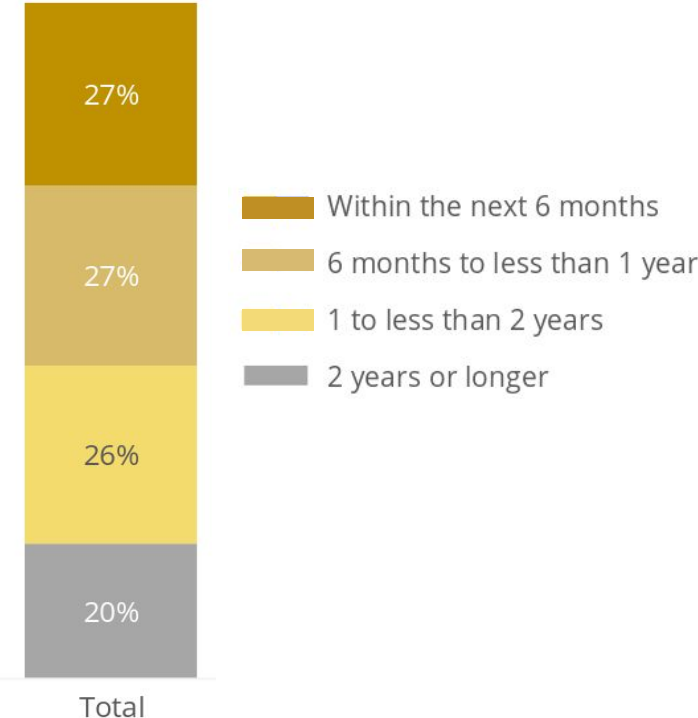
Strategies companies are planning to use



Replatforming prior to refactoring



Expected pace of modernization



Existing  
Application  
& Infrastructure



Rehost



Replatform

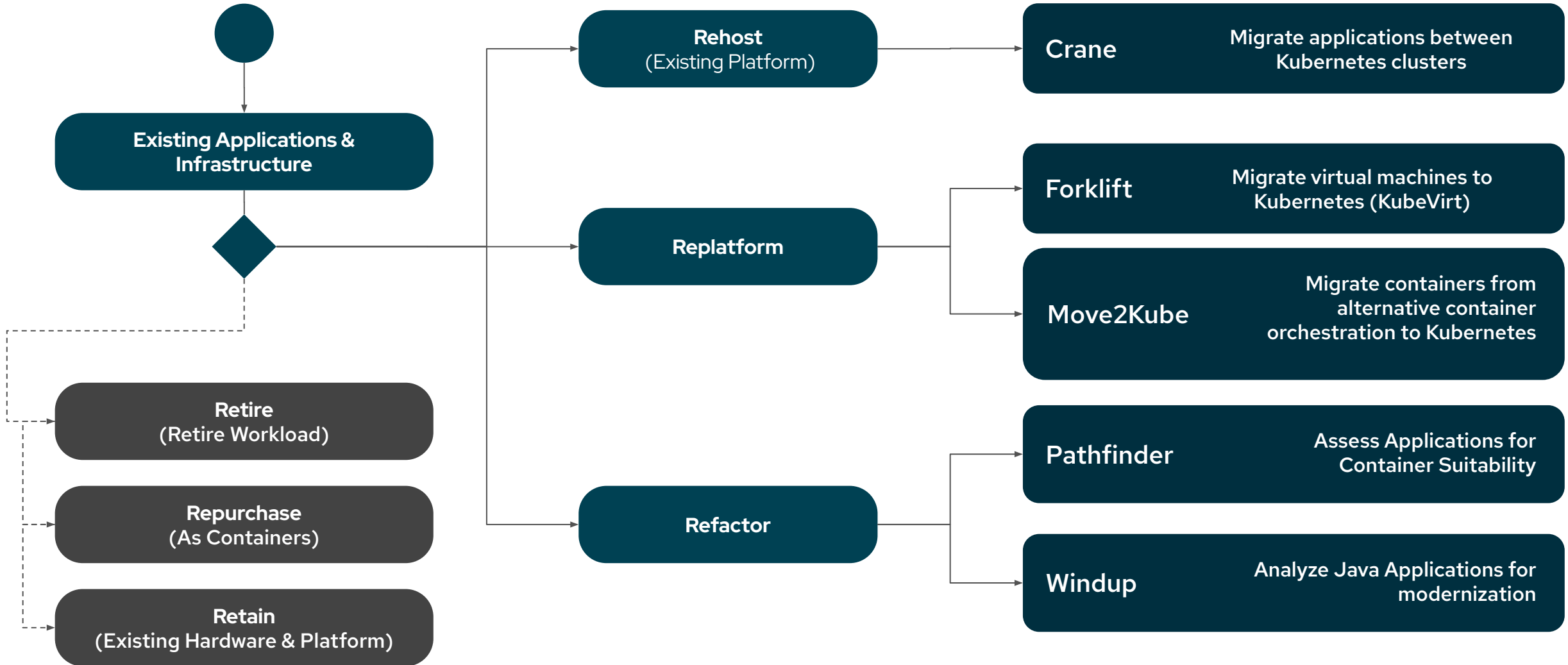


Refactor





# Migrating to OpenShift with *Konveyor*

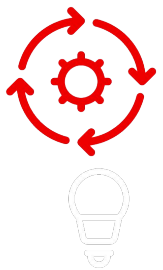


# But what if my application requires a Virtual Machine?

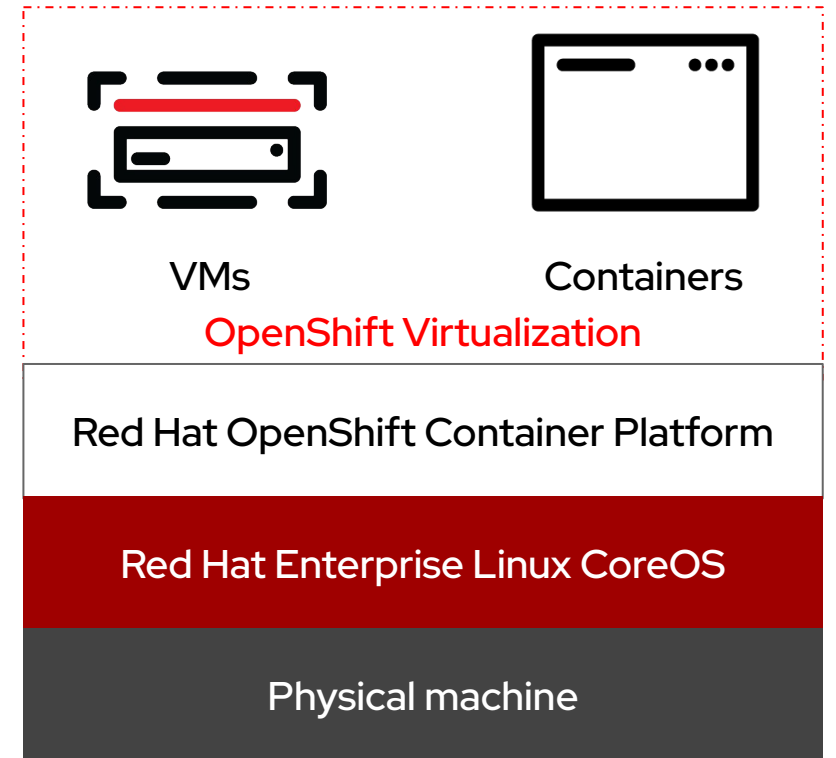
OpenShift 4.5 introduced the general availability of OpenShift Virtualization.



Enabling OpenShift Virtualization in a OpenShift cluster it allows users to deploy virtual machines in their projects side-by-side with their containerized applications.



OpenShift can deploy applications in virtual machines according to the same rules as applications running in containers.

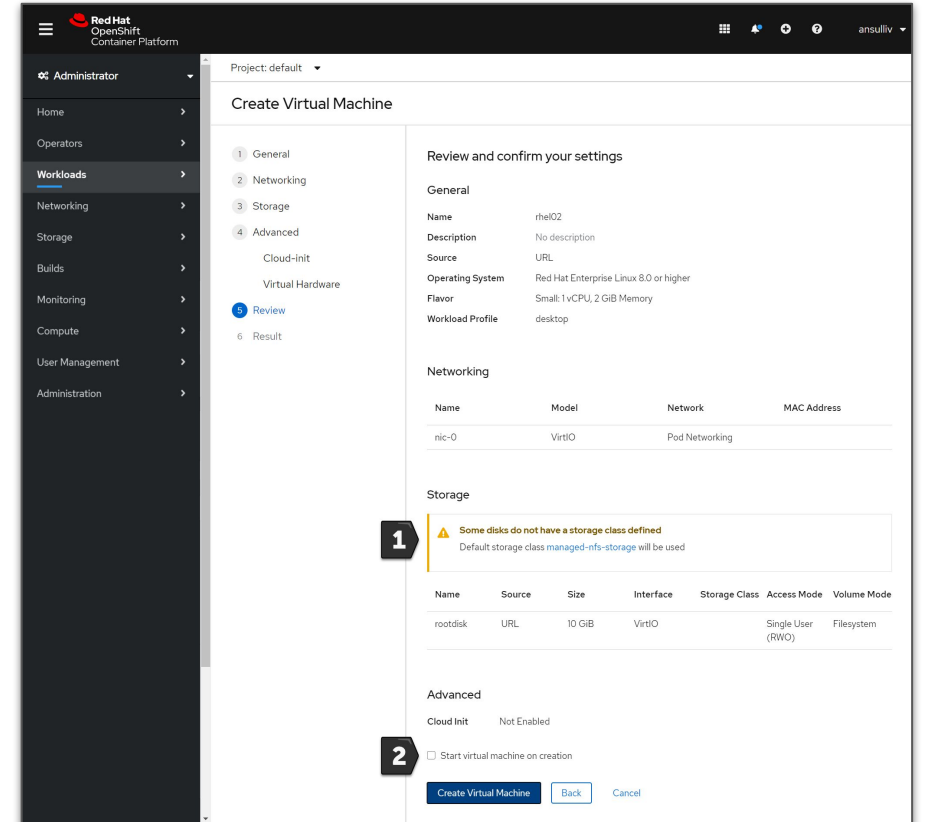
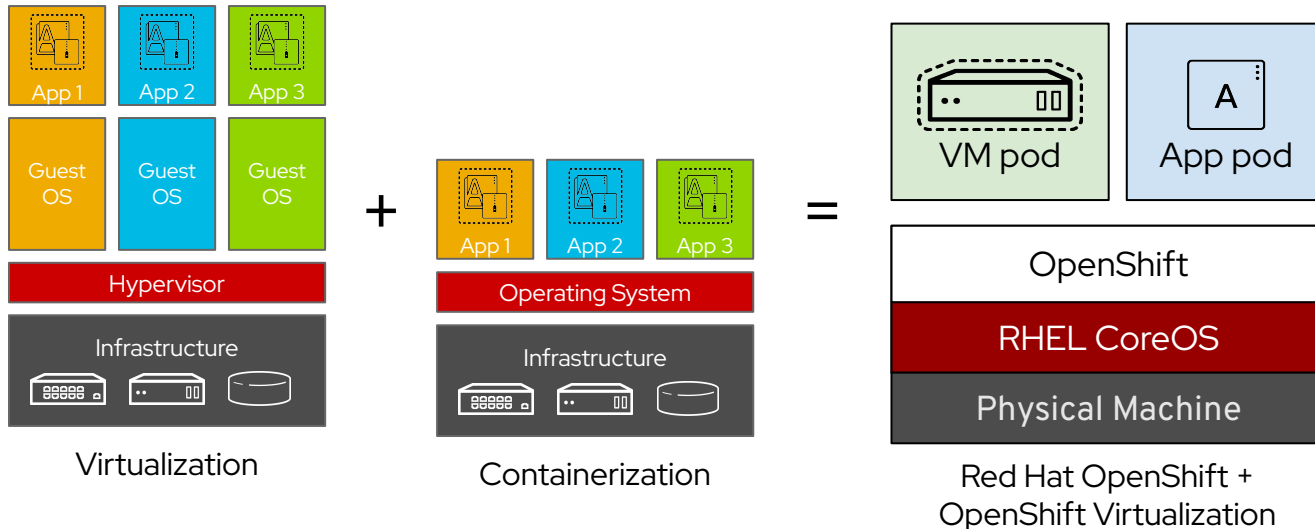


