



Migrating Microsoft Workloads to AWS

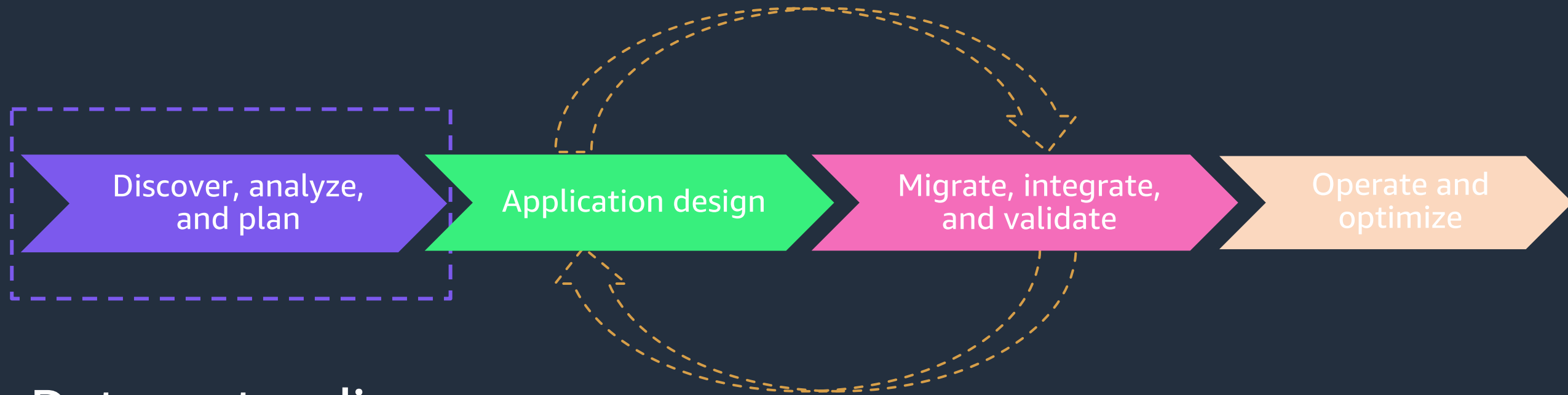
Siddharth Mehta
mehtasid@amazon.com

Jerroll Harewood
jerrollh@amazon.com

Jake Ignatius
jakeign@amazon.com

May 2023

Discover, analyze, and plan



- Datacenter discovery
- Analyze data
- Planning

Tools to assist with Discover and Planning

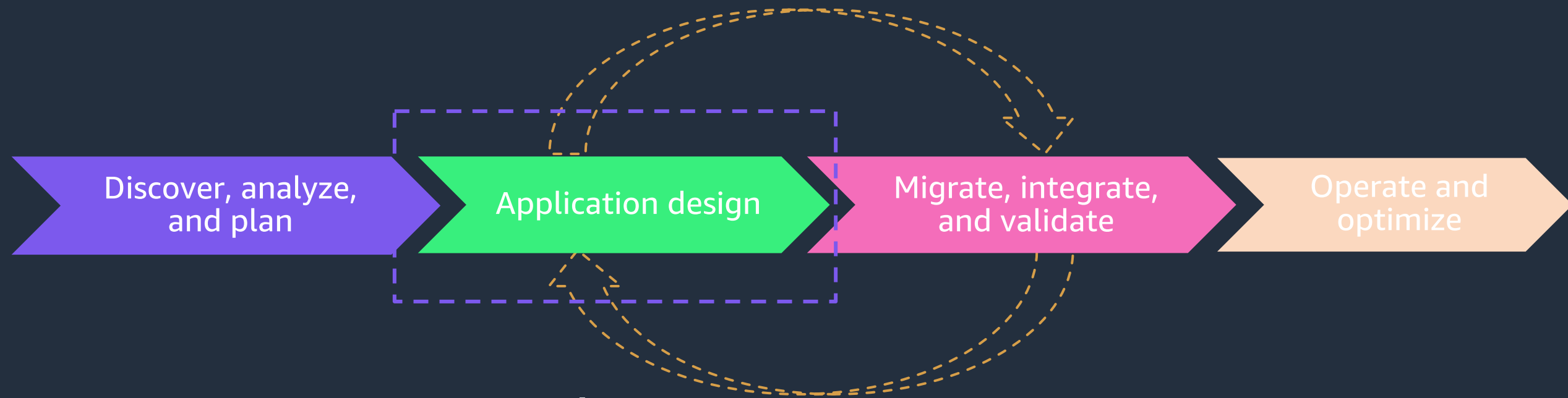


Discovery

- AWS Application Discovery Service
 - Discovers inventory and configuration of data center servers
- TSO Logic
 - Discovers inventory and dependencies of data center servers as well as performs optimization based utilization and licensing.
- Partner Tools – RISC Networks, CloudHealth, Cloudamize



