

OPTIMIZE EXISTING APPLICATIONS FOR MODERN DEMANDS

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January 15th, 2019



OPTIMIZE EXISTING APPLICATIONS FOR MODERN DEMANDS

- Why optimize and modernize?
- Why Red Hat?
- Use cases & strategies for application optimization
- Recommended approach & tools
- How Red Hat can help you

WHY OPTIMIZE & MODERNIZE?

The Macro level, your applications,
and your infrastructure



DISRUPT

Every business is a technology
business.

Code has **no business value** until it's
deployed.

HIGH PERFORMERS

...are decisively outperforming their lower performing peers.

46X

More
deployments

5X

Lower change rate
failure

96X

Faster recovery
from failure

WHY OPTIMIZE AND MODERNIZE EXISTING APPLICATIONS?

New requirements

Maintainability

Performance

Security
Concerns

Delivery too slow

Integrate old and new

Technical debt

Supportability

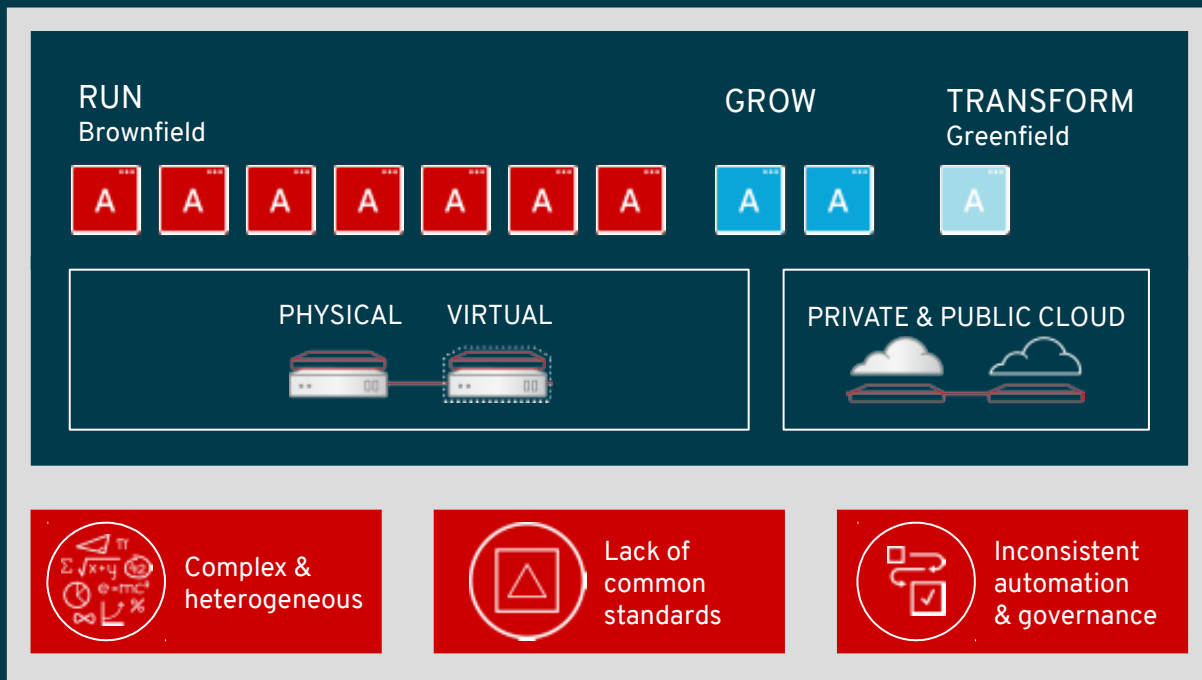
Portability

Talent

License
models & cost

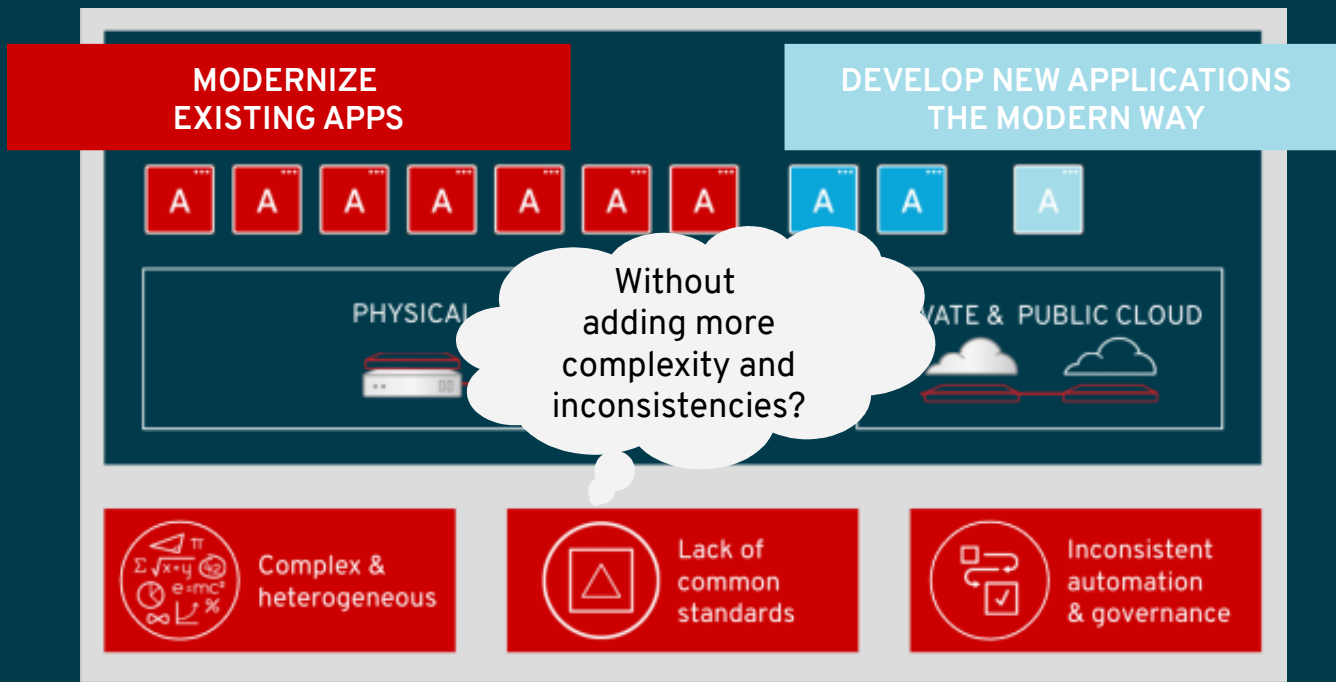
DOES THIS LOOK FAMILIAR?

Where the journey starts for most...



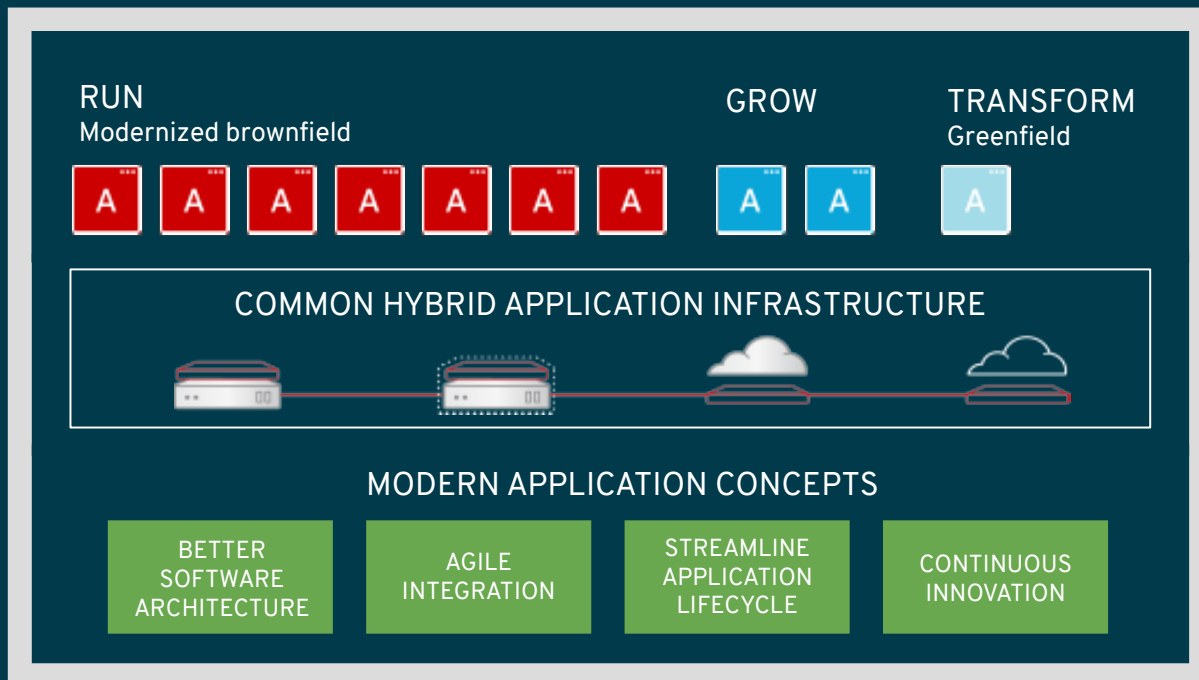
NOW WHAT DO YOU DO?