# Isn't a Virtual Machine different from a container?

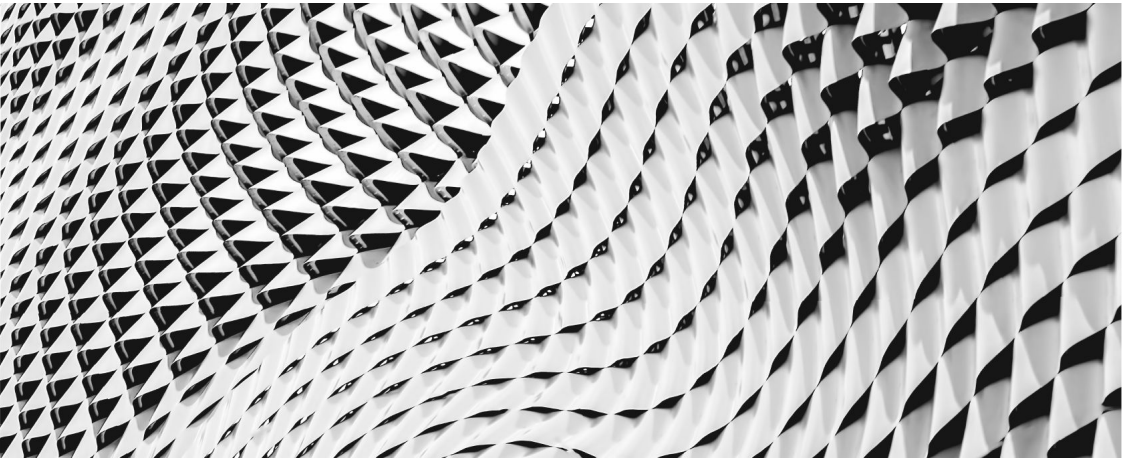
Technical facts:

- Containers are methods of process isolation
- A Virtual Machine is a process

Running a Virtual Machine inside a container platform is equal to running a Virtual Machine as a container.



# Tackle to Access Applications



# Assess, Prioritize, and Refactor Applications to Kubernetes



Streamline the modernization of your application portfolio to Kubernetes.

Through interrelated open source tools, Tackle gives you insight throughout the adoption process

Whether you're making decisions at the portfolio or application level.



# Tackle Operator

Install Tackle in your Kubernetes cluster with almost no effort

**Tackle Operator**  
1.2.0 provided by Konveyor

Uninstall

**Latest version**  
1.2.0

**Capability level**

- Basic Install
- Seamless Upgrades
- Full Lifecycle
- Deep Insights
- Auto Pilot

**Source**  
Community

**Provider**  
Konveyor

**Repository**  
<https://github.com/konveyor/tackle-operator>

**Container image**  
quay.io/konveyor/tackle-operator:1.2.0-native

**Installed Operator**  
This Operator has been installed on the cluster. [View it here.](#)

Tackle is a collection of tools that supports large-scale application modernization and migration projects to Kubernetes.

Tackle allows users to maintain their portfolio of applications with a full set of metadata and to assess their suitability for modernization leveraging a questionnaire based approach.

Tackle is a project within the [Konveyor community](#).

For more information please refer to [Tackle documentation](#).

- Can be installed in all Kubernetes distributions
- Available in operatorhub.io and OpenShift
- Requires Operator Lifecycle Manager on upstream Kubernetes distributions
- Provides a tackle CRD to provision all components
- Capability Level II



# Application Inventory

## Application Portfolio Management

Name	Description	Business service	Assessment	Review	Tag count
> <input type="checkbox"/> Flexicard	Account Managment for Credit Cards		Not started	Not started	3
> <input type="checkbox"/> ForestAndTrees	'generic, interfaces, extract and reportin...	Finance and HR	Not started	Not started	4
> <input type="checkbox"/> GeneralLedger	General Ledger	Finance and HR	Not started	Not started	4
> <input type="checkbox"/> Haulier-BE	Insurance service of commercial vehicles	Motor Insurance	Completed	Completed	5
> <input type="checkbox"/> Haulier-FE	User interface for commercial vehicle ins...	Motor Insurance	Completed	Completed	4
> <input type="checkbox"/> HeadChef	Allocation of orders to restaurants for ful...	Food2Go	Not started	Not started	4
> <input type="checkbox"/> Homesure	Home Insurance - buildings and contents	Home Insurance	In-progress	Not started	5
> <input type="checkbox"/> HomesureBTL	Insurance for Buy to Let properties	Home Insurance	Not started	Not started	4
> <input type="checkbox"/> InventoryManagement	Inventory management	Finance and HR	Not started	Not started	5

- Used to maintain a portfolio of applications
- It is the hub, and natural integration point for all Tackle projects in the future
- Through the use of tags extensible metadata can be added to describe and categorize the applications in multiple dimensions
- Applications can be linked to the business services that they support
- Application interdependencies can be defined and managed

# Assessment Areas

Assessment questions cover the following application aspects



- Architectural Suitability
- Dependencies
- Application Resiliency
- Communication
- Compliance
- State Management
- Runtime Profile
- Observability



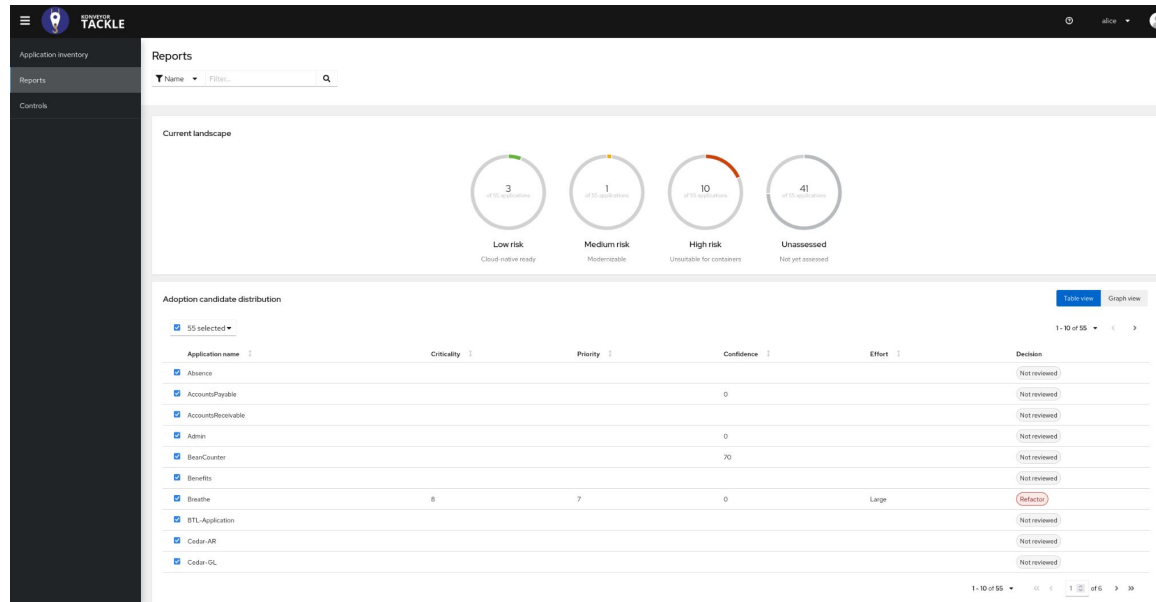
- Level of Ownership
- Service Discovery
- Deployment Complexity
- Application Testing
- Application Security
- Application Configuration
- Clustering
- Custom Questions





# Application Assessment

Assess your Application Portfolio for containerization suitability



- A questionnaire based tool that assesses the suitability of applications for deployment in containers within an enterprise Kubernetes platform
- The reports provide information about the suitability of the applications for containerization, highlighting risks and producing an adoption plan informed by effort, priority and dependencies

# Pathfinder

Pathfinder is an application assessment which can quickly assist a customer with creating a strategy for containerisation of their applications.

