

# DATA-DRIVEN CLOUD MIGRATION

Actionable insights on your application portfolio  
drive faster cloud migration



tidal migrations

Approach  
People  
Platform

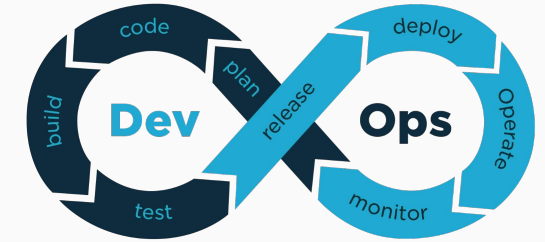
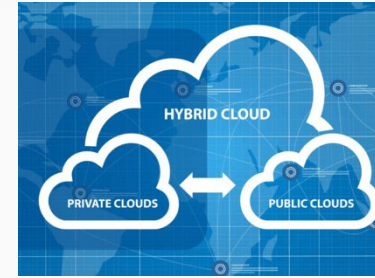
# AGENDA

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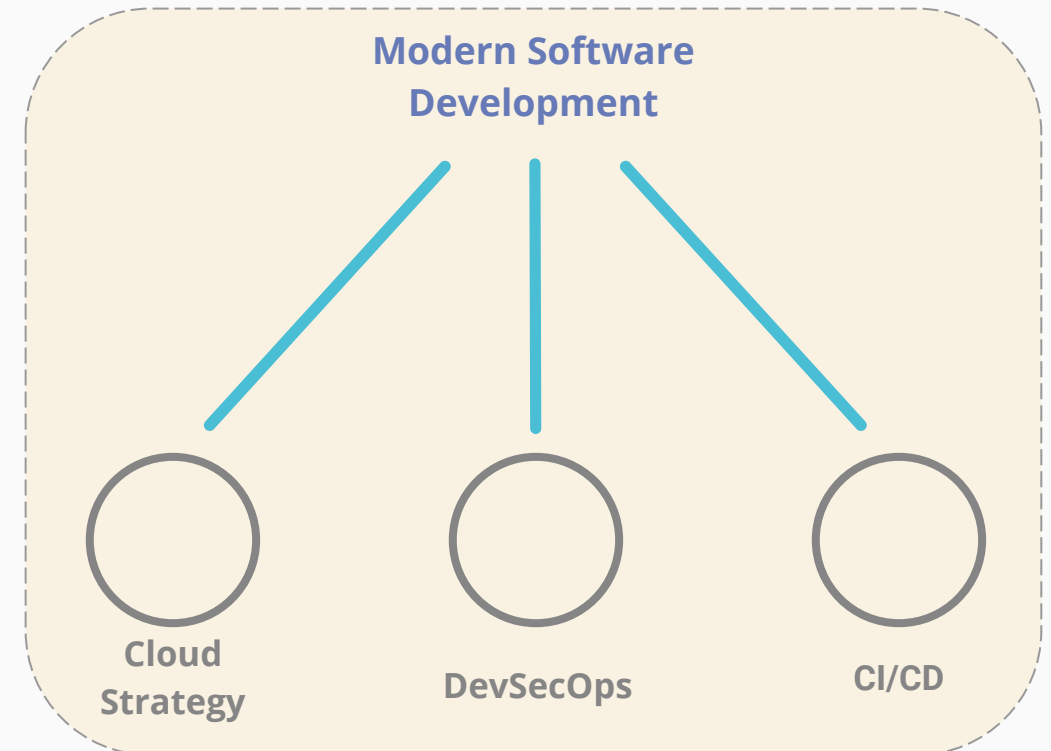
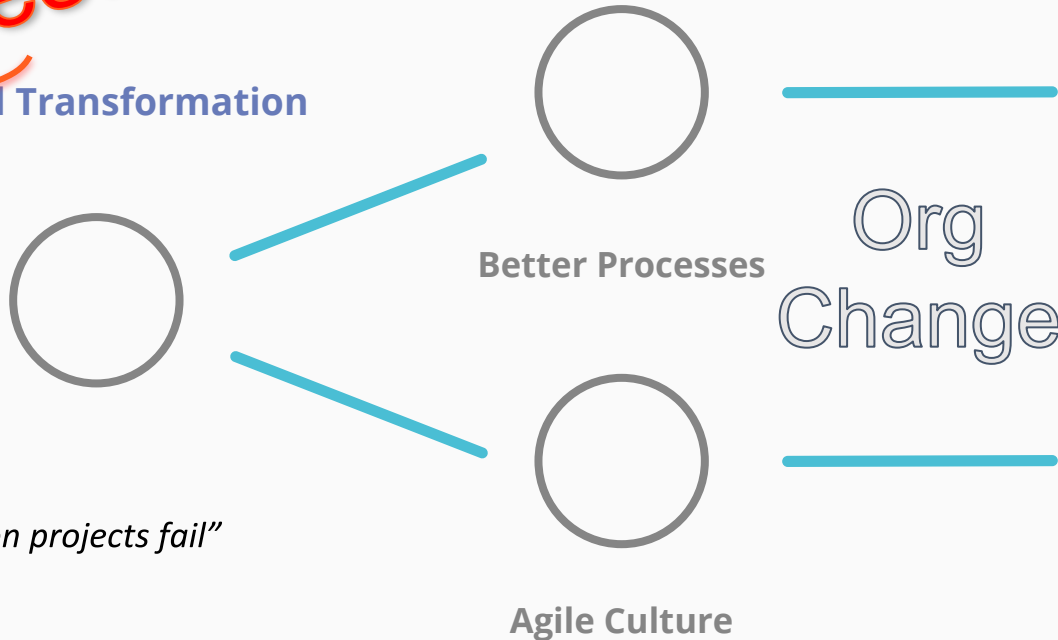
- Where Cloud Fits
- Problem Solved
- Case Study
- Unique Approach
- Demo of Platform
- Migration Factory Support
- Where from Here

# Digital Transformation in a Nutshell



INNOVATION

**Business**  
Digital Transformation



*"70% of Transformation projects fail"*  
McKinsey & Company

<https://www.mckinsey.com/business-functions/transformation/our-insights/why-do-most-transformations-fail-a-conversation-with-harry-robinson#>

