WHITE PAPER

Building on the Cloud:

Why You Should Consider Moving Your Application Platform to the Public, Private, or Hybrid Cloud

EXECUTIVE SUMMARY

Cloud computing promises

to be a fundamental transition in the evolution of IT. Measurable benefits such as lower costs, greater agility and better resource utilization have spurred initial adoption. Public cloud Software-as-a-Service (SaaS) and Infrastructure-as-a-Service are already quite popular, but the focus is shifting toward the Platform-as-a-Service model, and increasingly, the private cloud deployment model.

In this white paper, CSC and Oracle will offer guidance, tips and strategies to help organizations plan their transition to a cloud computing framework for enterprise applications. We'll discuss this issue in the context of CSC's and Oracle's strategy—leveraging many of the advantages of the cloud to evolve enterprise applications and the environment in which they reside. We'll look at how to determine which cloud models best suit an organization's enterprise application ecosystem; how to get started; how to assure security; and at some of the management strategies that will ensure success.

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LOOKING TO THE CLOUD

These days, it seems like every tech magazine, vendor, and IT organization is relentlessly focused on cloud computing. It's easy to get impatient with what may seem like a lot of hype, but there really is a good reason for all the excitement. Cloud computing—using a grid of servers to support virtualized infrastructure, platforms, or applications—can give an enterprise flexibility it never had before to respond quickly to opportunities, deploy new applications, or scale up fast to meet growing customer demand. At the same time, it can dramatically reduce expenses for hardware, maintenance, and IT staffing. For nearly all enterprise-class organizations, some form of cloud computing simply makes sense.

Which is why cloud adoption continues to grow. In a recent survey of global IT decision-makers, 88 percent said cloud computing would be a priority over the next 18 months. And as more companies explore the benefits of cloud computing, many are looking beyond SaaS and are investigating infrastructure-as-a-service and platform-as-a-service.

However, transitioning an application to a SaaS model, especially a widely used, mission-critical application, can require changes in how users interact with the application—which they are likely to strongly resist. It can also be difficult to get upper management support for moving mission-critical applications to the cloud.

On the other hand, moving underlying servers to a cloud model (through virtualization) or doing so with the platforms that support business applications will cause fewer disruptions to the user experience. Infrastructure-as-a-service typically improves efficiency and hardware utilization. Platform-as-a-service builds upon those improvements and adds a level of standardization further into the software stack, providing even greater benefits. Both options provide the increased flexibility and decreased cost that a move to the cloud commonly brings. No wonder these options are gaining popularity among IT leaders today.

WHY CLOUD COMPUTING IS GOOD FOR BUSINESS

Let's take a more detailed look at how cloud computing can benefit an organization:

- **Greater flexibility:** These days, even more than saving money, large organizations need to know that they can scale up their operations quickly to meet greater usage needs, and scale down just as quickly if resources are going unused. A cloud architecture (whether public, private, or incorporating both) makes it easier to do this because specific applications no longer need specific physical servers to run.

- **Quicker deployments:** Cloud computing may or may not have an impact on application performance, but in just about every case, you'll be able to get them up and running much sooner. Creating—and eliminating—environments for new applications is a much faster process, allowing your development team to use their time most efficiently.

- **Fewer servers:** Moving applications, infrastructure, or platforms to a cloud model can create enormous savings in your data center, as you can stand down or redeploy servers that were previously hosting applications now moved to a shared model. This can work across various environments (production, development, test), multiplying the benefits. With virtualization tools, creating and then releasing extra environments is quick and efficient.

- **Reduced head count:** With fewer servers to maintain, and with standardized platforms, you will likely find you need fewer IT staff. In fact, many companies find they can cut their maintenance staff by 50 percent.

Any company that wants to lower its IT infrastructure and staffing costs, while being able to bring products to market more quickly, should seriously consider cloud computing. And that's pretty much every company.

THE CHALLENGES OF CLOUD COMPUTING

While a move to cloud computing can bring huge operational and financial rewards, it's a complex and challenging undertaking that requires careful planning and some deep thought about what your priorities are.

You first need to understand the various cloud configurations. Today's cloud computing gives you an array of choices:

Public cloud: This is what most people think of when they hear the term "cloud computing." Applications and/or data are stored on shared servers at third-party providers that supply cloud solutions to many clients, such as Oracle On Demand Cloud Services or CSC's Trusted Cloud.

Pros: Public cloud options offer cost savings and flexibility, as well as initial speed of deployment.

Cons: Business decision-makers may resist having key data off-site or away from IT's direct control, and may not trust the security of data stored on servers shared with other customers.

Private cloud: A cloud infrastructure operated solely for an individual organization. It may be managed by the organization or a third party and may exist on premises or off premises.

Pros: It's possible to achieve many of the cost and flexibility benefits of public cloud computing without the concerns associated with having data stored in a public environment

Cons: Initial cost savings are less than with a public cloud, but long-term cost savings will in some cases exceed the savings of public cloud implementations. This solution also likely requires in-house expertise that current IT team members may not possess if the private cloud is kept on-premises.

