



aws INNOVATE

MODERN APPLICATIONS EDITION

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Move containerized applications to AWS

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AISPL



A Migration story

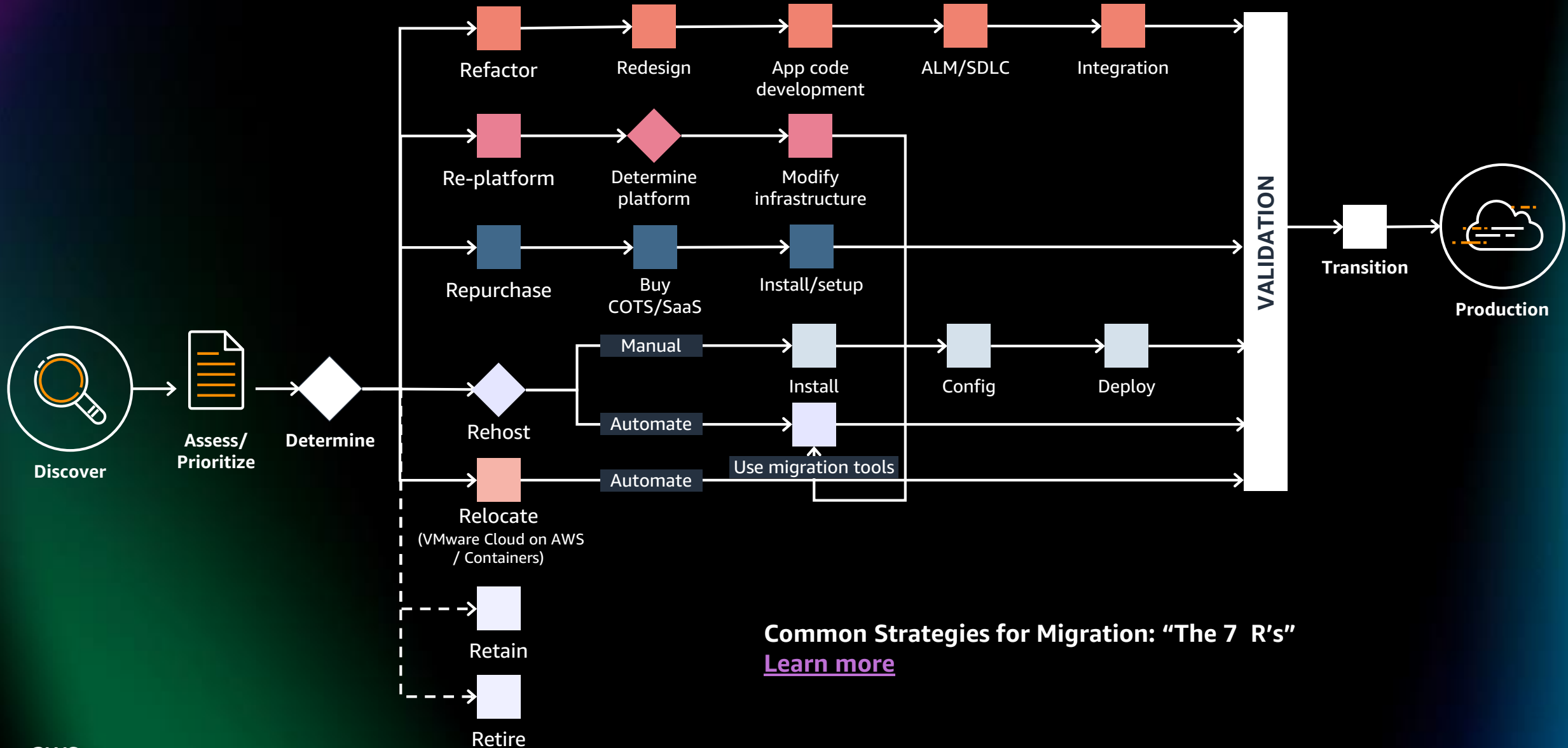
SELF MANAGED KUBERNETES TO AMAZON EKS



C A T S N D O G S
. L O L

- Self-managed, on-premises Kubernetes cluster
- Looking to migrate to the cloud to support growth
- Keen to understand migration approaches and options

Modernization strategies : Re-platform and Refactor



Benefits : Containers in the cloud

Agility



Develop and deploy faster to achieve business goals

Enterprise DevOps



Build and operate utilizing proven ecosystem of cloud-native tooling

Portable & Isolated



Enable portable, scalable and isolated application deployment

Operational Efficiency



Reduce IT operational overhead and achieve optimized compute infrastructure

Creating a migration strategy

Formulating a container migration strategy

PLAN | TEST | MIGRATE



PLAN

TEST

MIGRATE

Container migration strategy: PLAN

BUSINESS CAPABILITES

- Understand the **Business**
- Understand the **People**
- Understand the **Governance**

TECHNICAL CAPABILITES

- Understand the **Target Platform**
- Evaluating the **Tools**
- Proving the **Concept**
- **Security, Risk and Compliance**

Running containers on AWS

WHAT ARE THE OPTIONS?