How do you cater for both?



APPLICATION PORTFOLIO MODERNIZATION

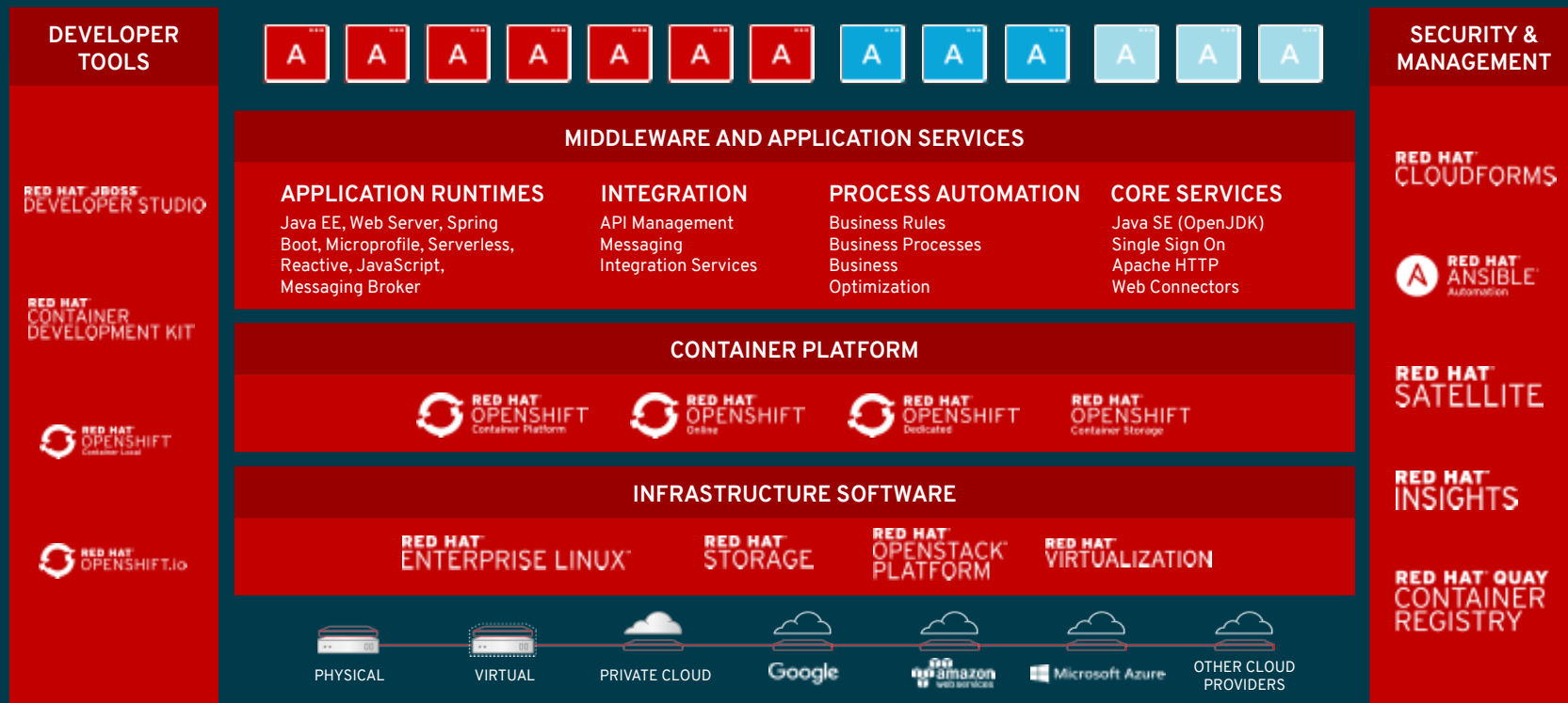
If only we could have this....



