

GETTING AHEAD IN THE CLOUD

What makes a successful migration

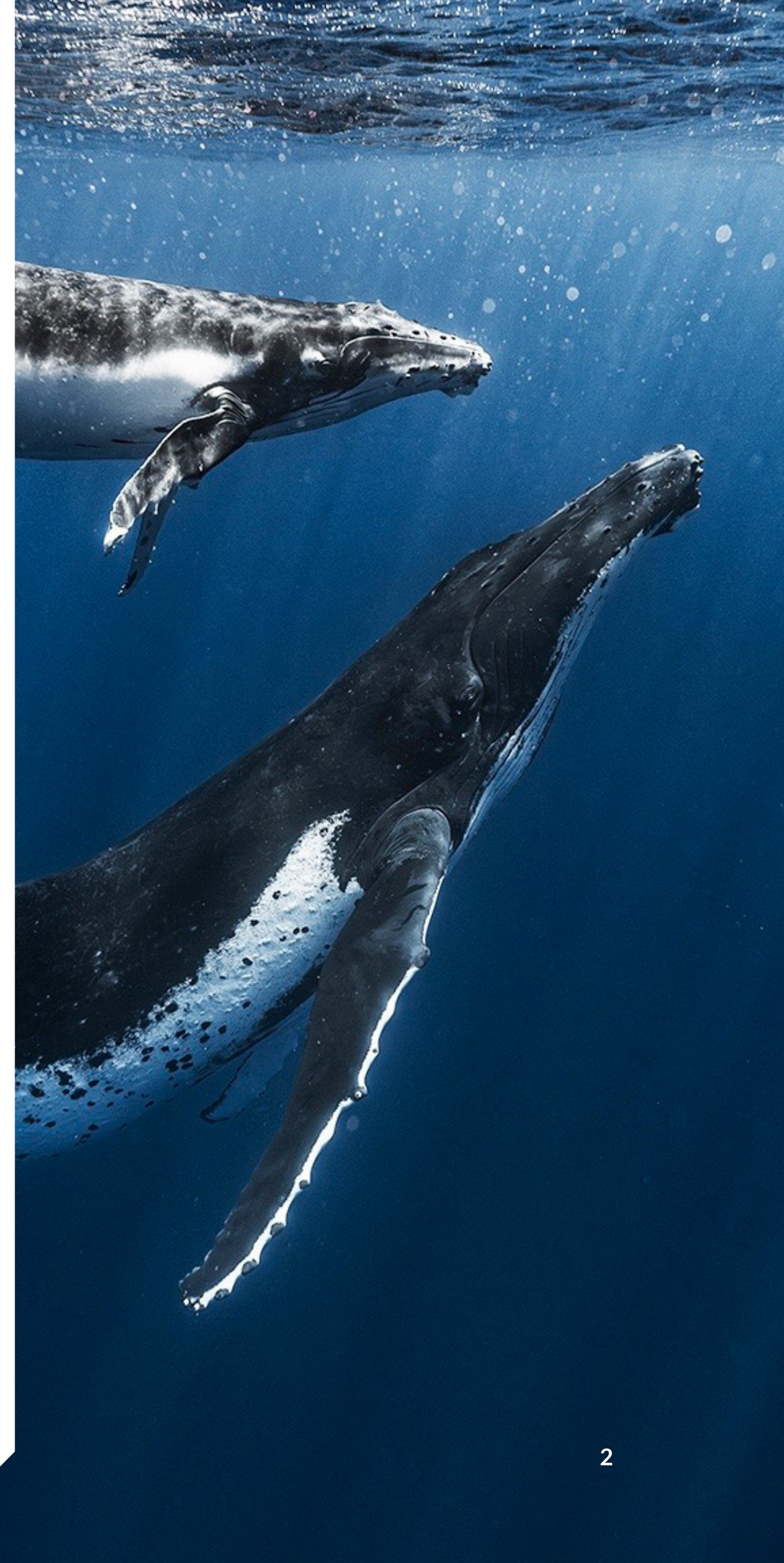


We want to help you have a successful migration. This ebook is based on Protiviti's years of experience, lessons learned and demonstrated success in helping businesses do just that.

We've developed this ebook to offer guidance on how to achieve a successful cloud migration by sharing and showing how we deliver success. Protivit has deep expertise in cloud migration and the principles in this ebook can be applied to many different types of migrations. One of the most frequent requests we receive is for guidance of migrating to AWS, so we will discuss some specifics related to that.

