

The logo consists of a red speech bubble shape pointing downwards, containing the text "RED HAT" in a smaller font above "SUMMIT" in a larger, bold font, both in white.

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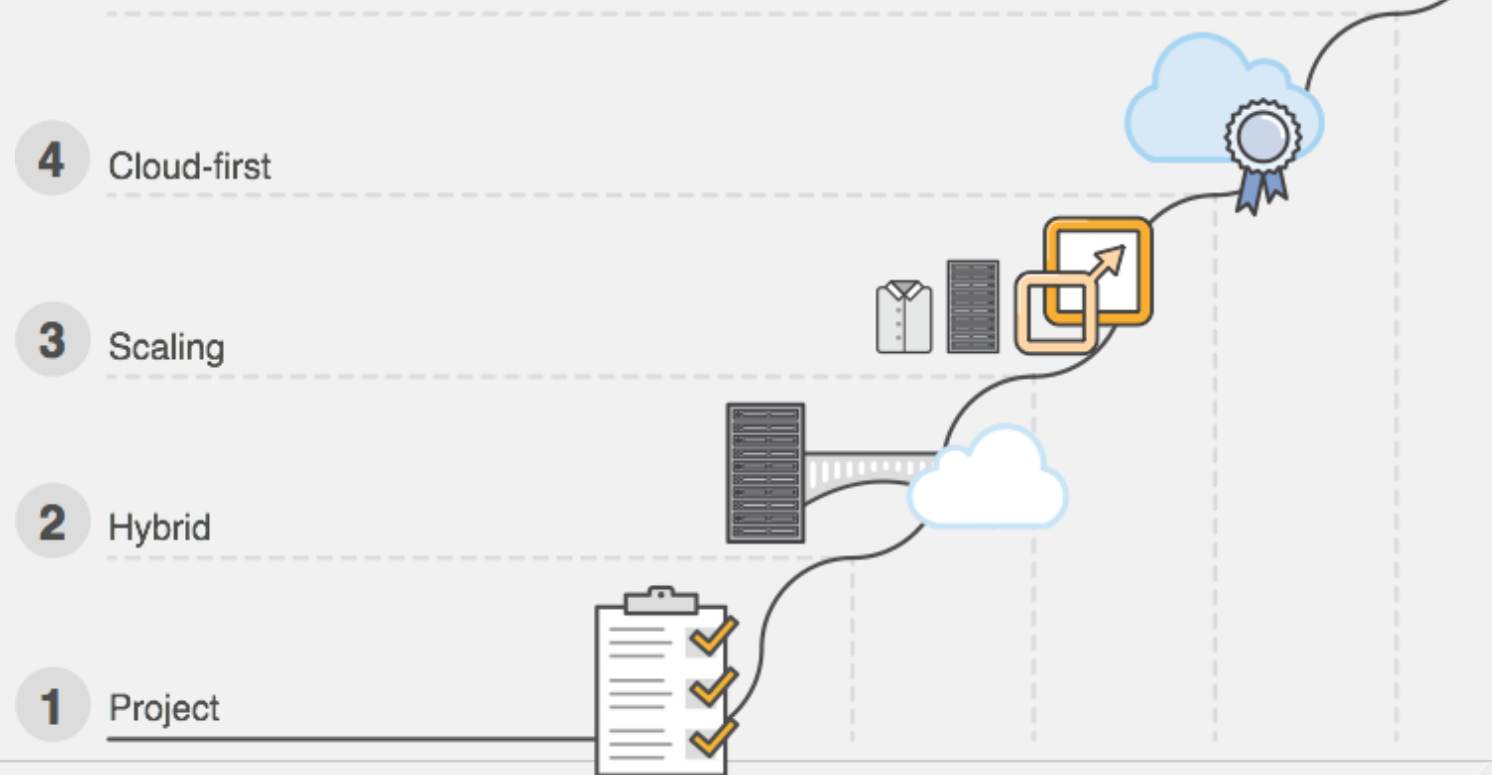
Taking the yellow brick road... An AWS migration story.

