
AWS
re:Invent
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ENT224

Tackle complex migrations with VMware Cloud on AWS: Lessons from Aon

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Aon

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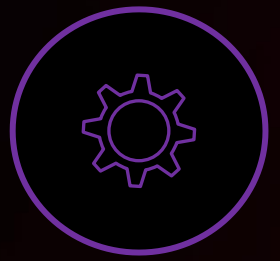
The difficulty of large-scale migrations

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People



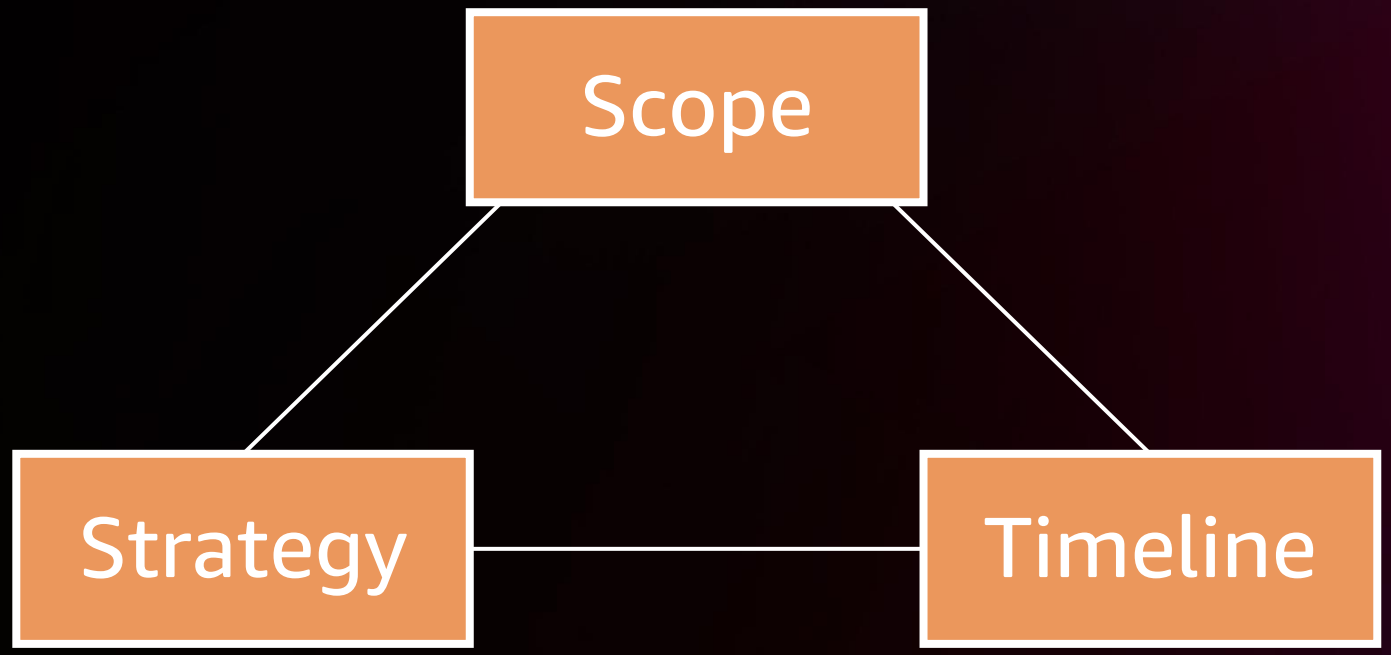
Process



Technology



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Scope – What are you migrating?

01 Scope will change, because large migrations come with unknowns

02 Recommend investing some time in defining the scope, working backwards from your target business outcomes

03 Key is to be flexible and have contingency plans in place to keep the program moving forward

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Strategy – Why do you want to migrate?

01 Understand what your drivers are, to communicate with them, and to prioritize them

02 Keys to success is alignment of requirements across the various stakeholders and teams

03 Businesses want to modernize applications, which can result in infrastructure upgrades, while the infrastructure team wants to be frugal and minimize infrastructure changes

04 “Migrate first, then modernize.”

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Timeline – When do you need to complete the migration?

01 Have defined, fixed timelines and outcomes, with little room for extensions or overrun

02 If your driver for migrating is based on a fixed date of completion, you must choose the strategy that meets that timeline requirement

03 In these time-sensitive types of migrations, we recommend the “migrate first, then modernize” approach

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AWS uses a structured approach to drive migration success