Pathfinder Logged in as Admin (Logout)

Italian Bank Assessments Applications Members

## CONSUMER APP PORTAL ASSESSMENT

### Application Details

#### 1. Does the application development team understand and actively develop the application? 0

- Unknown
- External 3rd party or COTS application
- In maintenance mode, no app SME knowledge, poor documentation
- Maintenance mode, SME knowledge available
- Actively developed, SME knowledge available
- New Greenfield application

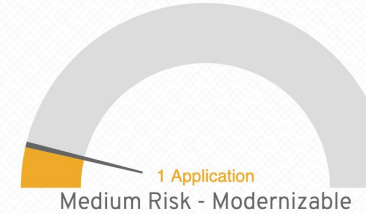
#### 2. How is the application supported in Production? 0

- Unknown
- Application production support outsourced to 3rd party support provider. Ticket driven escalation process, no inhouse support resources.
- Production support provided by separate internal team, little interaction with development team.
- Multiple teams support the application using an established escalation model
- SRE based approach with knowledgeable and experienced operations team
- Pure DevOps model, the team that builds it is responsible for running it in Production

Username:

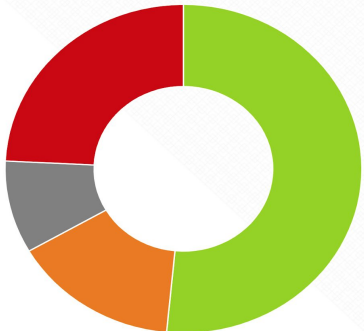
Password:

## CURRENT LANDSCAPE



Italian Bank Assessments Applications Members

## ARCHITECT REVIEW



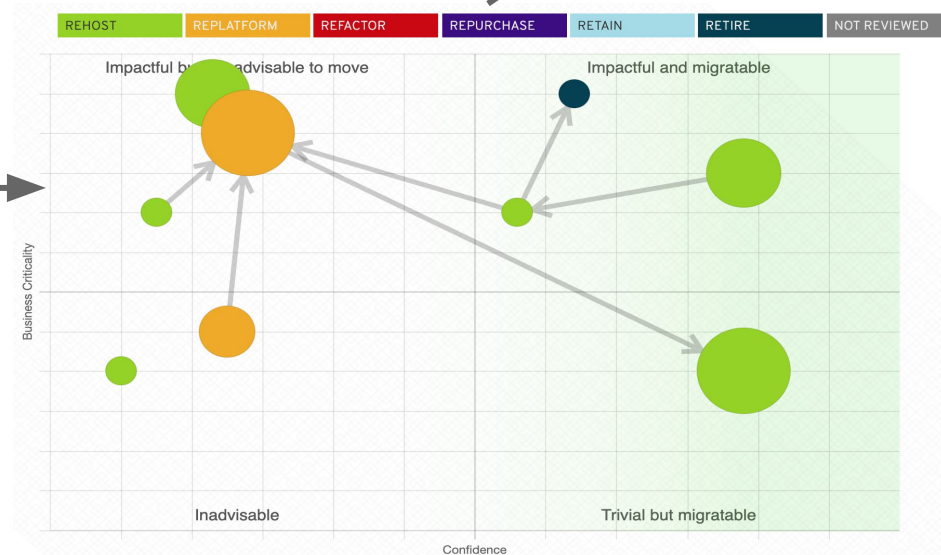
## CONSUMER APP PORTAL

Application Description: No description provided  
 Assessment Notes: Currently under development, still a work in progress.

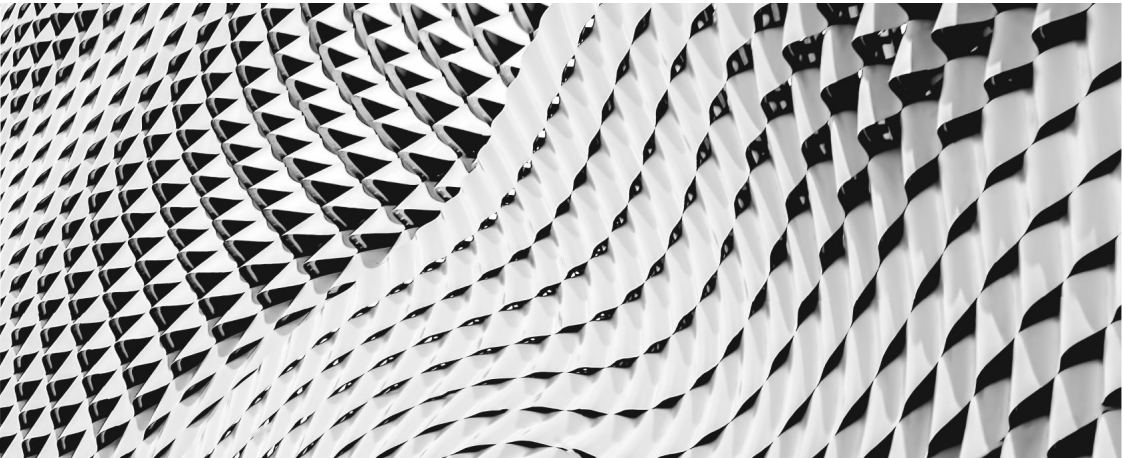
Please use this section to provide your assessment of the possible migration/modernisation plan and an effort estimation.

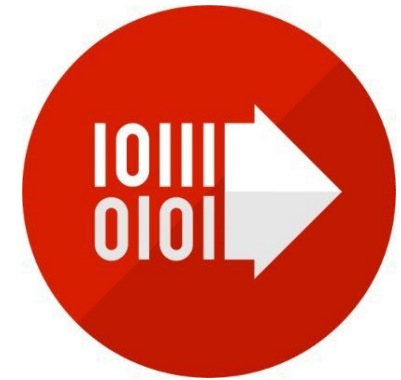
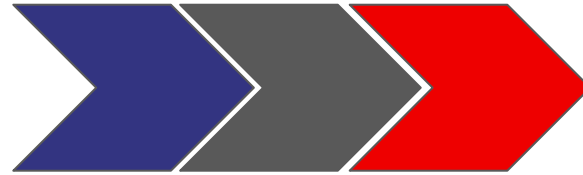
Proposed Action	Effort Estimate	Business Criticality (1=low, 10=high)	Work Priority (1=low, 10=high)
Re-host	Large	8	8

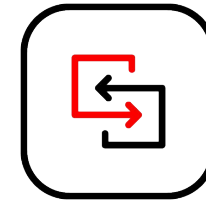
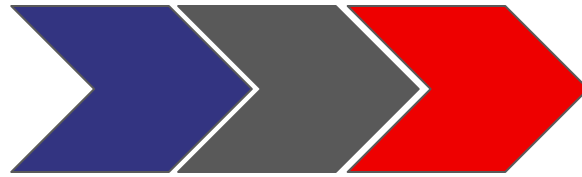
Question	Answer	Rating
Are 3rd party/Vendor components supported in containers?	Not recommended to run component in containers	RED
Dependencies - (Incoming/Northbound)	No dependent systems	GREEN
Dependencies - (Outgoing/Southbound)	Limited processing available if dependencies are unavailable	GREEN



# MTA to Analyze Applications







Migration Toolkit  
for Applications

# Migration Toolkit for Applications

The tools, reports, and knowledge that help developers accelerate application modernization and migration projects.

Download

[Overview](#)

[Download](#)

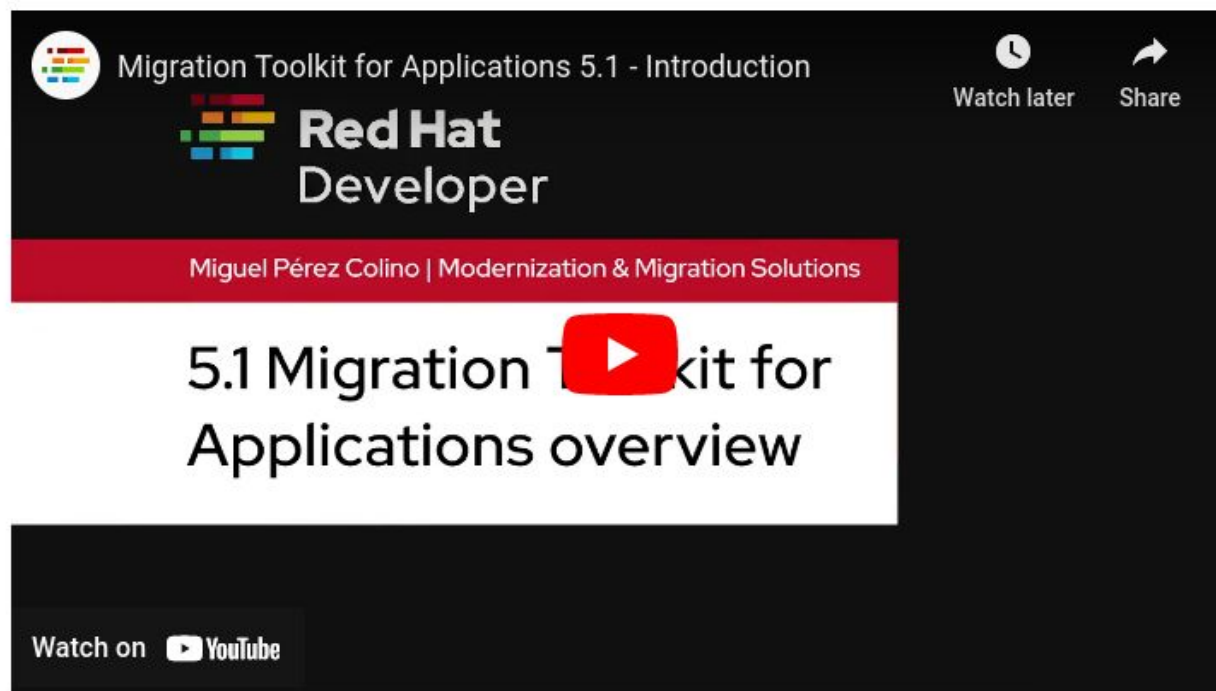
[Getting started](#)

[Use cases and migration paths](#)

## Migration Toolkit for Applications overview

### Modernize and migrate applications and move to cloud and containers

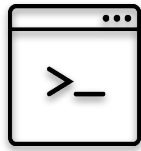
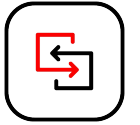
The Migration Toolkit for Applications (MTA) is an assembly of tools that support large-scale Java application modernization and migration projects across a broad range of transformations and use cases. It accelerates application code analysis, supports effort estimation, accelerates code migration, and helps you move applications to the cloud and containers.