Application design

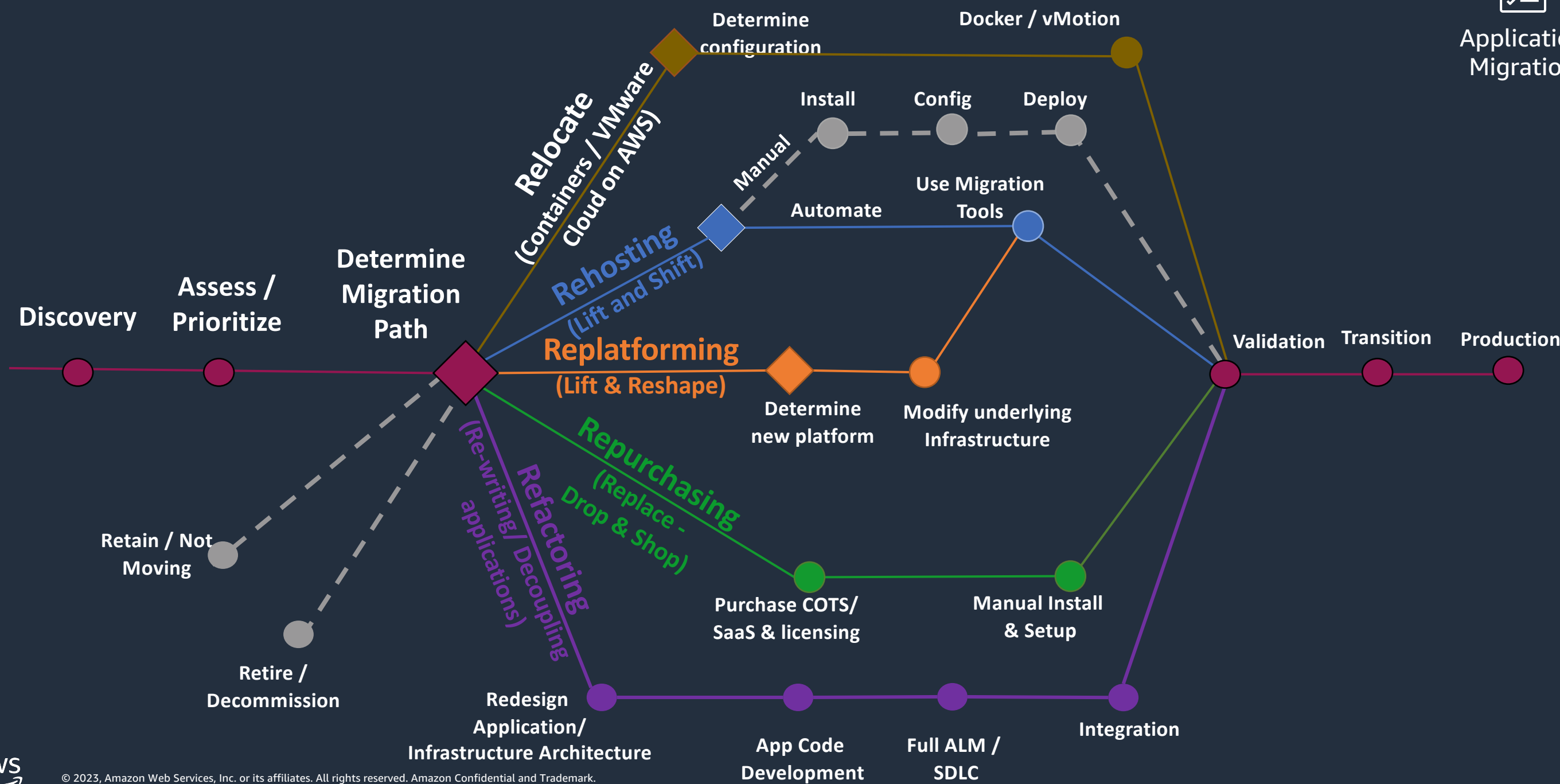


- Migration patterns analysis
- Architecture design
- Three Rs

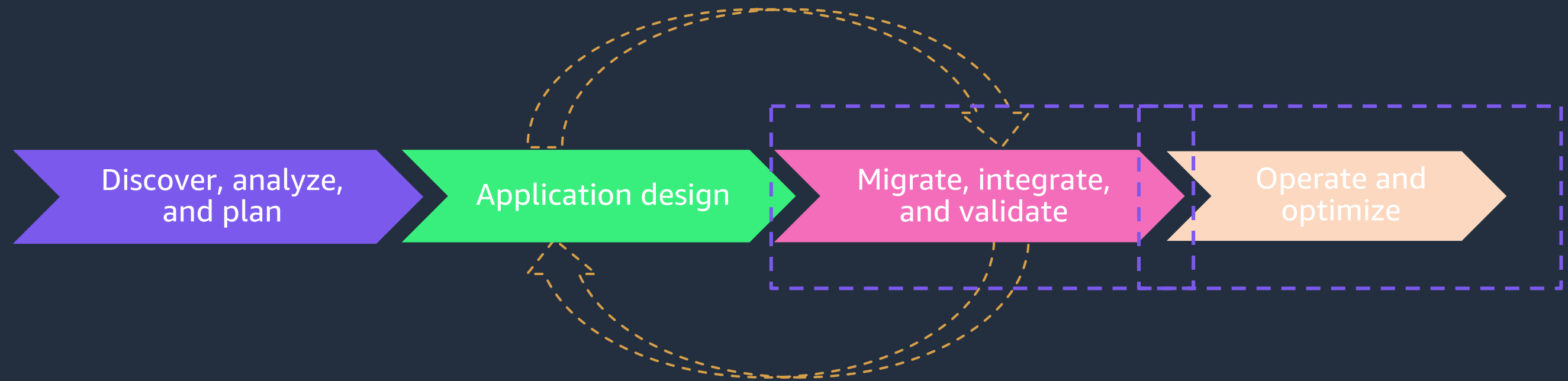
Application Migration Strategies



Application Migration



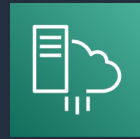
Migration process



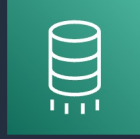
- Migrate
- Integrate
- Validate

Migration and modernization tools

Server and database migrations



AWS Server Migration Service



AWS Database Migration Service

AWS
Re:Platforming
Tool



AWS Migration Hub



VELOSTRATA

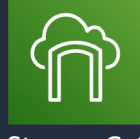
Data transfer



AWS Snowball



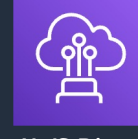
AWS Snowmobile



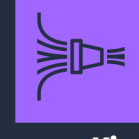
AWS Storage Gateway



S3 Transfer
Acceleration



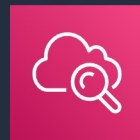
AWS Direct
Connect



Amazon Kinesis
Data Firehose



Application monitoring/ profiling



Amazon
CloudWatch



AWS Config

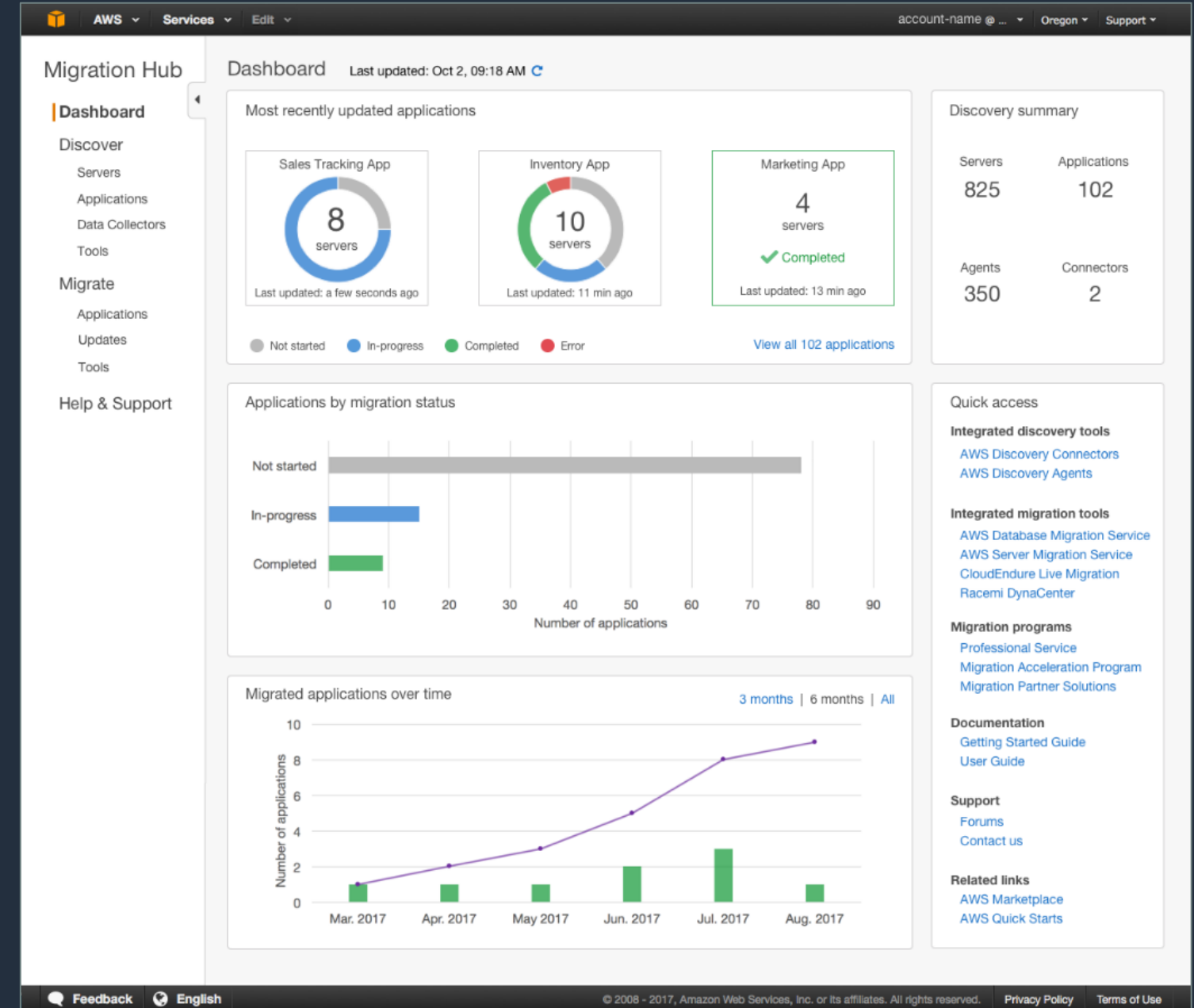


Track and manage your migration with AWS Migration Hub



Migrate & modernize

- Track the migration status of your applications across multiple tools in one place
- Discover using AWS Application Discovery Service or import discovery data from existing sources
- Use the migration tools that best fit your needs—AWS or APN Partner tools are integrated
- Available to all AWS customers at no additional charge