Subheading goes here

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**The yellow brick road is not
so winding anymore.**

Transformation is a Journey (Stages of Adoption, or SofA)



State of Adoption 1: Project

AWS is used on a project-by-project basis, or shadow IT.

Solves specific need(s).



Has few AWS skill sets in-house

Customer is proving to themselves that cloud is a viable option

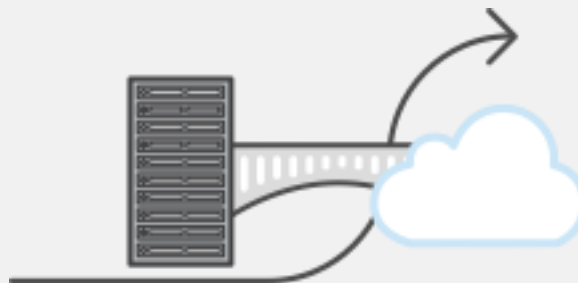
State of Adoption 2: Hybrid



Partners are trusted advisors and enablers, have earned the customer's trust.

AWS extends existing data centers

Opens up many new projects



Training and establishing a Cloud Center of Excellence

Establish scalable security and compliance models

State of Adoption 3: Scaling

Partner is an accelerator, introducing tools and people to execute migrations and improve operations

Preparing for long-term cloud operations

Cloud Center of Excellence is established



IT roles redefined

Groups of production applications and/or data centers migrate

State of Adoption 4: Cloud-First



Partner is an operator (MSP) partner and optimizer, constantly focused on doing things for less and more quickly

Cloud becomes default choice

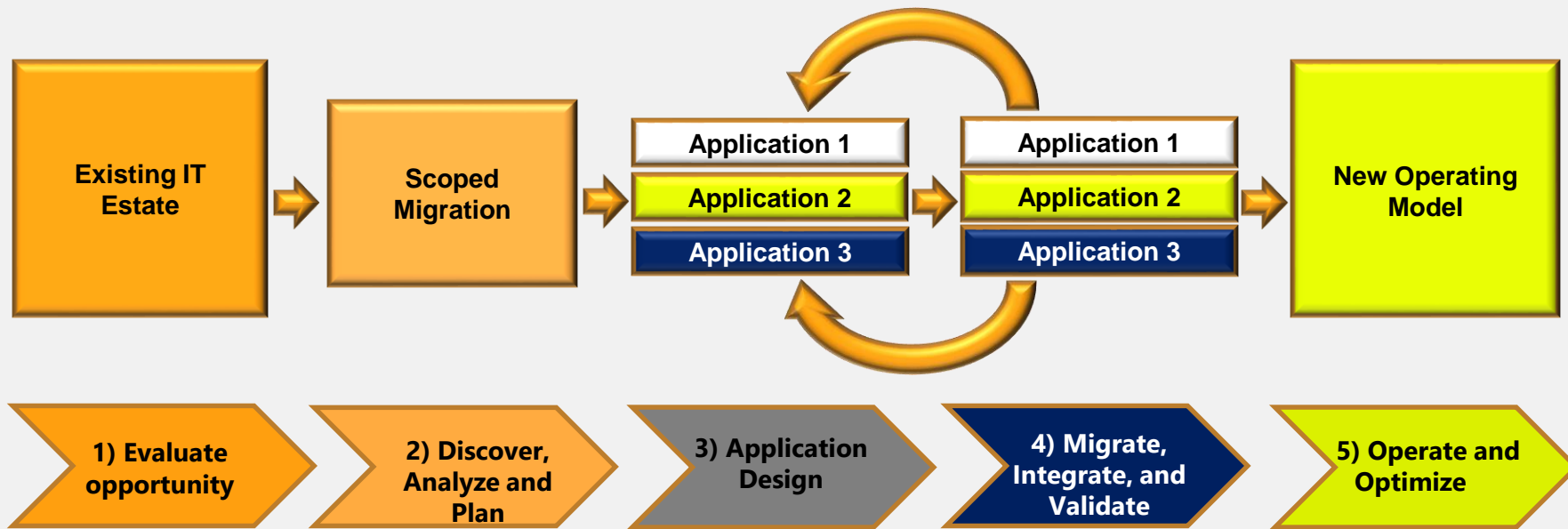
New business models explored



Switch from “Why Cloud?” to “Why Not Cloud?”

