White Paper

When Cloud Makes Sense

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Introduction

Today's business climate requires companies to find new ways to reduce costs while becoming more agile and improving their competitive advantage. For more than a decade now, companies have been implementing virtualization technologies in their data centers to increase efficiency and consolidate servers. Virtualization is a foundational part of cloud computing. The biggest benefits of virtualization are efficiency and operational availability. So many more benefits can be realized by moving beyond virtualization to the cloud. The benefits of cloud include agility and flexibility, the potential for capital reallocation, and accelerated competitiveness.

Business Transformation

Cloud helps with this kind of transformation for a business through implementation of the key tenets as outlined by NIST: on-demand/self-service, resource pooling, measured services, broad network access, and rapid elasticity. Table 1 shows the technical merit of these key tenets and their business benefits.

Table 1. NIST Cloud Tenets Tied to Business Value

Cloud Tenet	Technical Meaning	Business Impact
On-demand/Self-service	Shift from fixed systems to dynamically scalable systems provisioned as needed without IT assistance	Only pay for what is used. Shift from an allocation model to a consumption model. Brings business agility by having resources when needed.
Resource Pooling	Shared resources across multiple tenants (business units, companies, etc.). Maximize utilization of infrastructure	More efficient usage of IT resources—with potential savings on capital.
Measured Services	Metered usage of services	Billed for resources used. Shift from CapEx to OpEx.
Broad Network Access	Connect from any device, anywhere, to any service (application)	Improves business agility and supports a mobile workforce.
Rapid Elasticity	Theoretically limitless resources that can scale up or down as needed	Able to meet all business demands (flexibility and agility) and only pay for what is needed as needed.

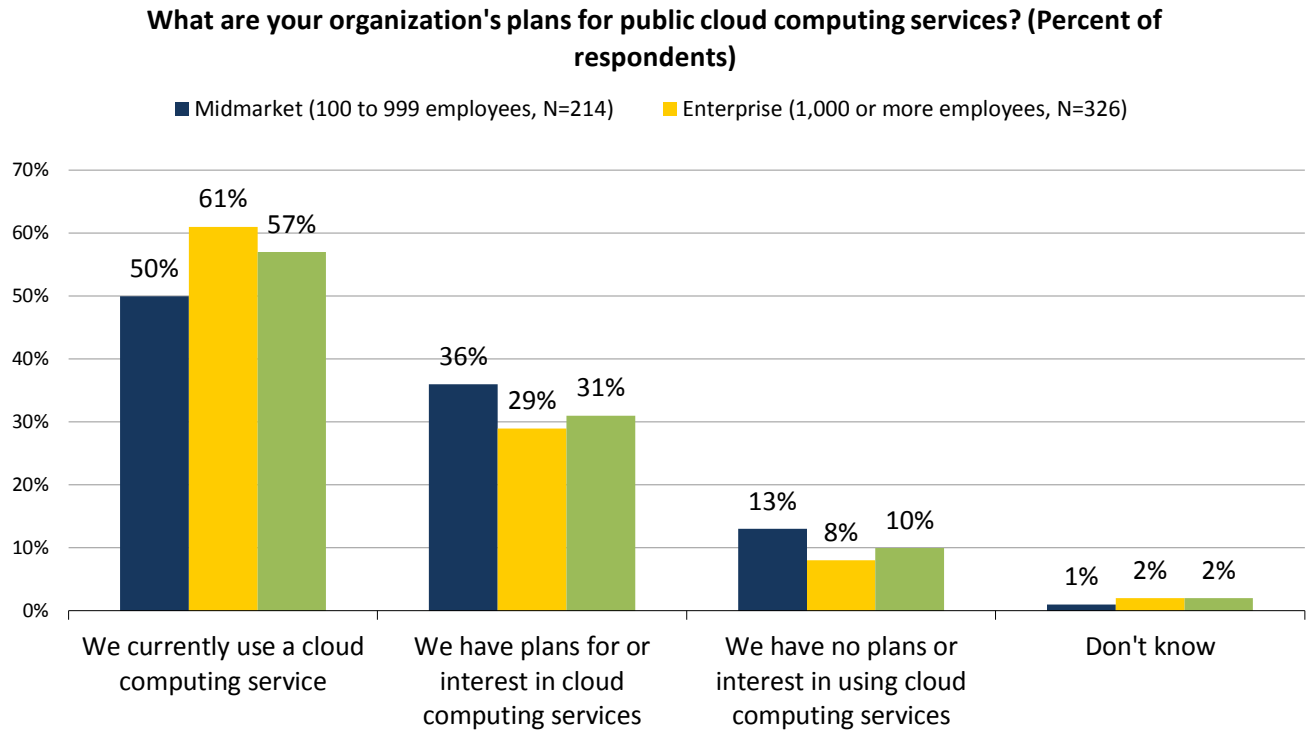
Source: Enterprise Strategy Group, 2013.

What the Research Says

ESG research shows that cloud adoption is already very high with an average of 57% respondents currently using cloud services with another 31% having plans or interest in cloud services (see Figure 1).[1] This makes for an aggregate of 88% either using or considering cloud, or put it another way, this represents a sizable majority of companies that have or will have cloud computing in the near term. Cloud has made it past the market hype phase and we've crossed the chasm to an important element of IT service delivery.

