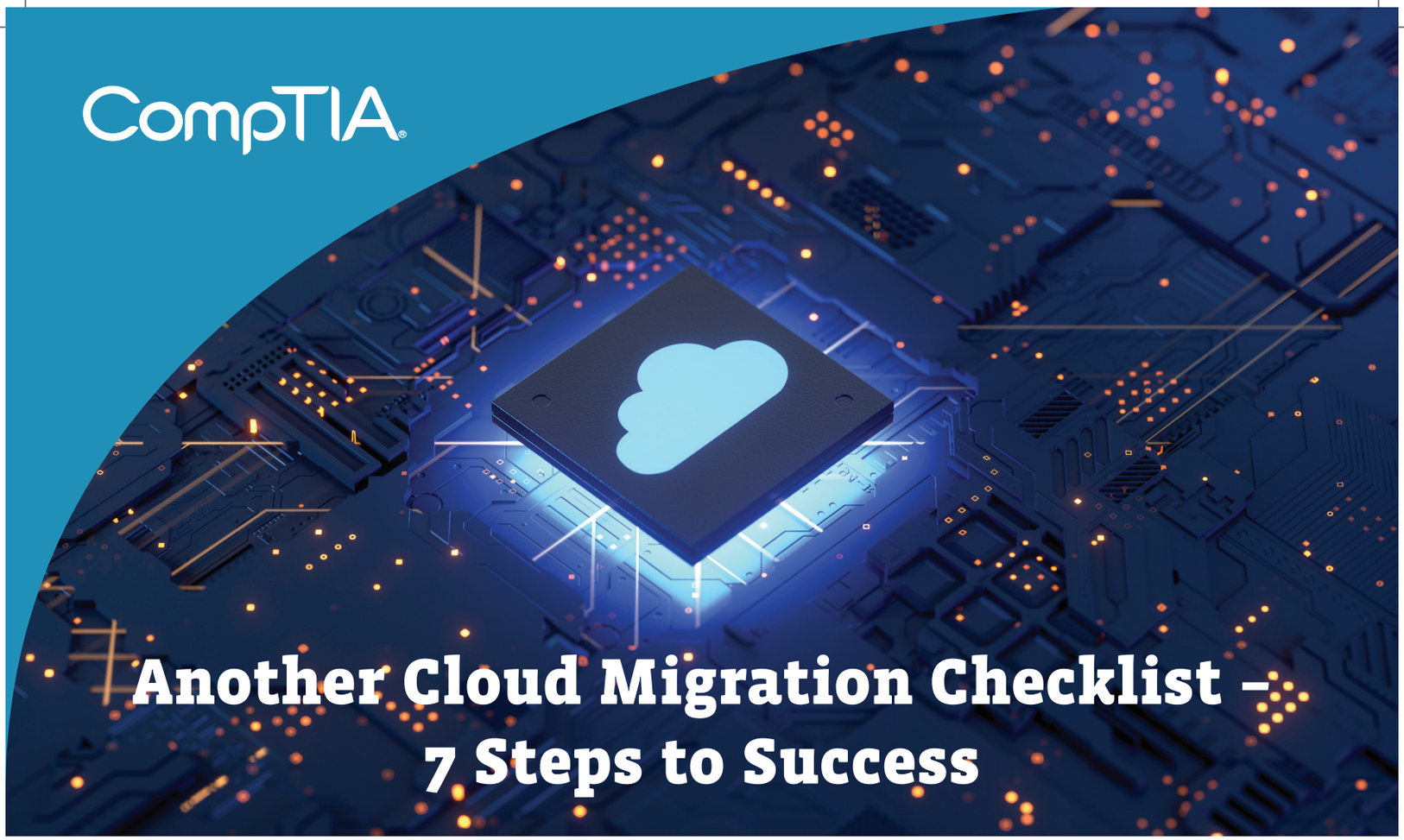

# Another Cloud Migration Checklist – 7 Steps to Success

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If you search Google on the words *cloud migration checklist* you will find over 2.8 million results. If you search on *"cloud migration checklist"* (yes, with the " " for an exact match) you will get over 6700 results. With so many existing cloud migration checklists in existence it might seem unnecessary to create another. But there is one issue which can be clearly seen from reviewing the results of these searches.

This is the fact that the vast majority of all of these checklists come from one cloud related vendor or another. While many are quite good, they all tend to cover things from an angle which addresses the particular vendor's offerings and strengths. Once one has chosen a particular vendor or cloud model, these may be helpful, but how does one get to that point and know which guide to follow in the first place.

Our goal with the creation of this Cloud Migration Checklist is to be completely vendor and model neutral. This checklist is intended to help you with a process to decide if cloud migration is right for your organization and the applications, services, and workflows you are considering migrating. The cloud is a rapidly growing and changing area of technology that many organizations are benefiting from in many ways, but that does not mean it is the right fit for every organization or application.

## 1 KNOW WHY YOU WANT TO MIGRATE TO THE CLOUD

Why does your organization wish to migrate to the Cloud? Ideally this should not simply be because one read or heard about how 'hot' the Cloud is from some article or opinion piece. There are many good reasons for moving applications and workflows to the Cloud including scalability, cost savings, flexibility, and switching from a capital expenditures model to an operational expenditures model. But despite this, not all applications are a good fit for the Cloud. Often applications which rely on legacy hardware or storage options are not the best options for Cloud migration. Security considerations are also an

important factor. Many feel it is not wise to move personally identifiable information (PII) such as credit card numbers to the Cloud, especially not in a public cloud model. Each organization should take a long, hard look at why they want to migrate to the Cloud and what they wish to accomplish with this move.