WHY RED HAT?

IT'S ALL THERE!

COMPLETE TECHNOLOGY STACK FOR HYBRID CLOUD

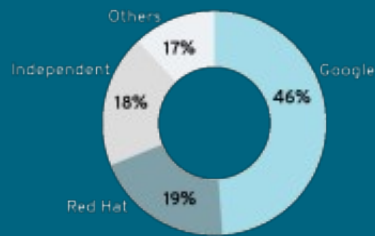


WHY IS RED HAT THE BEST CHOICE FOR ENTERPRISE KUBERNETES?

The four C's

CODE

Kubernetes commits



Red Hat is a leading Kubernetes developer & contributor with Google¹.

We make container development easy, reliable & more secure.

CUSTOMERS



Most reference customers running in production.

We have years of experience running OpenShift Online & OpenShift Dedicated services.

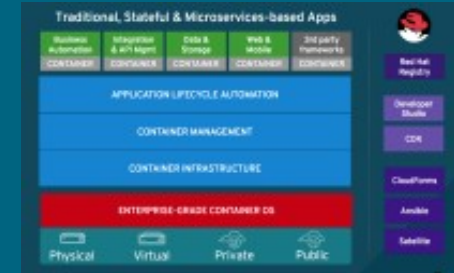
CLOUD



Strong partnerships with cloud providers, ISVs, CCSPs.

We have an extensive container catalog of certified partner images.

COMPREHENSIVE



Our comprehensive portfolio of container products and services includes developer tools, security, application services, storage & management.

USE CASES AND STRATEGIES FOR OPTIMIZATION OF YOUR APPLICATION PORTFOLIO

Modernize Tomcat based applications

Starting point:

- Lots of Tomcat based web applications
- Often different versions of Tomcat, Libraries including Spring and others
- Often old JDK versions

Challenges:

- Often not maintained/updated
- Security issues (libs & Tomcat)
- Hard to maintain
- Often slow development process / limited automation

Strategies:

- Move to **supported versions of Tomcat** (e.g. JBoss Web Server)
- Consider moving to **OpenJDK**
- Often good candidates for **Containerization** (OpenShift)
- **OpenShift** is the best place to run **Spring Boot apps (supported)**
- Some applications may be good candidates for leveraging **cloud native capabilities**
- Some apps may require **re-factoring** though

Impact:

- Supported stack
- Less technical debt and risk (security the biggest)
- Faster development & deployment process through automation
- Achieve higher density and leverage scale-out capabilities

**Most widely used application runtime, risk is often overlooked.
These are often low hanging fruits for optimization.**

Competitive middleware migrations

Starting point:

- IBM WebSphere AS, Liberty Profile, MQ
- Oracle WebLogic Server, ESB
- TIBCO
- WebMethods

Challenges:

- High license cost
- Resource density & automation
- Not built for cloud & containers
- Often technical debt or runtime upgrade needed anyway

Strategies:

- Create a **common foundation** to serve **traditional and new cloud native applications**
- Move to **modern application server runtimes (e.g. JBoss EAP, OpenShift Application Runtimes)**
- Move to **OpenJDK** to avoid Oracle Java licenses
- Assess applications for **cloud and container readiness**
- **Automate** as much as possible
- Opportunity to **modernize app development and delivery process**, organization, and ways of working together

Huge business benefits from license savings, density, automation, development process. App Server based projects low hanging fruits.