Migrating Servers



AWS Application Migration Service

Flexible



Migrate From
Any Source



Wide Range of OS,
Application, and
Database Support



Option to
Migrate Back

Reliable



Robust, Predictable,
Non-Disruptive
Continuous Replication



Short Cutover
Windows With
Minimal Downtime



Highly Secure
for Regulated
Environments

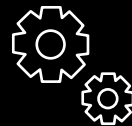
Highly Automated



Minimal Skill Set
Required to Operate



Easy, Non-
Disruptive Tests
Prior to Cutover



Easily Plugs Into
Migration Factories
and Cloud COEs

Designed for rapid, large-scale migrations

Agent based with wide OS and application support

Same highly automated process for any workload
Common workloads include databases such as Microsoft SQL Server, Oracle, and MySQL, and enterprise applications such as SAP

Built in orchestration reduces complexity and risk

Migrate with minimal business disruption

AWS Application Migration Service

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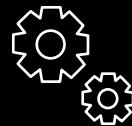
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AWS Application Migration Service Platform Support

Any
Application



Any
Database



x86 Operating
Systems



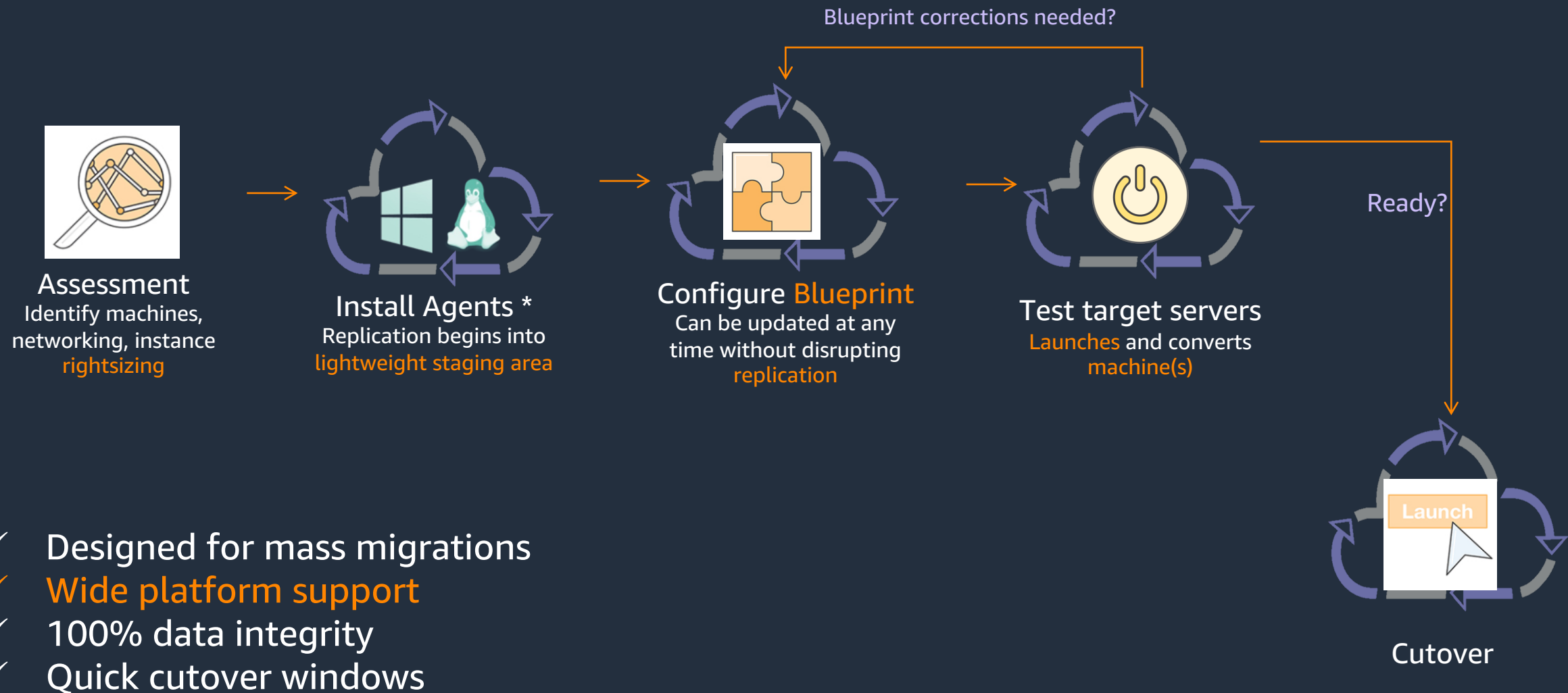
Source
Infrastructure



* See documentation or contact Support for a complete list.



Server Migration - AWS Application Migration Service Lifecycle



- ✓ Designed for mass migrations
- ✓ **Wide platform support**
- ✓ 100% data integrity
- ✓ Quick cutover windows

What is EMP?

End of Support Migration Program (EMP) for Windows Server helps customers package legacy applications (on Windows Server 2003/2008/2012) allowing them to run on newer Windows Server OS (WS 2016,2019,2022) without any code changes.

EMP for Windows Server provides

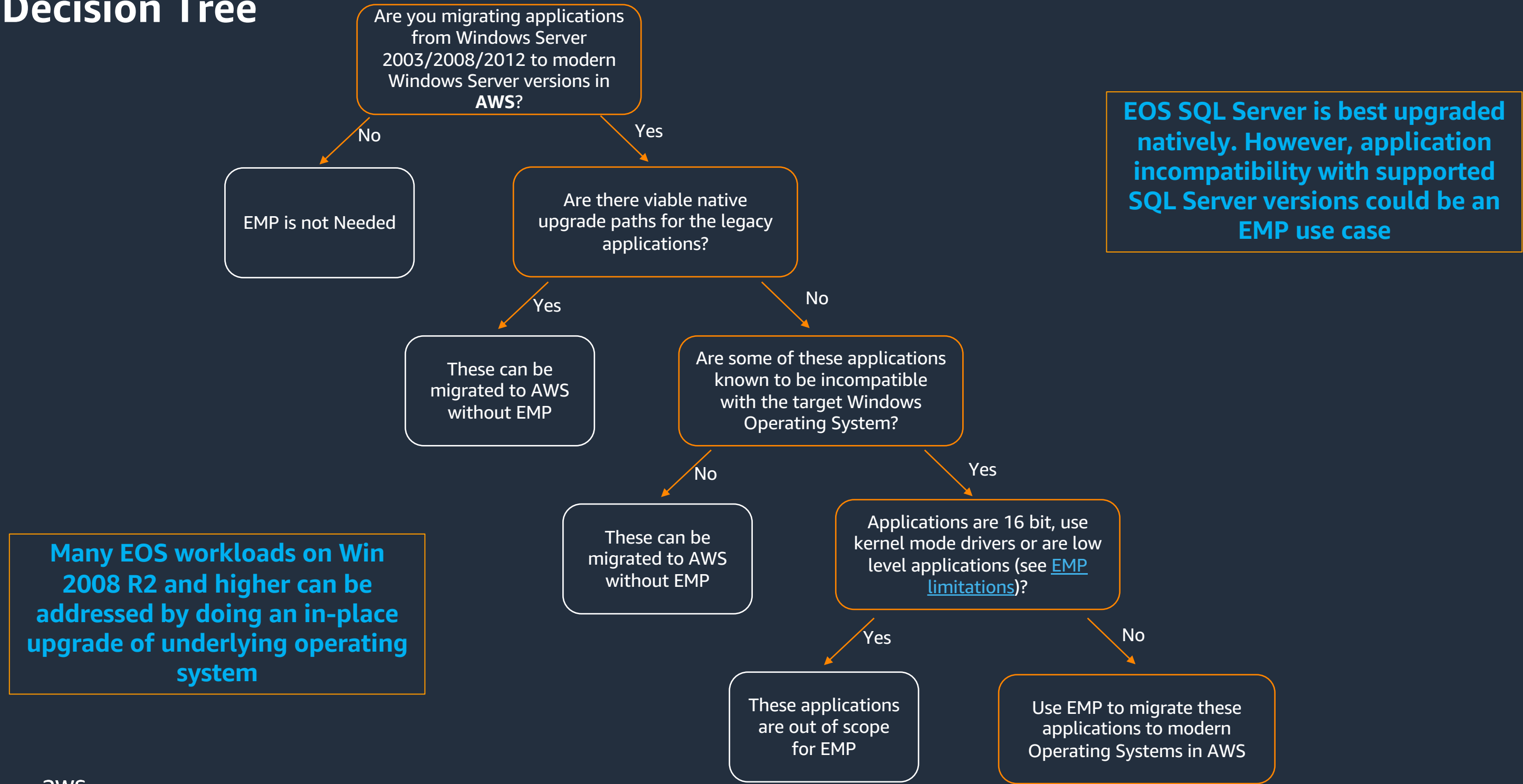


Tooling (no cost)