Protiviti is an AWS Migration Competency Partner, with experience successfully securing AWS Migration Assistance Program (MAP) funding for numerous clients and a track record of delivering myriad successful migration engagements with public and private organizations in highly regulated environments.

Cloud migration requires skill, planning, expertise and a business that clearly defines its expected outcomes. It's not magic and it's not hit-or-miss. This ebook is not a prescriptive process for cloud migration but rather a guide, based on our experience, of what determines a successful cloud migration that delivers genuine business benefit. We'll look at what migration is, why you might want to migrate, when to migrate and how to migrate. We'll also look at how to plan a migration and what type of migration is right for your business.



DEFINE MIGRATION

Migration in its simplest form is moving the resources you use to do business into the cloud so that you gain flexibility, scalability, resiliency and can move at speed. This improves your ability to innovate, develop and deploy. Depending on the organizational objectives, there are different types of migration, including rehost, replatform and rearchitect, to name the most common.

Getting ahead in the cloud: what makes a successful migration.

WHY MIGRATE (BENEFITS)

The cloud removes the on-premises barriers that challenge innovation. A successful migration can transform the way you do business. The insight you get into the business using a service like Amazon Web Services (AWS) or third-party tools can help with improved governance. You can track access to resources and files, set access levels and automate the creation and storage of the files you need for audit and compliance needs.

In addition to simplifying the burden of record keeping, clearer insights mean you can make better choices throughout the business. The CIO and CFO will both appreciate how FinOps can provide better control over web resources and optimize costs. Improved access to data allows the business to better understand its performance through analytics and business intelligence. AWS provides machine learning and artificial intelligence tools and supports many third-party options as well, meaning you can look to the future by learning from your past.

Migration to AWS also provides some of the strongest native security tools available. It's a central part of the AWS brand promise and the company continually evolves its security capabilities and compliance components to ensure its customers have the most secure environment in which to operate. With hundreds of security services and features, it might be hard to take it all in, but Protiviti can help you understand what is appropriate for your business.



The technical benefits of migration can be significant and help solve some big challenges. Running on a leading cloud provider, such as AWS, means a business has access to all the most up-to-date technology and can spin up and down any new service it needs.

It's no longer necessary to overprovision resources for a peak season — resources that sit idle most of the time — because servers and applications can be added when needed and spun down when no longer necessary at the click of a button. Developers can try new things at minimal cost, rather than the business having to commit to hardware or software acquisitions.

The Shared Responsibility model eases the burden of maintenance, shifting most of it from the client to AWS. Software updates and service upgrades are continuous and do not require client intervention, ensuring the latest versions are available without organizational staff interaction. AWS is also responsible for security of the cloud. The native security tools and resources provide the client the opportunity to implement information protection, a responsibility that still lies with the client (hence “Shared Responsibility”).

Aside from the technical benefits already mentioned, the business can achieve scalability through autoscaling (automatically adding resources to scale), as well as spinning up or down resources during peak or off-peak traffic hours.

Whether migrating your own on-premises resources to AWS will always be beneficial depends on your organization's individual needs. It will likely bring benefits, but it may or may not help cut costs, depending on your current arrangement. But moving to the cloud almost always provides better insights and control over costs. Traditional data center chargeback models are not as complete as possible and often lead to difficulties identifying the business units that are consuming the resources.

Although a level of FinOps may be achieved on-premises, a cloud migration fully supports FinOps principles (see opposite for definition), tools and employment.

Using the access controls that the cloud makes possible, organizations can see who is using what resources, when those resources are utilized and what the financial burden is. Any incidentals — such as spinning up a test server and forgetting to turn it off — can be quickly discovered, eliminating negligent waste. FinOps insights provide an avenue for cloud costs to be billed back to the appropriate cost center. The consistent analysis of cloud resource usage leads to optimized operations and financial predictability for the CFO's office.

The focus of a successful cloud migration is a value outcome for the business. Simply stated: realizing the optimum return on every dollar spent for maximized business performance. Protiviti focuses on helping clients achieve that value outcome.

WHAT IS FINOPS?

The FinOps Foundation defines FinOps as an

“operational framework and cultural practice which maximizes the business value of cloud, enables timely data-driven decision making and creates financial accountability through collaboration between engineering, finance and business teams.”

FinOps can help organizations better understand how they use cloud resources and optimize their use to eliminate waste.