More comfortable with cloud operations than on-premises

Migration Process “Mental Model”



**Different routes on the
yellow brick road.**

5 Phases of the Migration Process

The migration process includes **FIVE** phases:

Opportunity evaluation

Analyze the cost and benefits associated with migrating to the cloud and determine which parts of your IT portfolios will be migrated.

Discovery, analysis, and planning

Assess your migration portfolio and formulate a plan. You will also create a cloud center of excellence (CoE) team.

Design.

Design/Architect cloud infrastructure based on step 2 output. You will decide on AWS services that best fit each single application including computing, storage, database, networking, etc. Design should be for both short term (i.e. lift & shift, re-platforming, replace) as well as long term (modernizing, re-architecting).

Migration, integration and validation

Phases 3 and 4 are typically referred to as the migration factory. You focus at an application level and iterate through these two phases for each application being migrated. Working with the application owner to determine the target architecture and strategy is critical. Once migrated, a functional validation is performed.

Operations and optimization

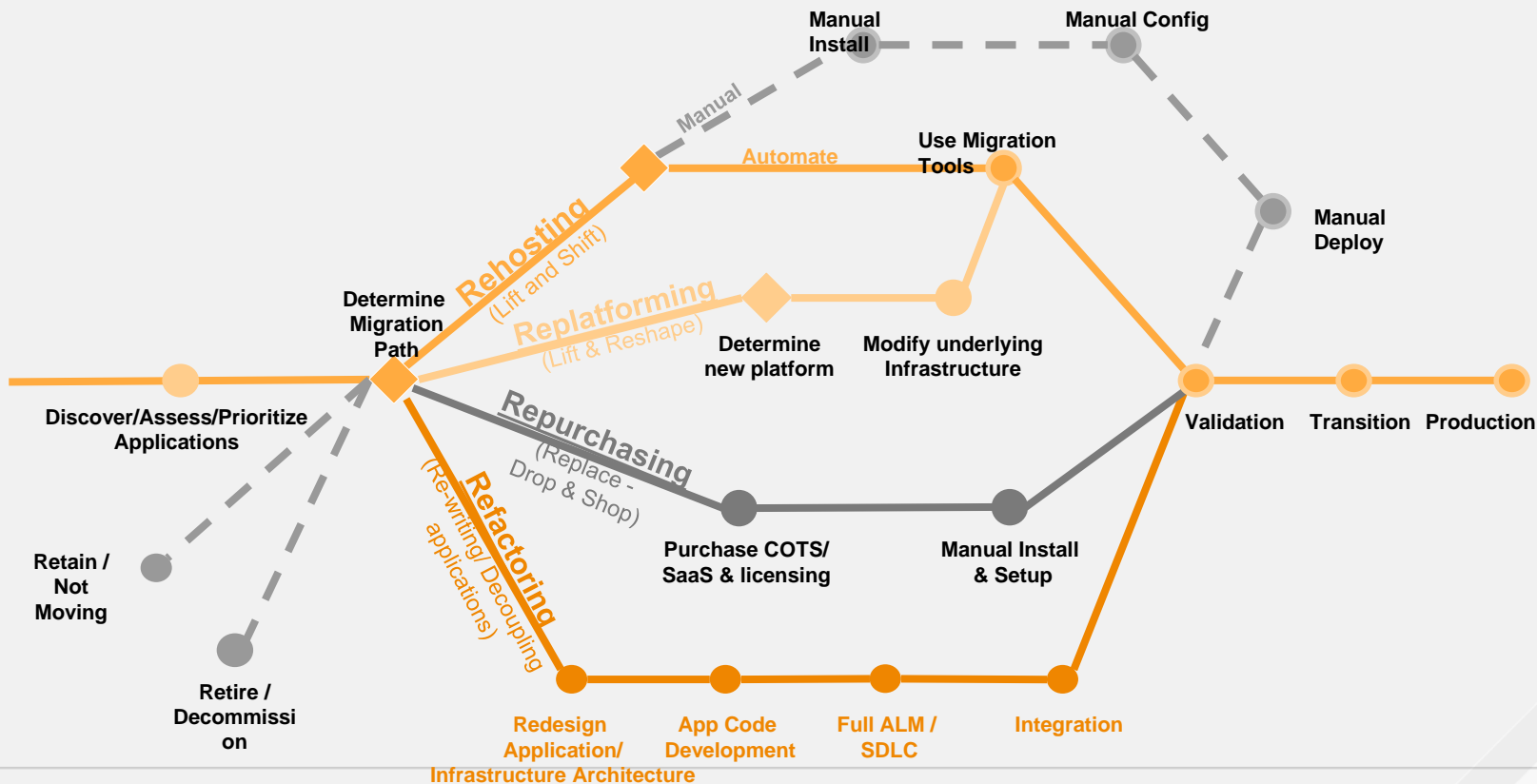
Upon successful validation, the source (on-premises) application is deprecated and the application continues to operate in the cloud