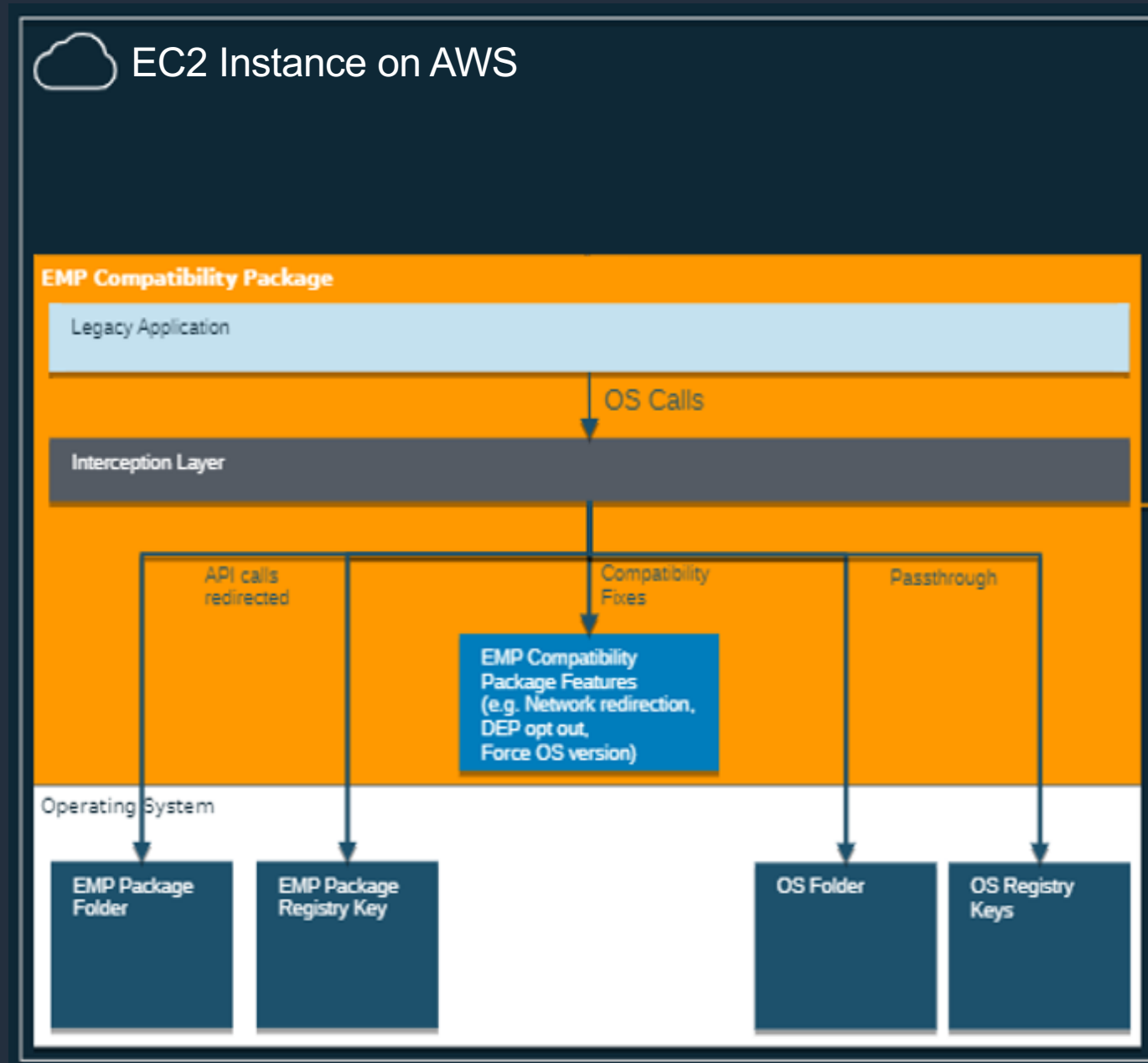


Experts (optional)

Decision Tree



What does a deployed packaged on EC2 look like?



Compatibility package features

Redirection

Intercepts Windows API calls as the application interacts with local operating system returning the resources expected by the application regardless of OS

Isolation

Runs older versions of runtimes that can only be accessed by packaged application

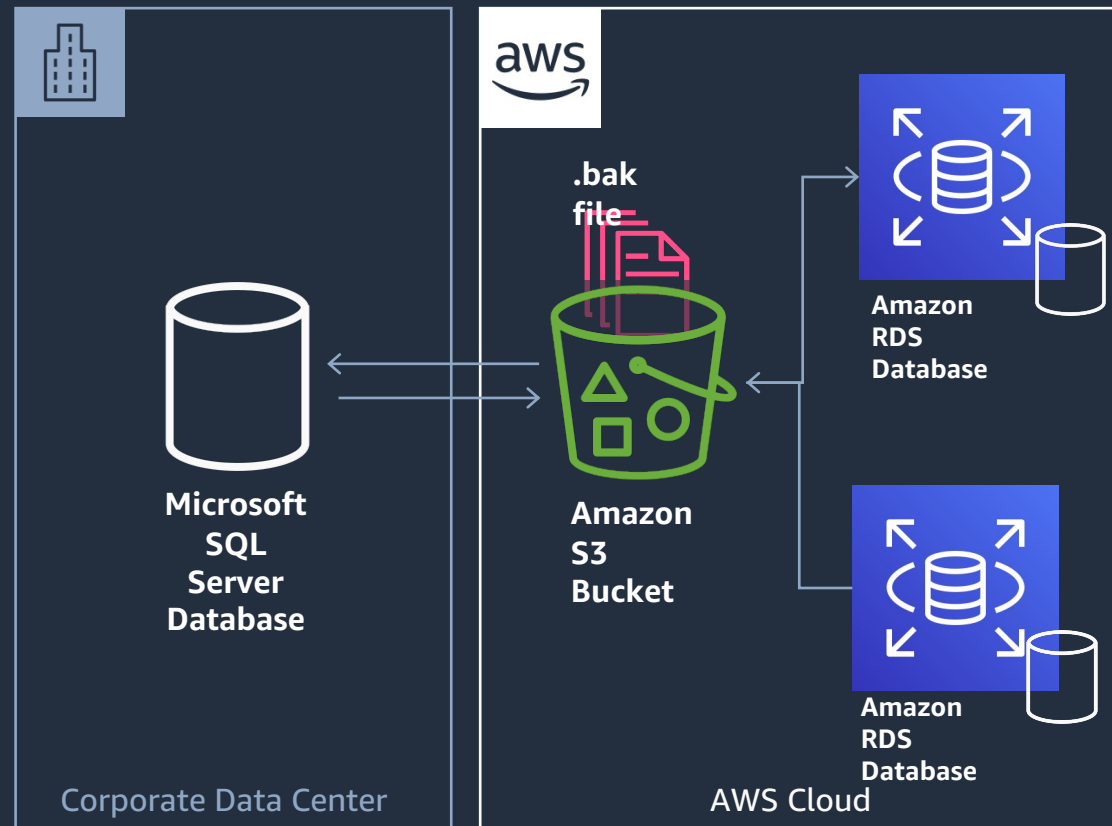
Compatibility

Resolves OS incompatibilities while maintaining integration with other applications and services

