



“When it comes to cloud, the biggest challenge isn’t technology—it’s the people and processes that must change and adapt.”

- Tyler Shields, Signal Sciences¹

Accelerating cloud migration at scale with Deloitte and AWS

Cloud opens the door to what’s possible

Migrating to cloud can offer benefits including cost savings due to right sizing and optimization, improvements in operational resilience and agility, and improving staff productivity by refocusing efforts on new feature developments rather than environment maintenance. Yet, cloud transformation is no small feat, requiring a deliberate change in mindset, skill sets, and tool sets.

When it comes to cloud, one of the biggest challenges isn’t technology—it’s the people and processes that should consider changing and adapting. Often, cloud efforts are led by siloed infrastructure groups with limited organizational buy-in or commitment to enterprise-wide change, which can result in slow overall progress. While cloud adoption can be questioned, outlining the facts that are important to individual stakeholders and building an internal business case will help migration benefits be fully considered.

It’s also important to recognize that moving to cloud is often the first step to amplifying business value, embracing transformative technologies, and growing both efficiency and innovation within an organization. Each organization’s journey to cloud will be different based on its unique business needs and strategy. By accelerating the transition, organizations can uncover what’s possible for their business.

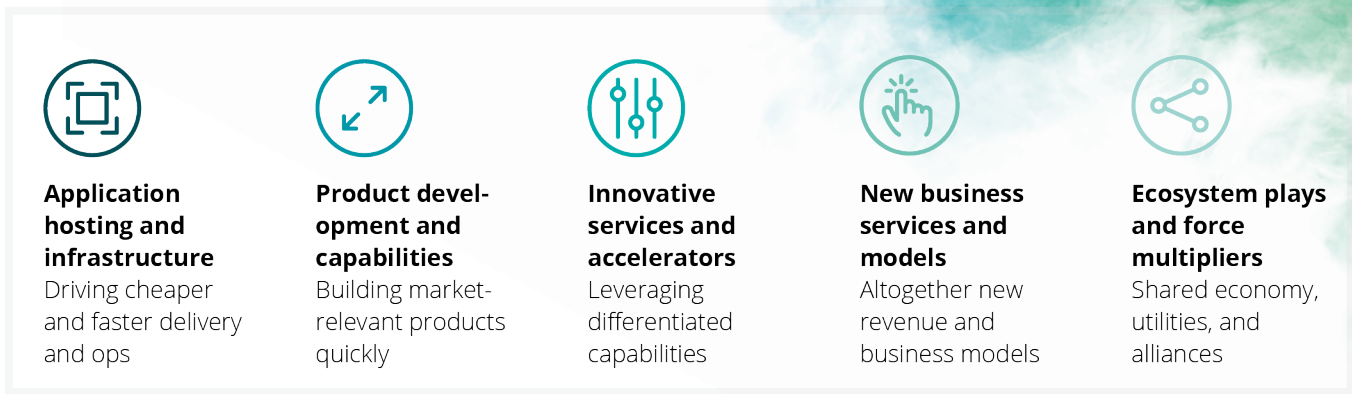


Figure 1. Cloud adoption and customer value

Many government agencies are now looking for approaches that will support cloud migration quickly and efficiently, with minimal disruption. They are no longer asking if they should move to cloud, but rather how fast they can move and modernize their applications and capabilities. To do so, agencies will need to become cloud-fluent organizations, recognizing digital transformations that incorporate cloud, digital, and analytics capabilities.

In order to support these large-scale cloud migrations, there are three critical success factors:

- 1 Bring the business along the journey and enable enterprise-wide cloud fluency
- 2 Develop a repeatable approach that outlines goals and emphasizes data-driven planning
- 3 Integrate teams across network and infrastructure engineers, cybersecurity and risk management specialists, and application and cloud architects

Building on these three critical success factors, Deloitte and Amazon Web Services (AWS) have teamed together to develop an approach that highlights the right set of migration skills through an integrated team structure.

Implementing a cloud transition program (CTP)

An enterprise cloud transformation typically results in a significant amount of change, which can come with associated risks. Determining how and when to migrate an application is difficult and a lack of visibility can slow

progress. Performing analysis on discovery data can also be time consuming and tracking across multiple use cases and migration tools is a complex process.

The approach Deloitte and AWS have developed can not only scale quickly to support large-scale cloud migrations, but it can also put in place a repeatable structure so that stakeholders across an organization are brought along the cloud journey, helping mitigate the risks associated with cloud transformations.