The image shows a YouTube video player interface. At the top left is the video title "Migration Toolkit for Applications 5.1 - Introduction" next to a small icon. To the right are "Watch later" and "Share" buttons. Below the title is the "Red Hat Developer" logo. A red banner below the logo contains the text "Miguel Pérez Colino | Modernization & Migration Solutions". The main video title "5.1 Migration Toolkit for Applications overview" is displayed in large white text on a black background, with a red play button icon. At the bottom left, it says "Watch on YouTube".

# Migration Toolkit for Applications

Other distributions



Command line  
interface



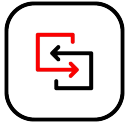
IDE  
plugins



Maven  
plugin

# Command Line Interface

## Features



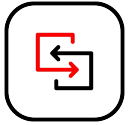
- Great for larger / automated analyses
- Easy to script
- Typical Use Case
  - Create a folder structure where your artifacts are stored
  - Have a script run through all
  - Move the resulting reports to a simple Web Server for consumption

```
$ <MTA_HOME>/bin/mta-cli --input /path/to/jee-example-app-1.0.0.ear --output  
/path/to/report-output/ --source eap:5 --target eap:7 --packages com.acme  
org.apache
```



# Maven Plugin

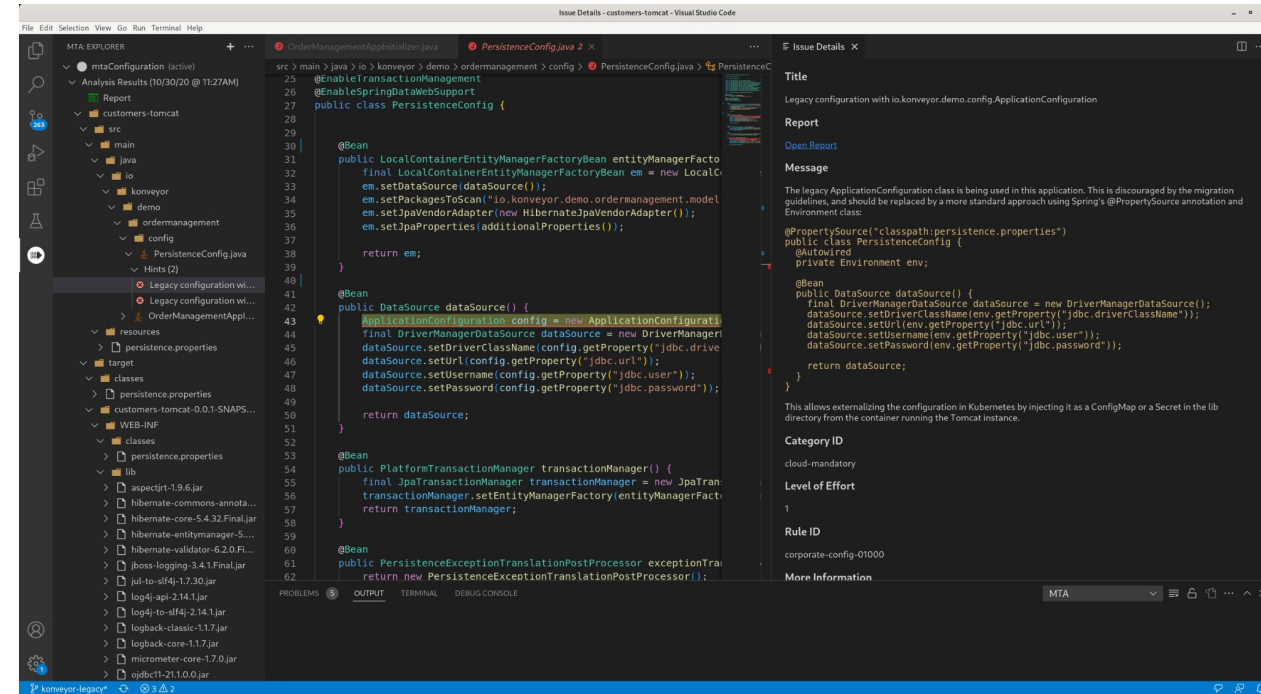
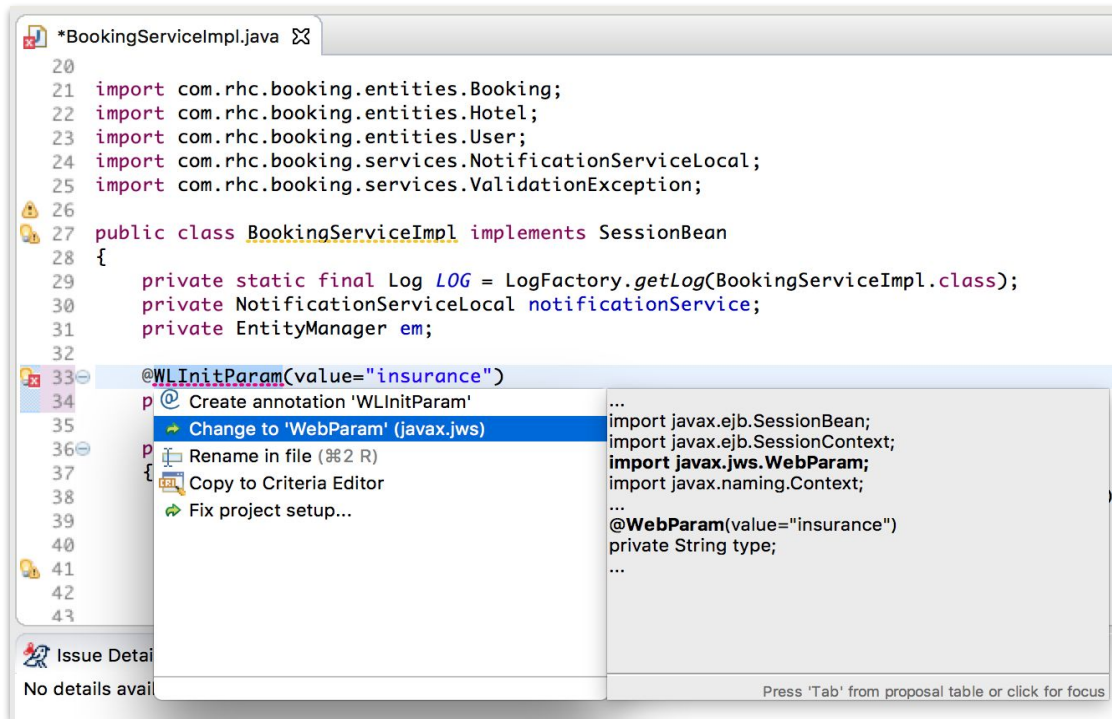
## Features



- For teams who want to continuously evaluate Migration efforts with each build iteration
- Easy to add to your CI/CD or build processes
  - CLI - add a step in your pipeline
  - Maven Plugin - Integrate into your Maven build

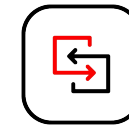
# IDE Plugins

Task list, inline hints, support for code changes

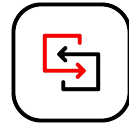


Eclipse(Che, CodeReady Studio) / VS Code / IntelliJ

# Migration paths Matrix



Source Platform	Targets							
	Migration to JBoss EAP 7	Cloud Readiness	OpenJDK 8 & 11	Jakarta EE 9	Camel 3	Spring Boot in Red Hat Runtimes	Quarkus	Open Liberty
Oracle WebLogic Server	✓	✓	✓	-	-	-	-	-
IBM WebSphere Application Server	✓	✓	✓	-	-	-	-	✓
JBoss EAP 4	✗ [1]	✓	✓	-	-	-	-	-
JBoss EAP 5	✓	✓	✓	-	-	-	-	-
JBoss EAP 6	✓	✓	✓	-	-	-	-	-
JBoss EAP 7	✓	✓	✓	-	-	-	-	-
Thorntail	✓ [2]	-	-	-	-	-	-	-
Oracle JDK	-	✓	✓	-	-	-	-	-
Camel 2	-	✓	✓	-	✓	-	-	-
Spring Boot	-	✓	✓	✓	-	✓	✓	-
Any Java application	-	✓	✓	-	-	-	-	-
Any Java EE application	-	-	-	✓	-	-	-	-



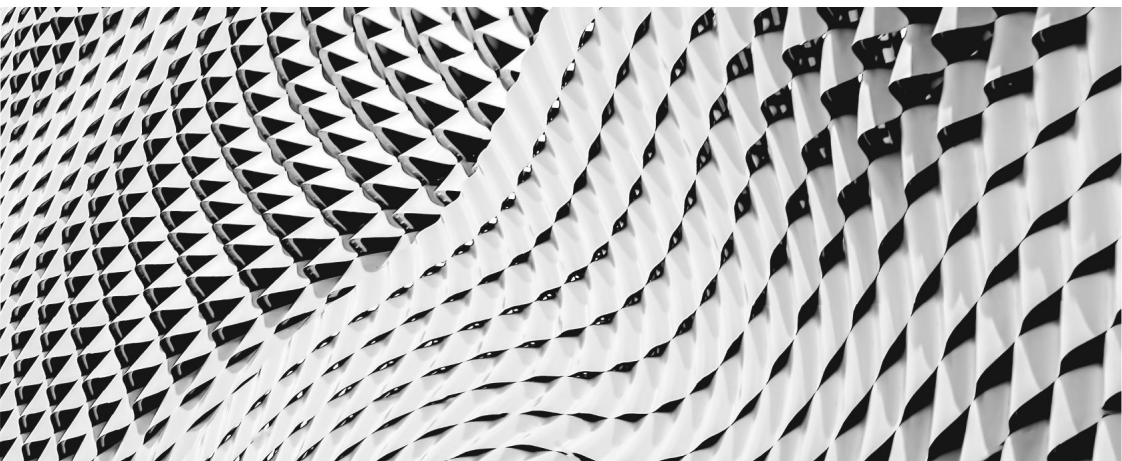
## Advanced Usage

### Build your own rules

- For your own Frameworks
  - “If you encounter this - here is how you migrate”
- Also great for large engagements, once you have built your “cookbook”
- Provide your internal guidance and link directly to your documentation

```
<rule id="cookbook-eap7-02000" xmlns="http://windup.jboss.org/schema/jboss-ruleset">
  <when>
    <javaclass references="weblogic.utils.StringUtils.{*}" />
  </when>
  <perform>
    <hint category-id="mandatory" effort="1" title="WebLogic StringUtils usage">
      <message>Replace with the `StringUtils` class from Apache Commons.</message>
      <link href="https://commons.apache.org/proper/commons-lang/" title="Apache Commons Lang"/>
      <message>Also, check the wiki for an example in conjunction with our XYZ-SUPERFRAMEWORK</message>
      <link href="https://our.internal.wiki/migration/StringUtils/" title="StringUtils usage and"/>
      <tag>weblogic</tag>
    </hint>
  </perform>
</rule>
```

