Your journey to the cloud

Your guide to a successful and cost-effective cloud migration.

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Table of contents

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The cloud adoption challenge – it's not about the cloud.

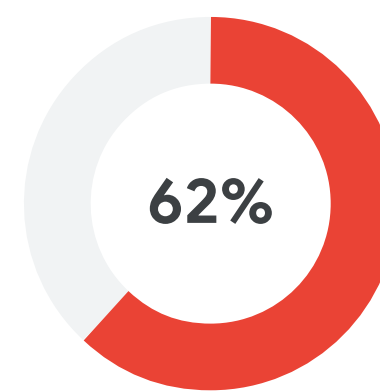**4%**

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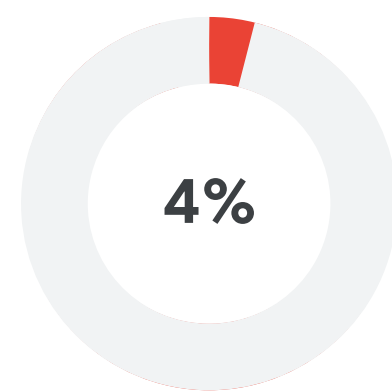
Migrating

Surge in cloud migration with 96% migrating but only 4% completion
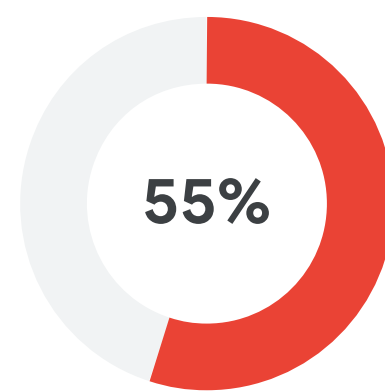
Over budget

More than half of migrations are delayed and over budget

Difficult/failed

Almost 2/3 of projects are considered very difficult or failing

"Where cloud projects fail is not so much about the cloud selection but about picking the wrong workloads to migrate and not paying attention to security, governance, and other core services."

David Linthicum, InfoWorld, Feb. 2018

"Why are application migration projects late and over budget?" by Dimensional Research, Sept. 2017

Critical considerations for a successful cloud migration

The customer focus on digital transformation centers on the need to balance between flexibility, security, cost, and speed. Public cloud is increasingly integral to that business imperative, spanning choices ranging from hybrid cloud to "all-in" single cloud and even multi-cloud optimizations. IDC forecasts public cloud services spending to total to nearly $500 billion in 2023, yet despite this growth, many organizations struggle with basic cloud migration questions.*

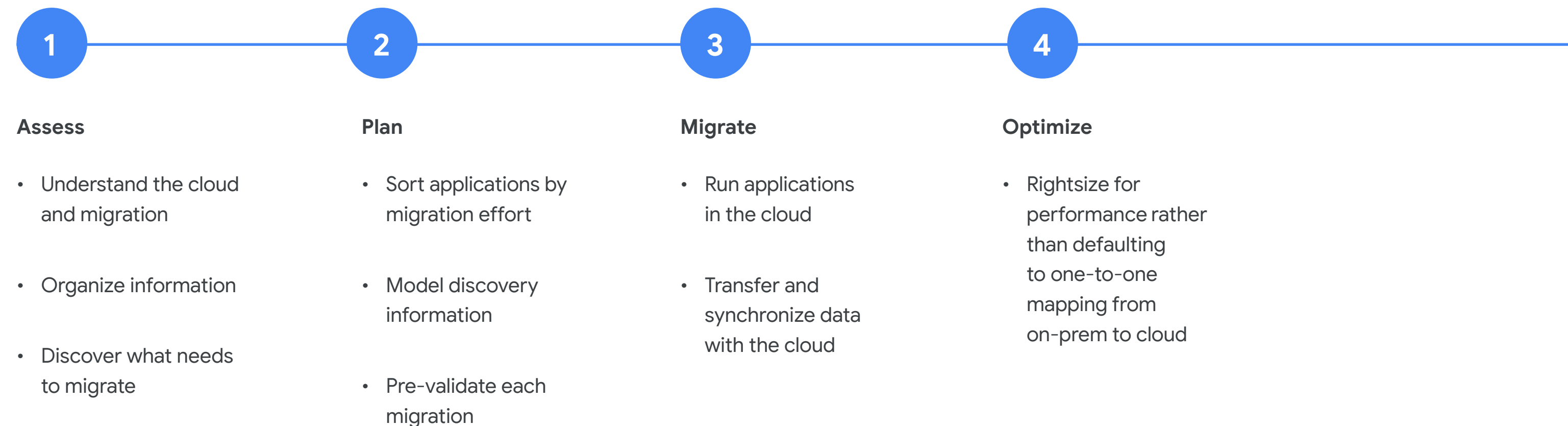*IDC, "Worldwide Public Cloud Services Spending Will More Than Double by 2023, According to IDC", July 2019

