AGENDA

- Why change?

- Why Red Hat?
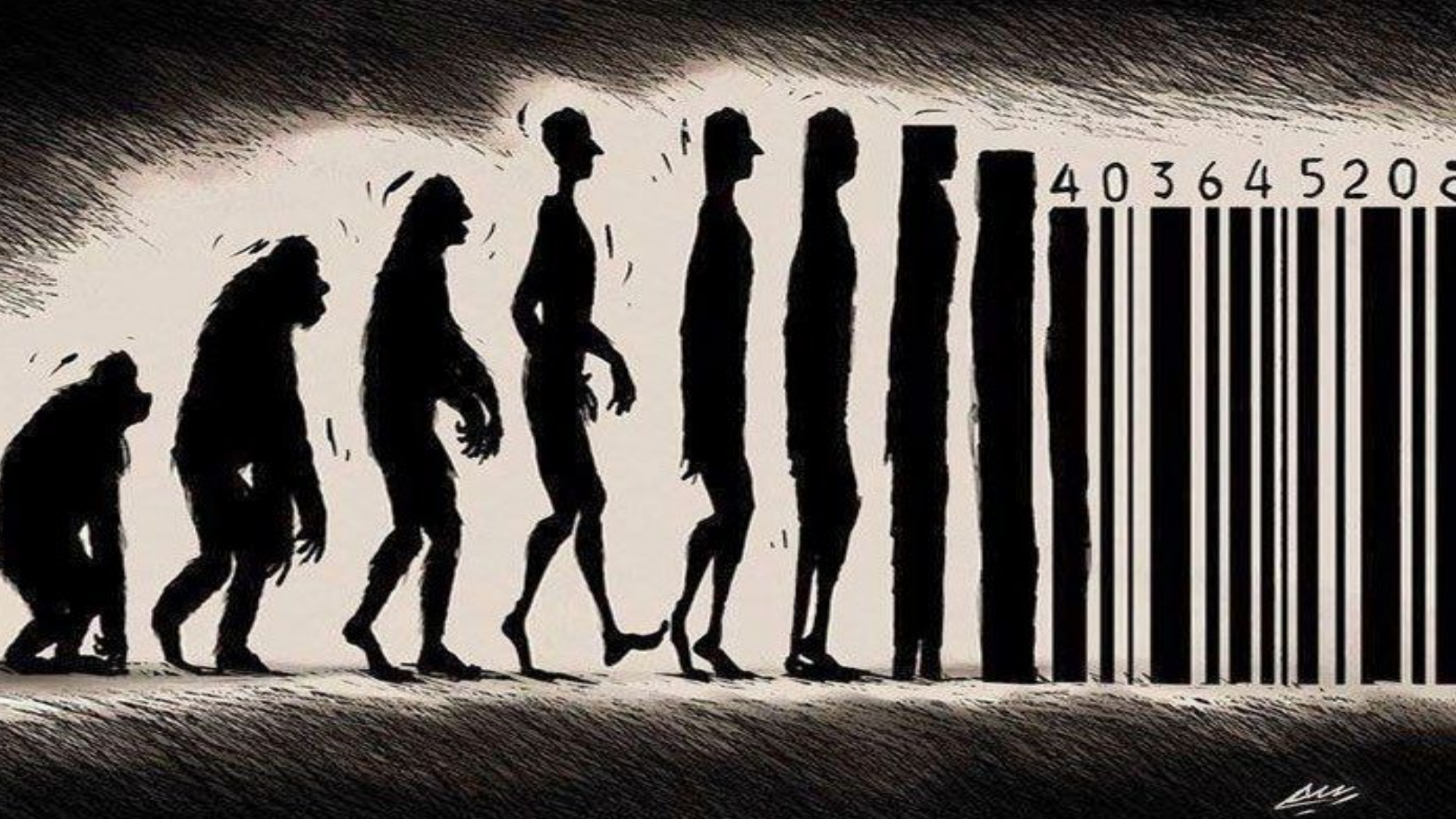
- Our approach

redhat.

APPLICATION MODERNIZATION:

WHY CHANGE?

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" By 2027, more than 75% of the S&P 500

will be companies that we have not heard of yet. "
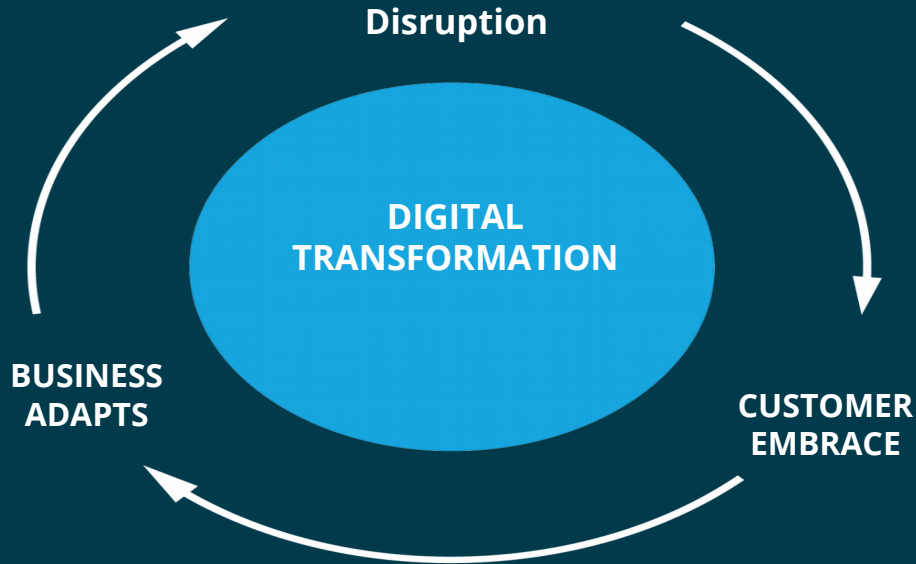
Professor Richard Foster, Yale University

Application Modernization and Migration

DIGITAL TRANSFORMATION

Disruption

DIGITAL
TRANSFORMATION

**BUSINESS
ADAPTS**

**CUSTOMER
EMBRACE**

Every business is a technology business.

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

redhat.

HIGH PERFORMERS

...are decisively outperforming their lower performing peers.

200X
More deployments

3X
Lower change rate failure

24X
Faster recovery from failure

redhat.

WHAT ARE "TRANSFORMERS" DOING DIFFERENTLY?

The Vision: Everything-as-a-Service (EaaS)

Transformation
Ideas to production safely in a day.

Goal
85% of the bank's apps developed and deployed on their automated EaaS PaaS platform by 2020 on a fraction of their current infrastructure.

Deutsche Bank

redhat.

WHAT ARE "TRANSFORMERS" DOING DIFFERENTLY?