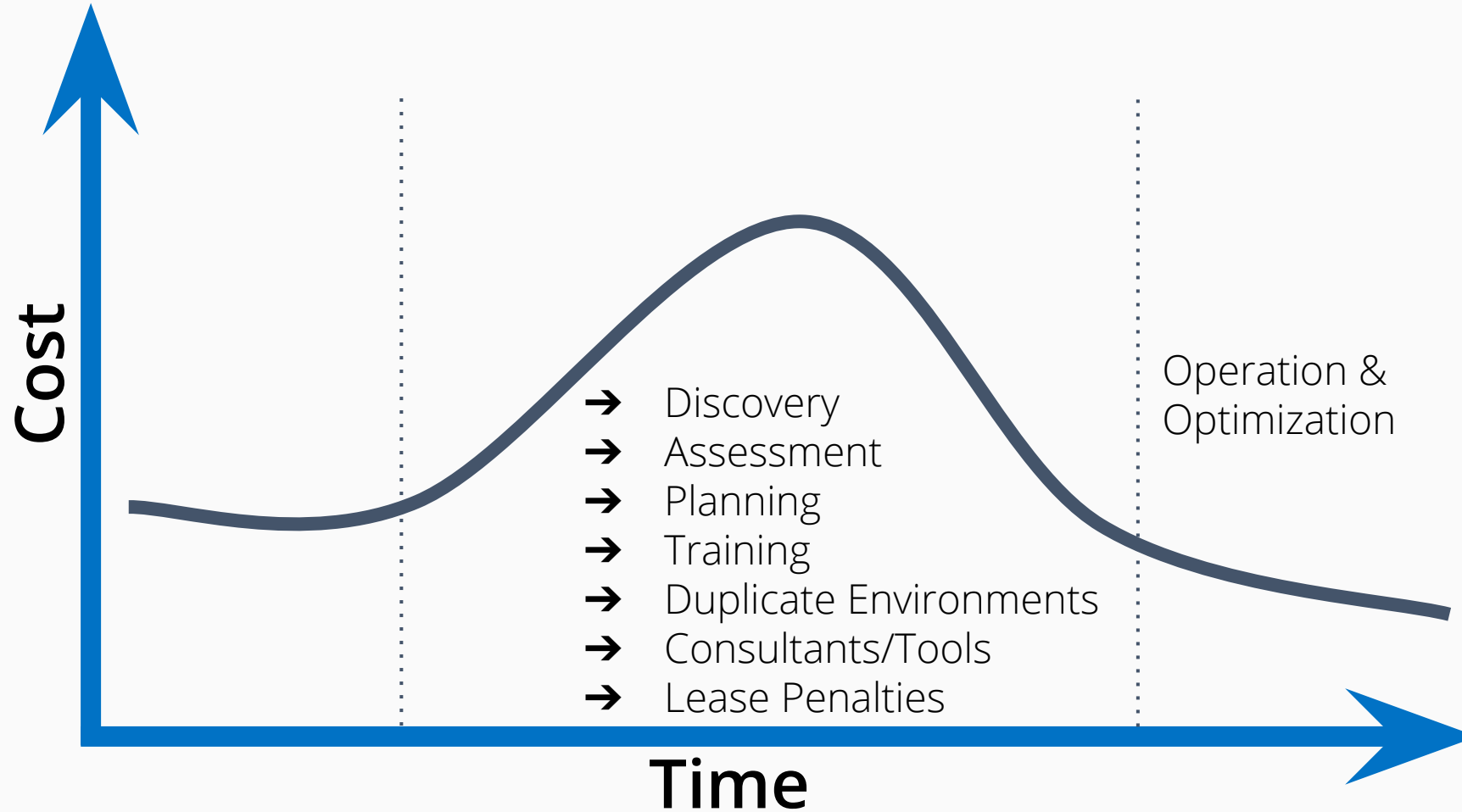
# Hard to Hear - Migration Findings



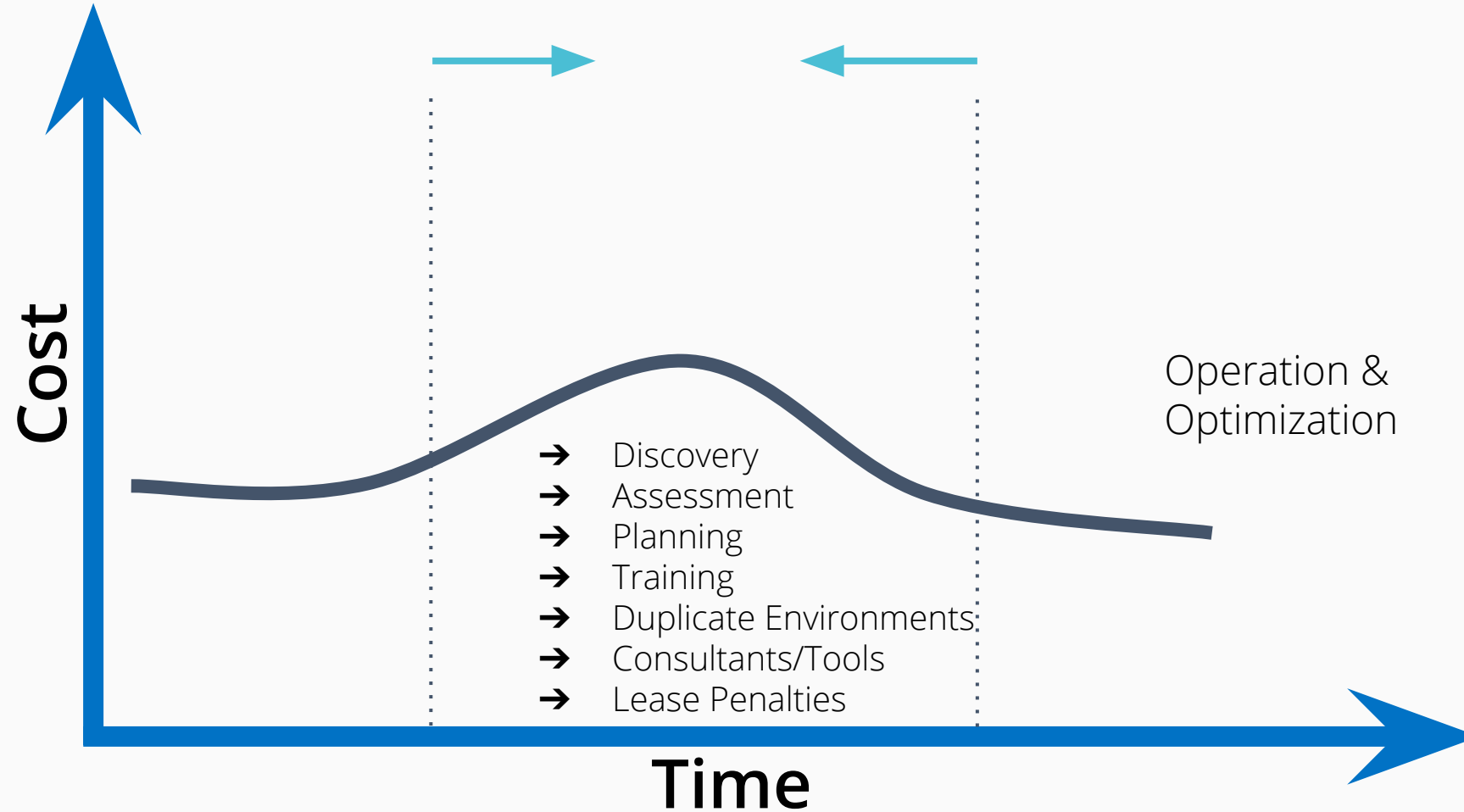
- 96% are migrating applications to the cloud with 4% already completed their migration
  - 62% of initial migration projects are more difficult than expected or fail
  - 73% expect the application migration project to take a year or longer
- 64% of application projects took longer to complete than planned
  - 55% exceed the application migration project budget
  - 47% believe their organizations are not moving to the cloud on schedule