As part of the approach, a cloud tiger team is created that has dedicated resources across leadership, infrastructure, security, operations, and applications. Starting with 16 one-week sprints, the tiger team begins to understand the application design patterns to build landing zones, develop detailed migration execution tools and checklists, define the operating model, and design the infrastructure security and compliance model. These sprints allow the tiger team to gain migration experience and refine the methodology into a repeatable structure for future migrations. Over time, this cloud tiger team grows into a CTP.

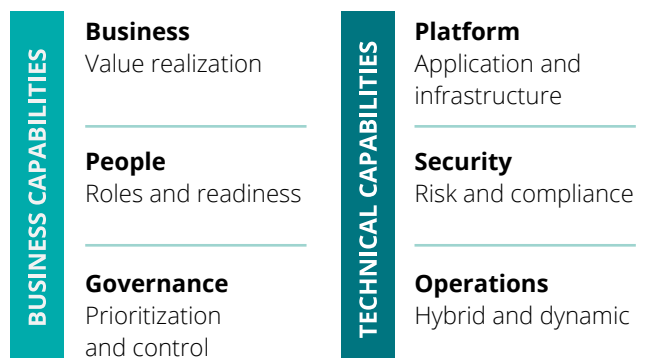


Figure 2. Integrated capabilities for cloud migration