"The IT department is moving way beyond being an internal
service provider for the business"

"We're playing a big part in how the company asks
vital questions about its business."
Klas Bendrik, senior vice-president and CIO of Volvo Car Group

Klas Bendrik, senior vice-president and CIO of Volvo Car Group
Source: "Volvo's digital launch of the XC90 marks 'connected car' era", ft.com, December 8, 2015
http://www.ft.com/cms/s/2/4e8b4230-951e-11e5-8389-7c9ccf83dceb.html#axzz4JKZ1934H

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SUCCEEDING AT DIGITAL TRANSFORMATION

EFFICIENCY   AGILITY   SPEED

OPTIMIZE THE IT YOU HAVE

INTEGRATE APPS, DATA, AND PROCESSES

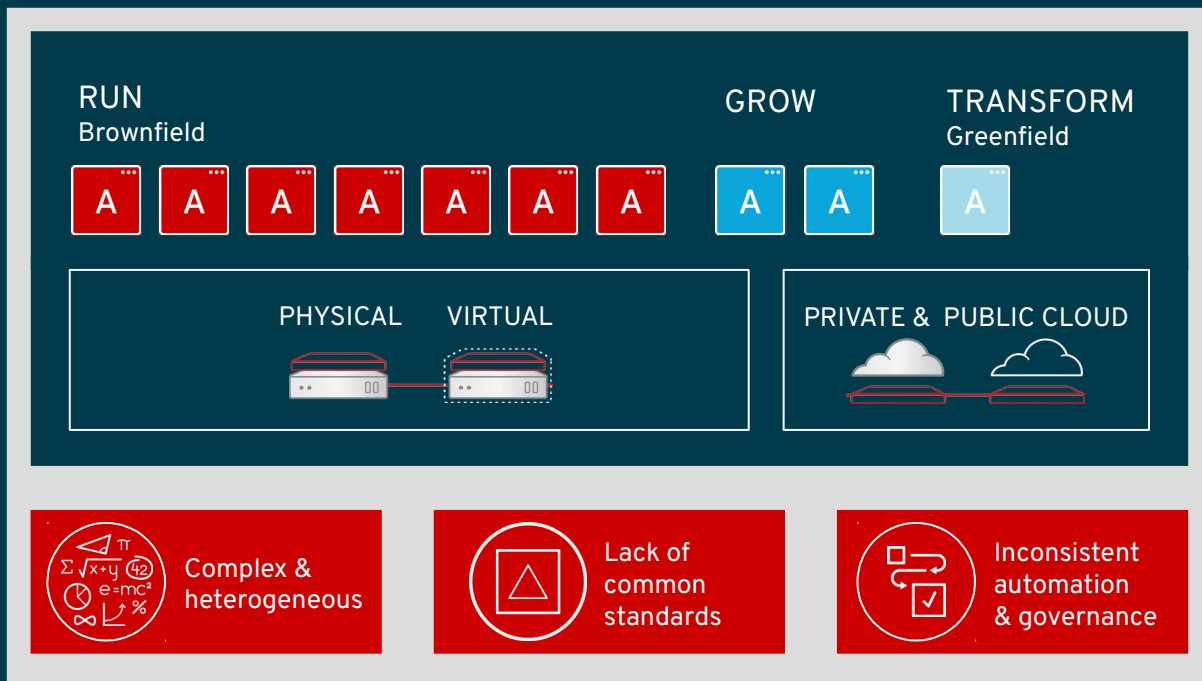**ADD & MANAGE CLOUD INFRASTRUCTURE**

BUILD MORE MODERN APPLICATIONS

TECHNICAL INITIATIVES

How do we <u>run</u> and <u>build</u> applications in the new world?

TYPICAL CUSTOMER LANDSCAPE TODAY

Where the journey starts...

RUN
Brownfield

GROW

TRANSFORM
Greenfield

PHYSICAL   VIRTUAL

PRIVATE & PUBLIC CLOUD

Complex & heterogeneous

Lack of common standards
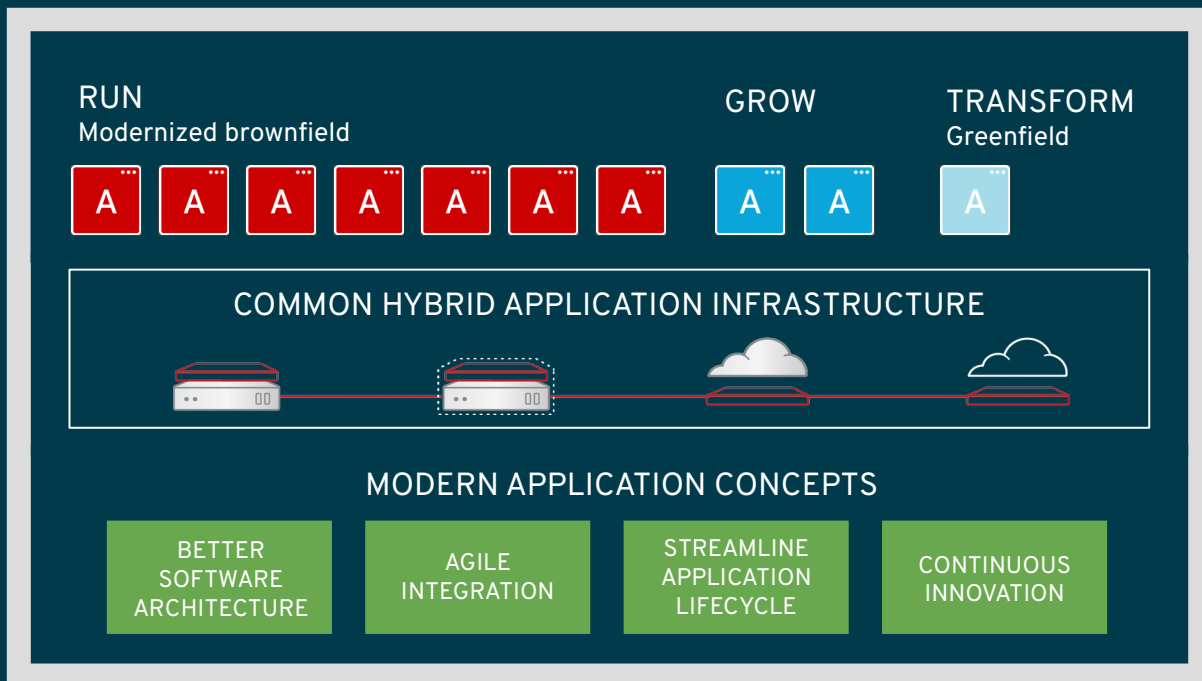
Inconsistent automation & governance

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TYPICAL CUSTOMER LANDSCAPE TODAY