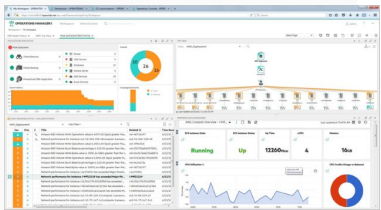
# Cloud Migration Bubble



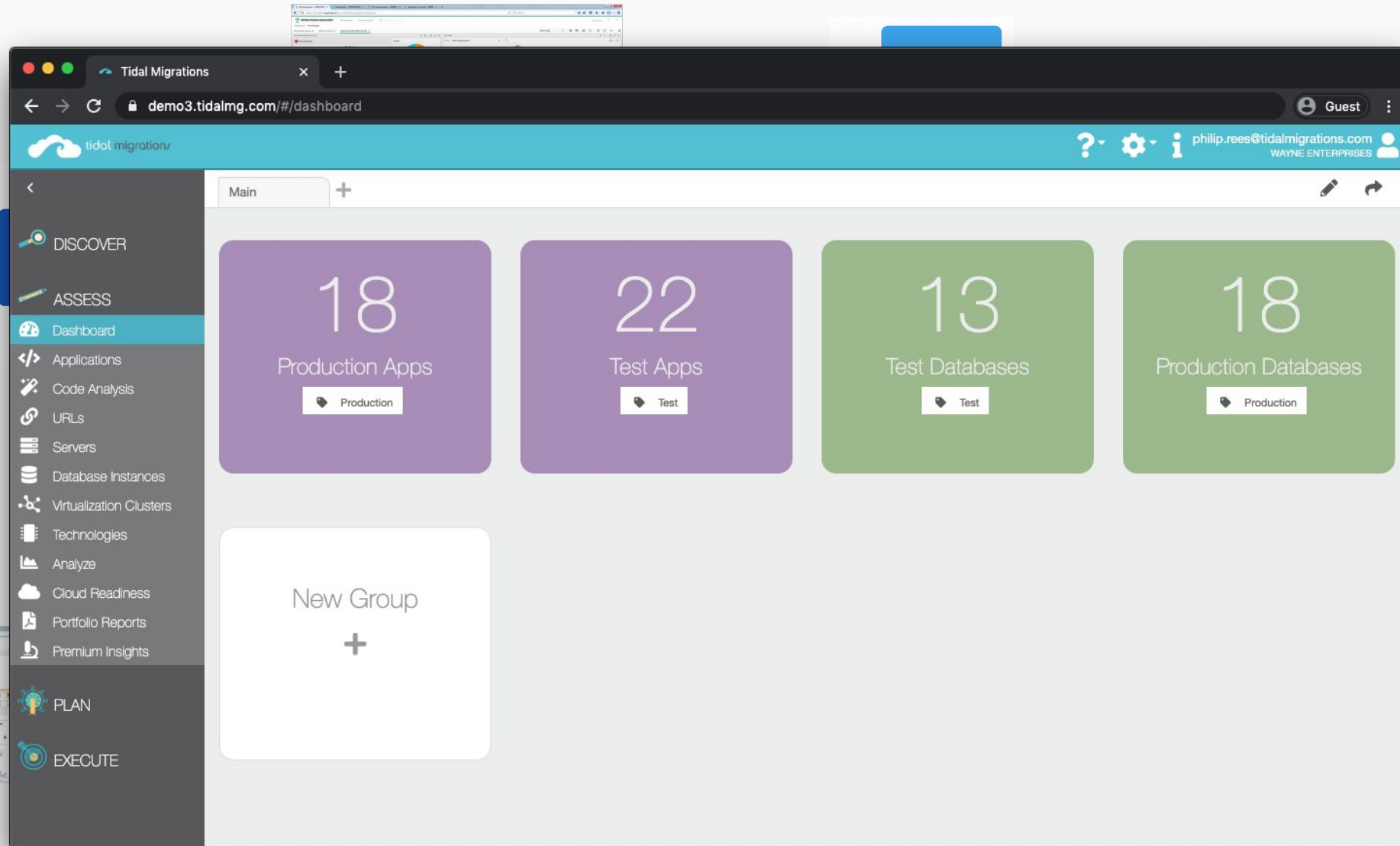
# Cloud Migration Bubble



# Traditionally...



# Tidal-ly...





# A CASE STUDY



Highlights

**Budgeted 2 years for Lift and Shift  
Transformative in just 15 months**

Results

Vertical:

Compelling Event:

Previous technology stack:

Previous spend on hosting:

Hardware refresh project:

**Public Sector - State/Provincial Government**

**Hardware Refresh Avoidance**

**AIX, Solaris, Windows, Mainframe**

**\$2,070,000 per year**

**\$15 mil *avoided***

**30 Apps Analyzed**

- Refactored 20
- Replatformed 5
- Rehosted 1
- Repurchased 2
  - Retired 2

Modernization process:

**Rationalize applications, and migrate J2EE to serverless**

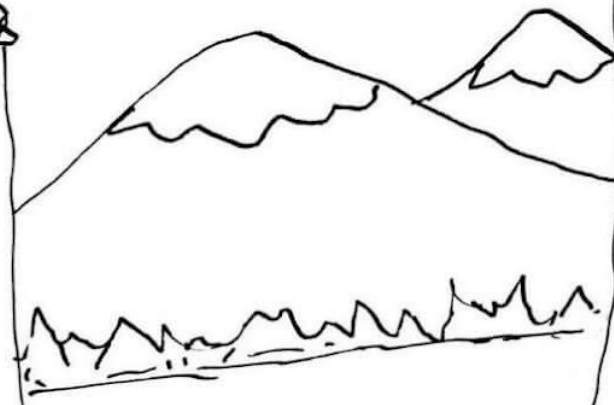
OpEx to: **\$80,000 p.a.**

**Remove over 100 Critical + High CVEs**

**Refactor core applications that have high-levels of technical debt first,  
to enable faster transformation**

COME  
OVER  
HERE

HOW?



# Tidal Application-centric Best Practices



## DISCOVER

1

Review  
Company  
Objectives

2

Identify  
Discovery  
Sources

3

Organizational  
Skills  
Assessment

4

Application  
Inventory

## PLAN

## ASSESS

8

Transition  
Wave  
Planning

7

Transition  
Requirements

6

Deep Dive  
Source Code +  
DB Assessment

5

Preliminary  
Application  
Assessment

## EXECUTE

9

Retire,  
Repurchase,  
Rehost

10

Refactor,  
Replatform  
Retain

11

Policy  
Automation +  
Enforcement

12

Stabilization

# IT-centric vs Business-first Approach



## Infrastructure-centric



## Application-centric\*\*



Migrate faster,  
with better results.

\*AWS Consulting average application assessment time  
\*\*Based on portfolio of 100 applications

# Application Portfolio Assessment



## DISCOVER

- Project Goals
- Application Inventory
- Dependency Mapping
- Skills Assessment
- Business Value


## ASSESS

### Basic Insights

### Premium Insights

→ Classification

→ Prioritization

- 
1. Easy App
  2. Easy App 2
  3. Medium App
  - ...
  - n. Hard App

### 6 R's

Refactor  
Replatform  
Rehost  
Repurchase  
Retain  
Retire

Source Code  
Database Analysis

CONTINUOUS RATIONALIZATION

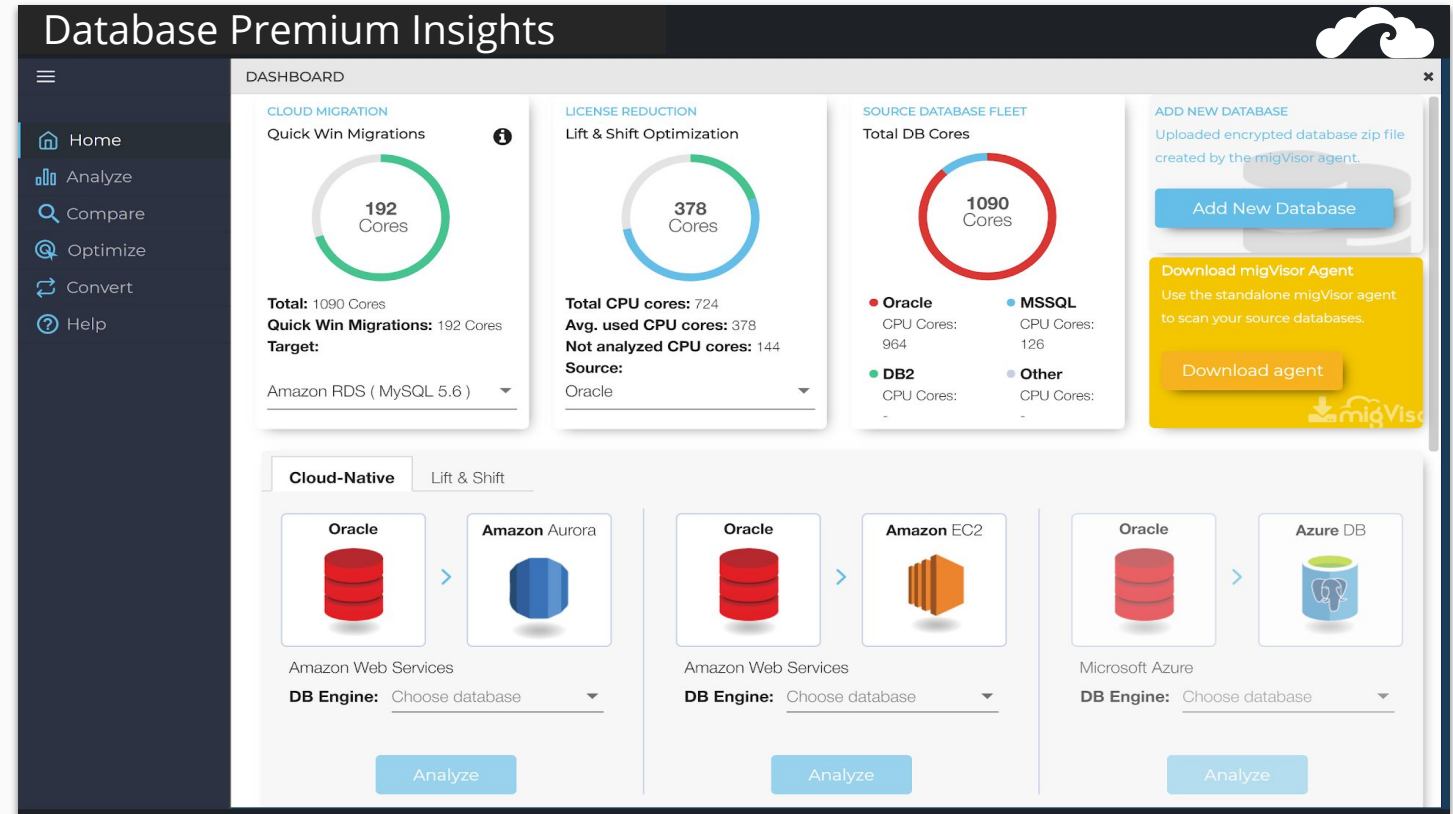


# Database Premium Insights



## Deep analysis & insights

- Configuration compatibility
- Application dependencies
- Licensing savings
- PL/SQL conversion
- Cloud-native migrations
- What-if scenarios



Tidal Migrations

demo3.tidalmg.com/#/database\_instances/10229

tidal migrations

philip.rees@tidalmigrations.com  
WAYNE ENTERPRISES

Record Database Insights

### Service Management

Name	Description
db2	--

Tags: --

Apps: </> Airbnb, Inc. </> KTSJ

Environment: --

### Technology Stack

Cluster: ip-10-1-0-196

Database Path: --

Database: --

Database Engine: Oracle 11.2

### Database Analysis Results

#### Migration Difficulty

Choose a migration target below to see its difficulty.

