EXECUTIVE BRIEF

6 Steps to a Successful Data Center Migration

Challenge
Overcoming the significant complexities associated with migrating to next-generation IT infrastructures in an effort to leverage cost and efficiency savings of new technologies.

At Stake
Failed migrations have the potential to result in costly infrastructure outages, lost data and serious financial/market share loss.

Solution
Only a structured, step-by-step project plan and process — supported by an experienced partner can ensure a smooth migration. Key checkpoints include: Project Management, Discovery, Analysis, Design, Build, and Migration.

During World War I, British Prime Minister David Lloyd George said: “The most dangerous thing in the world is to leap a chasm in two jumps.” Big changes don’t happen overnight and a well-planned process is the only way to get there.

And it holds true today — as companies attempt to make the leap between old IT infrastructures and those built for the next generation. Migration of all elements is no easy task and requires a series of steps to get it right. Those who fail to do so are often unsuccessful, trying to accomplish too much too soon, out of order, or without addressing risks along the way. The next generation IT environment has created a large migration chasm — and companies must take calculated leaps.

Defining Success
The migration process is fraught with complexity and risk — whether transitioning to colocation, managed hosting or even cloud services. But the cost efficiencies, scalability and reliability benefits of new technologies are simply too good to ignore.

With a range of moving parts, the risk of project failure is extremely high. Gartner Group estimates that IT migration projects represent up to 60 percent of all large enterprise IT projects. Unfortunately, they report only 60 percent of these are completed on time. Even worse — a recent study by analyst firm
Bloor Research notes the failure rate for IT migration projects is close to 40 percent. And it can cost you. Bloor also notes Forbes 2000 companies currently spend a minimum of $5 billion annually on migrations. However, cost overruns hit 30 percent, while time overruns broke 40 percent.

More than simple technology implementation, the migration process demands a step-by-step approach and project plan. Rather than leaping to the end game, businesses must pay careful attention to each step in the process, letting the result of one stage determine the next. In our experience, there are six elements to any successful migration project. These include: Project Management, Data Discovery and Collection, Analysis, Design, Build, and Migration.

**Project Management**
A strong project management plan is key to harness the chaos of the process. There are detailed checklists that must be tracked and monitored daily — ensuring nothing falls through the cracks. This planning is essential before any work is done, including assignment of resources and identification of business stakeholders. Project leads should create a structured plan from start to finish — identifying pre-migration, migration and post migration tasks along with interdependencies. Real-time communication and tracking is essential, including pre-determined application outage expectations and requirements. Project managers should create timetables and identify risks and mitigation pathways — noting resource availability and assigning accountability. And all of it must happen while not losing sight of the current business. If you don’t have the resources in-house, consider aligning with a partner having a successful track-record of success. Sometimes an outside advisor can bring a unique perspective to the business — helping to align and dedicate resources along the way.

**Data Discovery and Collection**
Now it’s time to embark upon data discovery and collection. After all, you can’t manage or migrate what you cannot see. Today’s IT environment is a vast universe of digital content — whether it be CRM, financial or sales data. At this phase, experienced professionals well-schooled on techniques to extract crucial data via workshops and automated tool based discovery is critical. The use of automated tools allows for the capture of performance metrics for a period of time for proper sizing during design. Data is discovered from various sources — stemming from multiple spreadsheets, output from CMBD, directory services, as well as configuration files from devices. In addition to infrastructure and application data, non-functional data is captured — such as business rules which define system availability, criticality of the applications — and such information as Recovery Point Objective (RPO)/Recovery Time Objective (RTO) requirements in the event of disaster.

But the tools are only part of the solution. It’s essential to team with a solutions provider to navigate the challenges of the client organization that identifies data necessary to ensure a precise capture that is relevant to the engagement focus. These tools are requirements for mapping the current state environment, which forms the baseline for analysis to follow. Some tools are strong on discovery, but weaker on collection. An advisor with a proven ability to implement custom discovery and analysis tools coupled with experienced professionals will streamline the process and ensure a successful completion of the data discovery and collection phase.

**Analysis**
The transition to analysis then creates an actionable universe of information — empowering IT leads to make informed decisions based on hard data. A good analysis process is capable of navigating the multiple forms of data in multiple formats with varying age and accuracy.

Collected data is scrubbed, normalized, and linked to one another. Data cleansing determines which source is most accurate, identifies and captures “missing data”, and removes both erroneous and duplicate data. The analyst can then establish interdependency mappings and define baseline inventories to create the foundation of the migration project.