Assess

Discovery and assessment



Rapid discovery



TCO report



Briefings and workshops



Migration Readiness Assessment

Mobilize

Build momentum and gain experience

Portfolio



Discovery and planning



Migration plan



Business case/AWS Migration Evaluator



Migration experience

Migrate

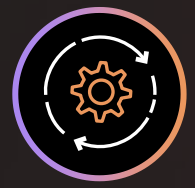
People



Skills/center of excellence



Landing zone



Operating model



Security and compliance

Platform

Migrate & modernize

Accelerate, scale, and modernize



Scale

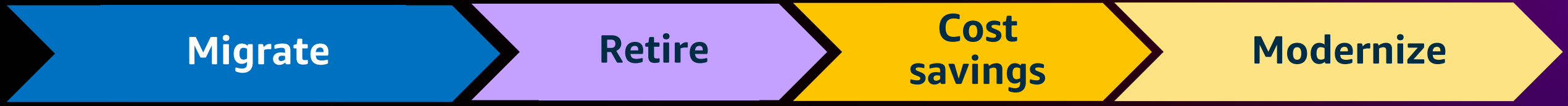


Operate and optimize



Modernize

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31%

Average infrastructure cost savings

62%

IT staff productivity boost

43%

Fewer security incidents per year

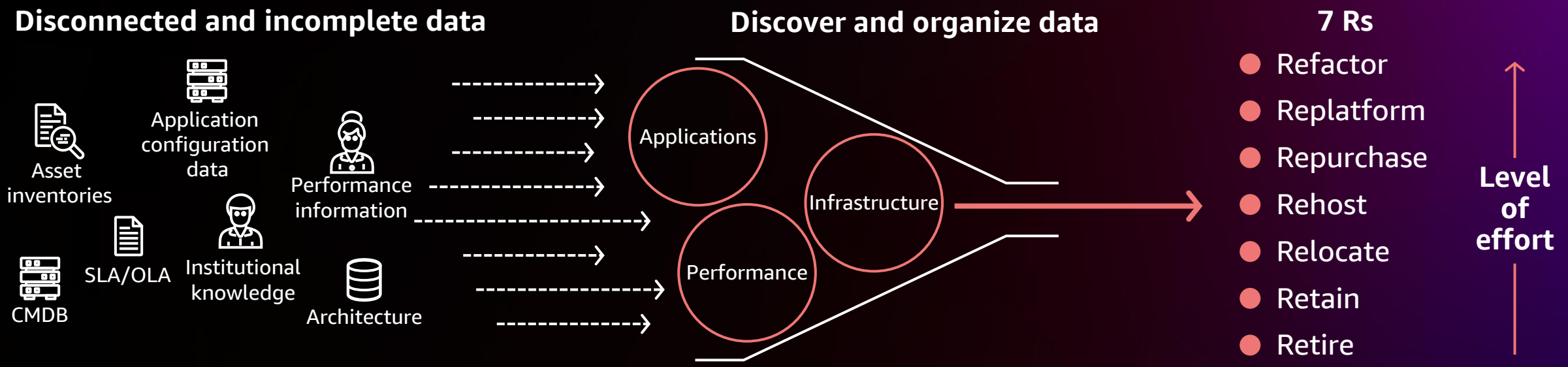
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Migration strategies and best practices

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Migration planning



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Application migration strategies



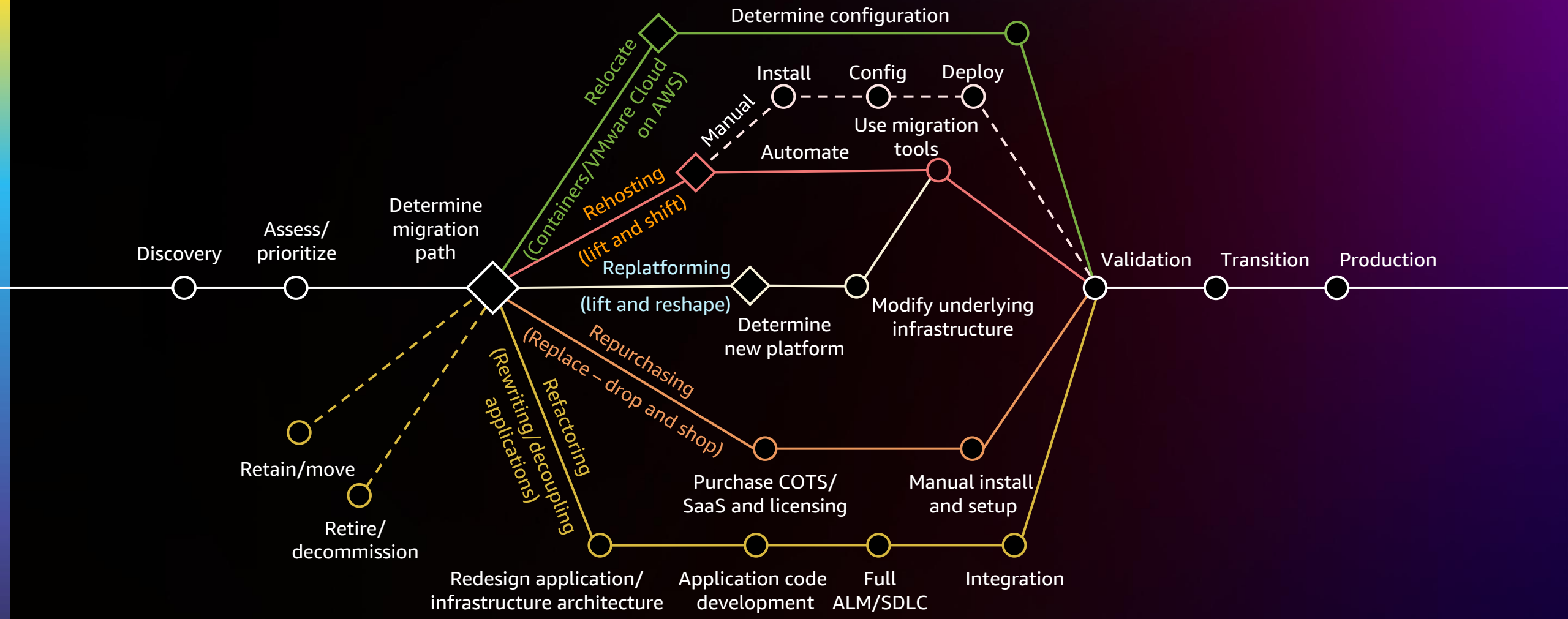
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Application migration strategies: Relocate