Where the journey starts...
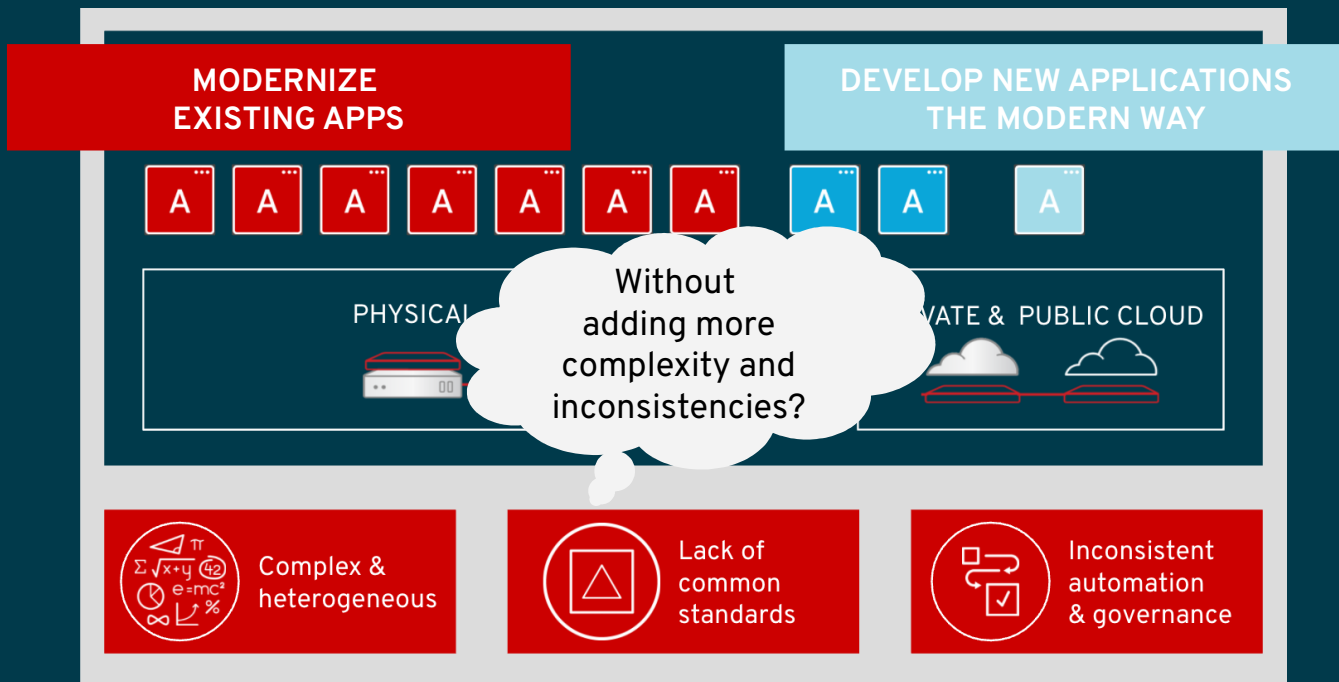
APPLICATION PORTFOLIO MODERNIZATION

One platform to support you today and tomorrow

RUN
Modernized brownfield

GROW

TRANSFORM
Greenfield

COMMON HYBRID APPLICATION INFRASTRUCTURE

MODERN APPLICATION CONCEPTS

| BETTER SOFTWARE ARCHITECTURE | AGILE INTEGRATION | STREAMLINE APPLICATION LIFECYCLE | CONTINUOUS INNOVATION |

MODERN APPLICATION CONCEPTS
Enhancing applications, platform & processes

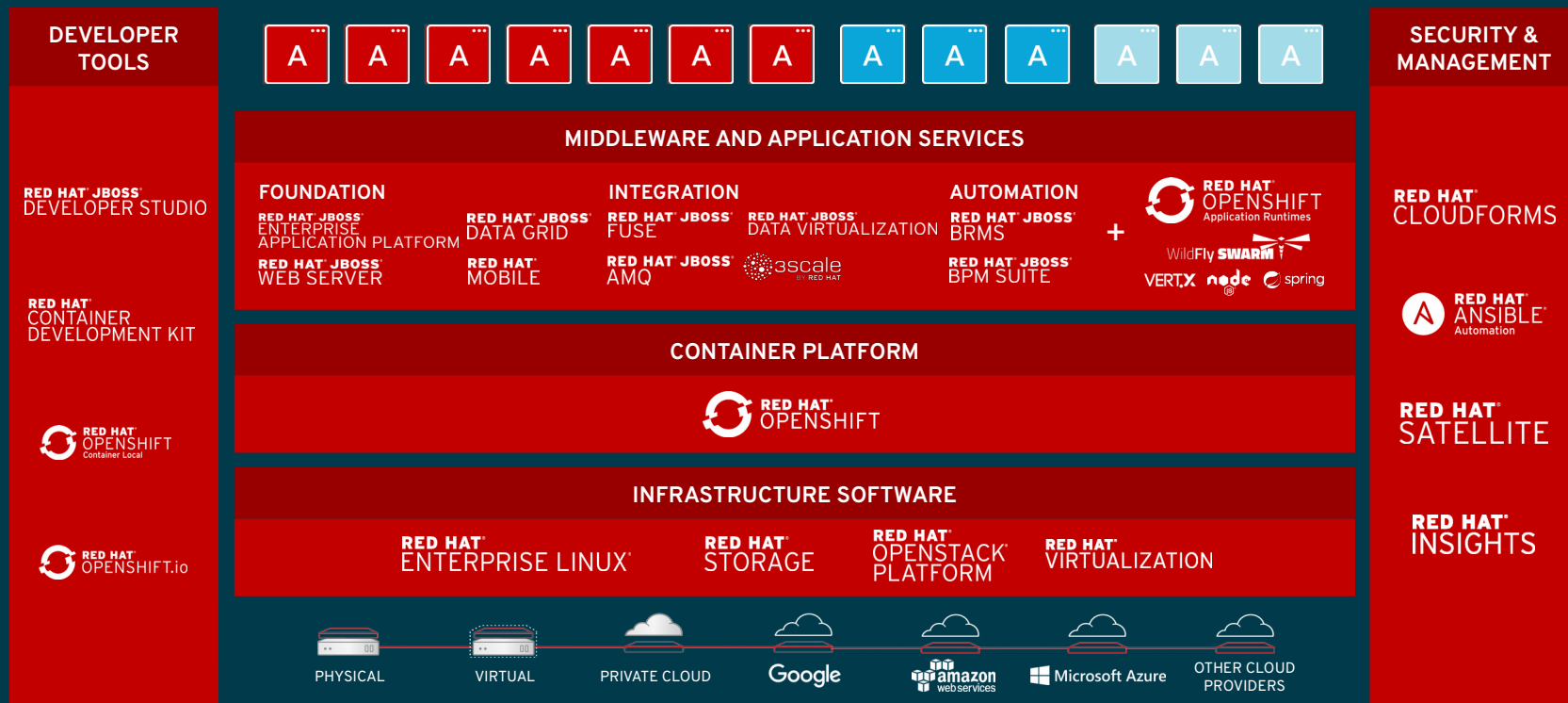| BETTER SOFTWARE ARCHITECTURE	AGILE INTEGRATION	STREAMLINE APPLICATION LIFECYCLE	CONTINUOUS INNOVATION
Future-proof applications	Bridge old and new	Speed up your business	Foster an agile culture
Modularize "Fast moving monolith" Microservices Clean technical debt	Decouple, expose & integrate APIs, services & applications Need hybrid-cloud-enabled integration platform	Accelerate time from idea to production Continuous Integration & Delivery (CI/CD) Automation & self-service Container technology	Agile methodology DevOps principles Collaboration

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APPLICATION MODERNIZATION & MIGRATION:

WHY RED HAT?

redhat.

