



Cloud Computing

How can small and midsize businesses that are relentlessly challenged by technology complexity and rapid technology obsolescence utilize a private cloud solution to thrive?



Introduction

As the owner of any small or midsize business knows, a reliable computer network is fundamental to a company's success. Software applications that run the business, as well as customer management, inventory and finance systems, are critical to a company's day-to-day operation and strategic growth planning. Investment in IT, therefore, is paramount, but the costs of managing and maintaining a reliable, scalable network have soared over the years.

As a result, small and midsize companies often postpone hardware refreshes and new application deployments, thereby sacrificing the improvements in productivity and strategic planning that new technology would facilitate. This conundrum has been difficult, if not impossible, for SMB companies to solve. Fortunately for them, relief is coming in the form of cloud computing, which has opened a world of technology possibilities at an affordable cost. Technology previously available only to enterprise companies is now accessible to small and midsize businesses.

Making IT resources even more accessible and affordable to SMBs is a new variation on cloud computing, called "private clouds," which combines the benefits of cloud-based computing with the advantages of on-premise setups. Through his model, the burdens of day-to-day administration and maintenance are transferred from the business to a qualified services provider who delivers "IT as a Service" to the customer. Doing so provides customers with the following benefits:

1. Pay-as-you-grow billing that accommodates IT infrastructure expansion
2. A flexible, agile and scalable IT infrastructure that supports evolving business requirements
3. Reduced maintenance costs balanced by increased hardware utilization

Growing with the Cloud

The term "cloud" has become synonymous over the years with the Internet. The picture of a large amorphous cloud has often been used to give people a visual of the vast infrastructure that makes up the public Internet. Anyone with an Internet connection and browser is a user of the cloud. The typical computer user regularly accesses a vast number of free cloud-based resources, including Google's search engine, Wikipedia, AOL Instant Messenger and myriad social networking sites such as Facebook, Twitter and LinkedIn.

As this "cloud" has expanded and the infrastructure became more stable, technology vendors such as Salesforce.com, Amazon and Google started leveraging the Internet to deliver software applications to users. The vendors act as hosts of the software, managing and maintaining them at their Network Operating Centers (NOC) and making them accessible to users through Internet



connections. This model typically is referred to as “Software as a Service” (SAAS), and customers pay utility-like fees based on their use of the technology.

The cloud, therefore, is much more than what Amazon and Google have to offer. Robust business applications such as customer relationship management (CRM), e-mail, security and data backup and storage are now available through the cloud. Technology vendors also have started offering other cloud-based services, including platforms for software development and integration. IDC projects significant growth in cloud services in coming years. Businesses spent more than \$16 billion in 2009. Their spending continues to increase, and is expected to reach \$55.5 billion in 2014, according to the research company.

The beauty of the cloud model is that it eliminates large upfront investments, thereby reducing capital expenditures and transferring IT expenses to operational budgets. Even though subscription or utility-like fees for technology consumption are bound to increase in time as a result of increased use, a company never has to pay for unused computing power. In legacy environments, this is a very common, costly side effect of having to pay upfront for servers and IT infrastructure. IT analysts estimate that utilization of a typical server ranges from 10 percent to 30 percent of capacity.

In addition to the payment flexibility and cost containment, cloud computing models offer benefits such as centralized management, enhanced security and the ability to scale the IT network as needed. Centralized administration makes it possible to rapidly deploy software applications across the network, and even to multiple locations simultaneously. The same is true of software updates and patches. Security tools and protocols are handled in similar fashion.

Scalability is one of the main attributes of cloud computing. As a company’s computing requirements grow because of additional staff or IT resources, typically there is no need for infrastructure expansion because computing assets are accessed through the cloud. For growing businesses, this is a significant benefit. In a legacy on-premise IT environment, growth often is hamstrung by the limitations of existing infrastructure and the prohibitive costs of expansion. Once a company starts leveraging the cloud, growth is virtually limitless.

Privatizing the Cloud

Computer users know how frustrating and counterproductive it is when a software application crashes or a server breaks down. Long waits typically follow as IT staff troubleshoots the system. Users stay idle for hours, and productivity is lost. If downtime occurs frequently enough, the company’s bottom line can take a hit.



With cloud computing, the risk of downtime is greatly reduced. That means the availability of computing resources is far greater than in legacy IT environments. Because applications are managed and monitored centrally in a cloud environment, most issues that cause downtime typically are caught and resolved before they ever become a problem. But several recent high-profile downtime incidents involving Amazon's and Intuit's cloud-based offerings have made it clear that breakdowns are not entirely avoidable. Such episodes, temporarily preventing thousands of users from accessing business applications, demonstrate that some kinks have to be worked out as cloud computing continues to evolve.

In addition, organizations that handle highly sensitive data, such as medical, legal and financial records, have reservations about letting the data travel outside their firewalls. These types of data are regulated by the federal and state governments, and security breaches can lead to heavy fines and costly lawsuits. Company executives, therefore, worry about whether data traveling outside their firewalls will be seen by unauthorized eyes in unknown locations. They fear losing control over the data, which could be problematic if they need to investigate inappropriate use or access.

These concerns weigh on the minds of business decision makers who consider placing their entire IT environment on the cloud. But rather than turn their backs on the cloud altogether, these decision makers should consider "private" cloud solutions that combine elements of the public cloud with an on-premise environment.

A private cloud replicates the larger Internet cloud on a smaller, local scale, eliminating the security concerns associated with the public cloud. Data stays inside the firewall and, therefore, is subject to the same authentication, protection and security protocols of an existing network – only they are handled better because centralized control removes room for error and the incompatibilities that commonly plague legacy systems.