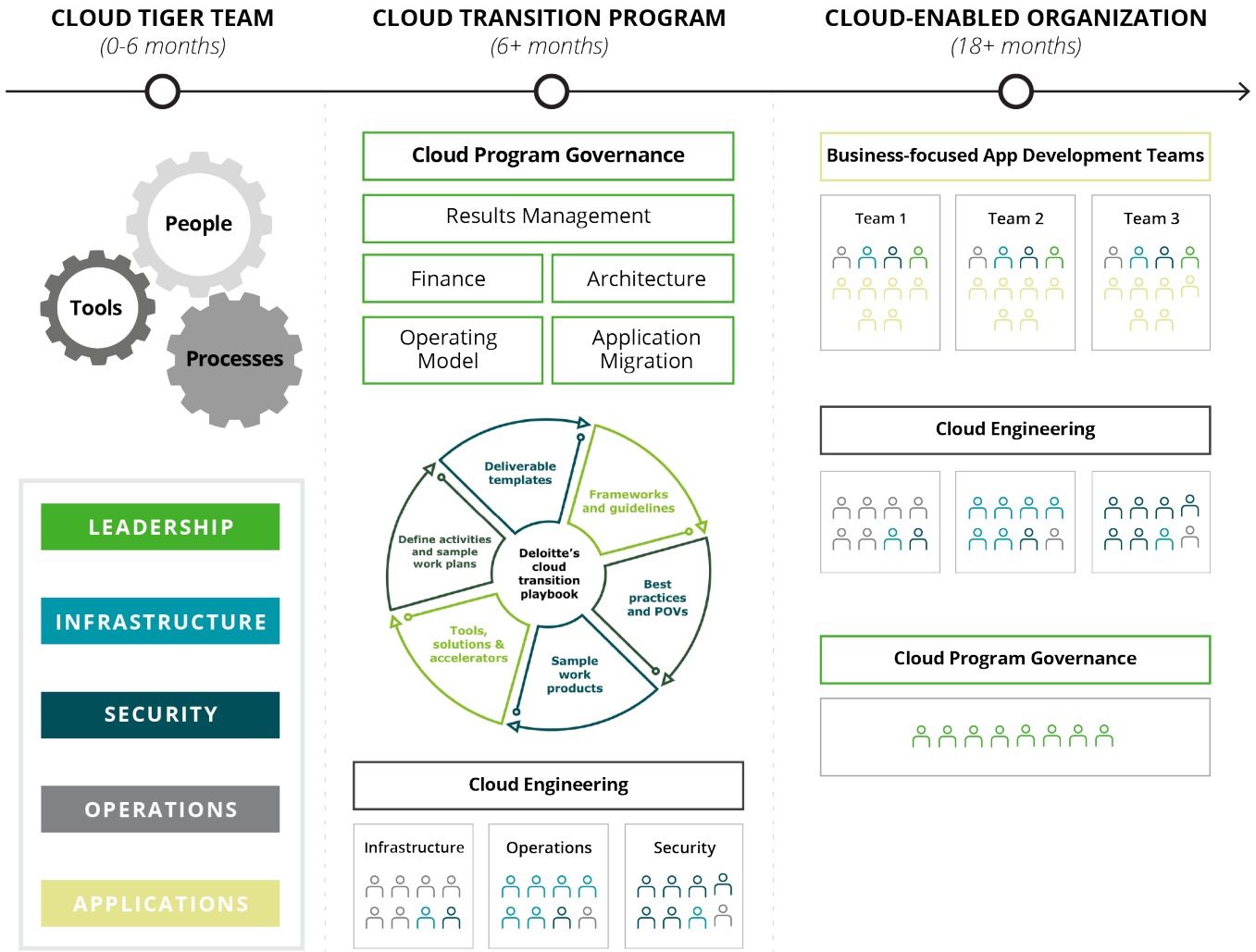


Figure 3. Sample CTP model



Deloitte and AWS joint approach

The joint approach from Deloitte and AWS is built on a three-phase journey

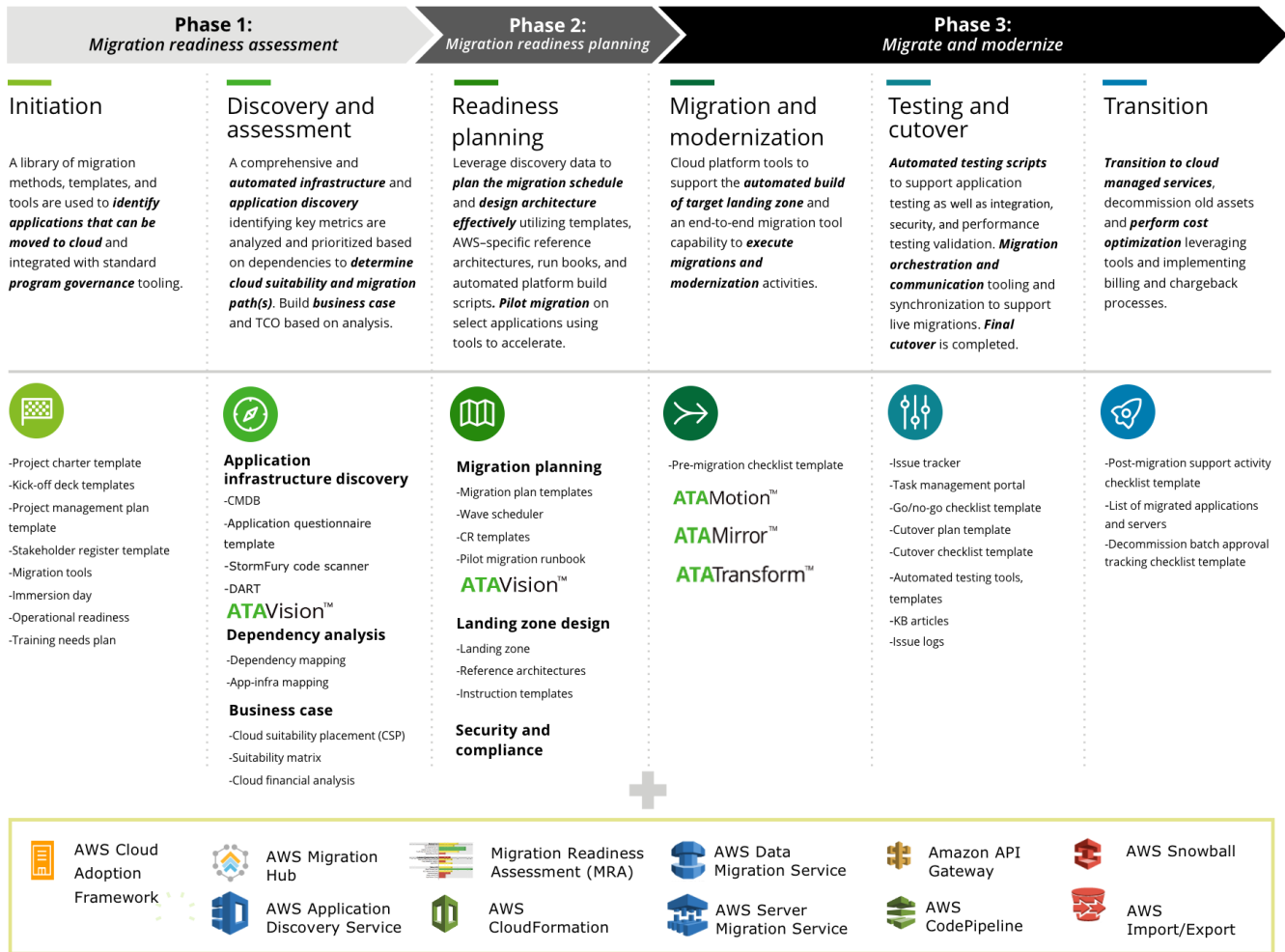


Figure 4. Deloitte and AWS joint approach

Phase 1: A migration readiness assessment (MRA) is conducted, which is the beginning of the organization's journey to a well-planned and executed migration. The MRA helps assess the organization's capabilities, readiness, and commitment to cloud migration. During the MRA, the team conducts a tool-based discovery of the organization's portfolio that is used to create a migration roadmap and form a compelling business case with refined total cost of ownership (TCO) for the migration.