IT'S ALL THERE!
COMPLETE TECHNOLOGY STACK FOR HYBRID CLOUD

DEVELOPER TOOLS

SECURITY & MANAGEMENT

RED HAT JBOSS DEVELOPER STUDIO

RED HAT CONTAINER DEVELOPMENT KIT

RED HAT OPENSHIFT Container Local

RED HAT OPENSHIFT.io

MIDDLEWARE AND APPLICATION SERVICES

FOUNDATION

RED HAT JBOSS **ENTERPRISE APPLICATION PLATFORM**

RED HAT JBOSS **WEB SERVER**

RED HAT JBOSS **DATA GRID**

RED HAT **MOBILE**

INTEGRATION

RED HAT JBOSS **FUSE**

RED HAT JBOSS **AMQ**

RED HAT JBOSS **DATA VIRTUALIZATION**

3scale BY RED HAT

AUTOMATION

RED HAT JBOSS **BRMS**

RED HAT JBOSS **BPM SUITE**

+

RED HAT OPENSHIFT Application Runtimes

WildFly **SWARM**

VERT.X **node** **spring**

CONTAINER PLATFORM

RED HAT OPENSHIFT

INFRASTRUCTURE SOFTWARE

RED HAT **ENTERPRISE LINUX**

RED HAT **STORAGE**

RED HAT **OPENSTACK PLATFORM**

RED HAT **VIRTUALIZATION**

PHYSICAL

VIRTUAL

PRIVATE CLOUD

Google

amazon webservices

Microsoft Azure

OTHER CLOUD PROVIDERS

RED HAT CLOUDFORMS

RED HAT ANSIBLE Automation

RED HAT SATELLITE

RED HAT INSIGHTS

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WHY CHANGE WITH RED HAT?

Solutions for today and the future

**RE-BALANCE
MAINTENANCE
AND
INNOVATION**

**DECREASE
COMPLEXITY,
INCREASE
EFFICIENCY**

**REDUCE / AVOID
VENDOR LOCK-IN,
INFLEXIBLE
LICENSE MODELS**

**INCREASE SPEED &
BECOME
MORE
PRODUCTIVE**

**REMOVE
TECHNICAL
DEBT &
RISK**

**ADOPT
AGILE
METHODOLOGIES,
DEVOPS**

WHY MIGRATE?

Red Hat JBoss EAP migration benefits
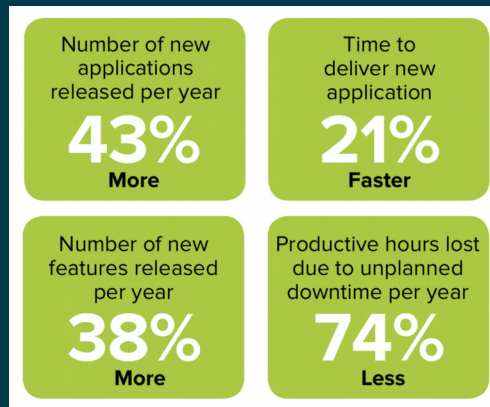 … experienced by our customer moving from IBM WebSphere and Oracle WebLogic.

IDC ROI Summary of JBoss EAP

3 Year ROI
481%

Average Annual Benefits per 100 Users
$50K

Payback Period
8 MONTHS

Average Annual Benefits per 100 Users

Business Productivity Benefits
$11K

IT Staff Productivity Gains
$21K

IT Infrastructure Cost Reductions
$10K

IDC study available: Executive summary, Infographic, White paper.

Risk Mitigation and App Development Impact

Number of new applications released per year
43% More

Time to deliver new application
21% Faster

Number of new features released per year
38% More

Productive hours lost due to unplanned downtime per year
74% Less

WHY MODERNIZE?

Red Hat OpenShift Container Platform benefits

Benefits experienced introducing Red Hat OpenShift:

- Fast Return on Investment (ROI)
- High increase in business productivity
- More features developed
- Faster development live cycle
- Increased developer productivity

Study available at "IDC - The business value of Red Hat OpenShift"

ROI Summary of Red Hat OpenShift

5 Year ROI
531%

Average Annual Benefits per 100 Developers
$1.29M

Payback Period
8 MONTHS

Average Annual Benefits per 100 Application Developers

Business Productivity Benefits
$291.1K

IT Staff Productivity Gains
$814.5K

IT Infrastructure Cost Reductions
$174.2K

Application Development and Business Operations Impact

Number of applications/ major features developed per year
36% More

Application development life cycle (weeks)
66% Faster

Annual user productivity gained per 100 application developers
1,156 Hours

Annual additional revenue per 100 application developers
$1.65 Million

redhat.

OPPORTUNITIES FOR CHANGE

Application Modernization and Migration

CORE MIGRATION

EXISTING & NEW WORKLOADS

| APPLICATION SERVERS | ESB & INTEGRATION PLATFORMS | BPM & DECISION MANAGEMENT | APPLICATION INFRASTRUCTURE |

MODERNIZATION INITIATIVES

ENABLING BUSINESS VELOCITY

| BETTER SOFTWARE ARCHITECTURE | AGILE INTEGRATION | STREAMLINE APPLICATION LIFECYCLE | CONTINUOUS INNOVATION |

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CORE PLATFORM MIGRATION
Source & target platforms

APPLICATION SERVER	ESB & INTEGRATION PLATFORMS	BPM & DECISION MANAGEMENT	APPLICATION INFRASTRUCTURE
Java EE workloads	Functional & data integration	Business rules & processes	Open hybrid cloud & containers
FROM: IBM WebSphere, Oracle WebLogic, Glassfish, Apache Tomcat, JBoss AS Community, Oracle Coherence **TO:** JBoss Enterprise Application Platform, JBoss Web Server, JBoss Data Grid	**FROM:** TIBCO, JCAPS, Sonic ESB, Mule ESB, Software AG WebMethods, Oracle ESB, IBM Message Broker, Cordys ESB **TO:** JBoss Fuse, JBoss Data Virtualization, JBoss AMQ	**FROM:** IBM WODM / ILOG, IBM BPM, Appian, TIBCO ActiveMatrix, Pega, Bonita, Oracle BPM Suite, Oracle Business Rules **TO:** JBoss BPM Suite JBoss BRMS	**FROM:** Mainframe to Linux/Java, bare metal, Unix/Solaris/Windows to Linux, virtualization, hardware storage solutions **TO:** Red Hat Enterprise Linux, Red Hat Virtualization, Red Hat Cloud and Containers (OpenShift, OpenStack, CloudForms), Ansible Tower, Red Hat Storage (Ceph, Gluster) …

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CORE PLATFORM MIGRATION
Application and web server migration

APPLICATION SERVER

Java EE workloads

FROM:
IBM WebSphere, Oracle WebLogic, Glassfish, Apache Tomcat, JBoss AS Community, Oracle Coherence

TO:
JBoss Enterprise Application Platform, JBoss Web Server, JBoss Data Grid

- **Low risk**
  - Hundreds of customers. Myriad of apps ported.
  - All potential issues already solved.