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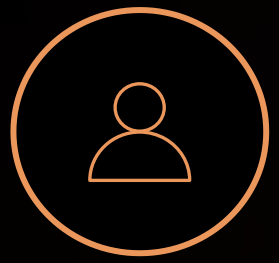
Choose your strategies as you plan and execute



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Best practices for large migrations

People



Process



Technology



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People



Executive support

Team collaboration and ownership

Training

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Process



Preparing for your large migration

Running your large migration

Implement multiple phases for any additional transformation

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Technology



Automation, tracking, and tooling integration

Prerequisites and post-migration validation

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VMware Cloud on AWS at Aon

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Aon is in the business of better decisions

Aon exists to shape decisions for the better — to protect and enrich the lives of people around the world. Our colleagues provide our clients in over 120 countries with advice and solutions that give them the clarity and confidence to make better decisions to protect and grow their business.

50,000

colleagues around the world

120+

countries with Aon clients

Through our experience, global reach and state-of-the-art analytics, we are better able to help clients meet rapidly changing, increasingly complex and interconnected challenges across four areas of need:

- Navigating new forms of volatility
- Building resilient workforce
- Rethinking access to capital
- Addressing the underserved

Commercial Risk Solutions

Shifts in technology, economics and geopolitics are creating unprecedented Volatility. We help clients identify, measure and manage their risk exposure

$75B+

of bound premium placed annually

Health Solutions

Health is declining, costs rising, and workers have vastly different needs. We help companies improve employee health and wellbeing while managing costs.

$180B

of healthcare premium directed annually[1]

Reinsurance Solutions

Businesses, governments and communities need to become more resilient. Our expertise and insight help (re)insurers navigate uncharted territories and create more relevant solutions.

$45B+

of bound premium placed annually

Wealth Solutions

Global business is becoming increasingly difficult to navigate. We help employers, fiduciaries and investment officers optimize results and provide a more secure future for their stakeholders.

$4.1T[2]

of assets under advisement

[1] Includes $30B of fully-insured premium and $150B of self-insured premium equivalents.
[2] As of 6/30/2021, includes non-discretionary assets advised by Aon and its global affiliates which includes retainer clients and clients in which Aon and its global affiliates have performed project services for over the past 12 months. Project clients may not currently engage Aon at the time of the calculation of assets under advisement as the project may have concluded earlier during preceding 12-month period.

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Advancing Aon technology

TECHNOLOGY MARKERS

Technology is at the heart of Aon's business of better decisions; the tech markers below represent our vision to modernize Aon technology, and delivering them in an agile and secure way to our colleagues and clients is our core value

CLOUD SMART

Smart, cloud-native applications and infrastructure to deliver exceptional stakeholder experience

DATA FIRST

Centralized data-centric solution design enabling integrated digital experiences

IDEA TO LAUNCH

Agile development and rapid deployment of disruptive products with self-service and automation



ANY (DEVICE), ANY (APPROVED APP), ANY (WHERE)

Enhanced workforce mobility with flexible collaboration platforms and device integration

DIGITIZED BUSINESS PLATFORMS

Digital business "as a service" with cloud-enabled, reusable solutions focused on business value

Continuous investments were made in cybersecurity, policy, process, technology, and culture to stay current with changing regulatory environment and external threats

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The Opportunity



- Tech Refresh DC or Migrate DC
- Complete migration within tight deadlines
- Shift from DC-Centric DR to Application-Level DR
- Improve security posture and uplift environment
- Increased data privacy, compliance and regulatory demands

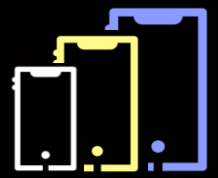
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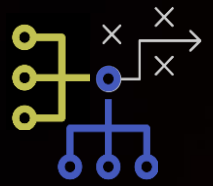
Application landscape

