



Head *in the* Clouds

Field services providers embrace hybrid cloud infrastructure for scalability, automation, and cost containment.



By **Scott Anderson**

Change is difficult but often essential to survival.” —*Les Brown*

Cloud computing is the next big technological paradigm shift for organizations to stay competitive, remain profitable, and prosper in uncertain financial times. Technology has progressed from punch cards, to mainframes, to client-servers, to web-based approaches for importing, storing, processing, and producing data to drive business initiatives. With the continued evolution of processor capabilities, storage growth, and real-time information needs, organizations must transform their IT strategies if they are to remain relevant.

The 2014 report *Data Growth, Business Opportunities, and the IT Imperatives* conducted by IDC and EMC reveals that the volume of total data we, as a society, create is doubling in size every two years. By 2020, the global volume of data will represent 44 zettabytes, or 44 trillion gigabytes. To put that number in context, the volume of textual data in the Library of Congress represents 15 terabytes of space, or roughly 0.000000015 zettabytes. Field services organizations are seeing a rapid increase in storage consumption from the millions of pictures, videos, emails, and data coming into their environments from myriad sources. These organizations are charged with storing multiple copies of each piece of data on their storage arrays, replication arrays, network storage devices, and backup media. The consumption, storage, and management of this volume of data is forcing field service organizations to change their strategy for data management.

Field services IT departments must rapidly respond to changes in security, regulatory, compliance, and client needs within their IT infrastructure and IT applications. In addition, these IT environments also must be agile enough to rapidly scale their environments up and down to meet changes to transaction volumes—while controlling costs—to ensure the profitability of the business.

Cloud computing strategies provide the essential tools for IT organizations to gain scalability and agility within their organizations while meeting the cost-control mandate.

Although the idea of cloud computing has been around for over a decade, it has been only recently that this process of transitioning workloads to cloud environments has experienced a significant spike in the business world. Many businesses are moving away from investing capital in data center environments and racks of physical servers toward co-located private cloud environments or pure public cloud-based infrastructures. These businesses are gaining greater agility, scalability, and availability of their systems and business processes. With the field services industry's rapidly changing requirements and the need for secure data storage of millions of properties, these new technological approaches are critical for business success.

Cloud computing is generally categorized into three distinct approaches: public cloud, private cloud, and hybrid cloud. Because of increased scrutiny



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from regulators and the need to keep property information secure, while better controlling costs, the best way field services companies can serve their mortgage servicing clients is by adopting a hybrid cloud infrastructure strategy.

Making It Public

For several years, IT professionals and businesses have debated the best way to utilize cloud computing within their organization. Those in favor of the public cloud offerings cite the cost savings of predictable operating expenditures over variable capital expenditures. Public cloud advocates also enjoy the known cost structures for scaling their environments to address usage, speed, and increased data capacity needs.

Public cloud offerings tend to be less expensive and easier for businesses to rapidly implement, while avoiding the capital costs of purchasing and maintaining data

centers and physical hardware. Public cloud infrastructures are billed on a consumption model, representing the end user client's use of storage, central processing unit (CPU), memory, bandwidth, and level of redundancy. As additional services or technical resources are consumed, monthly operating expenditures will increase.

Public cloud environments also provide great benefits to organizations beyond capital cost avoidance, which include automation, scalability, rapid deployment models, and decreasing staff needs. Public cloud clients are able to build systems and complete environments in minutes with the automation tools built into the public cloud offerings. Many public cloud clients also are building elasticity into their environments, allowing them to auto-provision and scale up to meet the demands of their users, then dynamically de-provision systems during lower utilization

periods to further optimize operating costs. With the cloud provisioning and automation toolsets, public cloud clients require less IT administrative staff, lowering their staffing expenditures and shifting their existing staff toward more engineering focuses.

Because public cloud computing runs on shared hardware, consumed by many different clients, security concerns may be an issue for financial clients running their mission critical applications and storing their protected data in a shared public cloud environment. Other areas of concern with public cloud offerings include the accessibility of retrieving data or moving data between providers, linear growth in operating costs, and the auditability of public cloud environments.

Private Eyes

Many IT organizations are implementing private cloud environments, which

leverage the public cloud technologies like virtualization, automation, and enhanced monitoring within their physical or co-located data center environments. IT organizations that prefer private cloud computing prefer the agility, automation, scalability, and redundancy of public cloud offerings, mixed with the management, security, and control frameworks built within their own data center environments.