- 1 Migration governance:** Leverage library of migration methods and templates to initiate the program, establish transformation program governance, and outline expectations. This typically can be executed through a cloud immersion day.
- 2 Operational readiness:** Conduct a readiness assessment by evaluating leadership commitment, cloud training needs, and operating model impacts, strengthening the organization's readiness and commitment to migrate to cloud.
- 3 Application and infrastructure discovery:** Application portfolio and supporting infrastructure is analyzed (using discovery tools) to identify metrics, affinities, and dependencies. This analysis provides a data-driven approach to define target migration application patterns and migration grouping. If needed, application code is scanned to assess cloud suitability and cloud service compatibility and identify refactoring and optimization needs. Based on this analysis, an initial cloud migration roadmap is developed showing the application migration timeline and dependencies.

- 4 Migration business case:** With data from discovery and planning, focus on TCO modeling, business value assessment, and reviewing options to optimize.

Phase 2: After the MRA, the organization progresses to the *migration readiness planning* (MRP) phase which builds the organization's capability to migrate to and operate via cloud. The focus is on building the landing zone, ensuring operational readiness, developing cloud skills, and creating a strong migration plan (including initial migrations). The MRP stage brings the tools, experience, and migration resources together to ready and accelerate cloud migration. These work streams are:

- 1 Landing zone:** Cloud data center is created, including account structure. Network design is created including virtual private cloud (VPC), virtual private network (VPN), and multi-region designs, and the identity and access management strategy is implemented.
- 2 Migration plan:** An overall migration plan is created including project plans, cost estimates, communication plans, and change management plans.
- 3 Skills and center of excellence:** Team is trained to build cloud experience across IT, security, and business key roles.
- 4 Operating model:** Updated to support cloud operations including developing operational run books for monitoring, logging, provisioning, asset management, and configuration management. Business continuity planning and disaster recovery are updated to support cloud operations.
- 5 Security and compliance:** Updated governance, risk, and compliance models. Preventative measures are implemented to protect and mitigate against threats. A security responses playbook is created.

Phase 3: *Migrate and modernize.* After completing the MRP phase, migrations can proceed rapidly and efficiently, building on the foundational capabilities that have been placed. A migration pilot is conducted to test the landing zone design, security, and infrastructure setup, and automated tools and scripts for the migration approach. Ten to twenty cloud-ready applications are targeted as part of each migration wave. Each successive migration builds into a full-scale cloud operating model.

- 1 Environment build and verification:** Ready-to-build cloud formation scripts are used to build the landing zone that follows the standards. An independent verification team reviews the environment buildout to confirm requirements have been met and works with the client's security team to certify the environment.
- 2 Migration pilot:** A comprehensive pilot-based migration plan and schedule is developed tailored to AWS-specific reference architectures. The migration approach is based on results from earlier phases and leverages the migration tools outlined in figure 4.
- 3 Testing and cutover:** Once applications are migrated, automated testing tools and scripts are used to support application testing as well as migration, security, and performance testing.
- 4 Transition:** As the migrations are complete, the environment is stabilized over a two-month hyper-care period and the transition is supported as specified in the future operating model. Walk-throughs and job shadowing are conducted as needed to allow the cloud operations team to become proficient at managing the cloud environment.



Conclusion

The approach Deloitte and AWS have developed can help teams scale quickly, realizing an organization's migration needs and reducing the associated risk. At Deloitte, we understand that cloud migration involves a complex set of activities that need to be managed properly and at speed. As an AWS Premier Consulting Partner, we effectively collaborate with AWS on migration best practices and incorporate these improvements back into our joint approach, helping our clients discover their possible and make it their actual.

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¹ <https://www.forbes.com/sites/forbestechcouncil/2017/06/05/13-biggest-challenges-when-moving-your-business-to-the-cloud/#6ac58d0c9b0e>

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