AON

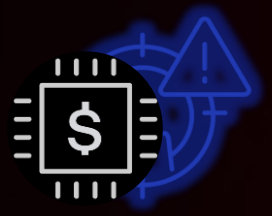
challenges



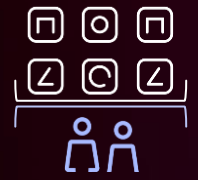
Monolithic



Complex



Technical debt



Large number of apps



Lacked agile delivery capability

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VMware Cloud on AWS drivers



Business outcomes

- Revenue growth
- Speed to market
- Cost management
- Risk management



Alignment to Aon's technology marker

- Cloud-smart
- Agility
- Global business platforms



Capabilities

- Software-Defined Data Center
- Application-level DR
- Access to AWS Cloud PaaS services
- Re-deployable across Regions



Operating benefits

- Eliminates infrastructure lifecycle management
- Financial fungibility
- Capacity on demand
- Licensing optimization
- Run rate reductions (data center, software, hardware, support)

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VMware Cloud on AWS – Solution overview

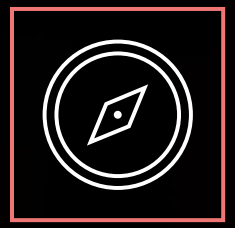
VMware offered Software-Defined Data Center (SDDC) running on AWS

- VMware manages and monitors the underlying foundation that's built on AWS resources
- Aon deploys and configures the Software-Defined Data Center
- Aon deploys and manages the actual workloads in the vSphere environment
- VMware Cloud on AWS provides closer integration with native PaaS services



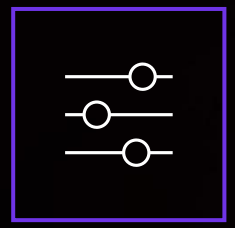
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Migration Approach



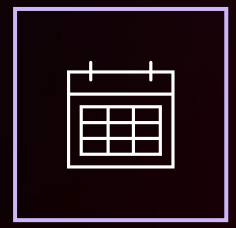
Guiding Principle

Migrate first, then Modernize based on App Rationalization



Four Swim Lanes

- Strategic global business platforms to migrate to AWS
- Legacy platforms to migrate to existing CoLos (Solaris etc.)
- Iseries to migrate to managed services
- Rest of the applications to migrate to VMWare Cloud on AWS



Timeline

- Duration: 10 Months
- Start: Feb 2022
- Planned completion : Dec 2022



Scope

- 280 Applications
- 1800 servers
- 306TB End user file share data

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AWS as a migration partner



- Infrastructure transformation and migration
- Migration wave planning
- Application dependency mapping
- Optimizing migration process
- Tooling
  - AWS Migration Hub for discovery
  - AWS Server Migration Service (AWS SMS) for migration to Amazon EC2
  - VMware HCX for migration to VMware Cloud
- Support during and after migration

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What worked well

Business priority

- Aon United approach to address issues and delays encountered

Technology

- Key platform functionality tested and validated prior to program launch
- Platform availability and stability were not key risks

Partners

- All partners leaned in with thought leadership and support

Process

- Guiding principles established early – migrate and then modernize
- Agile approach to process refinement
- Net new deployments limited until program completion
- Transparent reporting of risks and issues
- Clear accountability model

People

- Persistence, dedication and hard work by the Core team across Aon and partners

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Considerations for future migrations

Business priority

- Plan for macro events and changing business priorities

Process

- Simplify migration processes
- Engage application owners as early as possible
- Discovery (continuous refinement)

Technology

- Do not underestimate platform integration complexity

Compliance, regulations, privacy

- Significant client notification and consent requirements
- Account for regulatory compliance requirements
- Data privacy requirements on a per-country basis

Partners

- Keep your partner ecosystem simple

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Next steps



Program completion

Incorporate lessons learned

Revise global hosting strategy

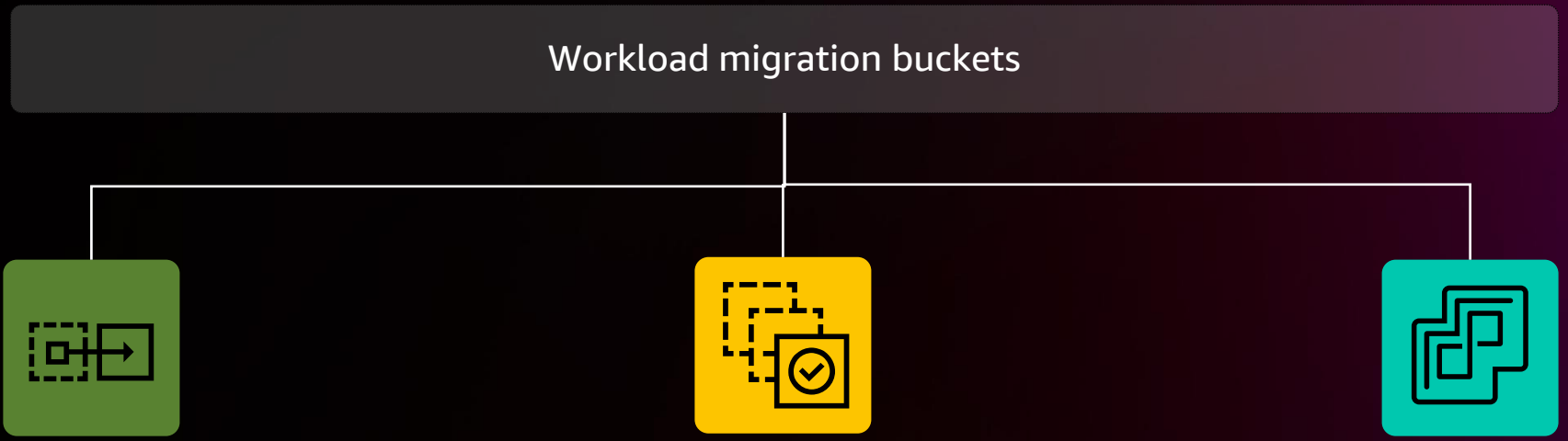
Execute for rest of EMEA and other regions