# DEMO - MTA

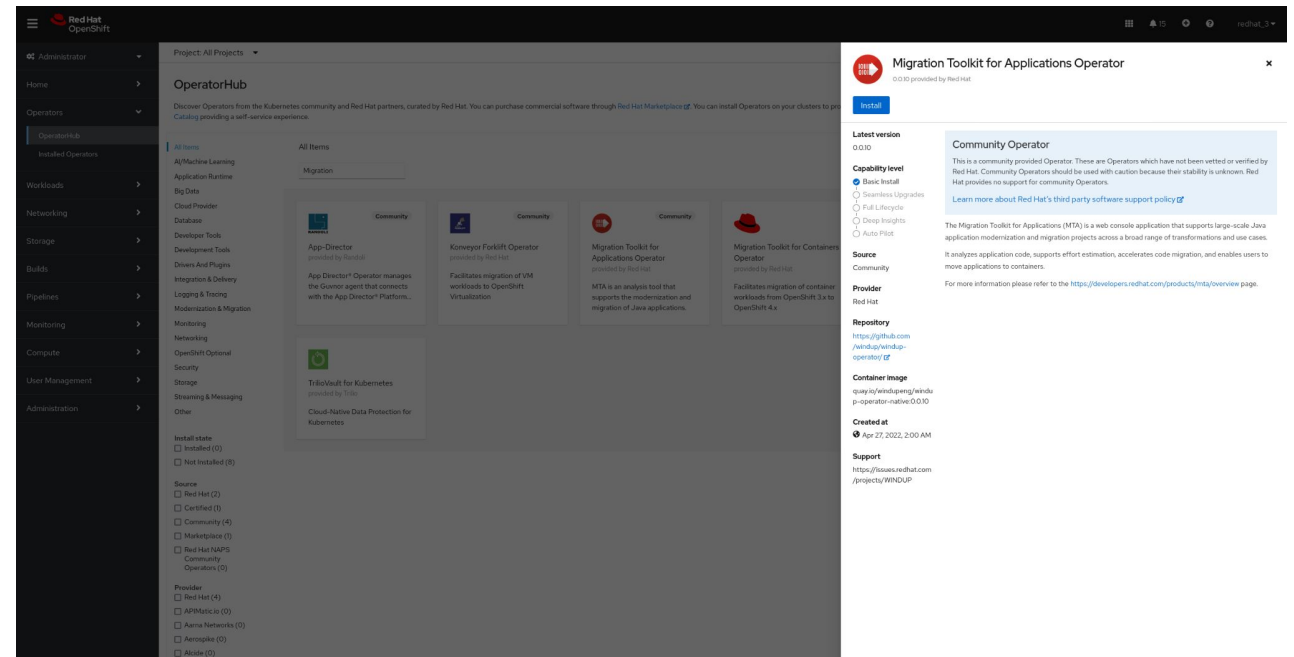


# Operator



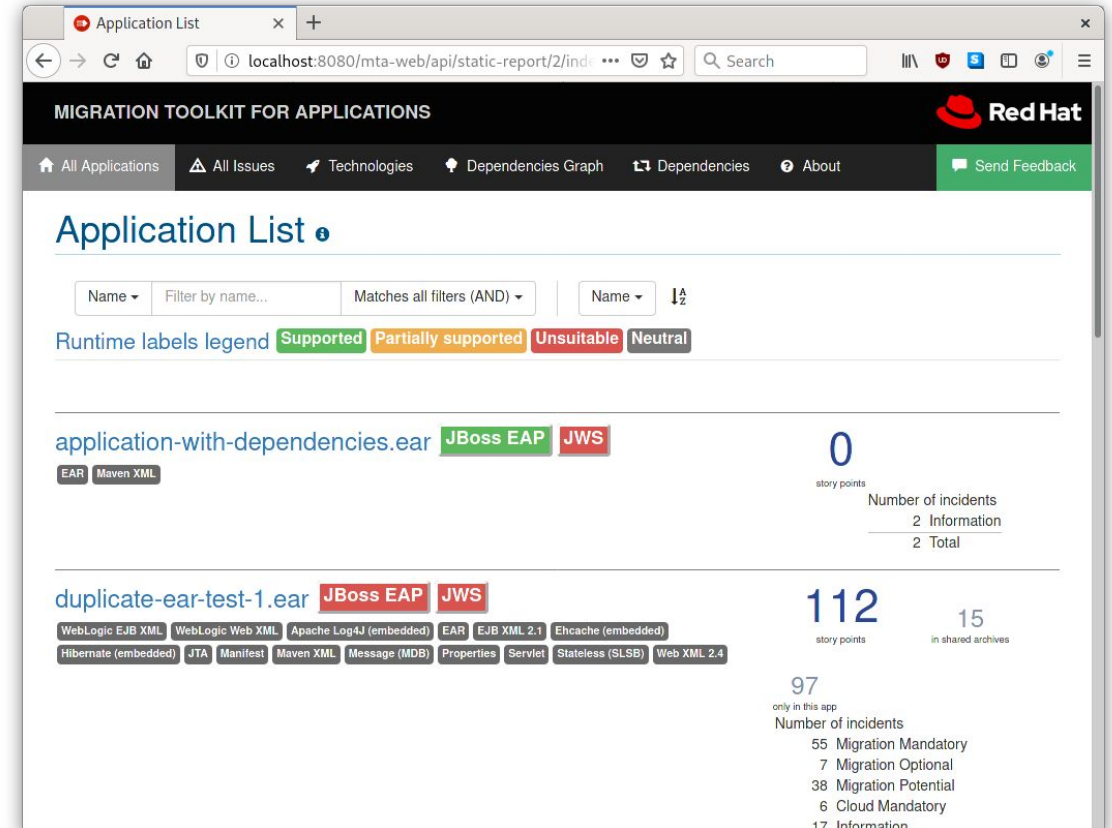
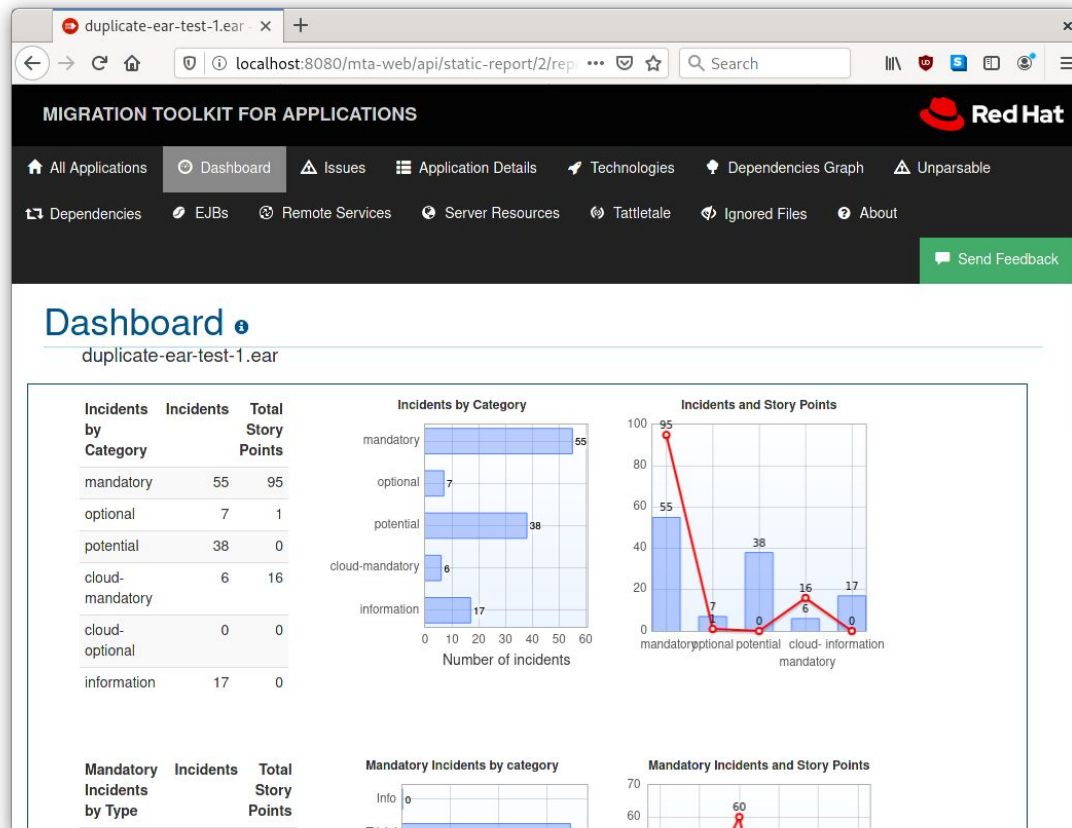
Install MTA in your OpenShift cluster with almost no effort

- Available in OperatorHub
- Provides a tackle CRD to provision all components
- Capability Level II



# Application Analysis

## Issue type analysis and support for effort estimation





# Application Analysis

## Issue identification and guidance for developers

**Issues**  
AdditionWithSecurity-EAR-0.01.ear

Issue by Category	Incidents Found	Story Points per Incident	Level of Effort	Total Story Points
Windows file system path	9	1	Trivial change or 1-1 library swap	9
JMX MBean object name (javax.management.ObjectName)	2	1	Trivial change or 1-1 library swap	2
WebLogic T3 JNDI binding	1	3	Complex change with documented solution	3

**Issue Detail: WebLogic T3 JNDI binding**

WebLogic's implementation of the RMI specification uses a proprietary protocol known as T3. T3S is the version of the protocol over SSL. `t3s://` and `t3s://` URLs are used to configure a JNDI InitialContext within WebLogic.