WHEN TO MIGRATE

How does a business know when it is the right time to migrate? After all, “if it ain’t broke, don’t fix it”, right? There are several reasons organizations turn to cloud migration before it’s “broke”. Business leaders should consider the following:

- **Accumulation of technical debt:**

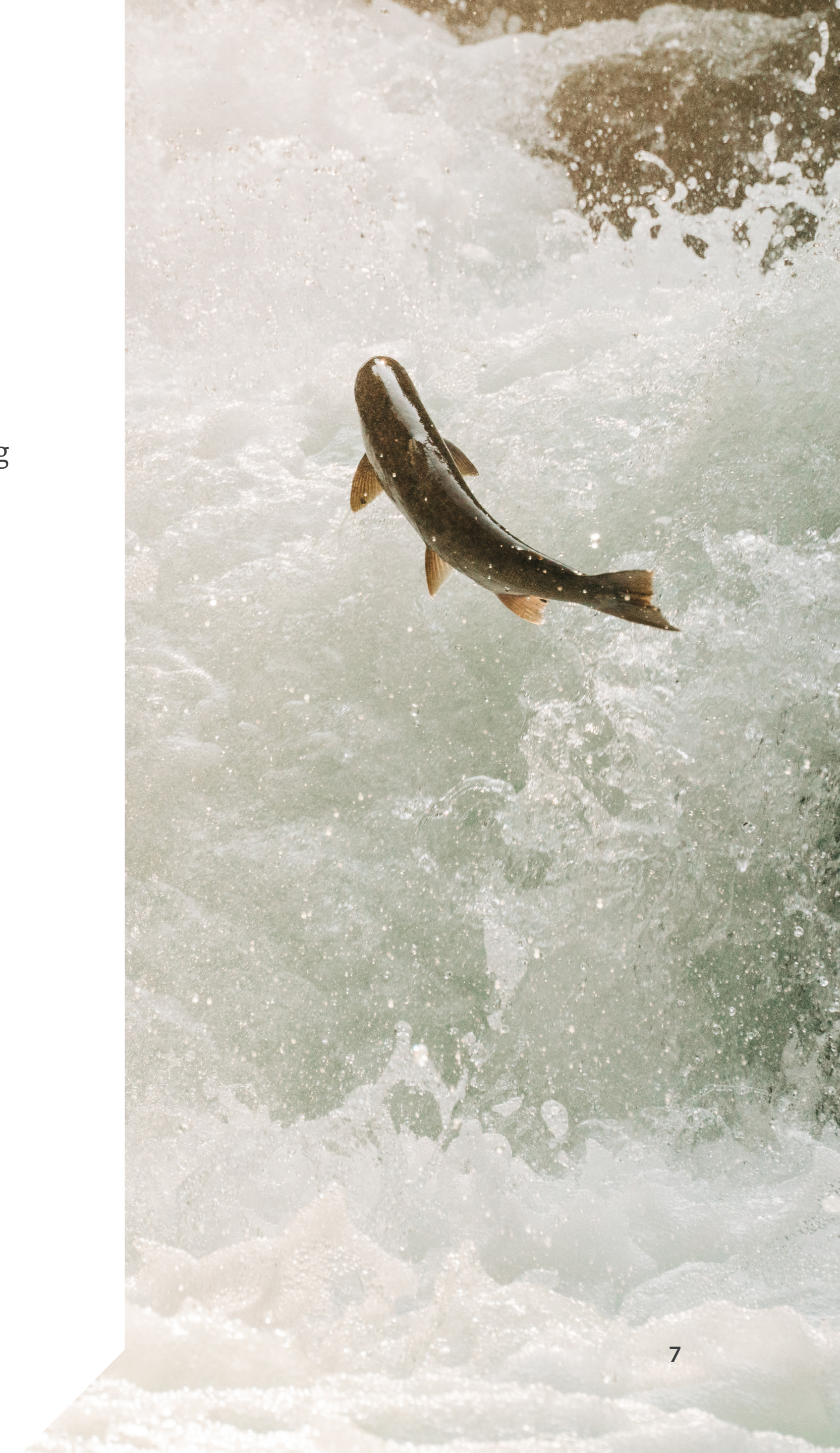
Aging hardware/software in an on-premises system often requires significant resources to renew. This is one of the most common reasons for a migration. Being faced with the cost of buying new equipment for a data center, the increasing costs of maintaining a data center, or the need to exit a data center at the end of a contract are common triggers for migration. When faced with the prospect of buying new hardware or software, a business should thoroughly evaluate the cloud alternative.