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Making migrations simple with VMware Cloud on AWS

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Migration options



Downtime

Cold Migration

HCX Cold Migration

Backup and restore

OS Assisted Migration

Minimal downtime

HCX Bulk Migration

No downtime

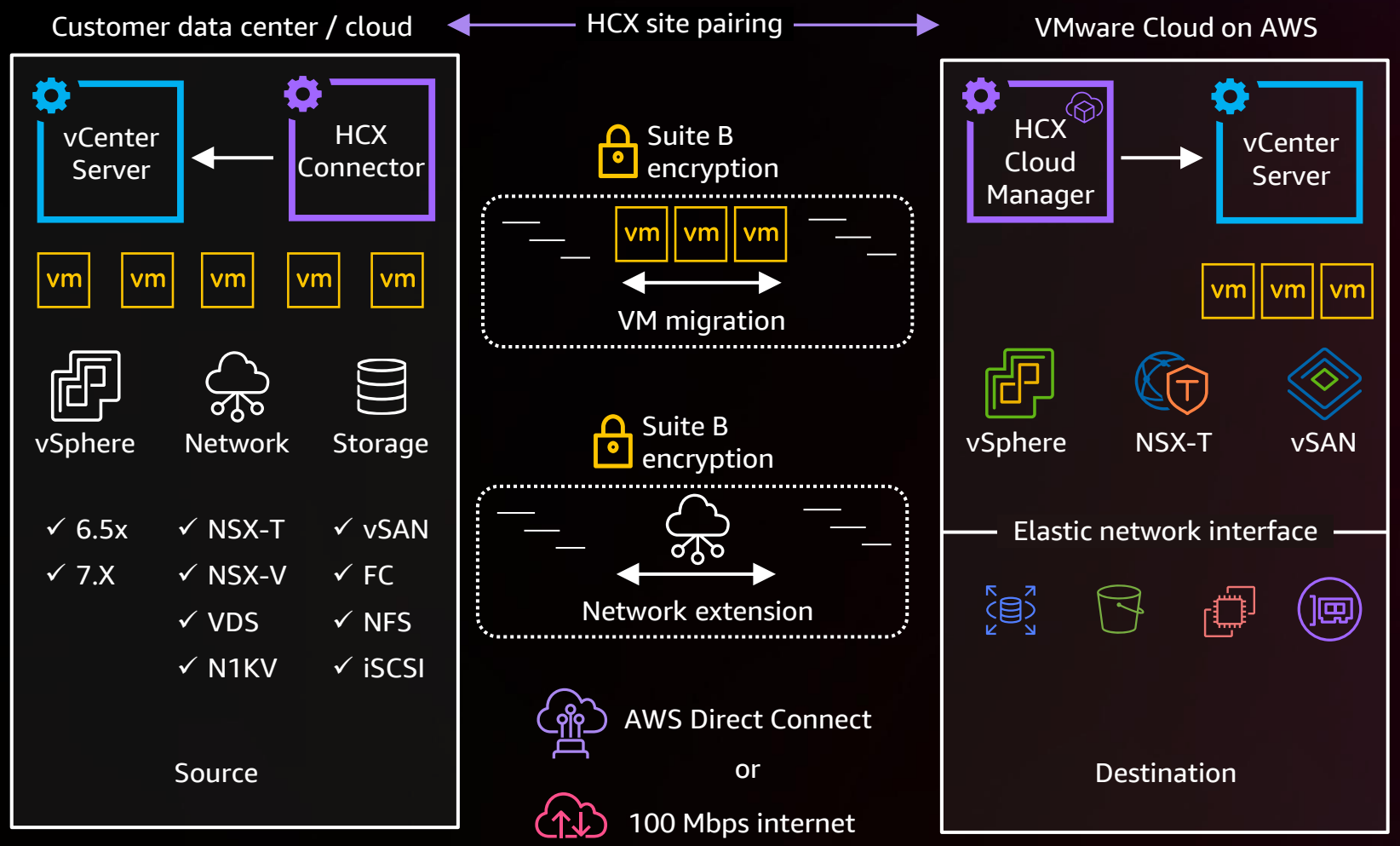
vMotion

HCX vMotion

HCX Replication Assisted vMotion

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VMware Hybrid Cloud Extension (HCX) service



Included with subscription for VMware Cloud on AWS

Supports vSphere 6.5x, 7.x (check interoperability)

Online and offline VM migration at scale options

Agnostic to on-premises vMotion network design

Built-in WAN optimization, de-dupe, and compression

Accessible via

- vSphere HTML5 plugin
- HCX standalone client
- HCX API and PowerCLI

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Lessons learned: Pre-migrations



- Right-sizing your workloads
- Network setup takes time – account for it in planning
- On-premises version and compatibility
- Look at migration partners or take advantage of POC programs
- Map application dependencies
- Bring your IT and your cloud team together
- Understand added costs during migration
- MAP credits can smooth the way

Biggest lesson learned: understand dependencies

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Lessons learned: Post-migrations



Review Day 2 activities

Security is critical – lock down environments!