Common cloud migration questions

- Where do I begin: what apps, workloads, and databases do I migrate?

- Can I start in smaller, achievable sprints with verifiable wins or do I have to go all in?

- Will application interdependencies affect my migration sequence and success?

- Should I "lift and shift" legacy applications into the cloud or modify them for cloud operation?

- How do I eliminate complexity and ensure the performance integrity of multi-tier and stateful applications?

- How will large datasets affect my migration complexity, timeline, and cost both during migration and in-cloud?

- How do I de-risk my migration to maintain stringent application SLAs and business continuity?

- Does my IT team have the expertise, time, and tools to perform start-to-finish cloud migration?

- How does this impact my budget? Can I cost-effectively scale the migration across part or all of my applications?

- What cloud model makes sense for me?

How you answer these questions can have a long-term impact on business agility, efficiency, level of risk, and TCO. Check out how our customers navigated through various conditions into a streamlined cloud migration experience.

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Navigating the journey to the cloud

Logical steps

1	2	3	4
Assess	**Plan**	**Migrate**	**Optimize**
• Understand the cloud and migration	• Sort applications by migration effort	• Run applications in the cloud	• Rightsize for performance rather than defaulting to one-to-one mapping from on-prem to cloud
• Organize information	• Model discovery information	• Transfer and synchronize data with the cloud	
• Discover what needs to migrate	• Pre-validate each migration		

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Phase 1

Assess

Discover your IT landscape

To be successful, a cloud migration first requires a clear awareness of your existing environment.
Answering the following questions is an essential part of the discovery exercise.

- What applications do I have?

- How are my applications integrated?

- What is my resource utilization?

- What is my most important application?

- Where are devices and applications located?

- What are my bandwidth requirements?

- What problems exist in my environment?

- How should I migrate to the cloud?

- What's low-hanging fruit for optimization?

- What should I consider for business continuity?

- What is the business case for change?

- What devices exist in my environment?

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Phase 2

Plan

Organize the chaos, rationalize your migration

Planning and assessment solutions intelligently rationalize any organization's migration portfolio and save significant time and effort prior to the migration through fully automated application portfolio discovery and rationalization. This helps customers understand what applications they have, how they are integrated, what issues they have, and how they can be optimized, as well as providing ongoing performance monitoring and analysis against business objectives and industry benchmarks.

Application dependency and integration mapping is a foundational value proposition and core to the analytics your business requires.

Prioritize and rank apps prior to migration

When migrating to the public cloud, picking the right order to migrate your workloads is critical. It's paramount to a successful migration to understand which workloads are the best candidates to migrate first, and which workloads will require longer preparation.

Plan the TCO and ROI for your move to the cloud

Many on-premises data centers are overprovisioned because there was no large budgetary penalty for doing so. Simply mapping on-prem resources to cloud instances will likely lead to overrun of cloud budgets. It's critical to properly rightsize your cloud instances based on actual usage, and then model what your cloud costs will be, as well as compare those modeled costs across cloud providers to see which offers the most value.