Choosing an orchestrator



Amazon Elastic Kubernetes Service (Amazon EKS)



Amazon Elastic Container Service (Amazon ECS)



Red Hat OpenShift Service on AWS (ROSA)

Choosing a compute engine



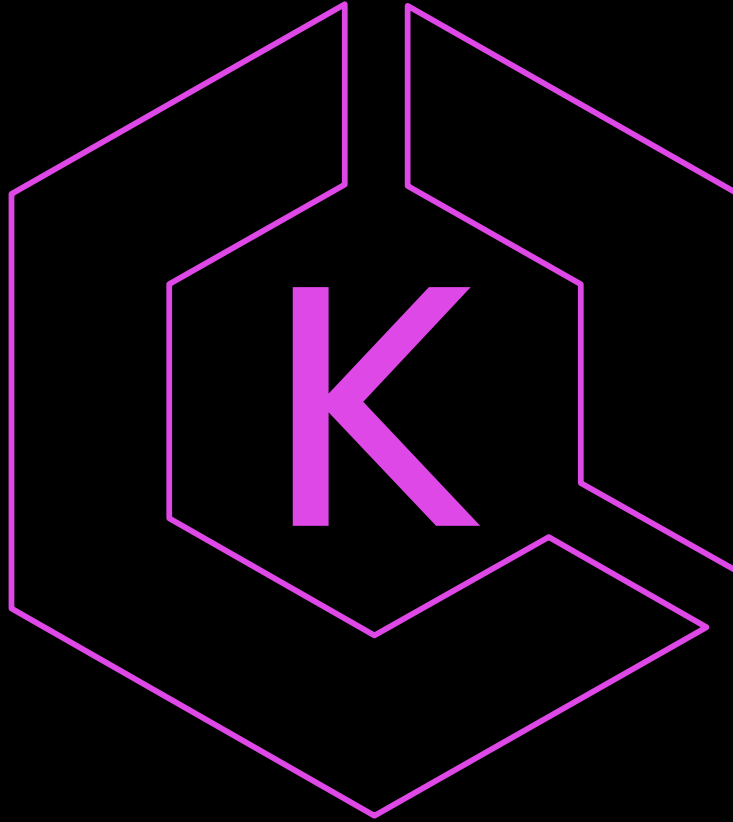
AWS Fargate



Amazon Elastic Compute Cloud (Amazon EC2)

The AWS Cloud

Formulating a container migration strategy



Formulating a container migration strategy

PLAN

TEST

MIGRATE

Kubernetes Version

- Avoid API inconsistencies
- Consider upgrading existing clusters
- Review deprecated APIs

Security

- Authentication:
 - IAM
 - OpenID
- Application Permissions:
 - IAM Roles for Service Accounts