Community cloud: Several organizations (such as a hospital and local medical practices) share a dedicated cloud. They can freely exchange data among themselves while keeping it secure from the outside world.

Pros: In industries such as health care, government, and defense, a community cloud provides a secure channel for the seamless transfer of vital data.

Cons: It requires a great deal of coordination among the members of the cloud community, who must also all agree on a provider or central location for the cloud.

Hybrid cloud: A cloud infrastructure composed of two or more clouds (private, community, or public) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load-balancing between clouds).

Pros: Hybrid clouds can offer the flexibility and cost savings of the public cloud along with the security and data protection of the private cloud.

Cons: This is the most complex cloud solution to manage, and integrating the public and private clouds requires special expertise.

Which of these is right for your organization? The answer will depend on several factors, but one key issue for any organization is security. This is where working with a company like CSC brings huge advantages. "Because our history is in the public sector, and with large aerospace and defense contractors, security has never been optional in our case. It was always an initial principle for how we did our development," says Jeff Budge, director, Global Oracle Technology Practice for CSC. The company specifically focused on security when it built Foundation Services for Oracle, a suite of products and services designed to provide smooth implementation and ongoing management for enterprises moving to cloud computing.

Another obstacle may be the need to work with organizational processes already in place, and with the technological expertise you already have in-house. This is where moving infrastructure or platforms to the cloud, rather than user-facing applications, can help. You will still be able to take full advantage of employees' skills and experience with your company's specific applications.

WHICH APPLICATIONS SHOULD MOVE TO THE CLOUD?

Once you understand the cloud types and their various pros and cons, your next challenge is to select which applications to migrate, and to which cloud model: Which apps should be consolidated onto a private, standardized middleware or database platform, which ones should be consolidated using VM technology, which ones should be outsourced to a public cloud, and which ones should be left alone in a dedicated, physical silo. The following steps should start you toward the right choice:

1. **Eliminate applications in transition:** Applications undergoing a major upgrade or other drastic change can be challenging to move to a new environment. You're probably better off leaving them where they are until the transition is complete.

2. **Reread your software contracts:** Licensing issues may rule out some of your choices, because you may be contractually limited by how many servers can run a specific application. Or in some cases, a move to the cloud might trigger increased licensing costs. Any applications that will cost substantially more to license on the cloud should probably be off your list.

3. **Rule out ancient or fragile applications:** You know the ones—those applications that have been around

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forever and run some vital part of your business but are a headache to maintain because any small change is likely to cause big malfunctions. Best leave those beasts alone.

4. **Think big:** Your first instinct might be to migrate a small and non-mission-critical application to the cloud. While that's fine, it also means you won't realize the full value of cloud computing, or see the kind of cost reduction that migrating a large and mission-critical application would yield. "Customers often want to do a cloud migration where the savings is so great that it pays for the rest of the work they want done," Budge reports. "We've sometimes seen cloud efforts considered failures because the desired value was not achieved since they were only migrating smaller and less essential applications."

MOVIN' ON UP

Once you've figured out what type of cloud to use, and which applications should be migrated there—congratulate yourself. The hard decisions have been made and your path forward is defined. With the tough decisions already made, actually moving to the cloud can be relatively straightforward.

This is especially true with help from a company that has successfully completed many such implementations. That's the big advantage of working with CSC and Oracle for your journey to the public, private, or community cloud. IT decision-makers will be well served to opt for an organization with the depth to deal with both obvious and hidden issues as well as a broad range and a broad scope of experience and expertise.

In fact, CSC and Oracle, working together, leveraged their experience by creating a set of templates to guide enterprise organizations through the transition to cloud computing. "When it comes to actual implementations and automation concepts, our question was how quickly can we do it?" Budge says. "Can we create a set of components that we can pull off the shelf, do some minor modifications, and then use that to help a customer set up a new environment very quickly? It isn't a cookie cutter, and these things are never one-size-fits-all. But it does give us a head start, an accelerator."

That head start makes a big difference, potentially cutting significant time off an Oracle cloud implementation. "It's an interesting business conversation to have," Budge says. "I go in and say, don't worry, it won't be a long, drawn-out engagement because I'm going to bring you these templates and your implementation will go a lot faster."

But, he says, that's fine with CSC. "If we can form a trust relationship with a customer by bringing in that kind of innovation, that's a lot more valuable in the long run than a short-term services engagement."

TIME TO TRY THE CLOUD

With greater flexibility, lower infrastructure cost, and lower operations overhead, there's a lot to love about a move to a cloud architecture. And with private and hybrid cloud options offering all the control and transparency an organization could want, there's no reason to fear cloud computing anymore. There's a solution that's right for any organization—even those that have to know precisely where their data is at all times.

Where should you start? A good first step is Cloud Assist, part of CSC Foundation Services for Oracle. Cloud Assist is a set of strategy and planning activities designed to help IT leaders figure out which applications to move to the cloud, what flavor of cloud to use, and exactly how to make it happen. "Cloud Assist helps you look at where you are today, the vision for your business, and the value you're trying to achieve," Budge says. "Then we look at all the applications and the dynamics you have going on, and help you create a road map that gets you there." ||