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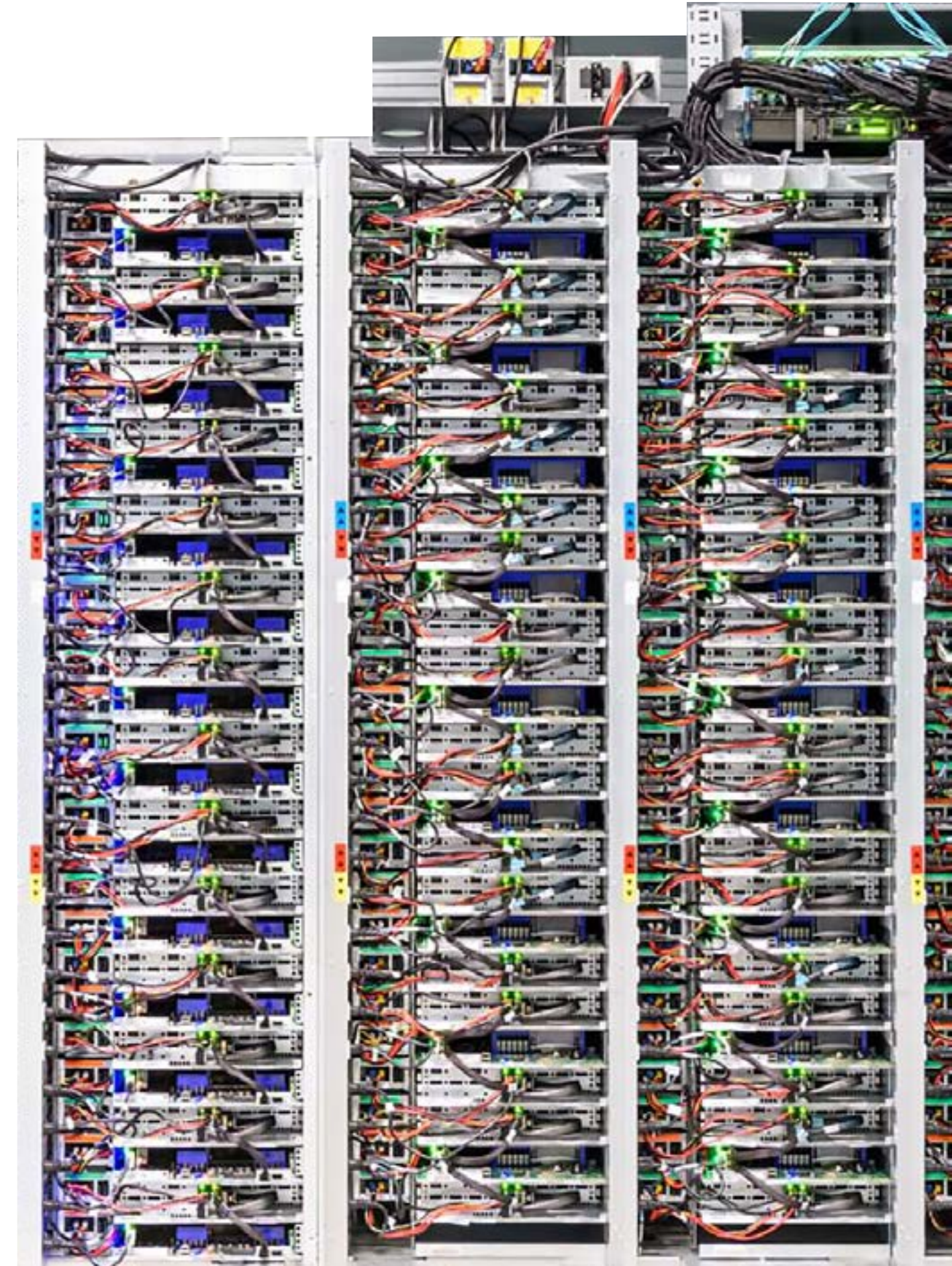
Accelerate cloud adoption with stakeholder buy-in

Pre-migration TCO justification and cloud performance validation

Having an integrated cloud migration journey that encompasses planning, assessment, migration, and optimization is key to helping you enable stakeholder buy-in and de-risk the journey for application owners prior to cloud migration.