The equivalent functionality needs to be configured in JBoss EAP 7. This could be done either by using standard Java EE JNDI names or by using a WebLogic proprietary library if the connectivity to WebLogic server is still required.

- Oracle WebLogic RMI with T3
- Invoking EJBs deployed on WebLogic from EAP6

### Source Report

sample-apps/jee-example-weblogic/jee-example-services/src/main/resources/META-INF/weblogic-ejb-jar.xml

#### Information

**9 Technologies**  
WebLogic EJB XML, database, configuration, weblogic, ejb

**Automatically Translated Files**  
JBoss EJB XML Descriptor - Generated by Migration Toolkit for Applications by Red Hat

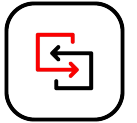
**Story Points**

- <?xml version="1.0" encoding="UTF-8"?>
- <weblogic-ejb-jar xmlns="http://www.bea.com/ns/weblogic/90" xmlns:j2ee="http://java.sun.com/xml/ns/j2ee" xmlns:xsi="http://www.w3.org/2001/XMLSchema-ns" xsi:schemaLocation="http://www.bea.com/ns/weblogic/90 http://www.bea.com/ns/weblogic/90/weblogic-ejb-jar.xsd">
- WebLogic EJB XML (weblogic-ejb-jar.xml)**  
The elements of proprietary weblogic-ejb-jar.xml descriptor need to be mapped to the jboss-ejb3.xml one according to the attached knowledge article.  
Migrate the weblogic-ejb-jar.xml
- <weblogic-enterprise-bean>
- <ejb-name>ItemLookupBean</ejb-name>
- <stateless-session-descriptor>
- </stateless-session-descriptor>
- <transaction-descriptor>
- <trans-timeout-seconds>180</trans-timeout-seconds>
- WebLogic EJB XML (weblogic-ejb-jar.xml) trans-timeout-seconds**



# Application Analysis

## Dependencies identification



**TACKLE ANALYSIS** KONVEYOR TACKLE

All Applications Dashboard Issues Application Details Technologies Dependencies Graph **Dependencies** JPA Hard-coded IP Addresses Ignored Files About Send Feedback

### Dependencies

customers-tomcat-0.0.1-SNAPSHOT.war

**log4j-api-2.14.1.jar**

**Maven coordinates:** [org.apache.logging.log4j:log4j-api:2.14.1](#)

**SHA1 hash:** cd8858fbbde69f46bce8db1152c18a43328aae78

**Version:** 2.14.1

**Organization:** Apache

**Found at path:** customers-tomcat-0.0.1-SNAPSHOT.war/WEB-INF/lib/log4j-api-2.14.1.jar

**log4j-to-slf4j-2.14.1.jar**

**Maven coordinates:** [org.apache.logging.log4j:log4j-to-slf4j:2.14.1](#)

**SHA1 hash:** ce8a86a3f50a4304749828ce68e7478cafbcb8039

**Version:** 2.14.1

**Organization:** Apache

**Found at path:** customers-tomcat-0.0.1-SNAPSHOT.war/WEB-INF/lib/log4j-to-slf4j-2.14.1.jar

**tomcat-juli-9.0.46.jar**

**SHA1 hash:** 409b519751e104eab51b4347a0d27b186a413bb1

**Version:** 9.0.46

**Organization:** Apache Software Foundation

**Found at path:** customers-tomcat-0.0.1-SNAPSHOT.war/WEB-INF/lib/tomcat-juli-9.0.46.jar

**tomcat-jdbc-9.0.46.jar**

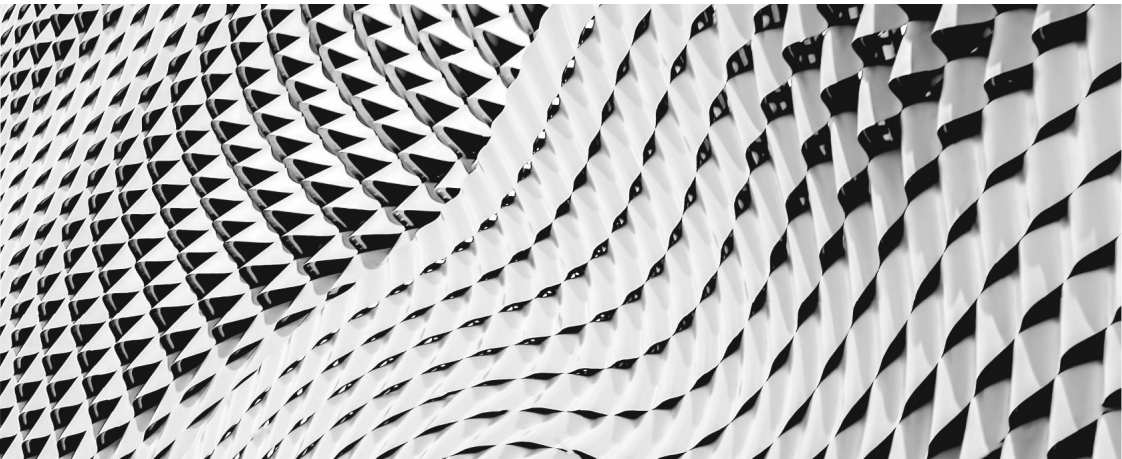
**SHA1 hash:** 385cb6cb1f6b26c881cd5c1c6ade5f180712f1dc

**Organization:** Apache Software Foundation

**Found at path:** customers-tomcat-0.0.1-SNAPSHOT.war/WEB-INF/lib/tomcat-jdbc-9.0.46.jar

**aspectjrt-1.9.6.jar**

Why?



The Gartner logo is displayed in white text on a dark blue square background.

Gartner®



By 2027, 85% of the workload placements made until 2022 will no longer be optimal, highlighting the evolving need for application mobility and portability.

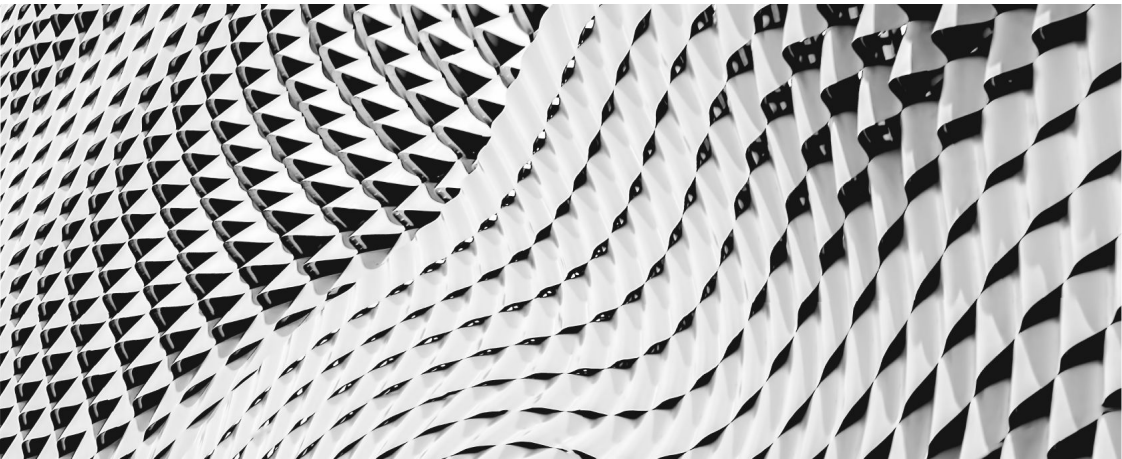
- \*Gartner, Workload Placement in Hybrid IT — Making Great Decisions About What, Where, When and Why, Henrique Cecci, David Cappuccio, 2 May 2022

# Never-Ending Modernization

Preparing for the Journey, not the destination

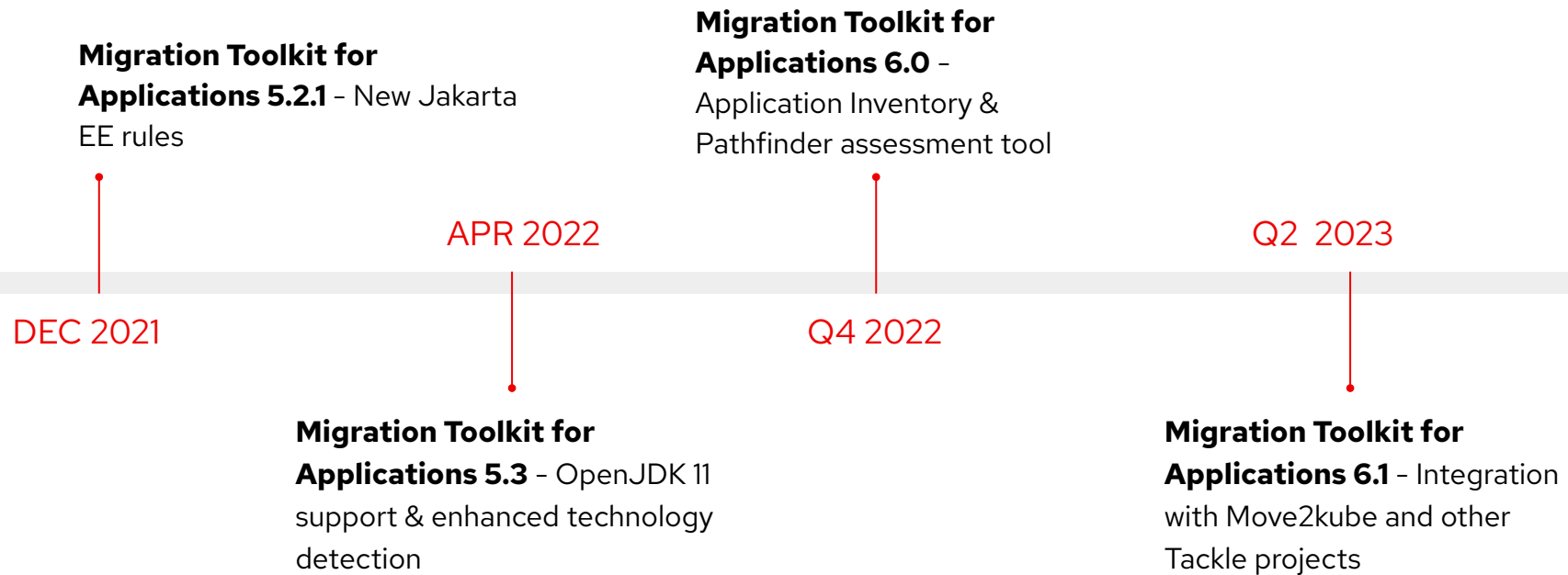
- ▶ Java Migration from 8 > 11 > 17 and beyond
- ▶ Preparing workloads to move to the cloud and back
- ▶ Standardizing Platforms
- ▶ Tracking applications as new versions release
- ▶ Justifying and prioritizing legacy modernization
- ▶ Sprint Planning and Resource Allocation

# MTA Roadmap



# Red Hat Modernization and Migration Solutions

## Roadmap Timeline



# Thank you

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.