Networking

- VPC CNI
- AWS Load Balancer Controller

Storage

- EBS/EFS/FSx CSI Controllers

Formulating a container migration strategy

PLAN

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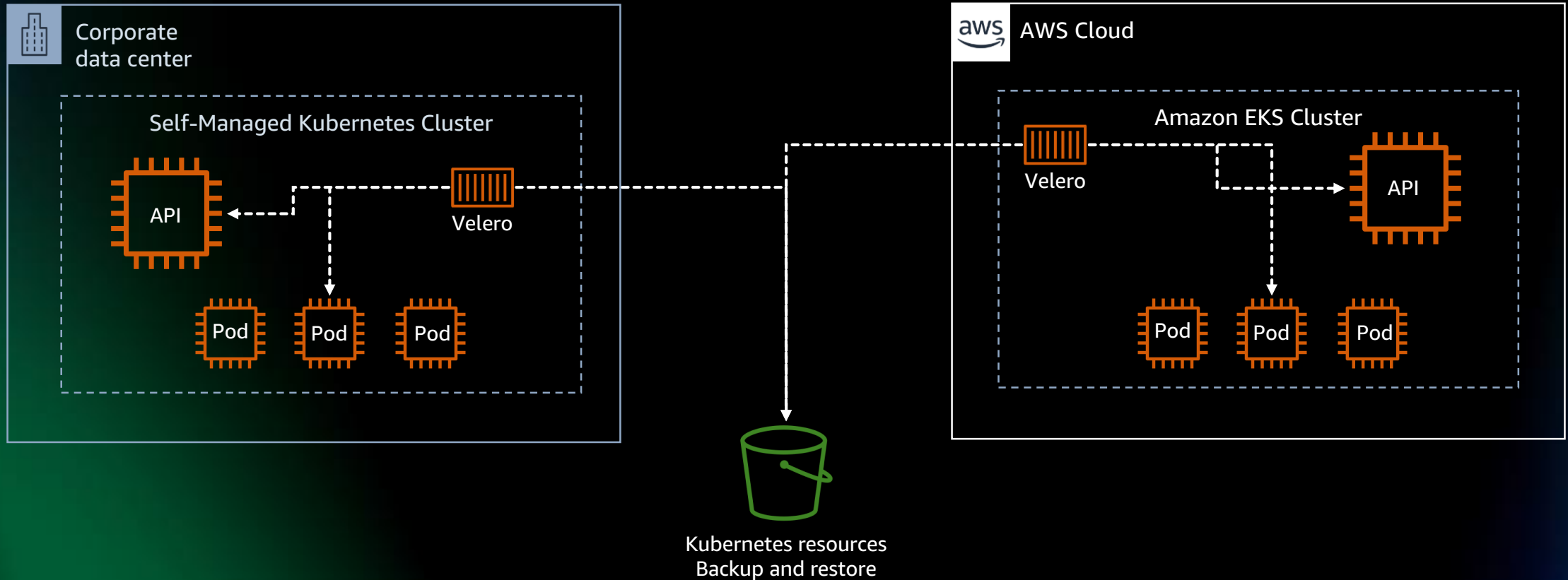
- Amazon EKS is Certified Kubernetes Conformant
- Load testing
- Security audit / Well Architected Review
- Re-evaluate tooling

Formulating a container migration strategy

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PLAN

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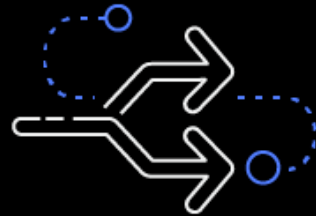
Amazon EKS and Amazon EKS Anywhere

Amazon EKS Anywhere

Create and operate Kubernetes in your data center and on your existing hardware using the same consistent EKS experience



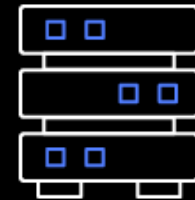
Helps customers run with secure, stable, and tested components used to run Amazon EKS