1 Identify best opportunities to migrate and rationalize your application migration portfolio against actual usage, cost, and performance variables, eliminating waste

2 Discover application interdependencies to accurately sequence and set up migration, and eliminate related in-cloud performance issues

3 Increase migration speed by up to 10x – accelerate cloud cutover times, and eliminate TCO associated with redundant workloads on-premises and in-cloud; improve utilization from hybrid cloud or optimize cost, performance and functionality across multiple clouds

4 Reduce manual labor per server with agentless architecture, freeing staff and budget for other projects

5 De-risk application owners by pre-validating in-cloud application performance SLAs, regardless of dataset size with cloud "test-clone" capability and short proof of concepts

6 Realize a faster path to the cloud, opening the door for additional transformation and modernization projects

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Phase 3

Migrate

Challenges increase as you scale

Scale: Large scale on-prem landscape that could include hundreds or thousands of workloads

Complexity: Complex multi-tier applications and data stores that have many interdependencies

Risk: Risk of making sure application uptimes and SLAs are met and downtime is minimal

Hybrid & multi-cloud: Avoiding lock-in and single points of failure by having rollback, hybrid cloud, or multi-cloud options

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Delivering seamless cloud migration

Google Cloud's migration solutions are built to be fast, flexible and safe. These solutions both accelerate and de-risk your migration journey. This allows customers to deliver stringent application SLAs regardless of application complexity, statefulness requirements, or size of datasets.

Rapid migration: Minimizing disruption when you migrate is crucial to every stakeholder, so having workloads running quickly — sometimes in as little as 10 minutes — is hugely beneficial.

Maximum uptime: Short, predictable downtimes that occur up front ensure maximum application uptime for continuous operations and SLA targets.

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De-risk migration: To minimize risk and ensure immediate operability, mission-critical applications are pre-validated in the cloud prior to actual migration. Plus, the safety net of a fast, stateful rollback to on-prem when needed provides full peace of mind.

Complex apps with ease: Easily migrate any application landscape – physical or virtual, legacy or modern, stateless or stateful, large database or small – and use analytics-based rightsizing and post-migration cost controls to keep cloud budgets in line.

Non-invasive cutover: By avoiding agents and final replication procedures altogether, our cutover technology is fast and seamless, and requires no additional processes or labor. All of your data is synced and maintained during migration, making the process smooth and seamless.

Maintain IT focus: Google's migration solutions can shave several hours of IT labor per server when migrating. With that, IT can perform more migrations in less time, or focus on other IT priorities in parallel.

Google's migration solutions can shave 3-5 hours of IT labor per server when migrating. With that, IT can perform more migrations in less time, or focus on other IT priorities in parallel.

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Phase 4

Optimize

Better ROI with cloud cost management

Optimize your systems and operations, helping you do more and pay less.

- Pre- and post-migration rightsizing

- Built-in reporting: cost trends & forecasting

- Intelligent recommendations for optimizing costs & usage

- GCE custom machine types

- Automatic sustained-use discounts

- Financial governance cost controls

Case study

Allcyte

Industry: Healthcare
Country: Austria

allcyte:

Challenge: Allcyte, a bio-tech startup started at the Austrian Academy of Sciences, uses microscopy techniques and data analytics to help predict the effectiveness of drug treatments. It needed full-scale infrastructure and collaboration to move from the academic to independent space.

Migration: Allcyte, a bio-tech startup started at the Austrian Academy of Sciences, uses microscopy techniques and data analytics to help predict the effectiveness of drug treatments. It needed full-scale infrastructure and collaboration to move from the academic to independent space.

- **Records, stores, and analyzes up to 100 terabytes** of imaging data every year

- **Deploys analysis software quickly, efficiently, and reliably** with Google Kubernetes Engine

- **Enables rapid and heavy scaling without** large upfront costs thanks to flexible pricing

"Moving from an academic environment, time was a factor for us. If our platform goes down for even a couple of days, the backlog in our processes could take weeks to catch up. We chose Google for its reliability and because we could deploy our software quickly, to always be able to perform necessary analyses."

Dr. Gregory Vladimer, Scientific Co-founder and CSO, Allcyte

For more information about migration, visit:
https://cloud.google.com/solutions/migration-center/