Impact:

- License & maintenance cost savings
- Higher degree of automation, higher density
- Speed and agility
- Portability across on-prem, public cloud, multi-cloud
- Consider on-demand models for dynamic workloads

Break down the monolith

Starting point:

- On-prem custom monolithic Java applications
- Combination of a number of tightly coupled applications
- Often grown over years forming big tarballs

Challenges:

- Slow delivery (releases often take months and require testing the whole)
- Dependencies make it hard and costly to change

Strategies:

- Analyze **domains & dependencies**
- Determine required **modularity & granularity**
- Consider **re-factoring** into smaller pieces - **fast moving monolith, microservices?** Consider **API management**
- Consider **strangler pattern**: incrementally replace functionality with something better/cheaper/faster, easier to maintain. Adding **new functionality** during strangulation attractive to business stakeholders
- Consider **containerization & competitive migration**

Impact:

- Speed and agility - release in days (fast monolith), daily (microservices), not months
- Capture benefits of containers & orchestration without complete re-write
- Lower cost & additional business benefits when combined with previously mentioned use cases

Maintain investments of existing monoliths while making them ready for today's and future needs. OpenShift provides a platform for the existing investment with a path forward.

Containerize applications

Starting point:

- On-prem custom Java applications
- Packaged Java based applications
- Non-Java applications

Challenges:

- Resource density
- Often not built for change
- Multitude of runtimes
- Not automated to highest possible degree

Strategies:

- Java Applications: Consider normalizing **app server runtimes**, Consider moving to **OpenJDK**
- Assess applications for **cloud and container readiness**
- Some applications may be good candidates for leveraging **cloud native capabilities**
- **Some apps** may require **re-factoring**, or may not be suited to run in a container context
- **Automate** as much as possible

Impact:

- Higher degree of automation
- Speed and agility
- Achieve higher density
- Leverage scale-out capabilities
- Portability across on-prem, public cloud, multi-cloud

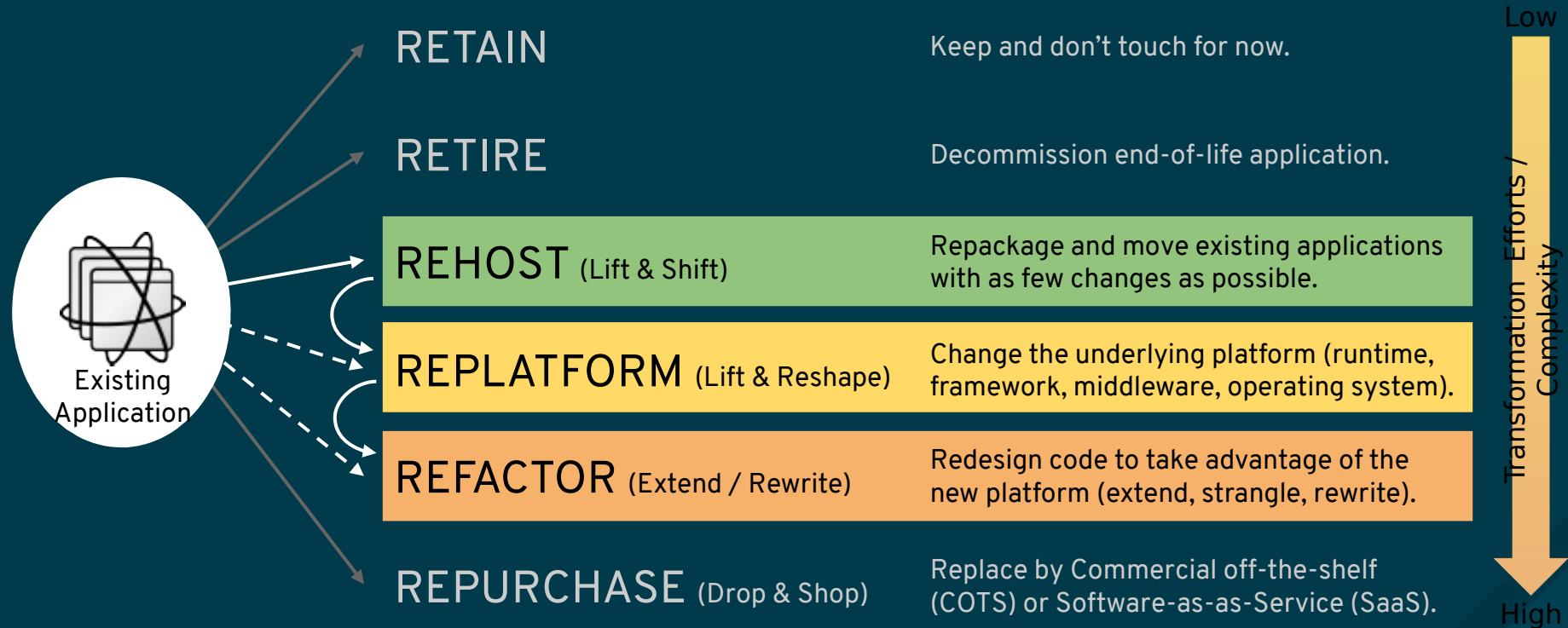
**Recommend to assess application portfolio for containerization.
Rate candidates by suitability, effort & impact.**

BEST KEPT SECRETS

- 1) Not every application fits a container!
- 2) Containers are not only for elite-apps.
- 3) Conducted transformations must be driven by business-value.