- **Compliance requirements (including security, audit and privacy) may be more effectively managed in the cloud:**

Legacy systems may be expensive — or even impossible — to bring into line with new regulatory, reporting and compliance requirements. Maintaining on-premises systems security may also present a financial and administrative burden considering the cost, maintenance and training requirements of legacy or new tools.

- **Business tool vendors may no longer support legacy on-premises systems:**

Tool vendors are consistently ending support for legacy on-premises tools and modernizing for cloud. Organizations are faced with end of life updates for existing applications and must plan for the transition of those applications to the cloud. Although many tools may remain available in the legacy data center model, in many instances application rationalization may justify a move to the cloud to achieve performance, resilience and sustainability.





Cloud gives businesses the opportunity to build more resilient applications as they're not geographically constrained to data centers:

The internet is a remarkable tool, collapsing time and distance. One advantage the cloud has over on-premises data centers is the ability to bring data closer to the edge (closer to consumers of that data). While that is a well-known advantage, the same premise may be a deterrent to moving to cloud. Large data, such as medical imaging or geographical information may struggle due to latency and distance where on-premises data centers thrive. Careful consideration must be part of the outcome-based migration planning when working with heavy data transfer. However, replicating data centers globally to provide acceptable levels of performance may be too costly and bear an unacceptable level of administrative management.

Firm commitment to a cloud migration decided by senior leadership — often seen with government organizations or subsidiaries of larger organizations:

Sometimes the decision for an organization comes from higher up. A parent company may dictate that all subsidiaries must migrate to the cloud, or a government department or ministry may dictate that all units that operate under it must migrate. These migrations can be challenging as the organization must build a functional cloud solution that meets its needs and meets the requirements set out by the umbrella organization.

Protiviti has helped organizations assess their business needs and build a migration plan, inclusive of Migration Acceleration Program (MAP) funding, that meets timelines and budget constraints. By working with leading cloud providers like AWS, your migration can take advantage of a secure, resilient environment that performs at scale yet is flexible enough to meet your specific needs.



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TYPES OF MIGRATIONS

Protiviti strongly believes migration may be done in various ways to suit the needs and desired outcomes of an organization.

Perhaps the simplest type of migration is the “lift-and-shift” migration. This involves replicating the existing on-premises setup in the cloud.

The architecture remains the same and is often penned with many of the same limitations of the on-premises environment. One such use case for “lift-and-shift” is when a business has reached a data center contract expiration date and/or hardware is reaching end of life. In such cases, many businesses opt to migrate their current environment to the cloud “as-is” and modernize those applications in the future.

A transformative or migration modernization involves assessing existing applications for cloud readiness and determining the best path for modernization. Some options may include refactoring the application to use cloud platform as a service (PaaS) solutions or re-engineering to a modern cloud serverless and/or microservice architecture. During a migration modernization an organization could add new functionality, optimize

existing processes, refactor applications that aren’t scaling or make other changes that offer new capabilities for the business and its end users. Modernizing an application may take substantial time and is usually planned well in advance. If a business does not have the time — such as when it has a hard deadline to exit a data center — the lift-and-shift migration is often the best first step. Once in the cloud, work can commence on transforming to a cloud-optimized architecture.

Often a business requires a partial or hybrid solution, with some functions remaining on premises and others moving into the cloud. Examples may include businesses in regulated industries that are required to house data in a particular region or maintain certain data on premises, also known as data residency requirements.

DOING IT RIGHT

KEY CONSIDERATIONS

Whether an organization determines to follow a “cloud first” or a “cloud when possible” strategy, success starts with support from the business and application owners and a clear goal defining what success looks like. Successful organizations start by working backwards and defining why they are undertaking migration. They consider what cloud migration means for the business and how it may enable transformation and support business objectives, whether generating revenue, cost reduction or a better user experience.

A good migration must align with business objectives. Protiviti invests its time in understanding your business and its stated objectives and consults with you to help determine and define the desired outcome so you can achieve your organizational goals for cloud migration.



COMMON MISSTEPS

Migration comes with risks. A business can spend a lot of time and money and end up with results ranging from disappointing to disastrous. Being aware of the common missteps in a migration and how to address them may help ensure a successful migration.

First, and most basically, are human factors. Organizational readiness is essential for a successful migration. Senior leadership must be committed to the change, but that's not enough. The structures and resources needed — changes to ways of working, new IT infrastructure or a new reporting structure, for example — may require work before the business is ready for a migration. Establishing a new operating model for cloud during migration assessment phase and bolstered by a Cloud Center of Excellence (CCoE) can help, and Protiviti can help with those. Although AWS is considered new technology, ways of working in the cloud need to be incorporated into key performance indicators (KPIs) and reward and recognition systems to ensure staff are supportive. We've seen large organizations where key figures have said they simply will not change their ways of working. With enough of that sentiment, a transformation will fail.