Clean up resources as you go

Utilize AWS services, such as Amazon S3 and Amazon FSx for storage use cases

Optimize for performance

Review your disaster recovery plans

Complete a Well-Architected Review for your workloads

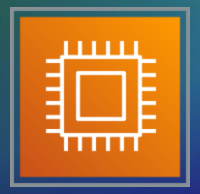
Biggest lesson learned: performance optimization

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What’s new



Storage



Compute



Backup



Networking

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Introducing new instance type: I4i.metal

MORE COMPUTE, MORE MEMORY, MORE STORAGE



As compared to i3.metal instance type:

2x compute

2x memory

Up to 3x networking speed

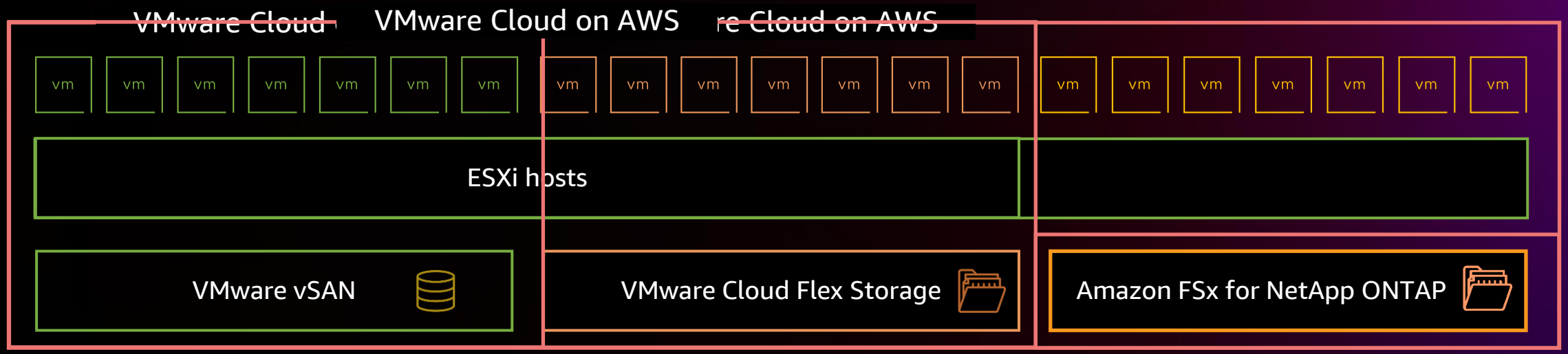
- 3rd Gen Intel Xeon Ice Lake at 2.4 GHz / Turbo 3.5 GHz
- Up to 128 vCPUs
- Up to 1,024 GiB memory
- 64 physical cores, 128 logical cores with Hyper Threading (HT)
- 30 TB NVMe (raw local AWS nitro SSD capacity)
- Up to 75 Gbps networking speed
- Always-on memory encryption
- Use cases: general purpose workloads, database workloads (like transactional databases), NoSQL databases, Amazon Kinesis Data Analytics workloads, and Distributed File Systems

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Introducing new storage options for VMware Cloud on AWS

NEW SERVICES TO MEET A WIDE RANGE OF STORAGE PERFORMANCE AND CAPACITY REQUIREMENTS



- Scale-out direct attached storage
- Primary storage for balanced compute-storage workloads
- VM-centric storage management

- VMware-managed cloud service
- Supplemental, independently-scalable storage for capacity-heavy workloads
- Natively integrated service