- **Excellent ROI**
  - Dramatical license cost savings
  - Relativity low efforts (mainly testing)

- **Enables modern app dev**
  - Standard IT of 2017 vs. 1999 (skills, landscape)
  - Perfect to combine additional transformations

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CORE PLATFORM MIGRATION
Application containerization

APPLICATION INFRASTRUCTURE

Open hybrid cloud & containers

FROM:
Mainframe to Linux/Java, bare metal, Unix/Solaris/Windows to linux, virtualization, hardware storage solutions

TO:
Red Hat Enterprise Linux, Red Hat Virtualization, Red Hat Cloud and **Containers** (OpenShift, OpenStack, CloudForms), Ansible Tower, Red Hat Storage (Ceph, Gluster) ...

- **High ROI**
  - ○ Costs of virtual machines vs. containers (higher density, elastic scaling, higher degree of automation)
  - ○ Ubiquitous technologies with enterprise grade support vs. self-written glue between components

- **Prerequisite for modern applications**
  - ○ Standard application packaging and management
  - ○ Efficiency, determinism through native automation
  - ○ High speed, agility, reactivity, reduced time-to-market

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MODERN APPLICATION CONCEPTS

Enhancing applications, platform & processes

BETTER SOFTWARE ARCHITECTURE	AGILE INTEGRATION	STREAMLINE APPLICATION LIFECYCLE	CONTINUOUS INNOVATION
Future-proof applications	Bridge old and new	Speed up your business	Foster an agile culture
Modularize	Decouple, expose & integrate APIs, services & applications	Accelerate time from idea to production	Agile methodology
Adopt standards		Continuous Integration & Delivery (CI/CD)	DevOps principles
Reuse instead of reinvent	Need hybrid-cloud-enabled integration platform	Automation & self-service	Collaboration
Clean technical debt & risk		Container technology	

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DEFINING YOUR OWN PATH

… to super-power your business and adopt a state-of-the-art IT landscape

CORE MIGRATION

EXISTING & NEW WORKLOADS

| APPLICATION SERVERS | ESB & INTEGRATION PLATFORMS | BPM & DECISION MANAGEMENT | APPLICATION INFRASTRUCTURE |

MODERNIZATION INITIATIVES

ENABLING BUSINESS VELOCITY

| BETTER SOFTWARE ARCHITECTURE | AGILE INTEGRATION | STREAMLINE APPLICATION LIFECYCLE | CONTINUOUS INNOVATION |

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MAIN DISCUSSIONS
Application Modernization and Migration

Migration → Modernization

Making old apps new again ← Modern app development

MOST WANTED ANSWERS

Approaching a large-scale application modernization

How do I …

- predict the needed <u>man-days</u> and <u>ROI</u> upfront?

- identify and mitigate <u>risks</u>?

- implement best practices to save <u>cost</u> and <u>catalyze</u> the process?

- maximize my business <u>benefits</u>?

RED HAT APPROACH

Scope of a modernization / migration

Application Code

Infrastructure
hardware, storage, virtualization, operating system, JVM, application container

Processes & Governance
application lifecycle, build, configuration, deployment, provisioning, DevOps, environments, test, integration, continuous *, monitoring

Knowledge

RED HAT APPROACH

Key good practices

Information sharing based on a central collaborative platform

Simplified knowledge transfer, with <u>least effort</u> approach: no issue solved twice.

Reuse, automate, standardize as much as possible

Infrastructure, deployments, tests, dependencies, stages, processes, management.

Efficient, proven, pragmatic methodology

Minimized changes. Risk mitigation. Efficient scale up through a factory model.

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RED HAT® APPLICATION MIGRATION TOOLKIT

Catalyze large scale application modernizations and migrations

- Automate analysis
- Support effort estimation
- Accelerate code migration
- Free & Open Source

Red Hat Application Migration Toolkit

| IBM WebSphere AS | Oracle WebLogic Server | Java EE upgrades |
| JBoss EAP upgrades | **NEW** Cloud readiness, containerization | Pluggable: your own rules |

| Command line interface | **NEW** Web console | **NEW** Eclipse plugin |
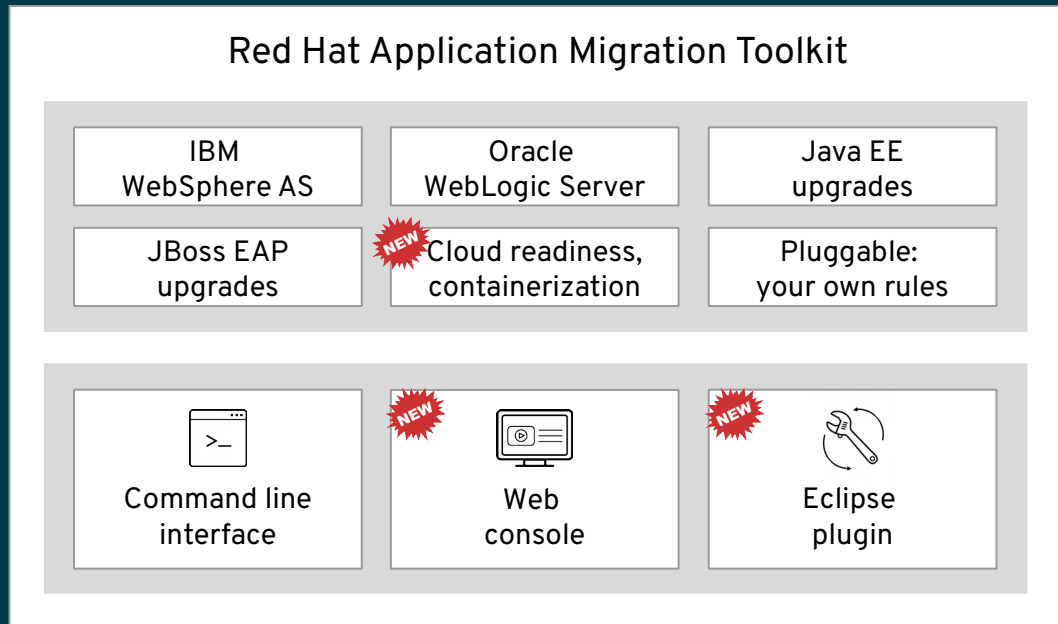
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RED HAT® APPLICATION MIGRATION TOOLKIT