OPTIONS FOR CONTAINERIZATION

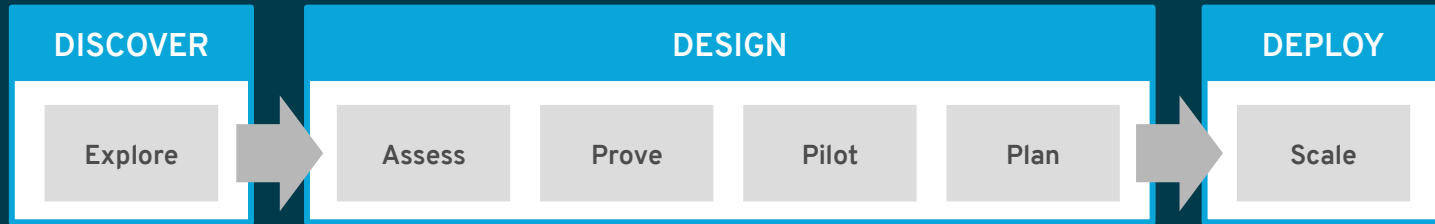


Where do you begin?

APPROACH & TOOLS

RECOMMENDED METHODOLOGY

Holistic, safe, business value driven



Typical
duration

1 day

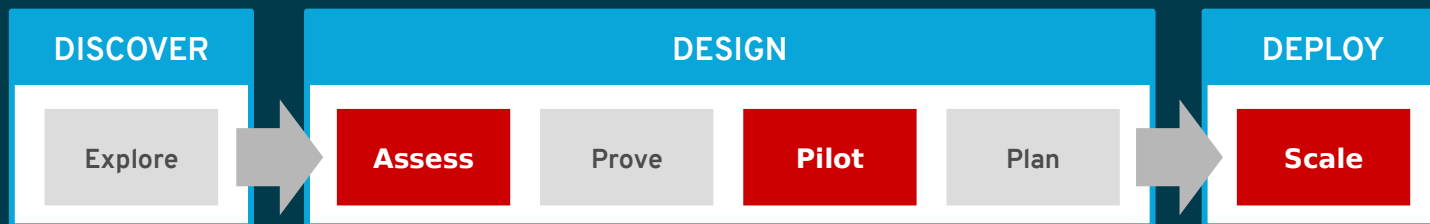
4 - 10 weeks

2 - 12 months

- Standard, proven, modular, repeatable, pragmatic methodology
- Step by step, low risk and highly efficient
- Scale up by leveraging collaboration with own teams and partners

TOOLING TO SUPPORT THE PROCESS

Use tooling for automation and making the right decisions



Red Hat Application Migration Toolkit

- Code analysis and potential issues identification during the **assessment**
- Making solutions to found issues repeatable (**pilot and scale-out**)
- Accelerate, simplify, standardize code changes (**pilot and scale-out**)

Pathfinder

- Tooling & workshops to determine modernization strategy **throughout the design phase**

PATHFINDER ASSESSMENT TOOL

Assessing applications with a wider view of customer capabilities, business requirements and their future IT strategy

Chart Testing | **Assessments** | **Applications** | **Members**

ASSESSMENT

Application Details

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

- Unknown
- External 3rd party or CSP's application
- In-house built, no exp. SME knowledge, poor documentation
- Maintenance mode, SME knowledge problem
- Legacy developed, SME knowledge exists
- New in-house application

2. How is the application supported in Production?

- Unknown
- Application vendor/partner retained for 24x7 support provided. Tired down capabilities, no in-house support resources
- Production support provided by in-house internal team. 24x7 production and development team
- Multiple teams support the application using an established escalation model
- SME based approach with cross-application architectural capabilities team
- Plus capabilities, the team has skills & is responsible for looking into Production