Built on open source standards cluster lifecycle management tooling



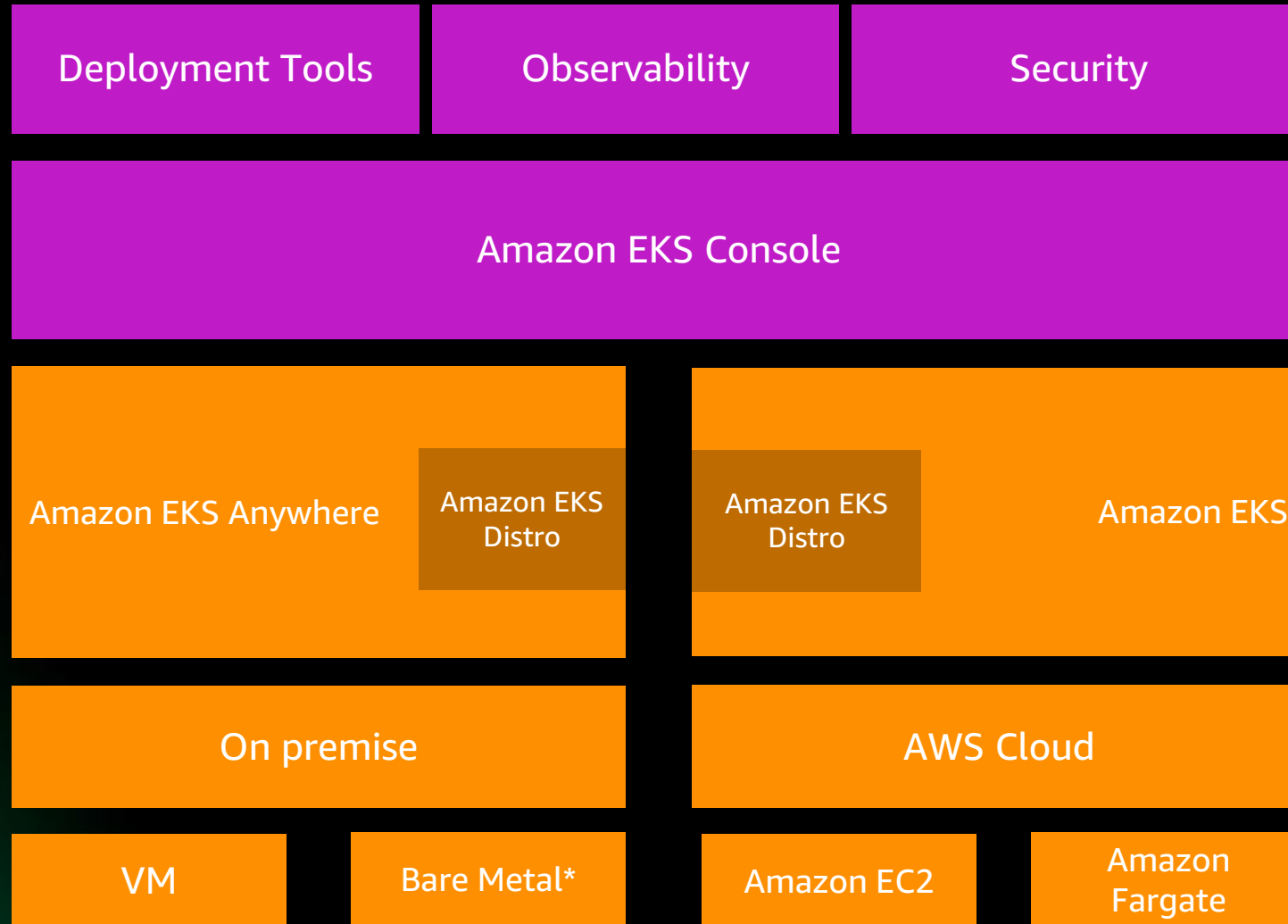
Bundled with components to accelerate readiness of production clusters



Bring your existing bare metal/self managed compute

Deploy and manage the lifecycle of Amazon EKS Distro clusters on-premises

Same operational experience across on-premises and cloud



** Fast follow*

PLAN

TEST

MIGRATE

Red Hat OpenShift Service for AWS

RedHat OpenShift Service for AWS



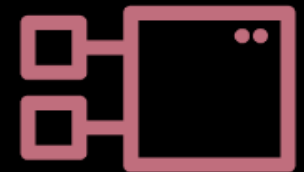
Console service



Unified bill



Joint support



Integration with AWS

PLAN

TEST

MIGRATE

AWS App2Container

AWS App2Container:

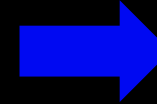
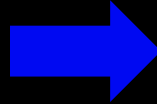
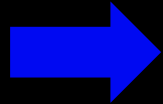
Accelerate application containerization

AWS App2Container helps customers to transform their applications running in virtual machines into containers and easily deploy them to Amazon ECS or Amazon EKS with minimal effort

Benefits

- Legacy app containerization with minimal efforts
- Containerization at scale
- Best practices for containerization
- Opinionated AWS Deployment artifacts

AWS App2Container – How does it work?