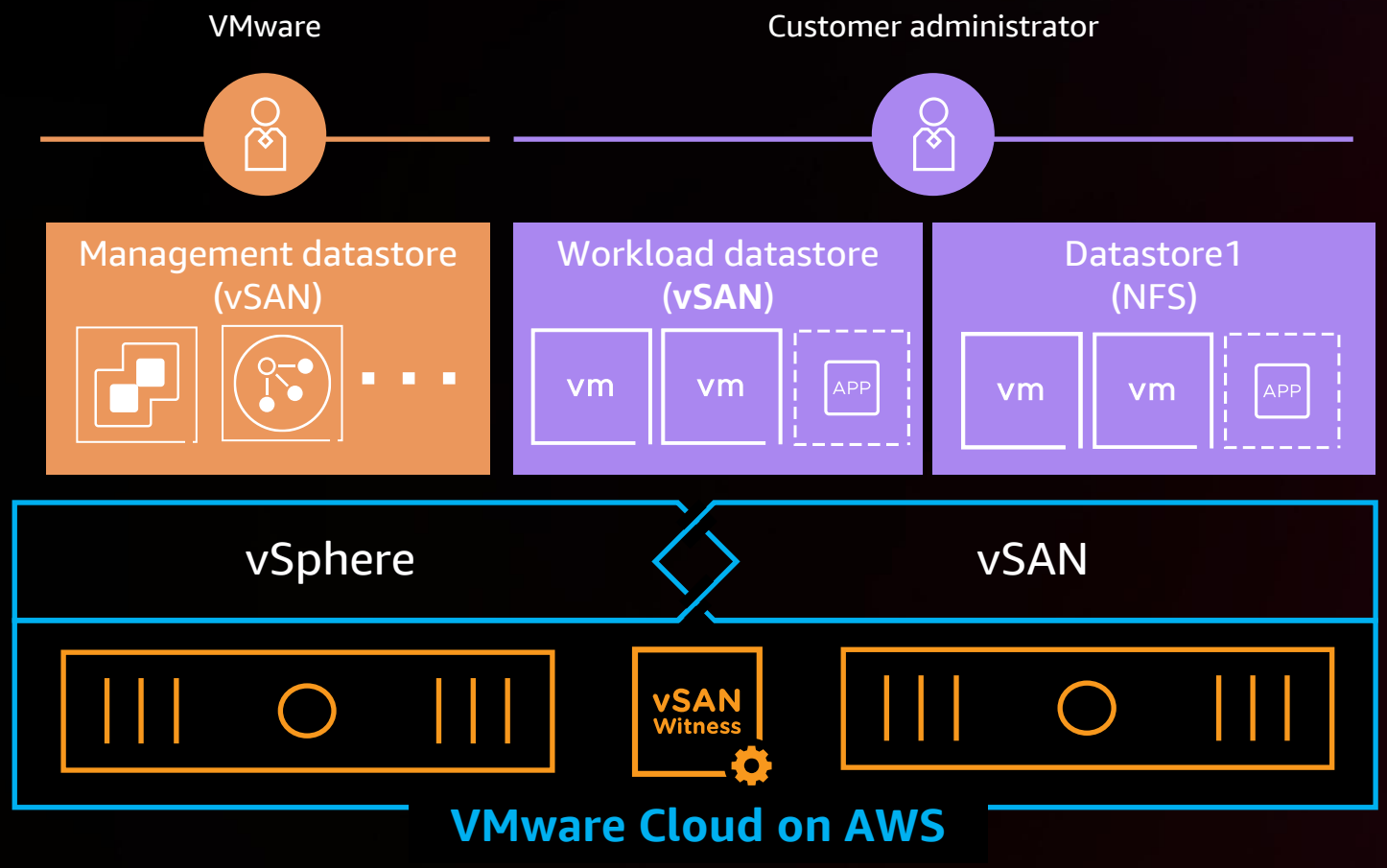
New

- AWS-managed cloud service
- Supplemental, independently scalable storage for capacity-heavy workloads
- Consistent ONTAP experience

New

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Supplemental NFS datastore support for VMware Cloud on AWS



NFS datastores

- Generally available
- 4 datastores per cluster
- API and user interface integration