Amazon RDS Oracle Low

Difficulty by Feature

Below are the three features that will complicate the migration the most. [Go to premium insights](#) to view the remaining features.

BTree Indexes	<span>Low</span>
User Defined Types	<span>Low</span>
Functions	<span>Low</span>

#### Server Metrics

Architecture:	x86_64/Linux 2.4.xx
CPU Count:	2
Storage Used:	13 GB
RAM Allocated:	4 GB
Maximum Storage Requests:	4 IOPS
Maximum Storage Throughput:	0 MB/s
SGA Size:	3 GB
Maximum Number of Sessions:	43
Number of Sessions Used:	1

#### Discovered Applications

Show Ignored

The below applications were discovered by the database analyzer. You can match each one to an application in Tidal Migrations.

KTSJ	<span>✓</span> <span>&lt;/&gt; KTSJ</span>
JDBC Thin Client	<span>!</span> <span>Match</span> <span>Ignore</span>

Rapidly identify the volumetrics required across your database portfolio, and measure the relative complexity to migrate from Oracle or SQL Server to cloud-native databases.

Discover applications that connect to your databases and map the dependencies with one-click

Tidal Migrations

demo3.tidalmg.com/#/database\_instances/10229

tidal migrationz

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WAYNE ENTERPRISES

Record Database Insights

Migration Analysis from Oracle to Azure SQL Database V12

ip-10-1-0-196  
ORCL (11.2)

orcl

40 60 80 100

20 18

Migration Complexity

- Hash Partitions
- List Partitions
- Virtual Column Partitions
- User Defined Types
- Database Level Triggers
- Schemas with Tables

Query Complexity

LOW HIGH

Data collection date: 10/17/19

Database features

Search features

Feature name

- > Virtual Column Partitions (1)
- > List Partitions (1)
  - > Table Owner.Table Name (1)
    - > NAYA (1)
      - LMR\_LIST\_001
- > Hash Partitions (1)
- > User Defined Types (4)
- > Database Level Triggers (3)
- > Schemas with Tables (3)
- > Stored Procedures (1)
- > Functions (4)
- > External Tables (1)

Exclude schemas

Target sizing

Workload

Perform detailed what-if analysis for migrations from Oracle and SQL Server to cloud-native database options

*Shown here: Azure SQL*

Easily drill down into individual columns, functions and features that your team should focus on when migrating from Oracle to cloud-native databases.

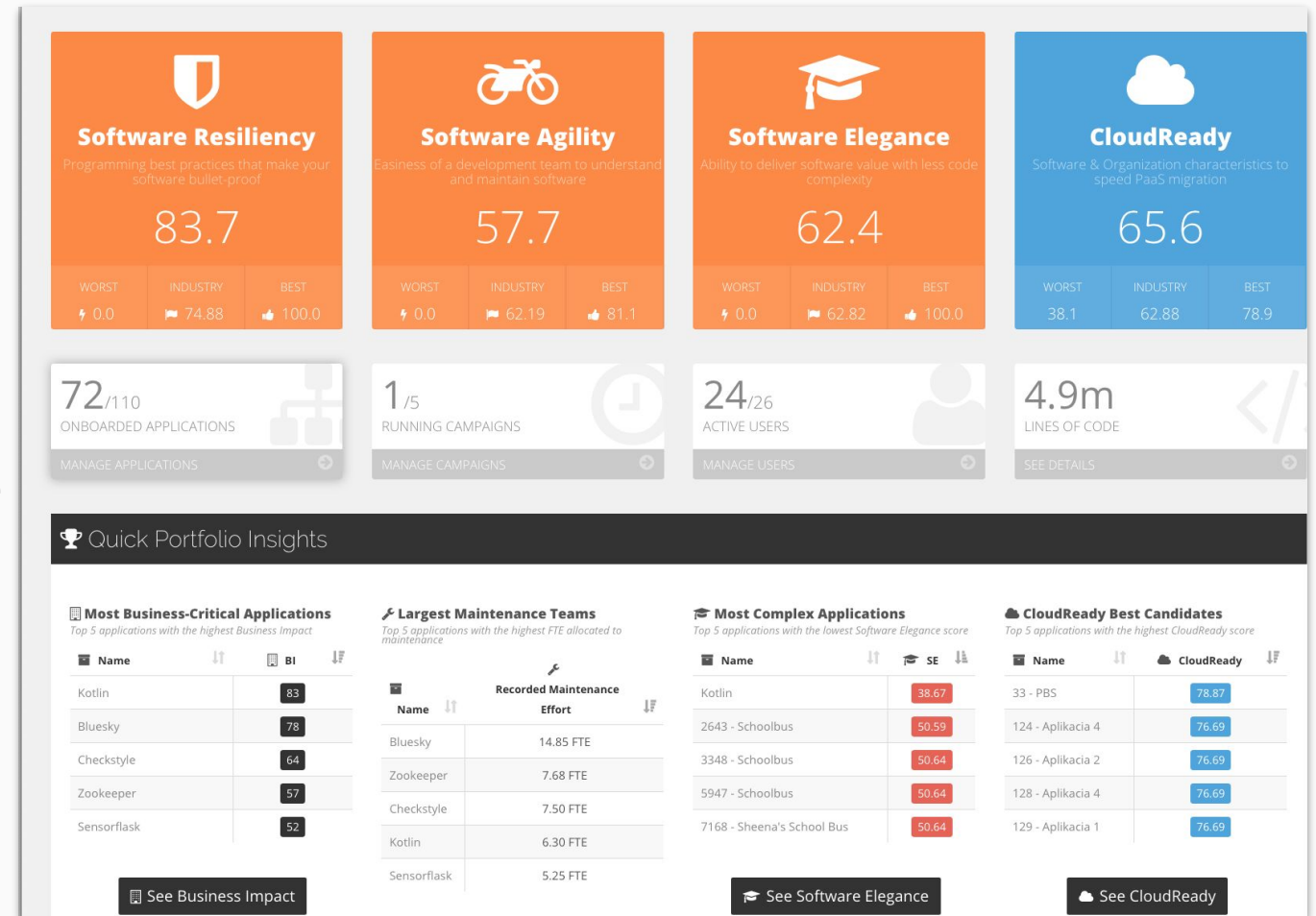
# Source Code Premium Insights



## Software Intelligence

- Roadblock identification
- Framework detection
- Vulnerability insights (CVEs)
- Measure migration difficulty with 200+ code patterns
- Cloud-native migrations