Migrating Databases



Importing and Exporting SQL Server Databases



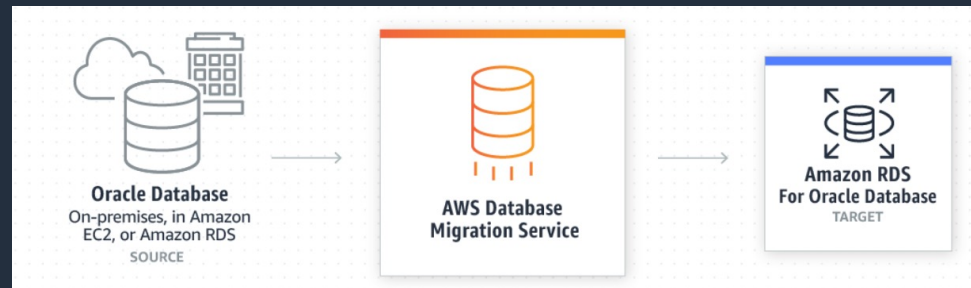
- Migrate databases to Amazon RDS.
- Move databases between Amazon RDS SQL Server DB instances.
- Import and export data.
- Migrate schemas, stored procedures, triggers and other database code.
- Backup and restore single databases
- Testing, training, and demonstrations.

Amazon
S3

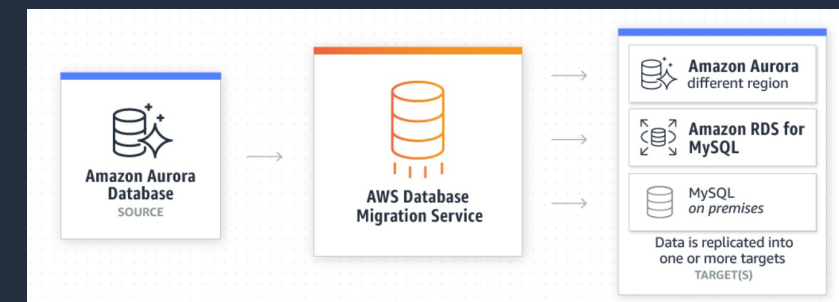
Amazon
RDS

AWS Database Migration Service (AWS DMS)

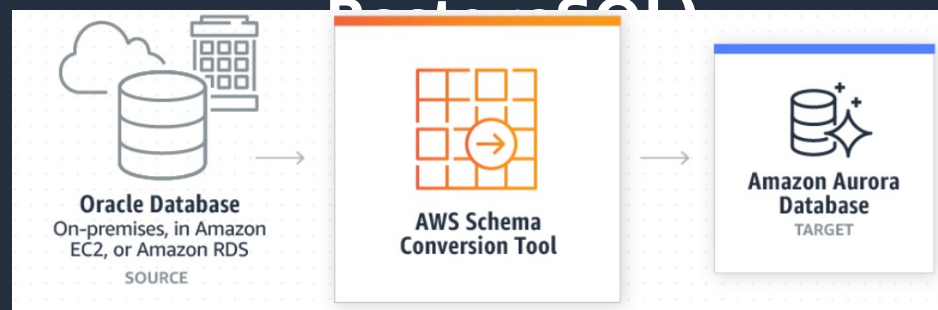
Migrate databases to AWS
(Amazon EC2 or Amazon RDS)



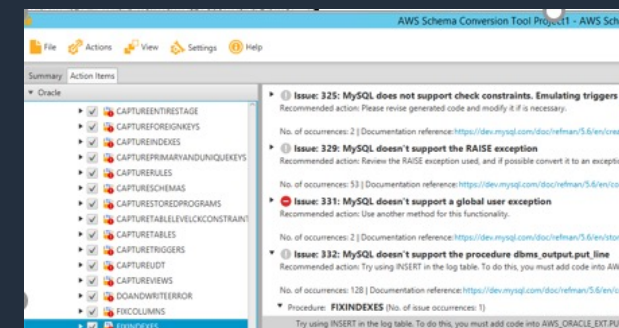
Continuous data replication for minimal downtime migration, DR or Dev/Test



Migrate between database engines (e.g. Microsoft SQL to Amazon Aurora PostgreSQL)



Automated schema conversion with Schema Conversion Tool (AWS SCT)