## 2 ANALYZE YOUR EXISTING IT INFRASTRUCTURE

Organizations considering migrating to the Cloud need to fully understand their existing IT infrastructure. They need to map all existing services and applications to identify any dependencies. Each organization should know their current operational costs including hardware, software, direct labor, and 'hidden' costs like facilities and training. All services and applications should be fully baselined for Key Performance Indicators (KPIs) and critical metrics such as load times, downtime, and performance measures. Key staff members who can assist with any migration need to be identified. The information gathered from this step will help determine not only what services and applications might make good candidates for Cloud migration, but also help determine the success of any migration.

## 3 INITIAL CLOUD EVALUATION AND PLANNING

Now that the organization knows why they wish to migrate to the Cloud and has a clear idea of its existing IT infrastructure, it is time to put a team together to do the initial evaluation and planning. The team should be lead by a technical project manager, ideally with experience in migrations, and include representatives from all affected areas such as Management, Development, DevOps, IT, Security, etc. In this step the goal is to determine which (if any) applications, services, or workflows can and should be migrated to the Cloud. Organizations need to profile their applications and services to determine their role, criticality, and type of workload (such as database intensive vs compute intensive). Applications need to be evaluated to see if they can be easily moved to the Cloud 'as-is' (something called Lift and Shift) or if they will need to be redesigned to take advantage of Cloud specific features such as scalability and load balancing. This information should help the team prioritize which applications, services and workflows are migrated to the Cloud and when. For first migrations, it is usually recommended to start with non-critical applications or to roll out the migration in stages.

## 4 SELECT CLOUD MODEL AND VENDOR(S)

There are three types of Cloud models: Public, Private, and Hybrid. Public clouds such as services from Amazon Web Services (AWS), Azure, or Google Cloud offer a scalable environment with a pay-as-you-go pricing model. However, these are shared resources and the organization loses a fair degree of control of the underlying infrastructure. Private clouds allow for more control, often using on-premise environments, but this puts the operational and security burden on the organization itself. Hybrid clouds, using a mix of public and private cloud infrastructure, can offer the 'best of both worlds,' but performance issues, especially between the two, can still be a factor. The mix of applications, services, and workflows being considered for Cloud migration will effect which is the best model for an organization. In addition, the organization needs to decide if it will work with one or many vendors. Choosing one Cloud vendors means your Development team only has to learn one set of API's (application programming interfaces), but increases the chance of the organization being 'locked in' to that particular vendor. While it is more complex to choose a multi-vendor option, this does increase flexibility and presents the opportunity to be able to dynamically scale across different vendors based on pricing.

## 5 DEVELOP CLOUD AND DATA MIGRATION PLANS

Now that your organization has decided what applications, services, or workflows to migrate to the Cloud and the model and vendors to use, detailed migration plans for those components and the related data must be developed. The Cloud migration plan should account for whether you are going to move your application all at once, or component by component. Any redesign or re-factoring of your application which will be done to take advantage of Cloud specific features like scalability needs to be planned out as well. In addition, the migration to the Cloud will likely have impacts on the organization's existing governance and security policies. Updates to these should be factored into the Cloud migration plan. Since often one of the more challenging steps of a move to the Cloud is migrating the underlying data, it is recommend that a Data migration plan be developed as well. Where data lives in relation to the application can have huge impacts on performance and costs. There

are a number of options to consider including whether to use one-way or bi-directional syncing between the on-premise and cloud databases, or whether to utilize the data migration services offered by many cloud vendors.

## 6 MIGRATE, TEST, AND GO LIVE

Using the Cloud and Data Migration plans developed, the applications, services, and workflows identified should now be moved to the Cloud. Given the complexity of such a project, testing should happen at just about every step along the way. These tests should compare the newly migrated Cloud application to the baselines established earlier in this process. Any deviations from planned baselines should be addressed and remediated. When to finally 'Go Live' depends on a number of factors, and there are a couple of options depending upon the application in question. The application can be moved from legacy on-premise equipment to the Cloud all in one go once the entire application has been migrated and verified. Alternatively, the migration can happen a little bit at a time by moving only a few customers or users initially to the new Cloud application to test things are working as intended. Then move additional customers or users until all have been moved over to the Cloud application. Either way failback plans should be in place in case any issue surface in these final steps.

## 7 MONITOR AND REVIEW

Once a Cloud migration has succeeded, there are still factors to take into account going forward. The organization needs to continually monitor and review resource allocation within their Cloud environment. One of the biggest benefits of the Cloud is the dynamic allocation of resources and your organizations goal now is to optimize that allocation. Resource allocations have a tendency to grow over time, so they need to be controlled to maintain performance while managing costs. In addition, since this will likely be the first of many Cloud migrations, it is also a perfect time to debrief the team for lessons learned that can be applied to future migrations. Lastly your organization and team need to stay abreast of the rapidly evolving Cloud landscape to be aware of any new features or offerings which could further benefit the applications, services, or workflows you have already migrated to the Cloud.

Individuals with a wide array of skills are necessary for a successful Cloud migration. While having representatives from different functional areas will help to address this, having individuals with proven Cloud specific skills will greatly increase the chances of success. One way to ensure this is to look for individuals with Cloud+. The CompTIA Cloud+ certification is an internationally recognized validation of the knowledge required of IT practitioners working in cloud computing environments. The Cloud+ exam certifies that successful candidates have the knowledge and skills required to understand standard cloud methodologies; to implement, maintain, and deliver cloud technologies; and to understand aspects of IT security and use industry best practices related to cloud implementations. Skills necessary for all 7 steps outlined above are covered by the exam objectives of Cloud+.