MOVING TO THE CLOUD WITH CONFIDENCE

A step-by-step guide to managing all stages of cloud migration

Moving applications to the cloud doesn't require rental trucks or appliance dollies—but there is heavy lifting involved, conceptually speaking. The combination of the competitive environment that businesses operate in, and the hybrid nature of their IT infrastructures, makes successfully navigating to the cloud increasingly challenging. Delivering predictable value and performance requires having a thorough knowledge of how business-critical applications are structured, including an accurate list of the third-party components that play a key role in maximizing performance. A successful migration, which harnesses the full benefits of the cloud, entails having an unclouded understanding of how components

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communicate. Without a clear view of the architecture of the apps, the IT function may find services deteriorating and downtime accumulating. Even worse, important data may get lost.

Other limitations can also make the trip to the cloud difficult, of course. Bandwidth requirements, for example, need to be tested ahead of time, as do any network architecture issues that could reduce responsiveness. In any event, no lifting-and-shifting of applications to the cloud should commence without mapping the associated IT infrastructure, which over years may have changed and grown in ways that weren't clearly documented. In addition to taking in a complete view of the landscape in which applications operate, the exercise may also provide insights into performance issues that could arise as a result of the migration.

Given the complexity of hybrid cloud environments—an appealing mix of agility and cost-effectiveness— it's key for companies to have clear visibility into any and all applications, and their dependencies, before they take their first steps toward the cloud. If a cloud-bound app depends heavily on communicating with on-premises applications, performance may slow. IT leaders also must be able to assess

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performance during the migration process, enabling them to quickly pinpoint any problems that need resolving. By understanding the role of infrastructure monitoring and analytics, companies can position themselves to avoid any migration-related issues involving security, compliance, and service quality.

Setting Out for a Smooth Journey

For certain types of apps, the journey to the cloud is bound to be perilous. That's because many of them, including some created in-house, weren't written for the cloud. As a result, companies typically choose to move those apps to virtualized envi-

ronments in the cloud, otherwise known as the "lift-and-shift" approach. Refactoring apps is also an option, although it can get costly, in terms of time and money spent. Some applications simply aren't worth the effort. Some resource-guzzling applications, such as data analysis tools, may suffer from performance issues if they aren't rearchitected for the cloud. On the other hand, off-the-shelf apps can only be re-architected by the vendor, so they must be conveyed by lifting and shifting, which means they may not receive all the benefits of being on the cloud.

Once companies understand which approach each application requires, they can begin deciding the order in which they'll migrate them to the cloud. For the sake of developing confidence, it helps to begin with the less complex migrations, gaining knowledge that will come in handy for more difficult transitions. Keep in mind that there may be some legitimate reasons for leaving some applications where they are—for now, at least. Those that were recently upgraded, for instance, may be best kept on-premises for the short-term.

Starting the migration with a cloud-friendly app (one that is less data-intensive and is by no means business-critical) can result in a quick win that

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may also help overcome internal resistance to the strategy. Members of the IT function may grow increasingly oppositional as they watch their on-premise assets, such as servers, go dark. Their initial reaction, which is likely to soften over time, is that their skills are no longer needed. It's true that they will have to learn new skills, such as managing cloud vendors and, even more importantly, making sure

they have the tools necessary to monitor the network's performance and security to reduce the cost of any technical glitches. At companies where IT is not regarded as a key competitive differentiator, such outsourcing of service and support may be easier for IT to digest.

Cost savings and agility, after all, are the overriding benefits that drive companies to even

consider relocating apps to the cloud. The ability to scale IT infrastructure to match current demand on a pay-per-play basis can make the pre-cloud costs look exorbitant. But it's still important to consider the fees of the service provider—making sure to include the impact that changing demand could have on such costs, which typically increase during peaks. Conversely, applications that don't experience such demand shifts, such as legacy databases, may be costlier to run in the cloud. Training members of the IT function to service the cloud also means spending money on training. Still those costs, among others, are unlikely to detract from the appeal of filling out a change-of-address card announcing the move to the cloud. The added business value of successfully completing such a shift will likely produce favorable impacts on areas ranging from the costs of customer acquisition to levels of customer satisfaction to shortening the time-to-market for introducing new features and products.

Looking back, on-premise applications will be remembered for the burdens that the cloud has lifted: requiring costly upgrades and expensive maintenance in exchange for hindering company agility.

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Watching their Steps

For most companies, the shift to the cloud represents a giant leap toward a new and unfamiliar business model. The massive digital transformation that is reshaping so many businesses—not to mention entire industries—is not a project to be undertaken in the dark. Both before and after they migrate apps to the cloud, companies need to be able to see the path they need to follow. They need to have tools that can give them visibility into the performance of apps throughout the transformation. Companies want to measure the progress they're making toward their ultimate goal: using the cloud as a catalyst for a digital transformation

that will boost the engagement of customers, both existing and prospective.

By leveraging "smart" analytics and even smarter data, organizations can gain valuable insight into the performance of their apps, pinpointing any difficulties and quickly resolving them. Using wire data, which cleanly and consistently captures every detail of every transaction, companies can get the much-sought "single source of truth" about the performance of their networks and their applications. By monitoring network performance on an app-by-app basis, companies can make sure their apps are available, reliable. and responsive. Using Network Assurance technology, companies no longer need to rely on someone with the expertise to read and interpret packet data. They can now gain real-time visibility into all the network activity involving applications and clients.

Applications built using micro services frameworks—in which application processes are separated into unique virtual or physical servers—contain layers of complexity from the start. For developers, the appeal of such distributed apps is that they can add new components to a single component without making revisions to the others. The capability to expand is especially

crucial at a time when companies in almost every industry are battling existing rivals and descending disruptors to stay competitive. Technologies such as mobile platforms and the Internet of Things (IoT) are in a nearly continuous and ongoing state of flux. With the right tools, companies can continuously collect information on traffic flow and data regarding the workload of any individual app. By using Smart Data, which depends on technology to organize and analyze performance data, companies can track down the source of any performance issues, thereby reducing IT bottlenecks.

Maintaining Peak Performance

Aside from reducing the time, risks, and costs involved with moving apps to the cloud, figuring out—in advance—the ideal

configuration enables companies to keep their apps running at peak performance throughout the migration. Optimal app performance is a critical component of productivity. By using tools that can automatically monitor app performance, the IT function is free to focus on high-value tasks, rather than pouring over data to find the source of any performance glitches.

If apps are running at peak performance, the business is getting closer to meeting its strategic objectives. Having broad visibility into any performance issues, as well as potential trouble areas, isn't quite enough; it helps to have a tool that can offer actionable advice. By effectively addressing every automated alert, the company can expect to have a smooth, consistent experience in the cloud.