Pathfinder

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

User: _____

Password: _____

Go



ARCHITECT REVIEW

TESTAPPI

Application Details

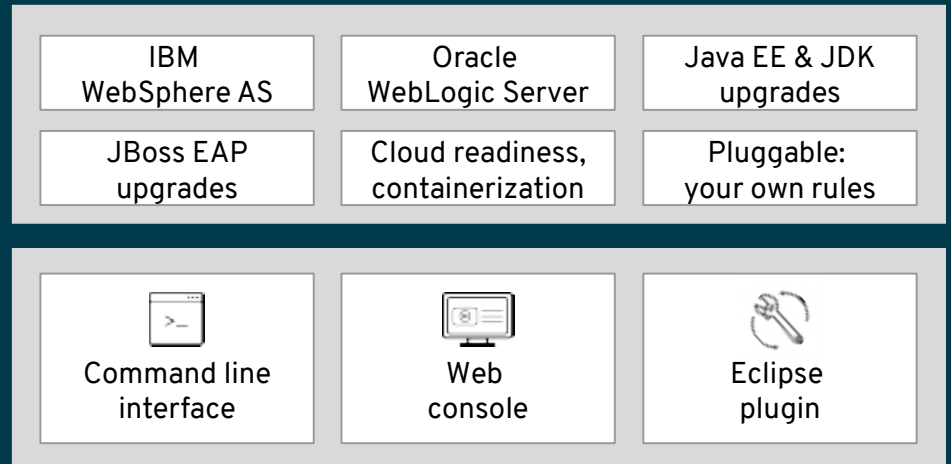
Application	Vendor	Industry	Business	Year A
Application 1	Vendor 1	Industry 1	Business 1	Year A
Application 2	Vendor 2	Industry 2	Business 2	Year A
Application 3	Vendor 3	Industry 3	Business 3	Year A
Application 4	Vendor 4	Industry 4	Business 4	Year A
Application 5	Vendor 5	Industry 5	Business 5	Year A
Application 6	Vendor 6	Industry 6	Business 6	Year A
Application 7	Vendor 7	Industry 7	Business 7	Year A
Application 8	Vendor 8	Industry 8	Business 8	Year A
Application 9	Vendor 9	Industry 9	Business 9	Year A
Application 10	Vendor 10	Industry 10	Business 10	Year A



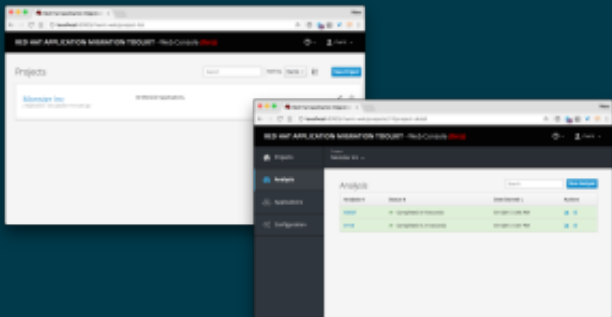
RED HAT[®] APPLICATION MIGRATION TOOLKIT

Catalyze large scale application modernizations and migrations

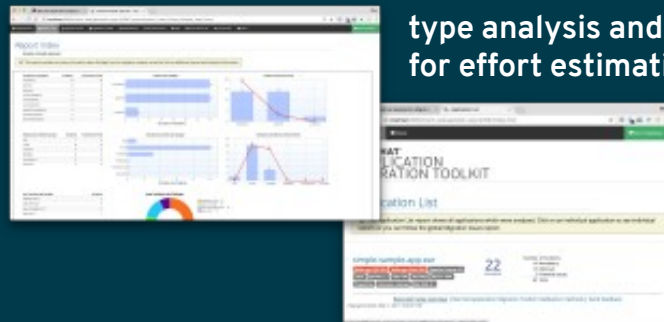
- Automate application analysis
- Support effort estimation
- Accelerate code migration
- Support containerization