Application Modernization / Change Effort

Migration Pattern Label	Migration Pattern Name	Pattern Description	Example
R1	Retain	<ul style="list-style-type: none"> ➤ Client will keep host / application in their source environment ➤ Minimal analysis/validation of scope and application affinity ➤ Dependency on integrating service management 	Mainframe UNIX host / applications
R2	Retire*	<ul style="list-style-type: none"> ➤ Application and host decommission on source ➤ No migration to target ➤ Application owner approvals needed 	Existing Decomission Program Scope UNIX, SCO; Clustered host for DR, alternative HA hosts
R3	Re-Hosting*	<ul style="list-style-type: none"> ➤ Like for Like application migration to target cloud ➤ Minimal effort to make the application work on the target cloud infrastructure (Minimal appl layout change) ➤ Storage migration will be needed (without conversion) ➤ UAT - Some level of application testing 	Simple to Medium V2V, P2V Storage: Local to DASD RHEL 6 above Win 2008 above
R4	Re-Platform*	<ul style="list-style-type: none"> ➤ Up-Version of the OS and/or Database onto the target cloud ➤ Storage migration will be needed (without conversion) ➤ Some level of application changes ➤ Application reinstallation on the target ➤ UAT is highly recommended ➤ Database to AWS RDS 	W2K3 to Win 2012; Win 2008 below; RHEL below; Oracle 8 to 11; All databases New application releases All clusters (MS cluster, DR) MS SQL same technology (RDS)
R5	Refactor*	<ul style="list-style-type: none"> ➤ OS and/or Database porting ➤ Middleware and application change to cloudify an application ➤ Data conversion; Database transition to MySQL, Aurora, etc. ➤ UAT required 	AIX to Linux Oracle to SQL; SQL to Aurora Middleware, IBM products
R6	Re-Purchase*	<ul style="list-style-type: none"> ➤ Replacing the application with a SaaS offering or COTS product ➤ Purchasing a cloud-compatible license 	Oracle PeopleSoft

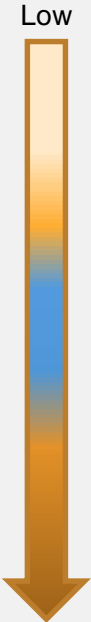
* Reduces TCO

Cloud Migration Strategies



Comparing Cloud Migration Strategies

Migration Complexity



	Time	Cost	Agility
Retain	+	+	N/A
Retire	+	+	N/A
Re-host	++	++	++
Re-purchase	+++	++++	+++
Re-platform	+++	+++	+++
Refactor	++++	++++	++++