It's not just people that can trip up migrations. Technical limitations can also hold back businesses. Systems may not be ready to migrate, needing

rearchitecting or optimization. When organizations undertake a transformative migration, technical systems as well as human capital limitations should already be addressed. Consideration must be given when determining an application's suitability to run in the cloud. Some applications will need some level of optimization. Protiviti's proven Application Migration Factory has helped businesses determine their application posture and aid in defining the business outcome of cloud migration. Protiviti understands that not all systems can effectively be migrated to cloud due to limitations, such as the need to move extremely large file sizes, regulatory requirements around data residency, and hosts of other issues. When such issues exist, consideration of a hybrid cloud and on-premises environment may be the successful path forward. The key to success may lie with a partner that helps navigate those stormy seas.



MAKING A MIGRATION GO TO PLAN

Successful migration requires a unified team approach and can almost always benefit from a partner that is committed in the organization's success.

Protiviti's approach to cloud migration is focused on delivering value and outcomes. We'll work to help you plan and implement a successful migration and ensure you get maximum value for every dollar. Protiviti has the experience to help you build a realistic plan, budget and timeline inclusive of winning board level presentations.

What does the process consist of? First, we begin with an **assessment** of both the technical and organizational environment to identify if a migration

is needed and if it is possible under the current conditions. Protiviti's evaluation identifies barriers to outcomes and justifies remediation and/or hybrid design before starting on a migration journey. The assessment phase also identifies any potential AWS Migration Acceleration Program (MAP) funding that might be available. Funding assistance is awarded by AWS based on the annual recurring revenue (ARR) realized by consumption of cloud resources.

Assessment is followed by **discovery** — identifying which applications and processes need to be migrated, how to best migrate them, and the impact to business as usual (BAU) ways of working. The outcome of discovery and any impacts are mitigated through effective change management communications.

With quality insight into an organization and its ways of working, Protiviti can begin **planning** with you for both the technical and human capital changes that migration will bring. Frequent communications through good governance of the migration program leads to smooth transitions and minimal disruptions to the business.

Once the migration of systems has been completed, **technical verification testing (TVT) and business verification testing (BVT)** commence to confirm the proper outcomes. A migration is often considered complete once a system has been moved into the cloud and is working. But just because systems are working doesn't mean the outcome has been achieved. The next step is learning from the TVT and BVT outputs and optimizing functions. The TVT and BVT outputs identify

areas in need of improvement and a successful migration depends on the final BVT and TVT results, which should show that the desired business outcomes — defined prior to the start of the program — have been achieved.

To ensure your business will be able to get the most from your migration, Protiviti can help you plan **staff training** to effectively support the new system and to effectively use the tools they have been given. This includes supporting the organization's cloud journey through post-migration hypercare support. We partner with your team providing “over the shoulder” support with guided runbooks until the team is ready for handover. Protiviti may also move from hypercare into a **managed services** agreement to carry forth operating the new cloud environment on a permanent basis.



CONCLUSION

We hope you've gotten a good look into what makes a successful migration a reality.

Every circumstance is different, of course, but the principles we've learned with experience and shared in this ebook will help you on the path to a successful migration.

The principles we've described apply to any migration, not just one undertaken with Protiviti and AWS. However, if you'd like to speak directly to us about how to get ahead on AWS, we'd love to have a conversation.

Wherever you are in your migration journey, we can help. Learn more at protiviti.com/aws-migration



ABOUT PROTIVITI:

Protiviti (www.protiviti.com) is a global consulting firm that delivers deep expertise, objective insights, a tailored approach and unparalleled collaboration to help leaders confidently face the future. Protiviti and its independent and locally owned member firms provide clients with consulting and managed solutions in finance, technology, operations, data, digital, legal, HR, risk and internal audit through a network of more than 90 offices in over 25 countries.

Named to the [2024 Fortune 100 Best Companies to Work For® list](#), for the 10th consecutive year, Protiviti has served more than 80 percent of Fortune 100 and nearly 80 percent of Fortune 500 companies. The firm also works with government agencies and smaller, growing companies, including those looking to go public. Protiviti is a wholly owned subsidiary of [Robert Half Inc.](#) (NYSE: RHI).



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