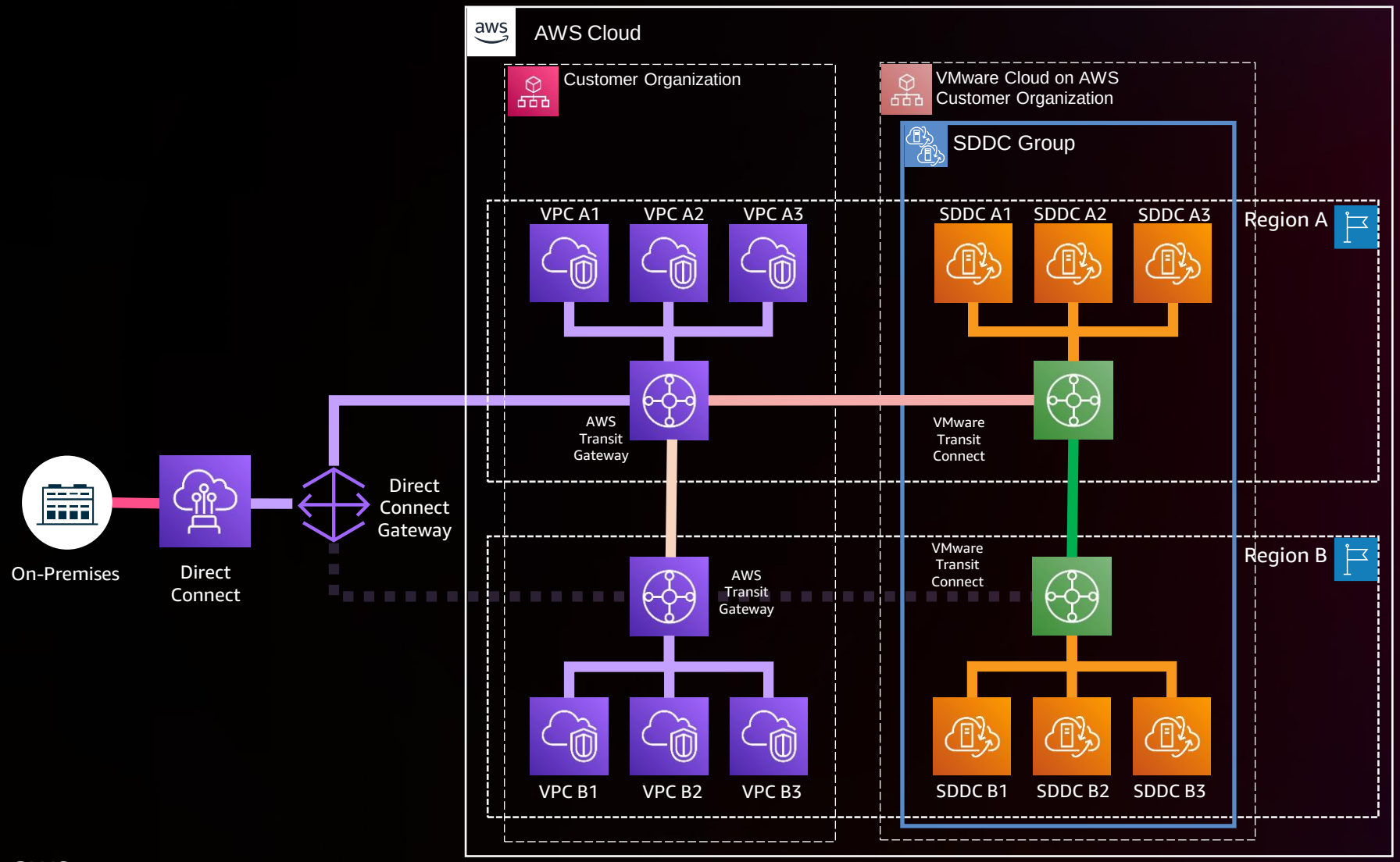
Benefits

- Right-size storage to control cost
- Full access to ONTAP's enterprise data management capabilities
- Accelerate migration – rehost on AWS without changing code or how you manage your data

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VMware Transit Connect

SIMPLIFYING MULTI-ENVIRONMENT CONNECTIVITY AT SCALE



- High-bandwidth, low latency connectivity based on AWS Transit Gateway
- VMware managed networking eliminates management overhead
- Automated and simplified provisioning and control of connectivity
- Automatic scaling provides users with flexibility

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Introducing AWS Backup for VMware

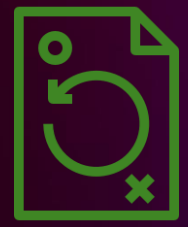
3 MAIN PILLARS OF AWS BACKUP FOR VMWARE



Single, centralized data protection solution for hybrid VMware workloads



Flexible restore options – on-premises and VMware Cloud on AWS



Ability to use same backup policy across AWS-native services and VMware workloads

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Wrapping up

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Get started with AWS Rapid Trial Program

- Self-service 14-day trial for new customers and partners
- Provides 2 on-demand nodes for your proof of concept (POC)
- Post-POC
  - Continue to use in on-demand fashion
  - Move to AWS Try and Buy program
  - Purchase a subscription through AWS

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VMware Cloud on AWS at AWS re:Invent 2022

ENT224 – Tackle complex migrations with VMware Cloud on AWS: Lessons from Aon
Breakout Session: Monday, November 28, 10:45 – 11:45 at Upper Level, Cristal 7, Wynn

PRT252 – All you need to know about architecting VMware Cloud on AWS deployments
Breakout Session: Tuesday, November 29, 2:00 – 3:00 at Level 1, Forum 121, Caesars Forum

ENT320 – Go hybrid: Migrate and modernize with VMware Cloud on AWS
Workshop: Wednesday, November 30, 8:30 – 10:30 at Level 1, Lafite 2, Wynn

ENT309 – Building a disaster recovery strategy with VMware Cloud on AWS
Workshop: Wednesday, November 30, 11:30 – 1:30 at Level 1, Grand 117, MGM Grand

ENT308 – Scaling VMware Cloud on AWS storage using Amazon FSx for NetApp ONTAP
Chalk Talk: Wednesday, November 30, 1:00 – 2:00 at Level 3, 306, MGM Grand

ENT233 – On the fast track: Accelerated migration with VMware Cloud on AWS
Chalk Talk: Wednesday, November 30, 4:00 – 5:00 at Convention Promenade, Palmer 2, Wynn

ENT223 – Resiliency in the cloud: Disaster recovery with VMware Cloud on AWS
Breakout Session: Friday, December 2, 10:45 – 11:45 at Level 1, Summit 201, Caesars Forum

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Resources and next steps

- Reference architectures
  aws.amazon.com/vmware/resources/
- Getting started with VMware Cloud on AWS
  www.vmw.re/vmc/gettingstarted
- Engage with your AWS Solutions Architect to help you get started

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Thank you!

Aarthi Raju

Rajeev Khanna



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