Multiple detailed playbooks describing how to perform migrations

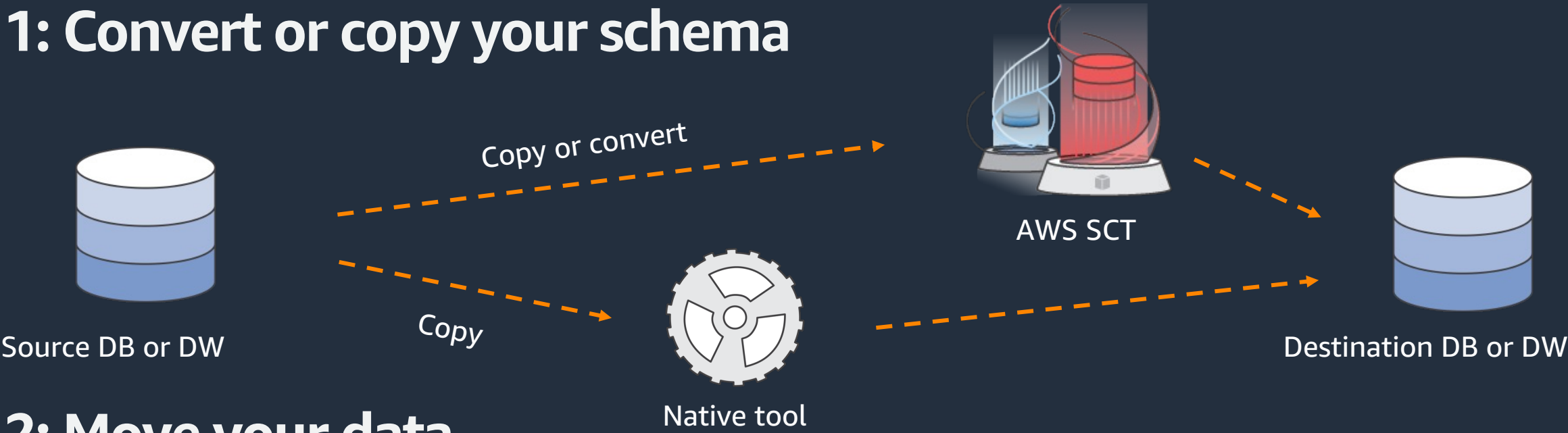


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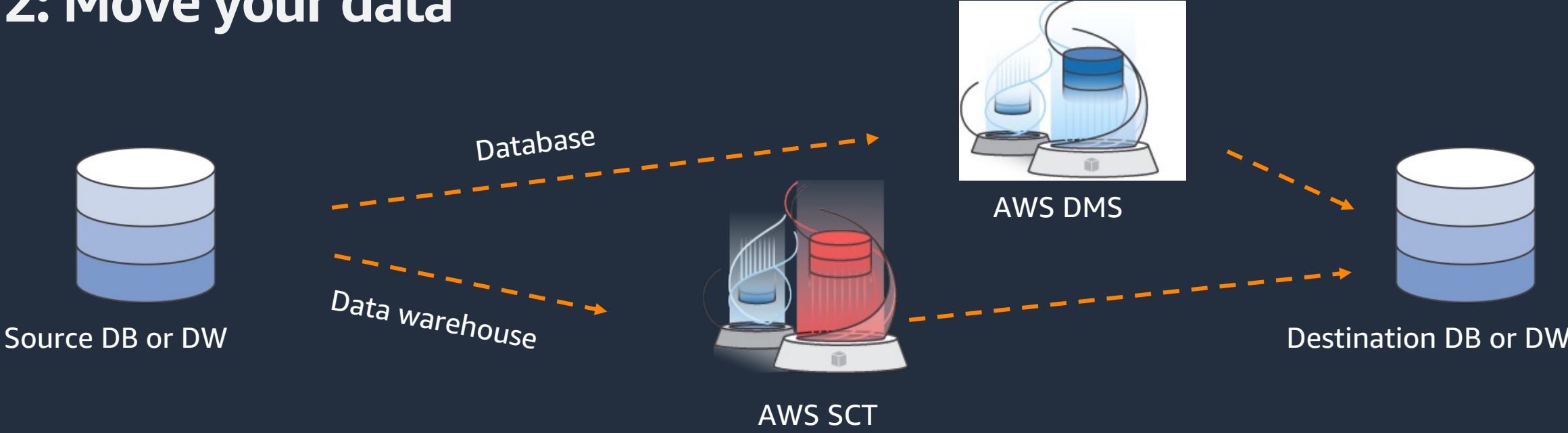
available at <https://aws.amazon.com/dms/resources/>

Database migration process with AWS DMS

Step 1: Convert or copy your schema



Step 2: Move your data



Migration method: Which should I use?

	Backup/ Restore	Transactional Replication	AAGs	Log Shipping	DB Mirroring	DMS/ SCT	Snowball
SQL Server Standard	✓	✓		✓		✓	✓
SQL Server Enterprise	✓	✓	✓	✓	✓	✓	✓
On-going Replication		✓	✓	✓	✓	✓	
Migrate Specific DB Objects (e.g. sprocs, tables, indexes, etc.)	✓	✓				✓	
SQL Server 2008/2008R2	✓ (ALL)			✓ (SE,EE)	✓ (EE)	✓ (ALL)	✓ (ALL)
SQL Server 2012+	✓ (ALL)	✓	✓ (EE)	✓ (SE,EE)	✓ (EE)	✓ (ALL)	✓ (ALL)
SQL Server on EC2	✓	✓	✓	✓	✓	✓	✓
RDS for SQL Server	✓	✓				✓	✓
RDS Custom for SQL Server	✓	✓	✓ (EE)	✓ (SE,EE)	✓ (EE)	✓ (ALL)	✓ (ALL)

Migrating Storage



What is AWS DataSync?

Online transfer service that simplifies, automates, and accelerates moving data between on-premises storage and AWS



Fast data
transfer



Easy to use



Secure and
reliable



Fully
managed

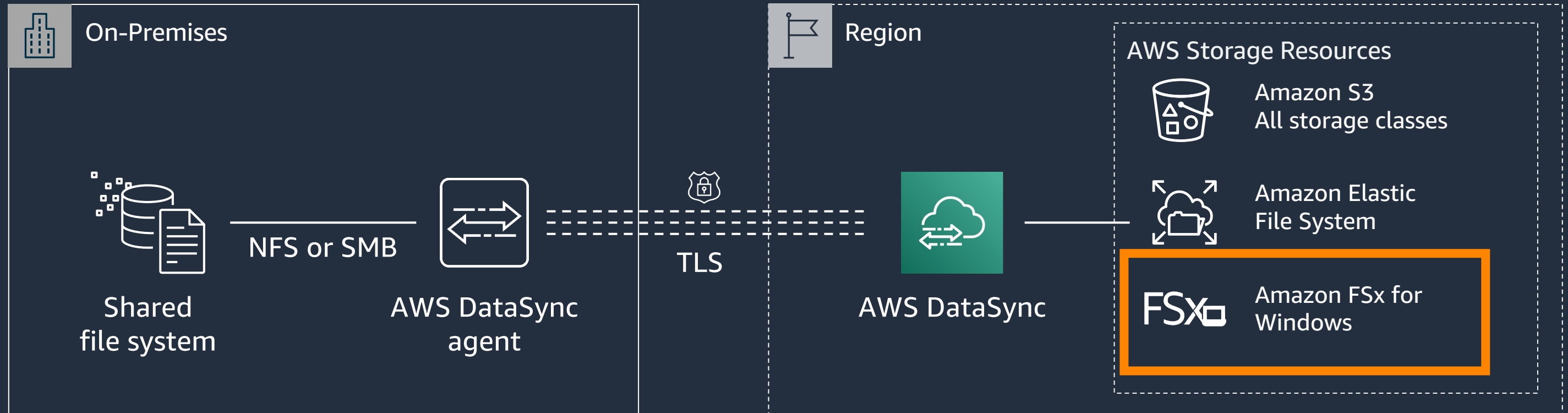


Cost-
effective

The speed and reliability of **network acceleration** software with
the cost-effectiveness of **open source tools**

AWS DataSync support for FSx Windows

AWS DataSync support for Amazon FSx for Windows



- Use fully managed AWS storage for Windows-based applications and home directories
- Easily build workflows involving in-cloud processing via Windows-specific tools
- Preserve all file-level metadata and attributes when transferring between Windows shares
- DataSync establishes and manages a secure connection to your FSx-Windows file system

Storage Gateway family



File Gateway

Store and access objects in Amazon S3 from file-based applications with local caching

File-based applications work without change



Volume Gateway

Block storage on-premises backed by cloud storage with local caching, Amazon EBS snapshots, and clones, integrated with AWS Backup

SAN-like with cloud recovery



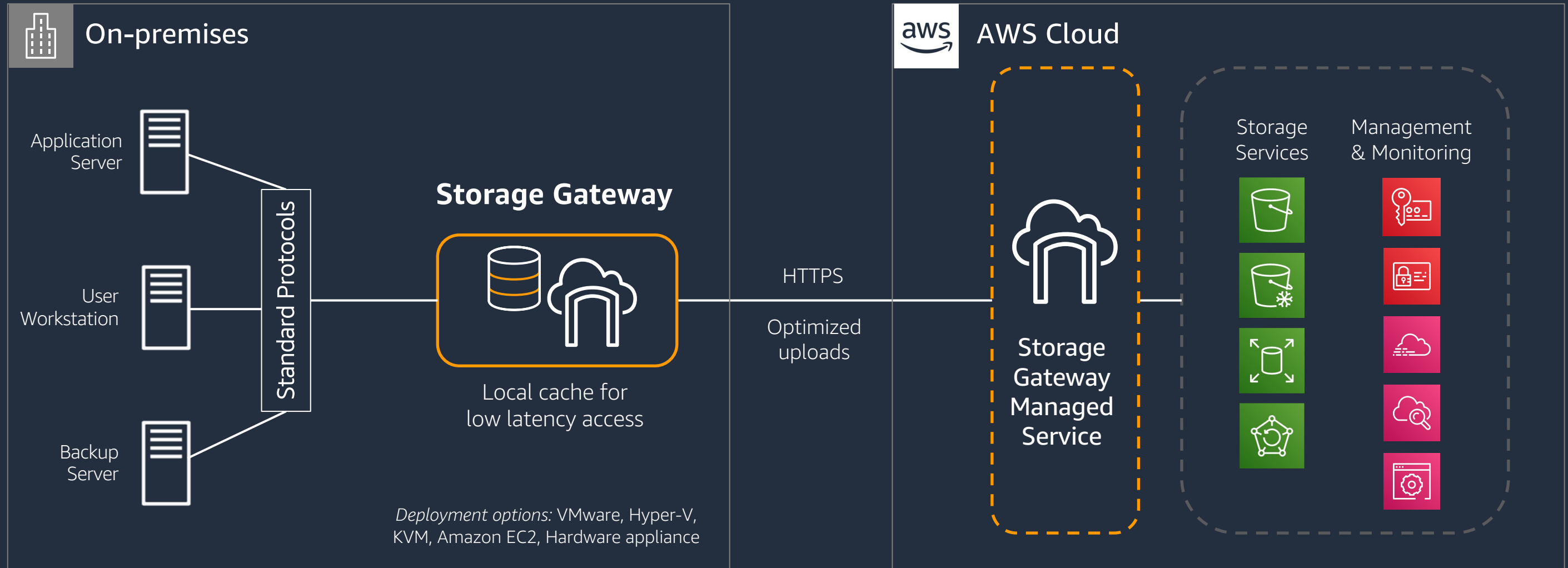
Tape Gateway

Drop-in replacement for physical tape infrastructure backed by cloud storage with local caching