**Ways to make the road a
little more comfortable.**

AWS Migration Methodology

- Portfolio Discovery
- Goals and Drivers
- Prioritized Backlog
- Foundations (target zone setup)
- Setup Factory (Tools, Teams, Process)

Initiate

Prioritized Backlog (PLAN)

App 1
App 2
...
App n

Migration Factory

Discover

Analyze

Plan

Integrate

Migrate

Design

Validate

Operate

- Application optimization
- Process optimization
- Operational optimization
- Cost optimization

Optimize

Portfolio **Discovery**

Tools should **automate** your discovery process and can be classified as:

- Agent-based vs Agentless
- Port scanning vs Packet scanning
- Appliance-based vs SaaS offering

Picking a Portfolio Discovery Tool

How should you choose a discovery tool for your environment?

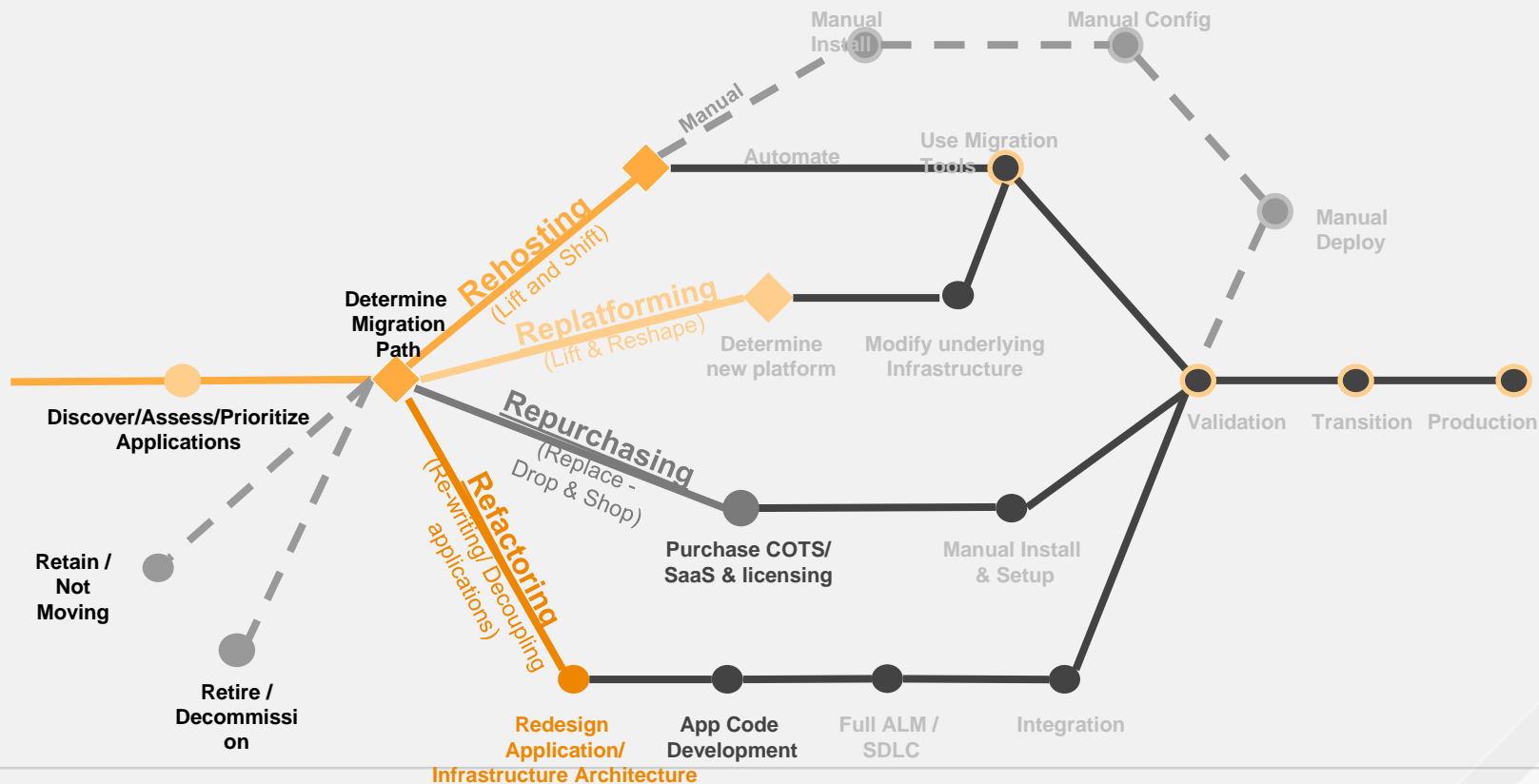
- How will you deploy agents if it is an agent based solution?
- Will your security policies let you share administrative credentials if needed with the tool?
- Can the discovered data be stored in a location outside of your organization?
- Do you have or need application-to-port mapping details?
- Do any of your applications use custom ports?
- Are you running any custom applications in your environment?
- Are there any restrictions on the type of ports that can be used for scanning?
- Do you need automated right sizing of the target environment?
- Do you need estimated run costs of the target environment?
- Do you have or need deep application performance monitoring?
- Do you need deep infrastructure performance monitoring?