Web Console: manage projects and applications
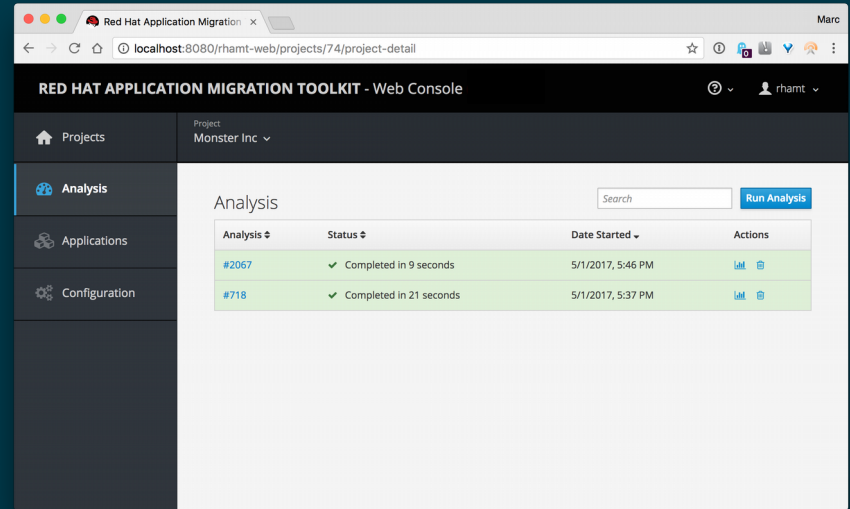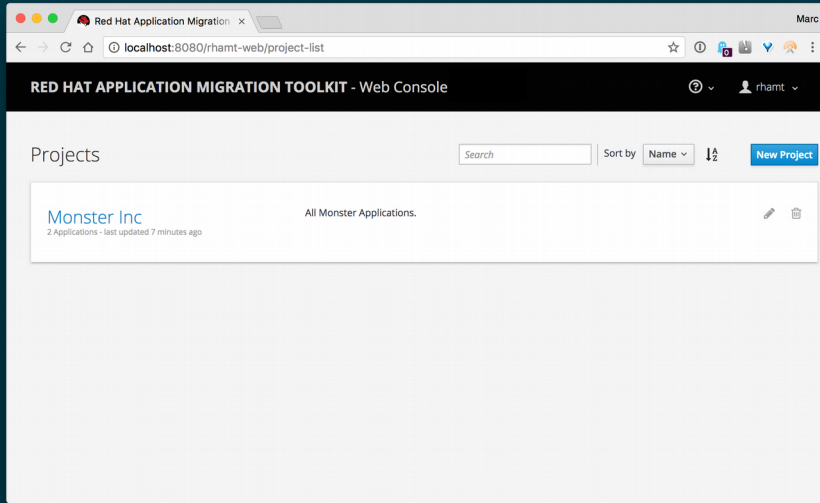
RED HAT® APPLICATION MIGRATION TOOLKIT

Web Console: issue type analysis and support for effort estimation
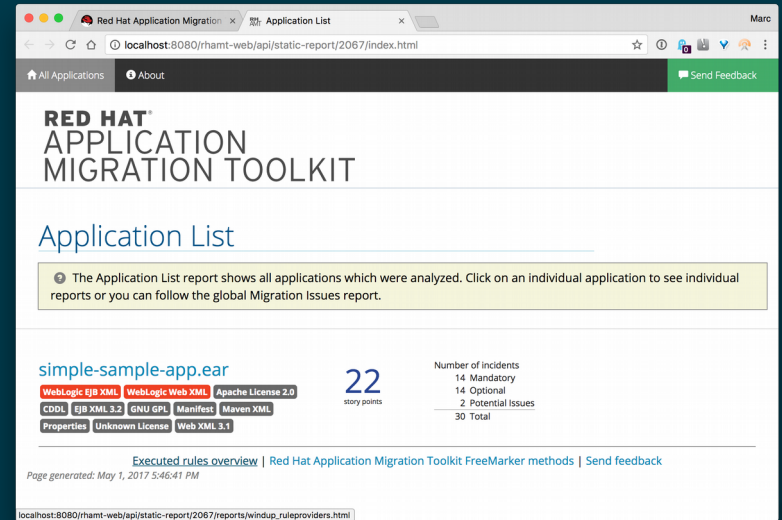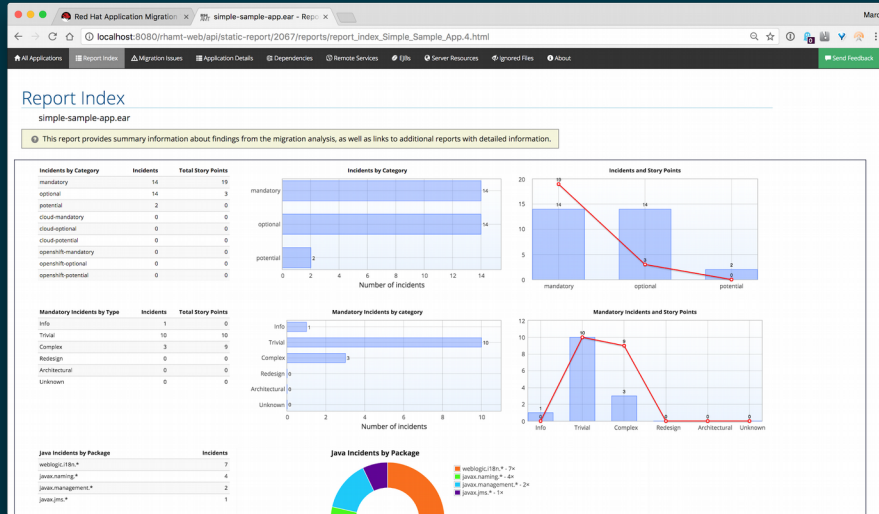
RED HAT® APPLICATION MIGRATION TOOLKIT

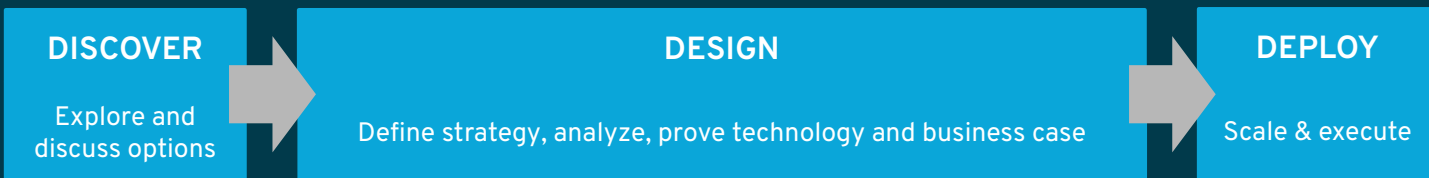## Web Console: examine hints and introspect application source code