Easily switch tape backups to AWS

AWS Storage Gateway

On-premises access to virtually unlimited cloud storage



When to use | Amazon FSx and File Gateway for S3

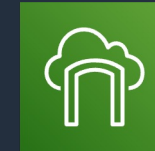
Lift-and-shift your file data to the cloud



Amazon FSx for Windows File Server

- ✓ Fully managed service
- ✓ Native file system (full NTFS/SMB compatibility and fully featured)
- ✓ Highly available (Single-AZ and Multi-AZ)
- ✓ Performance: Up to 10+ GB/s throughput and millions of IOPS
- ✓ Cost-effective
- ✓ On-premises access (multiple writers/readers)

Store and access Amazon S3 objects as files



AWS Storage Gateway (File)

- ✓ NFS/SMB access to objects in Amazon S3
- ✓ Low-latency access to S3 data with local caching
- ✓ Deployment options (VM and hardware)
- ✓ Highly available (VMware with shared storage)
- ✓ Performance: Up to ~500 MB/s local (cached) and up to ~125 MB/s network throughput
- ✓ Cost-effective
- ✓ On-premises access (single writer and multiple readers to same data)

The AWS Snow Family evolution

Data movement

Edge computing



- Set of services and functionality on the partially- to fully-disconnected and secure edge
- Enables data collection, data processing, and data movement from the Edge to AWS

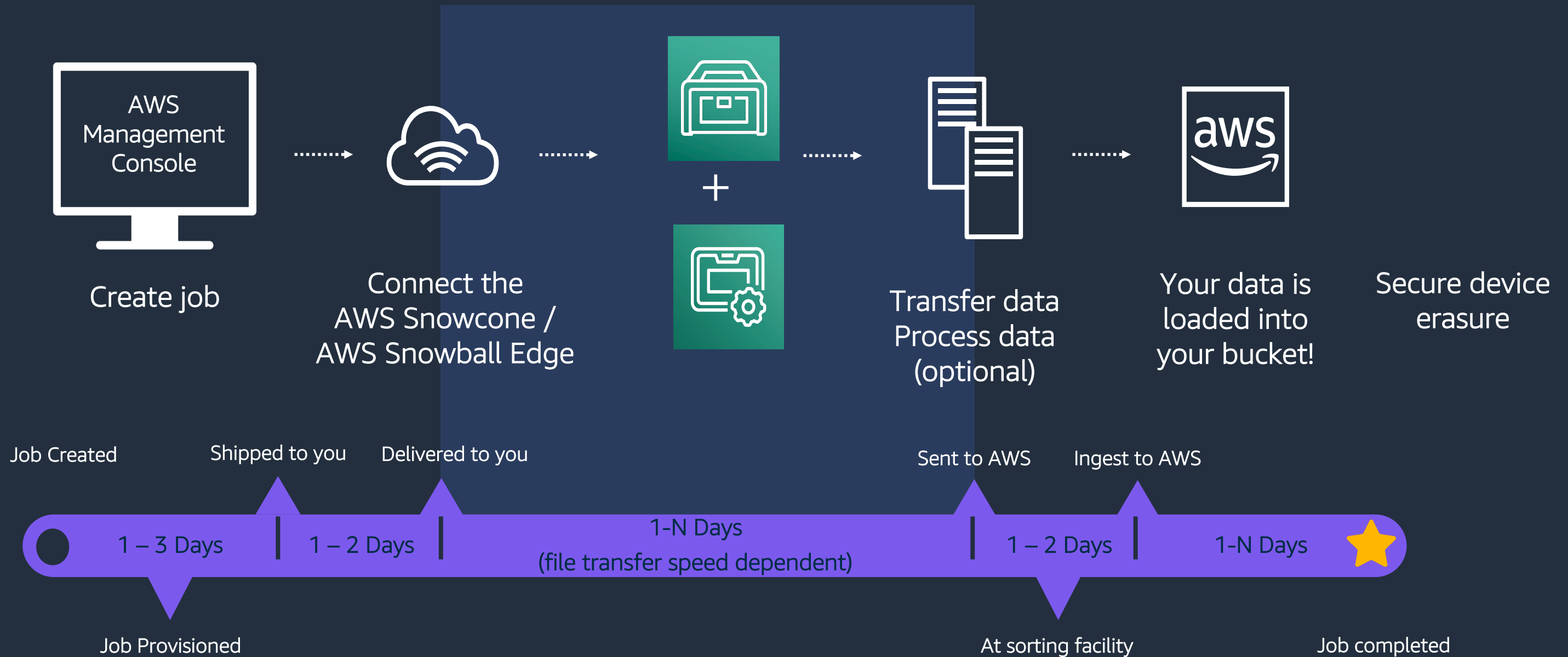
AWS Snow Family for data collection & data movement



	Snowcone	Snowball Edge Storage Optimized	Snowball Edge Compute Optimized	Snowmobile
Migration size	Up to 24 TB, online and offline	Up to petabytes, offline	Up to 28 TB offline	Up to exabytes offline
Form factor	Rugged 8.5 G impact cases that are rain and dust resistant, E Ink label for shipping automation			45-foot container, scheduled delivery
Security	256-bit encryption, tamper detection			Encryption, security staff, GPS tracking, video surveillance, alarms
Storage capacity	8 TB usable	80 TB usable	28 TB usable	<100 PB
DataSync agent	Pre-installed	-		-
Compute	2 vCPU, 4 GB RAM usable	40 vCPU, 80 GB RAM, 1 TB SSD usable	104 vCPU, 416 GB RAM,	-
Onboard computing options	AWS IoT Greengrass functions Amazon EC2 AMIs			-
Wireless	Wi-Fi	-	-	-
Portable or Mobile use	Battery based operation	-	-	-
Clustering	-	Up to 10 nodes		-