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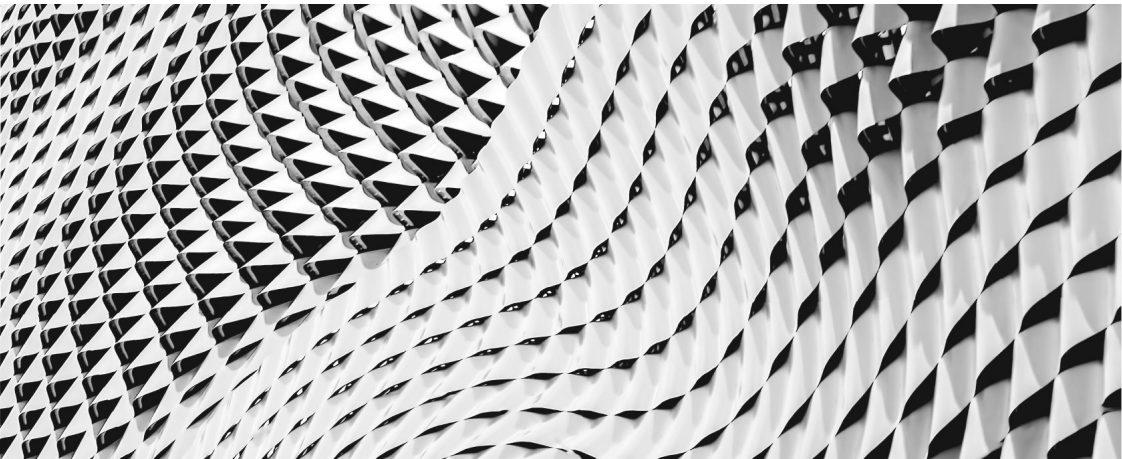


[facebook.com/redhatinc](https://www.facebook.com/redhatinc)



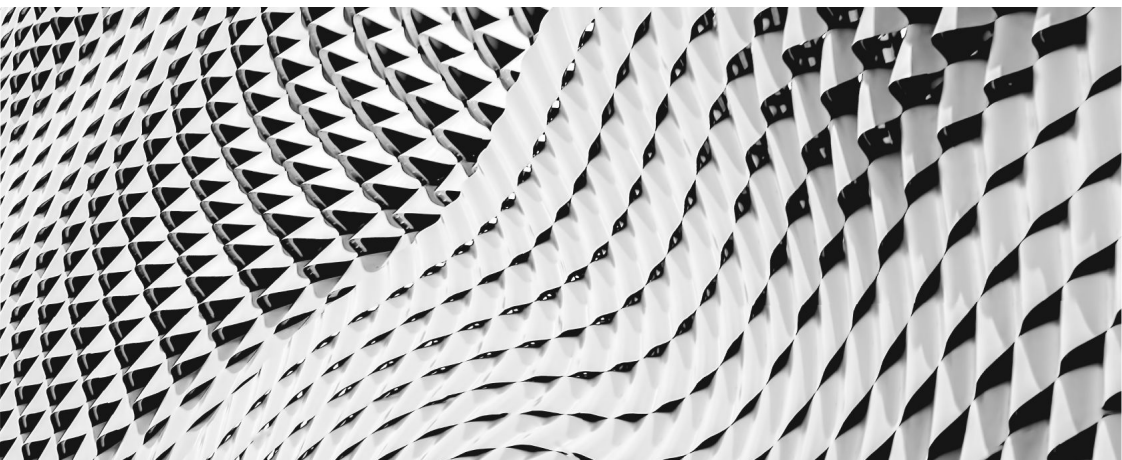
[twitter.com/RedHat](https://twitter.com/RedHat)

# Appendix





# What's New in Tackle 2.0







# Tackle Operator

## Manage and upgrade your Tackle instances

- Completely reimplemented operator
- Available for all Kubernetes distributions
- Capability Level II, allowing seamless upgrades
- Enhanced configuration management
  - Enable authless deployment
  - Manage volume sizes
  - Configure storage classes
- Manages two CRs now: tackle and addon

OperatorHub.io

Search OperatorHub... Contribute

**Tackle Operator**  
Tackle contains tools that support the modernization and migration of applications to Kubernetes and OpenShift

Home > Tackle Operator

**Tackle Operator**

Tackle is a collection of tools that supports large-scale application modernization and migration projects to Kubernetes and OpenShift.

Tackle allows users to maintain their portfolio of applications with a full set of metadata and to assess their suitability for modernization leveraging a questionnaire based approach.

Tackle is a project within the [Konveyor community](#).

**Install**

Once you have successfully installed the Operator, proceed to deploy components by creating the required Tackle CR.

By default, the Operator installs the following components on a target cluster:

- Hub, to manage the application inventory and coordinate the migration process.
- UI, the web console to manage the application inventory and drive the migration waves.
- Pathfinder, a service to manage the assessment questionnaires.
- Keycloak, to manage authentication, including with 3rd-party providers.

**Documentation**

Documentation can be found on our [website](#).

**Getting help**

If you encounter any issues while using Tackle operator, you can create an issue on our [GitHub repo](#), for bugs, enhancements or other requests.

**Contributing**

You can contribute by:

- Raising any issues you find using Tackle Operator
- Fixing issues by opening [Pull Requests](#)
- Improving [documentation](#)

**Install**

CHANNEL  
stable-v2.0

VERSION  
2.0.0 (Current)

MIN K8S VERSION  
1.22.0

CAPABILITY LEVEL II

- Basic Install
- Seamless Upgrades
- Full Lifecycle
- Deep Insights
- Auto Pilot

PROVIDER  
Konveyor

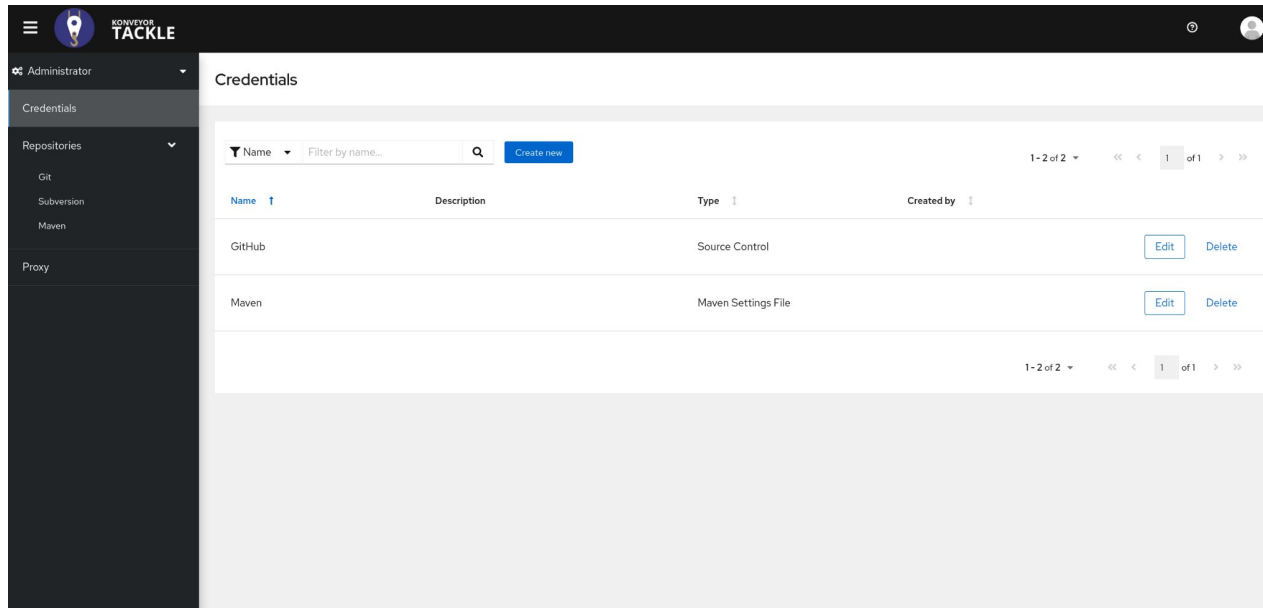
LINKS  
[Konveyor Tackle Documentation](#)  
[Konveyor Tackle Operator](#)

REPOSITORY  
<https://github.com/konveyor/tackle2-operator>



# Administrator Perspective

New perspective to manage the toolkit



- Dedicated perspective to manage tool-wide configuration.
- Similar approach and design to the OpenShift Administrator Perspective.
- Enforces enhanced RBAC with three new differentiated personas:
  - Administrator
  - Architect
  - Migrator



# Integration with repositories

Get source code and binaries from repositories

- Integration with source code and binaries repositories:
  - Git
  - Subversion
  - Maven Artifact repositories

The screenshot displays the TACKLE application interface. On the left, a sidebar shows the 'Application inventory' section. The main area shows a list of applications under the 'Assessment' tab. An 'Update application' dialog box is open, showing fields for Name, Description, Business service, Tags, Comments, Source code, Repository type, Source Repository, Branch, Root path, Binary, Group, Artifact, Version, and Packaging. The 'Application inventory' page shows a table with columns for Name, Assessment, Review, and Tag count.

Name	Assessment	Review	Tag count
Customers	Completed	Completed	5
Orders	In-progress	Not started	3
Inventory	Completed	Not started	3
Gateway	Completed	Completed	3
RetailFrontend	Completed	Completed	2
Payroll	Completed	Not started	2
PurchaseOrders	Completed	Not started	4
Flexicard	Completed	Not started	3
AccountsReceivable	Not started	Not started	4
OrangeHRM	Not started	Not started	2



# Credentials Management

Manage and assign credentials securely

Filter by name...