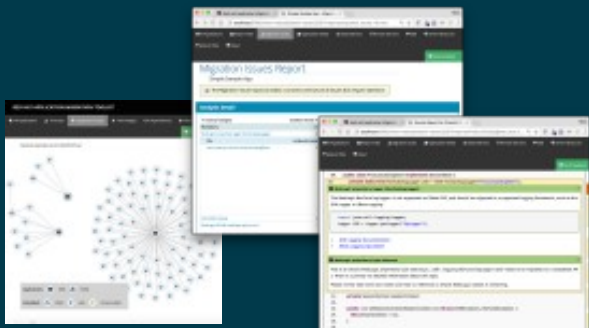
RED HAT® APPLICATION MIGRATION TOOLKIT



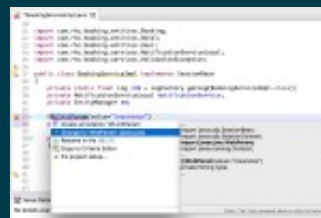
Manage
projects and
applications



Effort estimation support
type analysis and support
for effort estimation



Analysis - show
dependencies and
understanding required
code changes



Eclipse plugin: task
list, inline hints,
support for code
changes

CORE PRINCIPLES

- **BUSINESS-VALUE** driven change.
- **RISKS** early identified & mitigated.
- **HIGH-EFFICIENCY** through small repeatable steps & factory model.
- **HOLISTIC** transformation including people / process / technology.
- **OPEN INNOVATION** unlocking the potential of existing and future apps.



KEY RECOMMENDATIONS

For optimizing large application portfolios

- **Application Modernization requires a holistic approach**
 - infrastructure, applications, middleware, automation, processes, skills, culture & collaboration
- **Choose a platform that can cater for both traditional AND cloud native applications and gives you fully supported stack**
 - Some vendors focus on greenfield, and don't tell you about the cost of re-writing existing apps to the new platform. The majority of cost savings and business benefits comes from existing app portfolio.
- **Focus on business value for your organization**
 - understanding business value helps make the right decisions and set priorities and transformation roadmap
- **Learn from experts, and learn by doing**

APPLICATION OPTIMIZATION:

MAKE THE NEXT STEP TODAY

...AND WHERE DO YOU BEGIN?

Speak to one of our Application Modernization experts

to advise you into the next steps

Schedule a Discovery session

to explore the possibilities for your organization - it's free

Consider an assessment

to explore the potential for your IT and business, identify your transformation strategy, priorities, and to determine the business case for your organization

FURTHER EXPLORING



Is your team ready to innovate? Check out Red Hat Open Innovation Labs & take online assessment

<https://www.redhat.com/en/services/consulting/open-innovation-labs>



EBook: “The Path to Cloud Native Application Development: 8 steps”

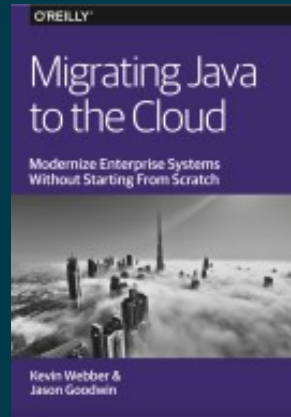
<https://www.redhat.com/en/resources/path-to-cloud-native-applications-ebook>



Datasheet: “Migrate and modernize applications”

<https://www.redhat.com/en/resources/application-migration-modernization-consulting-jboss-middleware-datasheet>

FURTHER EXPLORING



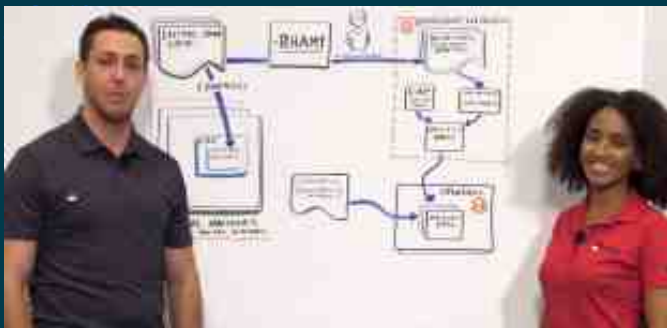
<https://developers.redhat.com/resources/#!type=book>

FURTHER EXPLORING

Red Hat Consulting Whiteboard Videos

E.g.:

[Migrating your Red Hat JBoss Enterprise Application Platform Applications into Red Hat Ope](#)



Full Playlist:

<https://www.youtube.com/playlist?list=PLbMP1JcGBmSEc5SmaJ1CkCSn9zIUlu1p2>

QUESTIONS?

**GET ANSWERS IN THE NETWORKING
LOUNGE**

THANK YOU



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