AWS Snowball Edge import workflow



Migrating .Net Applications



Modernization assistance tools

AWS App2Container

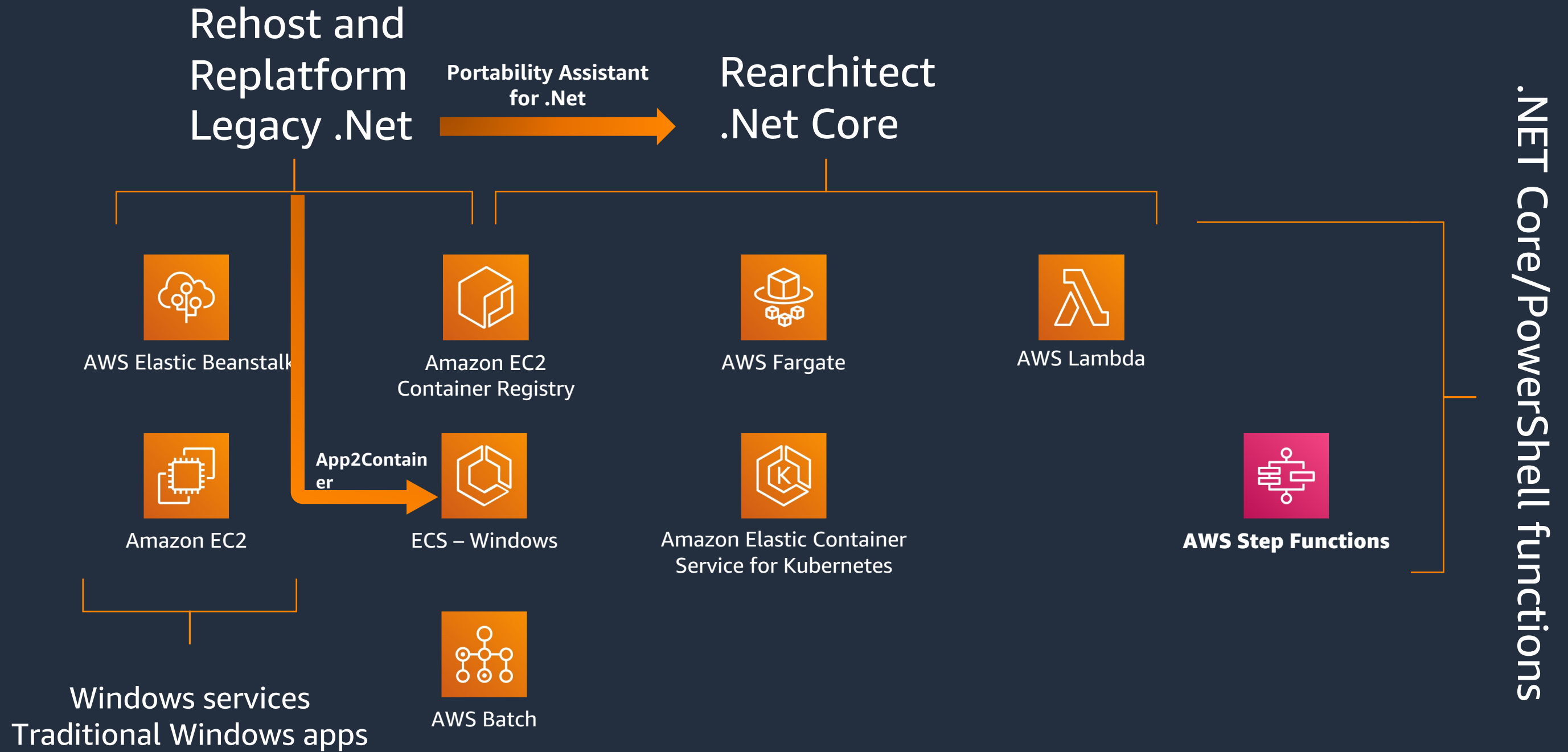
A command-line tool for modernizing .NET and Java applications into containerized applications. A2C analyzes and builds an inventory of all applications running in virtual machines, on-premises or in the cloud

Portability Assistant for .NET

An analysis tool that scans .NET Framework applications and generates a .NET Core compatibility assessment, helping you port your applications to Linux faster



.Net Applications



Accelerate your Migration



Migration Acceleration Program

Assess

Mobilize

Migrate & Modernize

Migration Readiness Assessment (MRA)

Business Case	2.9
High Level Business Case	2.3
Key Stakeholder Sign-off	4.0
Migration Funding Commitment	4.0
Specific Migration Workloads Committed	3.0
Detailed Business Case	1.0
Customer Migration Project Plan	1.0
Determine Delivery Model & Approach	2.0
Project Management Capability	1.0
Migration Plan	2.0
Skills & COE	2.0
Single Threaded Leader	5.0
COE Resource Commitment	2.0
Experience baseline	3.0
Design or Evolve COE	1.0
Organizational Training	1.0

Migration Business Case



Rapid Discovery



TCO Report



Discovery & Planning



Landing Zone



Skills / Center of Excellence



Migration Experience



Business Case



Migration Plan

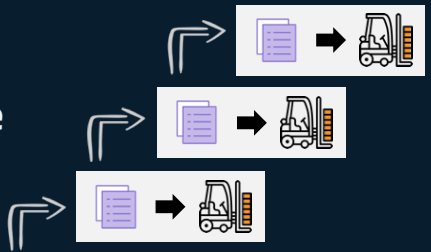


Operating Model



Security & Compliance

Migrate



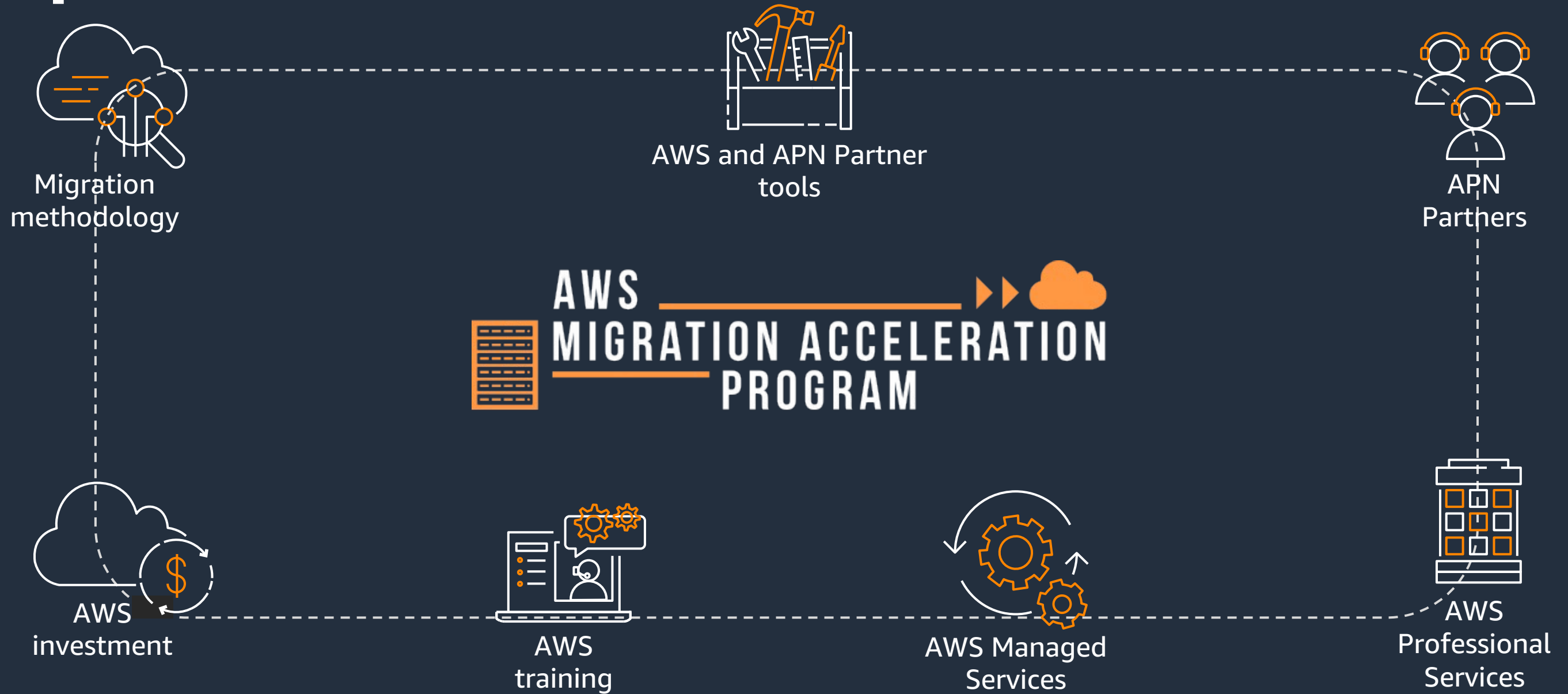
Operate



Optimize



The most comprehensive set of services and expertise



Partners to help you migrate



- ➔ AWS Migration Competency Partners (80+)
- ➔ Established AWS migration practice
- ➔ Current managed services or devops competency

- ➔ At least advanced level AWS Consulting Partner
- ➔ AWS certifications and certified consultants
- ➔ Audited annually against competencies



Thank you!

Siddharth Mehta
mehtasid@amazon.com

Jerroll Harewood
jerrollh@amazon.com

Jake Ignatius
jakeign@amazon.com