***Focuses your efforts on what matters***



Tidal Migrations

demo3.tidalmg.com/#/code\_analysis

tidal migrations

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WAYNE ENTERPRISES

DISCOVER

ASSESS

Dashboard

Applications

Code Analysis

URLs

Servers

Database Instances

Virtualization Clusters

Technologies

Analyze

Cloud Readiness

Premium Insights

PLAN

EXECUTE

Code Analysis

Source Code Analysis

Use Tidal Tools source code analysis feature to measure your application code bases for cloud PaaS migration difficulty. With your source code analyzed, the low-hanging fruit appear at the top of the list here. Migrating these to cloud-native platforms first allows your team to build momentum and demonstrate cloud competency.

1. Download, install and login to Tidal-Tools

2. Run `tidal analyze code --app-id [app_id] /path/to/source`

Application Analysis Progress

Refactor: 10

Replatform: 15

100%

94%

App	App Owner	Transition Type	Migration Difficulty	Roadblocks
Alexa website		replatform	Easy (83.8%)	12
Japan Airlines		refactor	Easy (79.8%)	16
Apartment Therapy		replatform	Easy (74.8%)	21
United Airlines		replatform	Easy (73.6%)	22
Capital Safety		refactor	Easy (73.5%)	22
Edmunds.com Inc.		replatform	Easy (72.4%)	23
Encyclopaedia Britannica		refactor	Easy (72.1%)	23
Yellow Pages website		refactor	Easy (72.1%)	23
Internet Archive		refactor	Easy (68.0%)	27
Tom's Guide		refactor	Easy (68.0%)	28
Truebill		replatform	Medium (65.6%)	30

Support

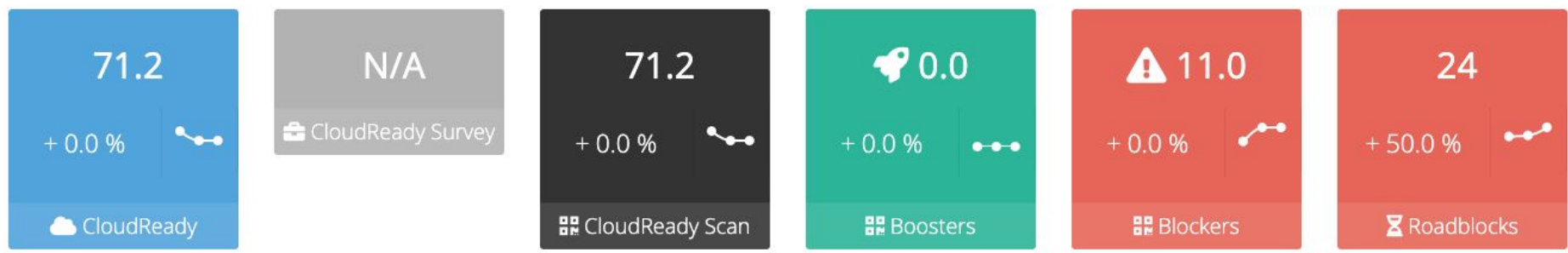
Getting Started - Tidal Tools

Layered Approach To Discovery

Importing and Integrating Applications via API

Rank your applications by migration difficulty to cloud-native architectures.





Cloud Requirement	Technology	Impact	Criticality	Contribution	Roadblocks
Access Control List : Using Access Control List ?	C#	CFA	Critical	+21.22 %	0
Application Settings Configuration : Using other configuration files than Web configuration ?	C#	C	Low	- 0.28 %	1
Code Execution : Using COM Components ?	C#	CF	High	- 4.13 %	2 + 1
Data Encryption Key : Using auto generated Machine Key ?	C#	A	High	+3.98 %	0
Data Encryption Key : Using Crypto API ?	C#				0
Execution Environment : Using file system ?	C#				0
Execution Environment : Using hardcoded network IP address (IPv4, IPv6) ?	C#				2 + 1
Execution Environment : Using system DLLs ?	C#				0
Inter Application Messaging : Using a middleware application ?	C#				19 + 6

Files list

- RabbitMQHare\RabbitConsumer.cs
- RabbitMQHare.UTest/Properties/AssemblyInfo.cs

Identify issues before you migrate.

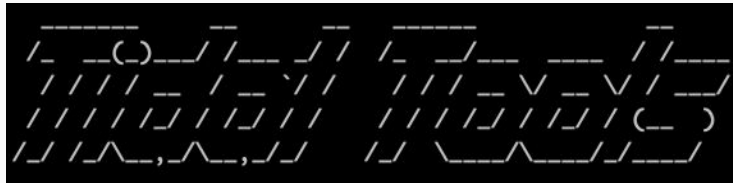
Down to the source code files that your team should focus on.