APPLICATION MIGRATION TOOLKIT

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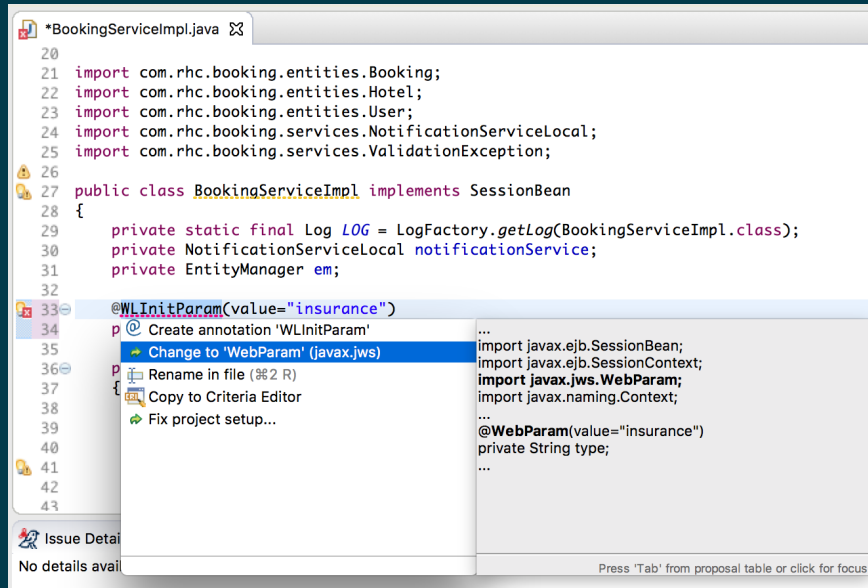
METHODOLOGY

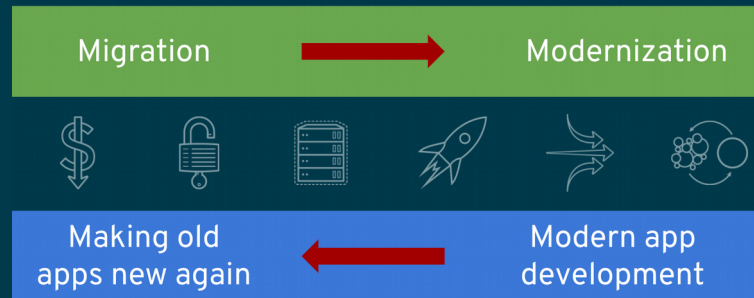Iterative, managed service, factory scale up.

DISCOVER

Explore and discuss options

DESIGN

Define strategy, analyze, prove technology and business case

DEPLOY

Scale & execute

METHODOLOGY

Iterative, managed service, factory scale up.
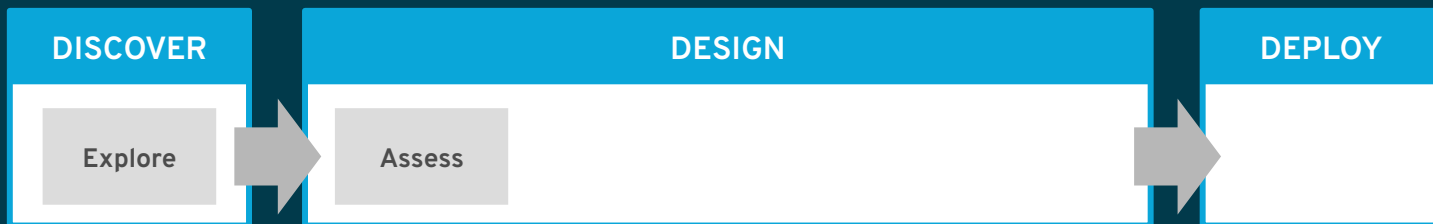
DISCOVER	DESIGN	DEPLOY
Explore		
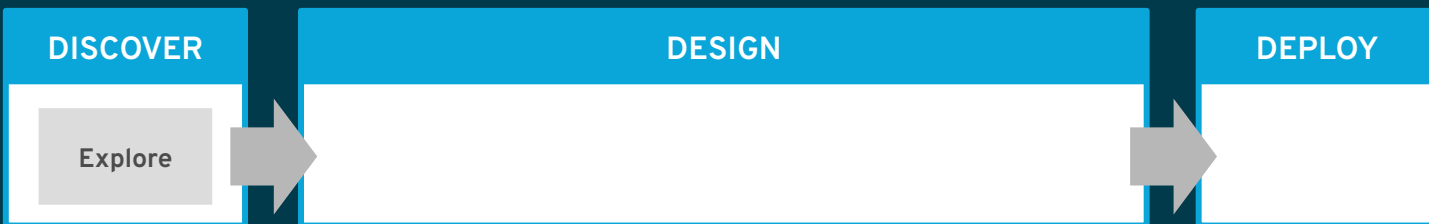
- Interactive workshop with deciders and technical leads
- Focus on existing challenges and business needs

Migration	→	Modernization
Making old apps new again	←	Modern app development

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METHODOLOGY

Iterative, managed service, factory scale up.

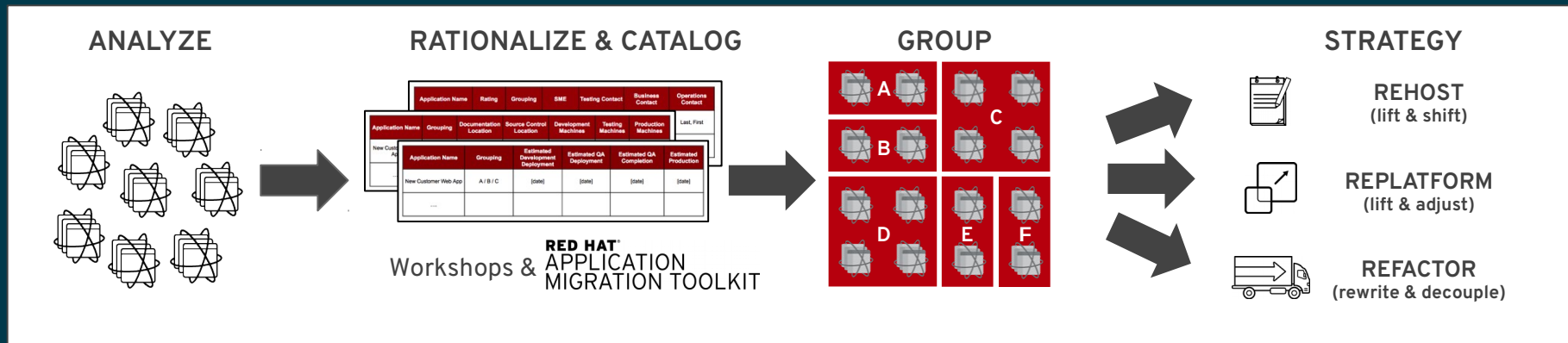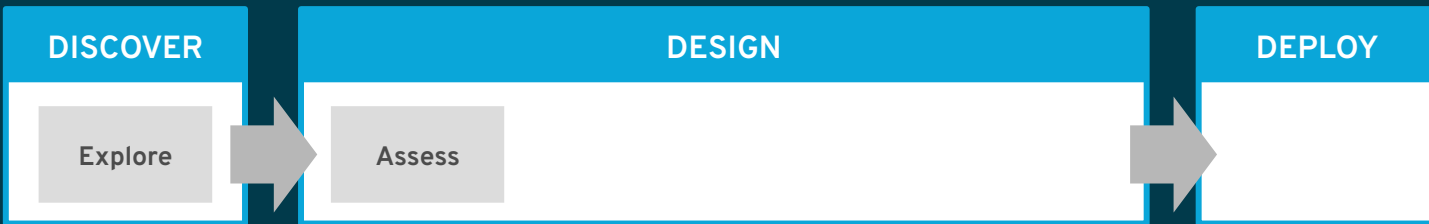| DISCOVER	DESIGN	DEPLOY
Explore	Assess	