Configured to meet a company's specific needs, a private cloud leverages dedicated hardware, virtualization technology -- or a mixture of both -- to provide an end-to-end IT infrastructure. Virtualization clones IT resources, including servers, operating systems and software applications without adding hardware. In a virtualized environment, one physical host server can run multiple virtual servers. As such, virtualized environments require far less physical space and significantly reduce the consumption of electrical power to run and cool systems.

Systems in a virtualized environment may include servers, thin clients, storage equipment and networking gear, all run from a central location. Centralized monitoring and management ensures high resource availability, and automatic



updates and patches keep the environment current and trouble-free, all without having to disrupt users for maintenance purposes. Because all these computing resources share a common platform, maintenance is easier and the user experience is more predictable. Common interfaces and protocols shorten the learning curve for users and boost productivity.

Private Vs. Public

Any company considering cloud services, then, should weigh the benefits of public versus private cloud environments. The public cloud offers a viable, cost-effective means of accessing hosted applications such as e-mail and CRM through SAAS models, but this approach may fall short when it comes to infrastructure. Small and midsize businesses that attempt to transfer their IT infrastructure to the cloud take a big risk because if downtime occurs, they lose access to all their assets, as opposed to one or two hosted applications. Ultimately, the costs of using the public cloud for infrastructure may well prove greater than keeping it in-house.

With a private cloud, however, small and midsize companies can enjoy the best attributes of both public cloud and on-premise environments at an affordable cost. By leveraging existing infrastructure with virtualization technology, private clouds solve the problem of physical limitations, internet connectivity issues and excessive costs that traditionally have hampered IT adoption and expansion plans in the small and midsize business world.

IT as a Service Model

As we have seen, cloud computing is a dynamic, evolving model that offers businesses new and varied options for cost-effective and reliable computing. Figuring out which option to choose, however, may prove vexing. For small and midsize businesses looking to combine the best of the cloud and on-premise environments, the answer lies in IT as a Service. Through this model, businesses can leverage elements of the public and private clouds and tailor them to their specific needs.

RoyaTech, Inc. offers our Cloud Computing, an IT as a Service offering, with a turnkey on-premise private cloud solution that we monitor and manage remotely. The solution provides a complete IT environment, replacing conventional hardware and IT infrastructure with thin clients, virtual servers, networking and unbreakable storage with data backup and disaster recovery. The environment is run from a single hardware stack that leverages both on-premise infrastructure and the cloud computing technology. Our solution is deployed at your site, but offers all the attributes of the public cloud while reducing the associated risks.

RoyaTech, Inc. deploys, monitors and maintains the private cloud environment by remaining connected around the clock to the on-premise hardware stack. A



built-in alert system keeps us apprised of any signs of trouble. Our highly skilled staff specializes in prevention; our mission is to anticipate IT problems and take appropriate action before they ever happen. This means the risk of downtime is reduced to an absolute minimum, but should a problem occur, RoYaTech has knowledgeable technical personnel available 24/7 to respond to any issues.

RoyaTech, Inc. also handles updates, patches and the addition or removal of resources such as thin clients and virtual servers as needed. In the event of a disaster, we activate the built-in data storage and recovery platform to provide business continuity. Because of centralized controls, all deployments, maintenance and recovery efforts take place far more rapidly than what is possible with legacy environments.

In addition, because a single hardware stack runs the network, the private cloud solution dramatically reduces the amount of physical space needed to run an IT environment. The same goes for the associated power and cooling costs.

In fact, the economics of IT as a Service deliver a compelling argument for any small or midsize business looking to update its IT environment without busting its budget. For starters, by transferring day-to-day administrative and maintenance duties to us, companies are better able to focus their in-house resources on the core business and strategic planning. This should translate to better staff utilization, lower personnel costs, increased productivity and – ultimately – a boost in profits.

In a more tangible way, the actual costs of running the IT environment are greatly reduced. In our pricing model we charge you a monthly fee based on number of users in your company for our RoYaTech. This billing approach lowers the total cost of ownership and delivers a quick return on investment. It reduces in-house IT staffing budgets because RoyaTech, Inc. handles day-to-day activities and eliminates the upfront costs of capital equipment purchases by the client, instead turning IT expenditures into predictable, more manageable operational expenses. Because the private cloud solution is scalable to accommodate company growth, billing terms are flexible so that fees can be adjusted for increased consumption. The inverse is true for reduced use.

Benefits of Private Cloud Services

Private clouds delivered through the IT as a Service model provide an array of benefits to small and medium companies. Chief among them are:

- Avoidance of unpredictable IT charges
- Allows your staff to have an enhanced business focus
- Improved quality of IT
- Utility or subscription-based billing



- Flexible pay-as-you-grow terms
- Reduced maintenance and power costs
- Increased hardware utilization
- Flexible, agile and scalable IT infrastructure tailored to specific business needs
- Built-in business continuity, high availability, and monitoring

Conclusion

In a highly competitive business environment, small and midsize businesses are relentlessly challenged by technology complexity and rapid technology obsolescence. For too long, small and midsize companies have faced hard choices on IT investments. Budget pressures have often forced them to forgo technology advancements while the costs of maintaining and managing their IT infrastructures have soared. Cloud computing is changing this landscape by placing the newest technology within reach of small and midsize business at an affordable price. Businesses, however, must move with caution and choose solutions that best address current IT needs and prepare them for the future. For a preponderance of small and midsize businesses, IT as a Service delivered by Royatech, Inc. is a reliable IT service providing the best of the on-premise and cloud computing worlds.

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