Discover and analyze

Extract and containerize

Create deployment
artifacts

Deploy to AWS Cloud

Application inventory;
analyze dependencies

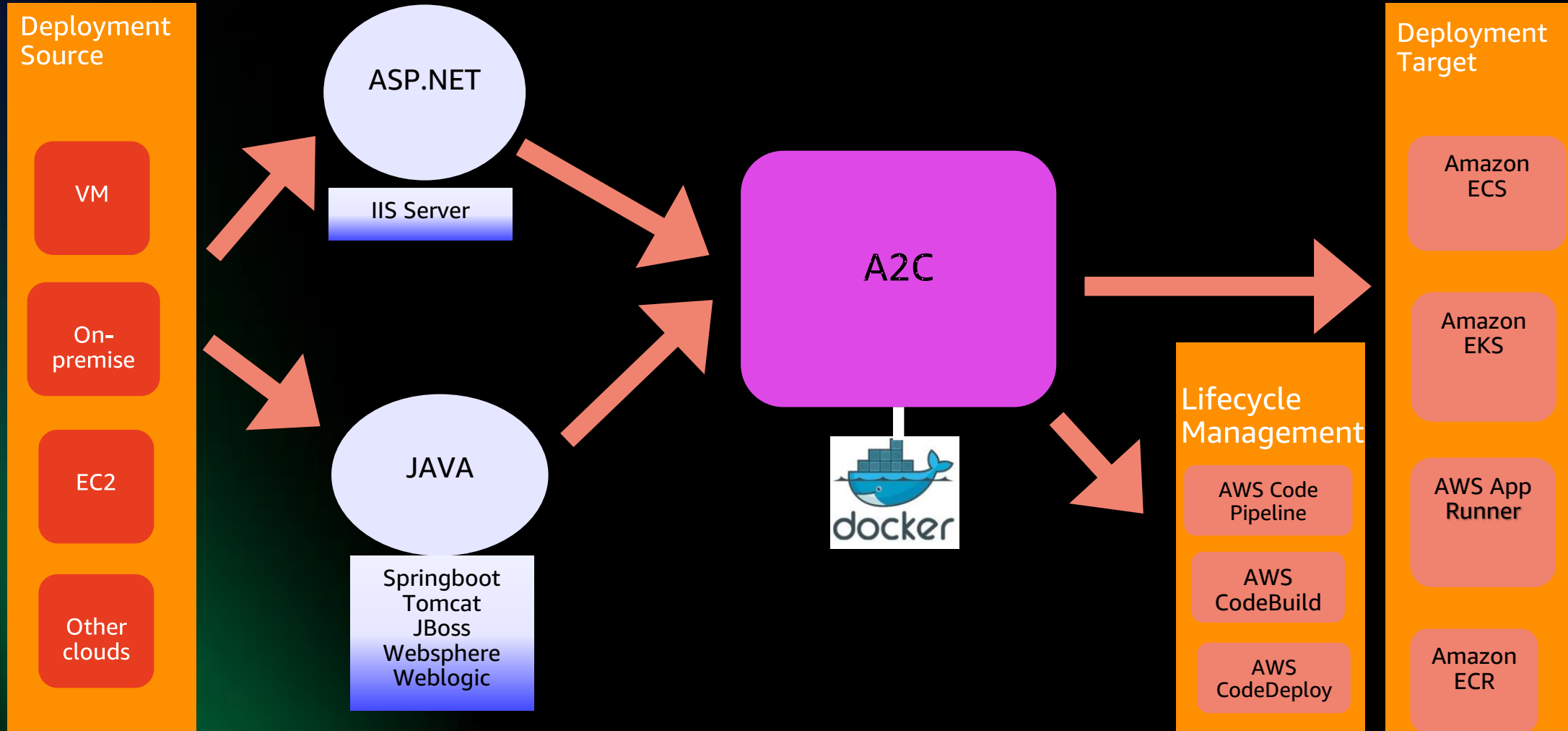
Containerize with Docker

Amazon ECS task
definitions, Kubernetes pod
definitions, and CI/CD
pipelines

Amazon ECS, Amazon EKS,
AWS App Runner, and
AWS CodePipeline

AWS App2Container

Containerize and migrate existing apps to AWS Cloud



When migrating containers to AWS

- Relocate, rehost and re-platform are the often the good first choices for migrating and modernizing your applications
- Plan, test and migrate – don't lose site of the business goals
- Broad set of AWS services that can help with you migration, Amazon EKS, Amazon ECS, ROSA, AWS App2Container

Wrapping things up

- **People:**
<https://www.eksworkshop.com>
<https://www.ecsworkshop.com>
- **Process:** [Container Migration Methodology Whitepaper](#)



<https://bit.ly/3BtwYSs>

- **Tools:** <https://velero.io/>

Visit the Modern Applications resource hub

Dive deeper with these resources to help you develop an effective plan for your modernization journey.

- Build modern applications on AWS
- Business value of cloud modernization
- An introduction to event-driven architectures
- Accelerate full-stack web and mobile app development
- Determining the total cost of ownership: Comparing serverless and server-based technologies
- Building event-driven architectures with AWS
- Continuous learning, continuous modernization



<https://tinyurl.com/modern-apps-aws>

Visit resource hub

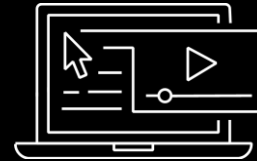


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