The private cloud is developed and implemented to support a single organization—whether managed internally or by a third party—and hosted within internal data centers or co-located environments. Highly sensitive and confidential data can be stored securely in a private cloud offering, with the IT organization maintaining total control of the security and audit components. IT organizations also have greater flexibility and options for managing access to their environments in a private cloud offering.

Private clouds maintain higher costs than public cloud offerings due to the need for both capital and operating expenditures related to the maintenance and support of the data center environments, physical hardware, software, and the cloud framework tools. However, the increase in costs is offset by the total control an IT organization can maintain with relation to security, audit/compliance, technical capabilities, and data access.

Best of Both Worlds

A hybrid cloud combines both public and private cloud services that companies are leveraging into a comprehensive solution to solve business problems. While being separate entities, many organizations are combining public cloud services for scalability and agility in their infrastructures, while maintaining private cloud offerings for security and control of their protected data.

Fields services organizations



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will find that a hybrid cloud strategy will offer their organizations the greatest flexibility, while maintaining the tight security controls needed to meet audit and compliance requirements. Regulations and guidelines require that property data remain stored in a secure location with stringent access controls around that data. Using the hybrid strategy allows for the flexibility and cost savings involved in consuming public cloud resources with unrestricted data, while maintaining their critical systems and confidential data in the controlled private cloud environment. Several national field services companies, like Safeguard Properties, have begun utilizing the hybrid cloud system to leverage public cloud offerings for informational websites and research and development (R&D) projects, while maintaining all of restricted data within their tightly controlled private cloud environments.

Earlier this year, RightScale, a cloud automation vendor, released its 2015 "State of the Cloud Report," which surveyed 930 IT professionals about cloud computing. It showed that hybrid cloud offerings remain the preferred strategy for businesses, with 82 percent of businesses reporting that they use a hybrid offering. This is up from 74 percent in 2014's report.

The Sky's the Limit

Field services providers must take a cautious approach to cloud computing. Many mortgage servicers have yet to fully embrace public cloud technology due to legitimate security and compliance concerns. However, field service providers can leverage a hybrid cloud strategy, keeping their sensitive data protected in their private environment, while leveraging public cloud offerings for development, test, and stage environments to lower capital costs and pay for the services they consume on an as-used basis. Field service providers also can leverage cloud service offerings for targeted applications like time and attendance, payroll, CRM, or Web hosting initiatives.

Safeguard has implemented a comprehensive hybrid cloud strategy, integrating the company's new state-of-the-art data center environments with private cloud technologies, while utilizing public cloud services for hosting of informational websites and strategic research and development projects not containing sensitive data. Using a hybrid cloud approach has helped Safeguard provide better services to its mortgage servicing clients through ensured and enhanced security, dynamic agility, and enhanced monitoring.

The hybrid cloud approach has allowed

Safeguard to be more agile in reacting to issues or needs in a timely manner. Leveraging public cloud offerings for rapid R&D builds of solutions has allowed Safeguard's IT department to rapidly prototype and deploy test solutions, without tying up infrastructure hardware and human resources. These solutions are vetted out in protected public cloud offerings, then brought back into Safeguard's private cloud environment for deployment into the production infrastructures. In leveraging public cloud services, Safeguard has been able to lower its capital spend for development environments and developmental IT staffing support.

Safeguard's newly implemented private cloud infrastructure has provided great efficiencies and agility to support the rapidly changing needs of the industry. System deployments have decreased from multiple days down to minutes, environmental patching has been reduced from weeks to several hours, and system failovers have decreased from hours to minutes.

This new level of agility has positioned Safeguard to better support and rapidly respond to dramatic fluctuations in transaction volumes. For example, during grass-cut season, Safeguard can dynamically increase system capacity to support increased transaction volumes, then scale back as transaction volumes decline in the fall.

Safeguard's private cloud strategy, termed "Data Center 2.0," has implemented redundancies at all tiers of its environment, across multiple geographically diverse data center environments, while removing single points of failure. This is done so the company's clients are not affected and, in most cases, are not even aware if system issues arise. This cloud strategy also enhances Safeguard's monitoring capabilities, as systems and transactions can be analyzed down to the packet level. This gives the company complete visibility into the health and performance of applications across all systems, networks, and end-user environments.

Despite questions, uncertainty, and lingering doubt from the mortgage servicing industry, a cloud computing strategy is a requirement for field services providers to maintain the agility to support rapidly changing requirements and support the exponential increase in data, while controlling IT costs within their organization. **M**



SCOTT ANDERSON is the AVP of infrastructure services for Safeguard Properties, the largest field services company in the U.S.

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