Created by ↓

### New credential

Name \*

Corporate Repo

Description

Type \*

Source Control

Source Control ✓

Maven Settings File

Proxy

Password \* 🔒

Create Cancel

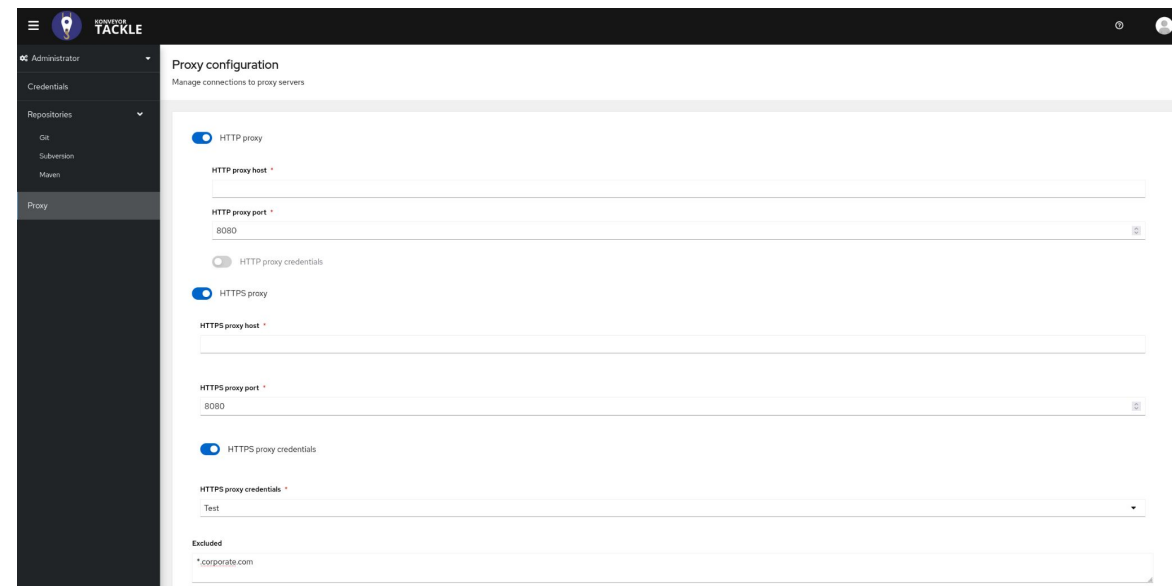
- Secure store for multiple credential types:
  - Source control
  - Maven settings files
  - Proxy
- Credentials are managed by administrators and assigned by architects to applications.



# Proxy integration

Allow the use of proxies to connect to external systems

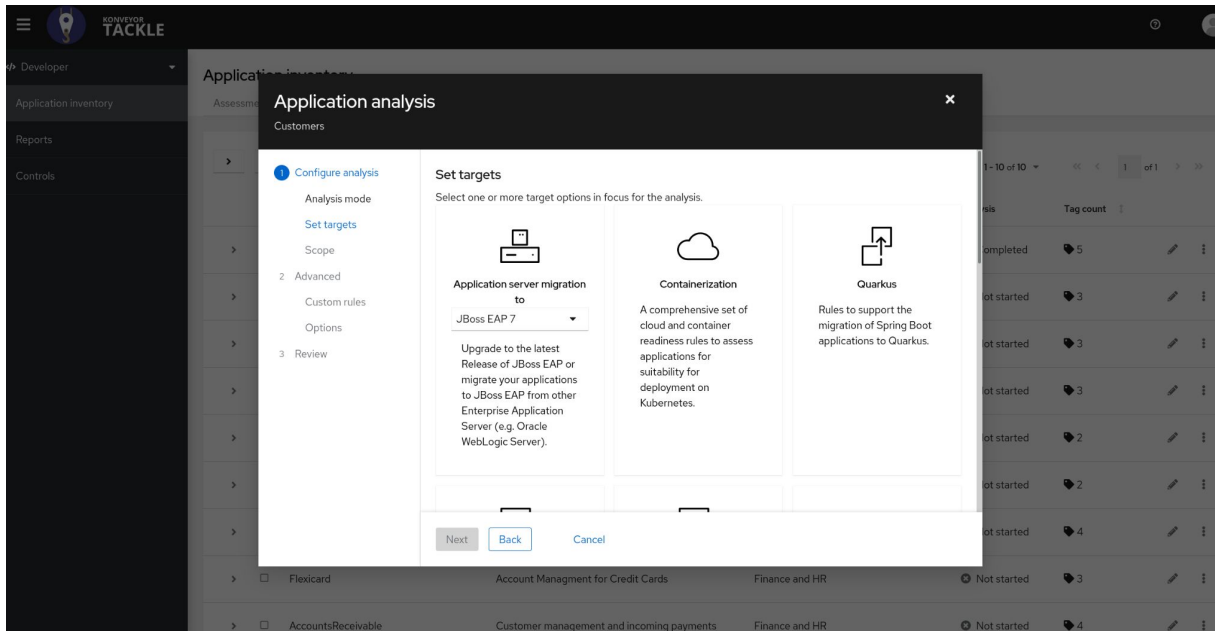
- HTTP and HTTPS proxy configuration in the UI/UX.
- Used to interact with external systems like repositories.





# Application Analysis

Get precise data about your Application Portfolio and estimate migration cost



- Analyzes application source code and binaries and helps estimating the migration effort for different targets or paths
- Decompiles and analyzes Java applications executing an extensible set of rules to identify issues
- Support numerous migration paths and creates a rich set of reports





# Application Analysis

## Integration with Windup

- Execute application analysis from the application inventory.
- Leverage the integration with repositories to streamline the user experience.
- Oriented to bulk analysis.
- Enhanced inventory view with dedicated tabs to assessment and analysis data.

The screenshot displays the 'Application inventory' page in a web application. The page has a dark sidebar on the left with a menu containing 'Developer', 'Application inventory', 'Reports', and 'Controls'. The main content area is titled 'Application inventory' and has two tabs: 'Assessment' and 'Analysis'. Below the tabs is a search bar with a 'Filter by name...' dropdown and a search icon. There are two buttons: 'Create new' and 'Analyze'. A pagination indicator shows '1-10 of 10' and '1 of 1'. The main table has the following columns: Name, Description, Business service, Analysis, and Tag count. The table contains five rows of data:

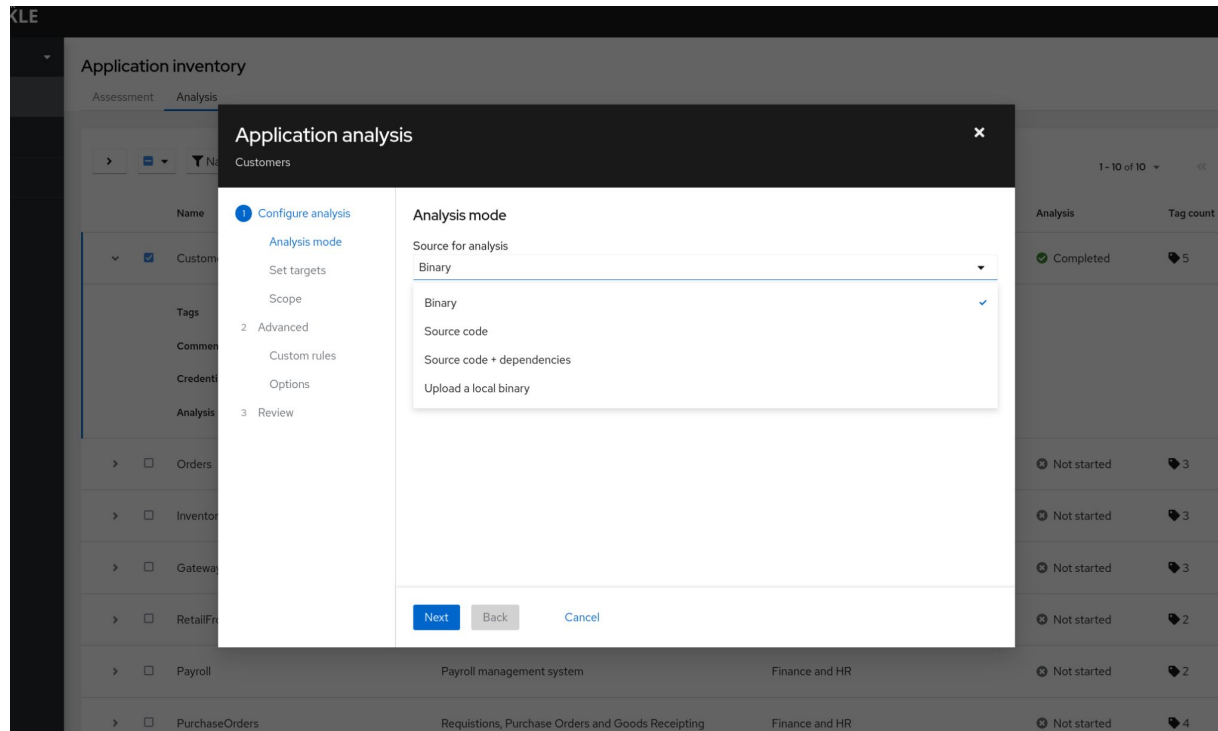
Name	Description	Business service	Analysis	Tag count
Customers	Legacy Customers management service	Retail	Completed	5
Orders	Orders Service	Retail	Not started	3
Inventory	Inventory service	Retail	Not started	3
Gateway	API Gateway	Retail	Not started	3
RetailFrontend	Frontend for the Retail application	Retail	Not started	2

The 'Customers' row is expanded, showing a 'Tags' section with 'Oracle', 'Java', 'RHEL 9', 'Temux', and 'Corporate Custom Configuration Library'. Below the tags are sections for 'Comments', 'Credentials' (Source and Maven), and 'Analysis' (Report).



# Application Analysis

## New analysis modes



- Multiple analysis modes:
  - Source
  - Binary
  - Source + dependencies (parses POM to gather dependencies)
  - Upload a binary from local workstation



# Application Analysis

## Analysis scope selection

- Simplified user experience to configure the analysis scope.
- Possibility to force the analysis of known Open Source libraries.
- Predetermined analysis scopes or manual selection of packages to analyze.