- In-depth AS-IS analysis (catalog)
- TO-BE definition (rationalize)
- Risks identification
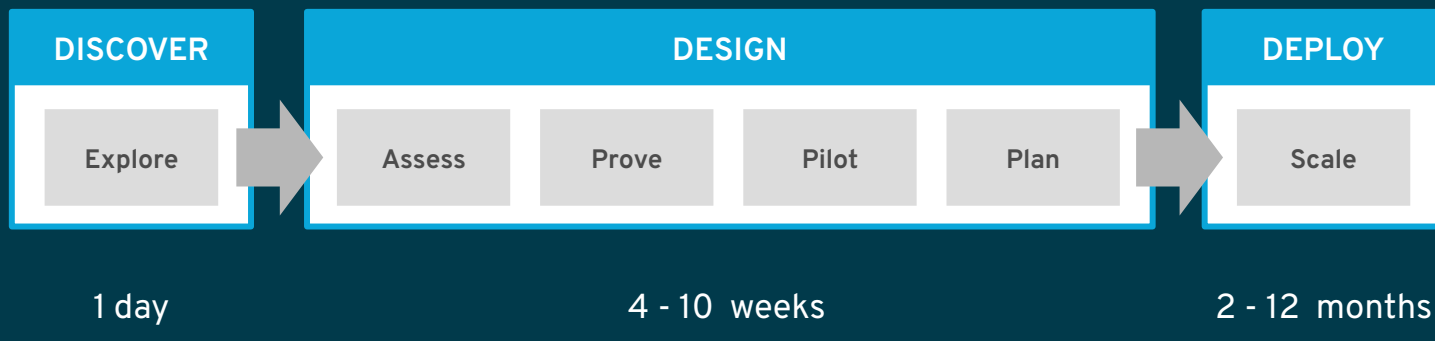- Plan next steps, provide rough estimates and strategy

METHODOLOGY

Iterative, managed service, factory scale up.

DISCOVER

DESIGN

DEPLOY

Explore

Assess

ANALYZE

RATIONALIZE & CATALOG

GROUP

STRATEGY

Workshops & **RED HAT** APPLICATION MIGRATION TOOLKIT

A
B
C
D
E
F

REHOST
(lift & shift)

REPLATFORM
(lift & adjust)

REFACTOR
(rewrite & decouple)

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METHODOLOGY
Iterative, managed service, factory scale up.

DISCOVER	DESIGN				DEPLOY
Explore	Assess	Prove	Pilot	Plan	Scale

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 clients and partners

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QUICK COMPARISON

DIY vs. Red Hat Methodology

MANUAL COST ASSESSMENT

20 APPLICATIONS

x

40 HOURS/APPLICATION

_____

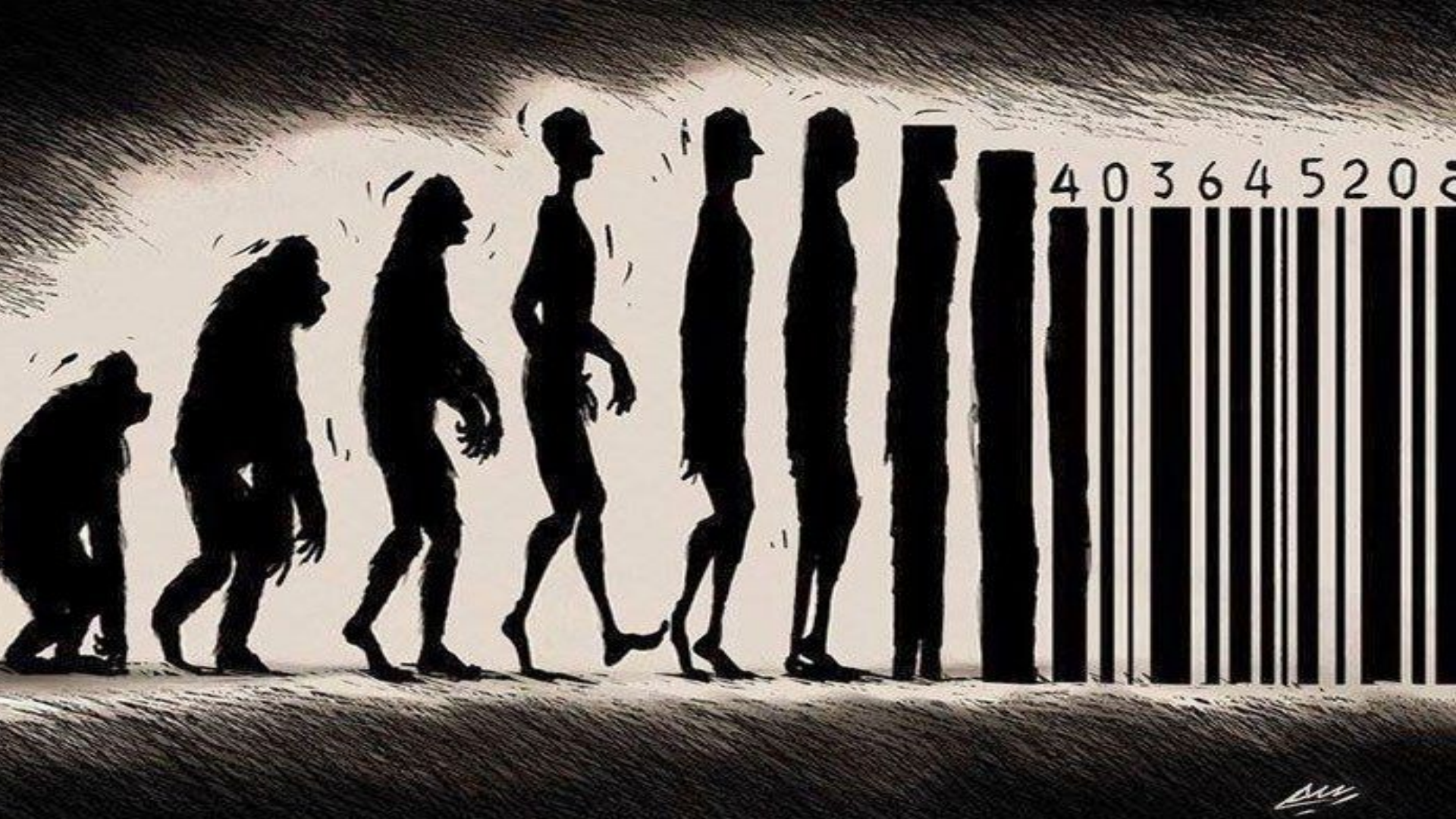800 HOURS OR 20 WEEKS

RED HAT APPROACH

DESIGN

| Assess | Prove | Pilot | Plan |

4-8 WEEKS

+ YOU HAVE A PLAN IN PLACE
+ TECHNICAL RISKS IDENTIFIED & TESTED