According to Data Migration Pro, the process is not unlike a mountain climber preparing for a difficult journey. No two treks are the same, just as no two migration projects are similar. That’s where proper analysis and planning comes in:

“You have been given a mountain to climb, would you base your estimates on how long it took to climb the last mountain. It could be similar height, similar terrain and you could be going with the same climbing buddies but striding off without suitable planning would present a considerable risk. So most experienced climbers spend some considerable time and effort understanding exactly what is required to climb this new peak. Every mountain is different and no two migrations are alike.”

While there are a range of analysis packages on the market, a qualified partner not only provides options for deployment, but essential counsel on the best tool and process for your business.
**Design**

During the design phase, analysis is used to architect the target-state environment — including architecture, migration strategy, grouping schedule and project plan. By leveraging best-practices instead of re-creating the wheel, companies can ensure all functional requirements are met to prevent common challenges associated with moving applications. And as with any journey, none of it is static. The project plan is a living, breathing document that must be monitored and adjusted as the design evolves.

A strong partner can outline these best practices and help analyze data to put it into four main work products: Target State Architecture, Migration Strategy, Application Grouping Schedule, and High-Level Project Plan. The Target State Architecture clearly defines the end state. It accounts for all functional requirements to host a customer’s application suite and addresses potential challenges up-front — including improper sizing, proper placement of servers and applications, insufficient power resources, and cooling infrastructure.

In creating a Migration Strategy, teams define proper methods for moving each application while causing minimal service disruption and risk. Oftentimes, trying to accomplish this without support of migration experts means lack of best-practices for moving certain types of applications, mixing mechanisms, and employing the most cost-effective risk-adverse methods to meet SLAs.

Building an Application Grouping Schedule defines applications and infrastructure services to be moved together — and in proper sequence. Far too often, teams don’t comprehend application interdependencies — leading to poor performance during migration because applications must communicate with resources hosted in the source data center.

Above everything is the High Level Project Plan that pinpoints milestones. Deliverables are identified, along with delivery dates, and tracked as it progresses. Each and every milestone can act as a reference point to gauge if the project is on track, and where it is faltering. Typically, there are three ultimate goals of a High Level Project Plan: Measurement of tangible progress, validation of achievements, and support during resource planning and budget preparation.

Proper design is one of the most critical steps during the migration process. Quite often, this is where a migration expert can offer the most value.

**Build**

The first stage of execution takes place in the “Build” phase. Adding to previous steps, this phase is all about putting the physical hardware in place. During this time, the team begins both ordering and set-up of all devices — from servers to network gear.

As equipment arrives, people and facilities are coordinated to mount, rack and connect devices. The build phase is actually the creation of the preliminary Target State Architecture Design. This includes core infrastructure build-out and services to enable migration. Any experienced partner will alert you to some of the most common challenges that can take place, including: Insufficient time allocated to ordering WAN circuits, local host files that require manual updates to support new IP Address space, and training on new technology.

In building out the infrastructure, use the Project Plan as a roadmap for success and always refer to the planning and analysis that occurred up front. This is the stage where companies gauge the validity of analysis and simulations. It's most useful to regroup with your partner at this time to measure objectives versus reality.

**Migration**

Now it’s time to flip the switch. Here, all applications and data are migrated in alignment with the output and recommendations of initial assessments. This is actually the repetitive execution of the agreed upon strategy for each move group — until all workloads have been migrated.

Detailed migration plans can be used as a handbook to follow pre-migration tasks, hour-by-hour actions, and post-migration processing. Execution includes leveraging a checklist to support “go-no go” decisions, proper sequencing, and handoff between teams during migration. The process also accounts for any back-out tasks — including sequencing and timing — in the event the migration needs to be “rolled back”.

Underlying all this is constant, real-time communication. Remember, the business relies on the availability and reliability of the IT infrastructure, and regular updates are essential.
The Perfect Plan

Like all good plans, there are bound to be challenges, pitfalls, and setbacks in IT migration. The trick is to be ready for those pitfalls before they happen and to create effective plans that limit the impact to your business. Working with an experienced partner to guide you through the six-step process is one formula for increasing your chances of success. You will rely on teams that can leverage past experiences — putting them to work for your organization. Unfortunately, those that keep the process in-house often find themselves with insufficient resources, lack of experience, and minimal focus to make it happen. No one said crossing the IT migration chasm would be easy. Consider an experienced partner to help make the leap.

About CenturyLink IT Consulting & Implementation Services

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Unlike traditional IT consulting firms that play an advisory role, CenturyLink leverages deep, hands-on expertise with proven best practices built on thousands of client and internal engagements, to guide you through the entire technology lifecycle.

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