# Tidal Migrations platform | tools



## UNDERLYING TOOLS

### Tidal Tools



### 3rd Party Tools

#### Discover/Reporting APM



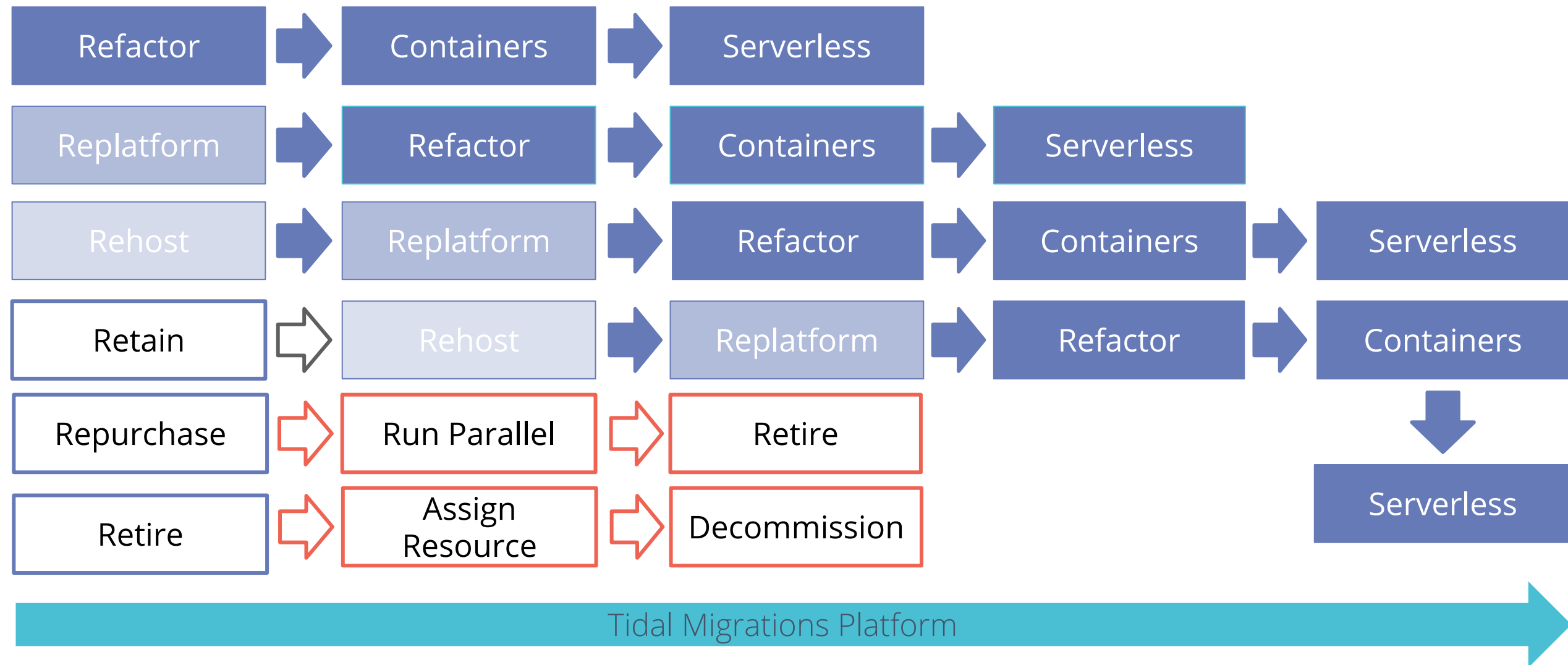
### Automations



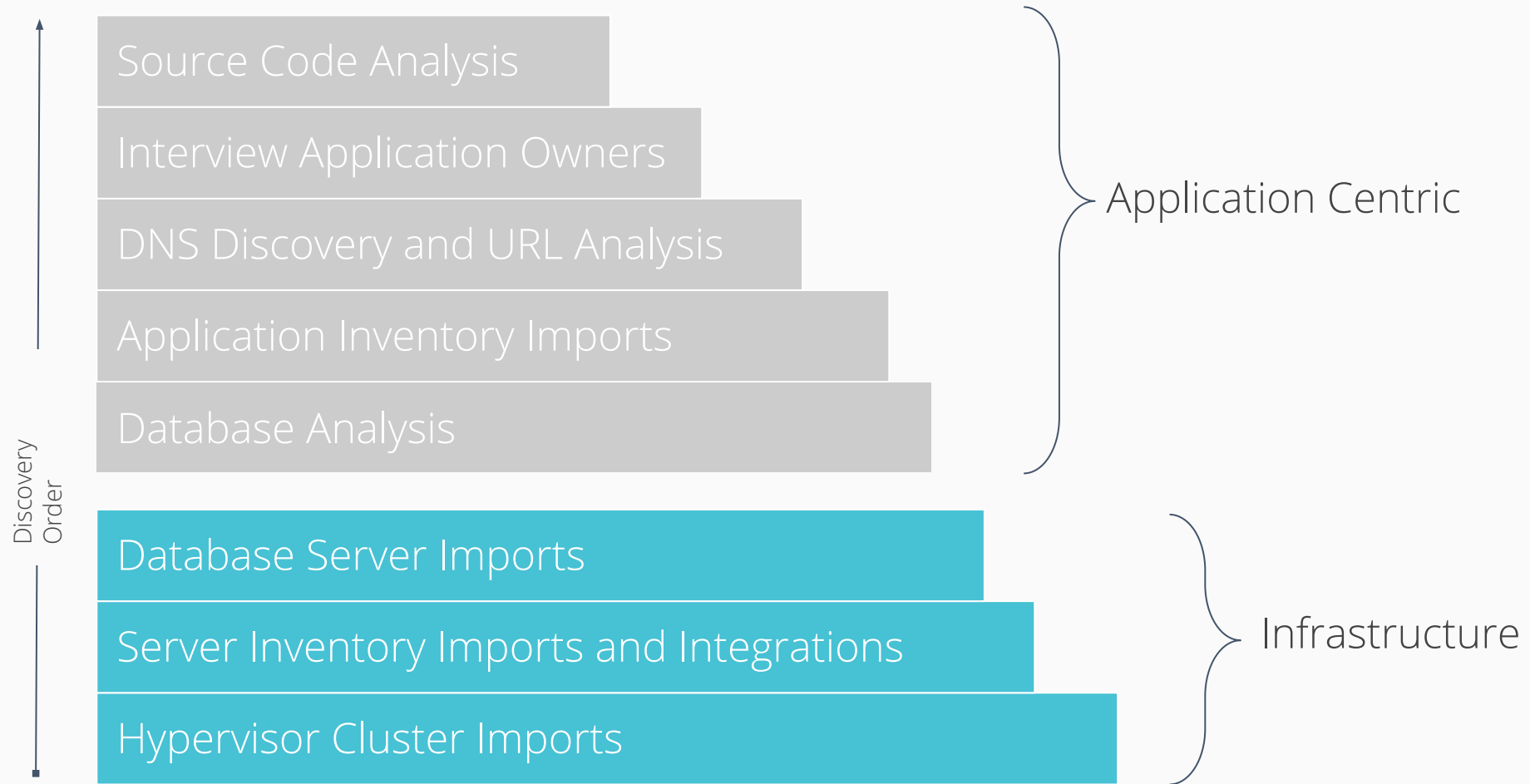
### Service Management



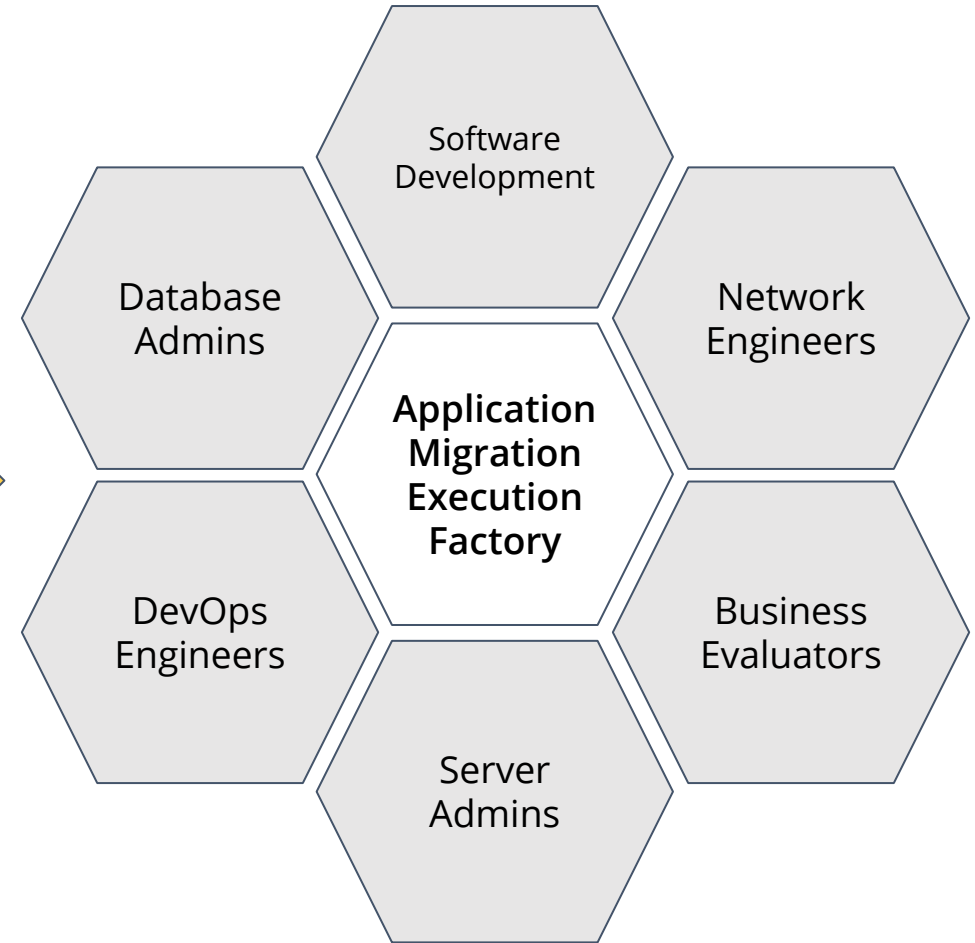
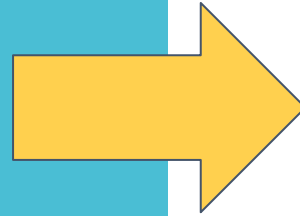
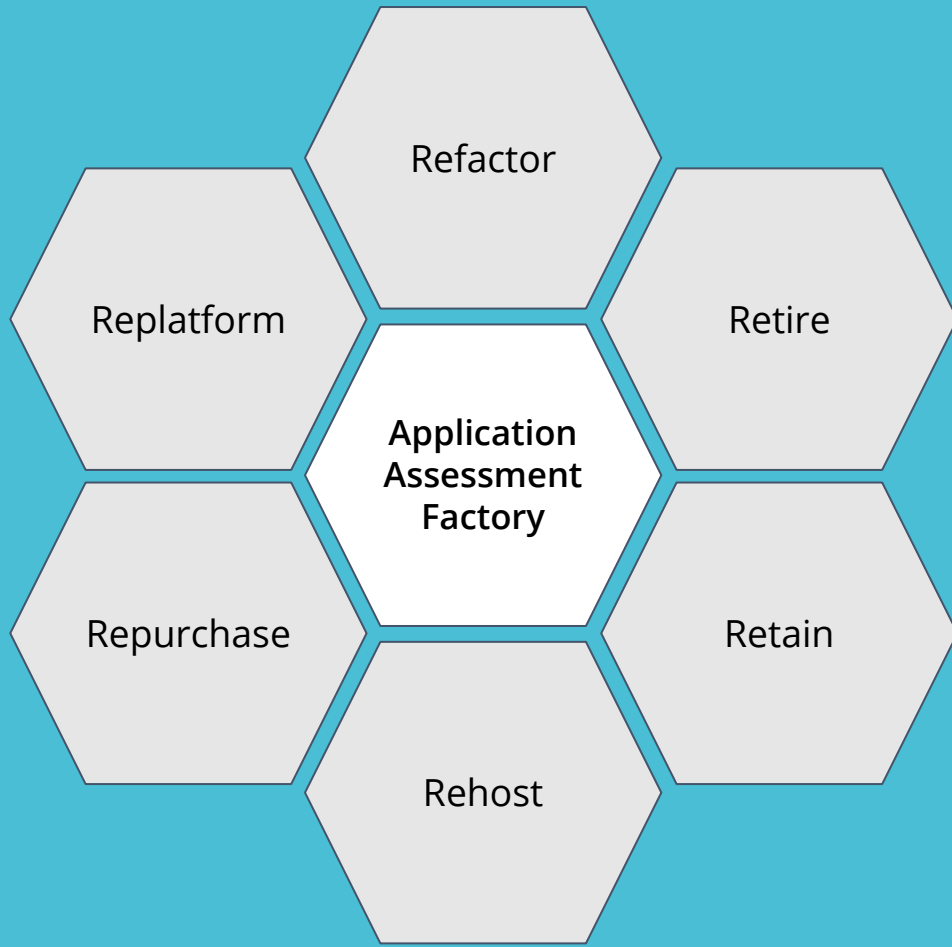
# 6 R's Transformation Management



# Layered Approach to Discovery | Demo



# Two Factories





# WHERE FROM HERE?

## PROOF OF VALUE PROJECT

- Workshop with knowledge transfer to baseline the team
- Try the approach and the process on a limited number of applications in the portfolio
- Make recommendations as to categorization and prioritization utilizing the data
- Application Assessment report

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