Getting **Ready** for Migration Planning

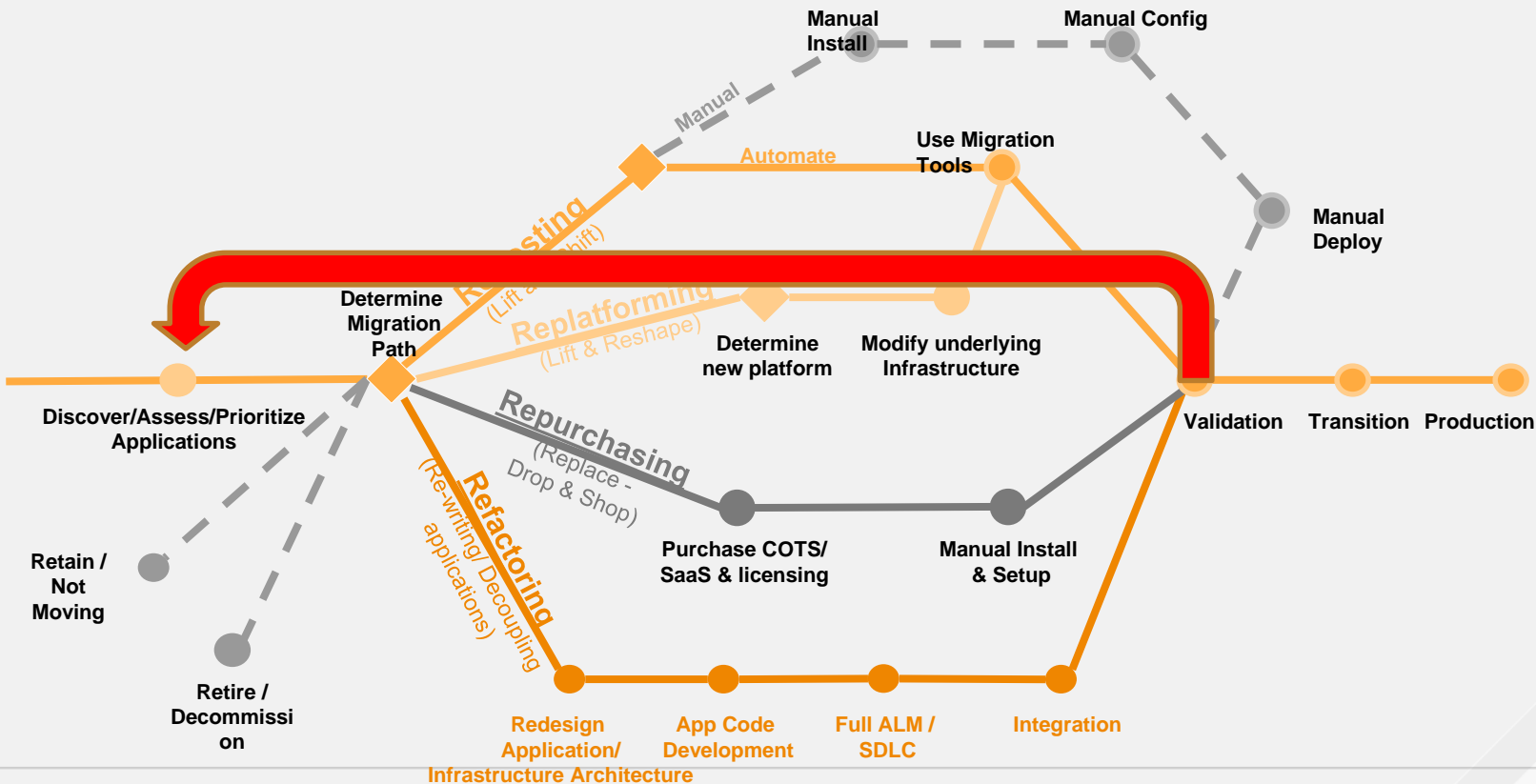
Before you can create a detailed plan for your cloud migration project, you must have:

- A final architecture for the target environment in the AWS cloud.
- Understand hybrid connectivity with the target cloud environment.
- A discovery of your cloud migration portfolio.
- Details of the application owners.
- Come up with a contingency plan to ensure that the blast radius is small is contained if there are issues.

Determine the Migration Strategy



Contingency Plan



Migration Planning **Final** Planning

The **Final** things to plan for before you start to migrate are the following:

- Come up with a series of tests for the application and your users.
- Figure out how you will cutover.
- Identify the stakeholders for support and escalation and work with them on operational plans.
- Come up with what the success criteria will look like in order to flip to the new environment.
- Take one last baseline performance analysis of the source environment to compare to the new environment.

Migration Sprint Teams



Builds and validates appropriate foundational components that ensure Dev, Test, Prod environments are scalable and appropriately maintained and monitored. Prepares landing zones as needed for migrations.

Foundations & Operations



Accelerates downstream activities by executing application discovery and optimizing application backlogs. Works to eliminate objections and minimize wasted effort.

Portfolio Discovery



Additional Lift and Shift Migration Teams

Lift & Shift Migration

Migrates large quantities of simple applications that don't require refactoring or re-platform. Heavy utilization of migration automation tools. Rapidly delivering large quantities of small incremental value



Additional Re-Platform Migration Teams

Re-Platform Migration

Designs, Architects, and migrates more complex applications that require a change of platform or a change in application architecture. Migrating fewer applications that provide a higher return per migration



Additional Re-Factor Migration Teams

Re-Factor

Builds and validates appropriate foundational components that ensure Dev, Test, Prod environments are scalable and appropriately maintained and monitored



Additional Innovation Teams

Innovation

Works in coordination with foundation, migration, and transition teams to develop repeatable solutions that will expedite migrations. Tackles larger or more complex technical issues for the migration teams.

Migration Tools

Several **AWS** partners including [CloudEndure](#) and [Racemi](#) help execute migrations to **AWS** by capturing your host server, configuration, storage and network states, then provision and configure your AWS target resources.

AWS also provides [Server Migration Service \(SMS\)](#), an agentless service which makes it easier and faster for you to migrate thousands of on-premises workloads to AWS. AWS SMS allows you to automate, schedule, and track incremental replications of live server volumes, making it easier for you to coordinate large-scale server migrations.

Migration Competency Partners for Workload Mobility

<https://aws.amazon.com/migration/partner-solutions/>

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EXPERIENCE
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