[1] Source: ESG Research Report, *2013 Public Cloud Computing Trends*, March 2013. All other ESG research references and charts in this white paper have been taken from this research report.

Figure 1. Organizations' Plans for Public Cloud Computing Services

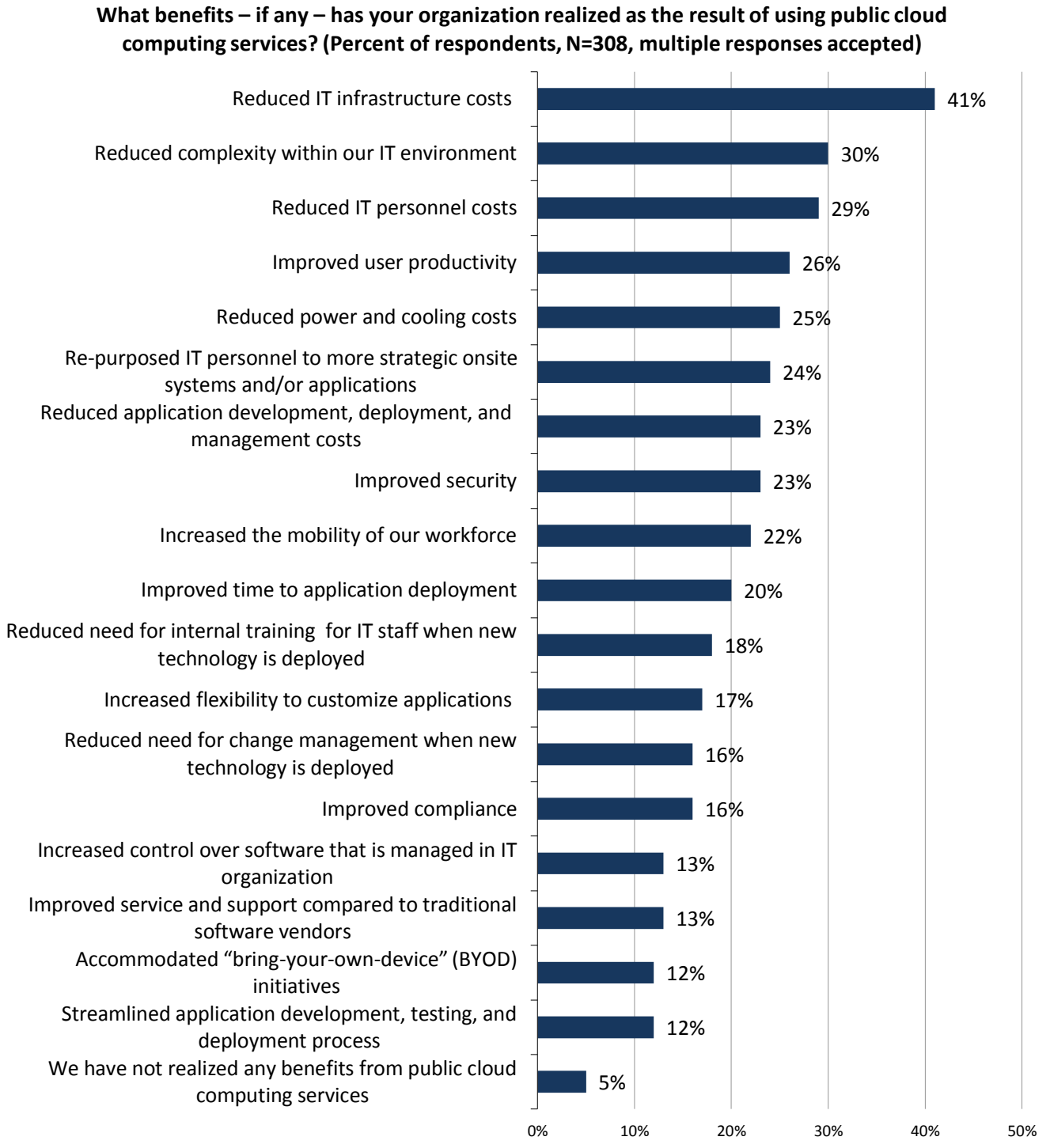


Source: Enterprise Strategy Group, 2013.

Benefits

Those surveyed by ESG found that business benefits from cloud computing include reduced costs, reduced complexity, improved productivity (efficiency), and agility through workforce mobility and time to application deployment (see Figure 2.). Reduced costs can come from delaying or canceling capital expenses on equipment, real estate, data center expansion, and the technical resources needed to manage a growing data center. Improved productivity is an outcome when end-users have more reliable access to systems, applications are developed and deployed more quickly, and the business is able to repurpose IT personnel. Agility comes from the ever-emerging need for the workforce to be untethered while having continuous access to critical applications. Business agility is also derived from the business units being able to deploy resources immediately without a long approval process or long-term commitments.

Figure 2. Benefits Realized as a Result of Using Public Cloud Services



Source: Enterprise Strategy Group, 2013.

Cloud computing architectures may come in several different delivery models, but in the end, the value to the business is based on matching usage needs with a provider's services. One of the most compelling reasons to consume cloud services continues to be the ability for a business to almost immediately leverage IT platforms instead of having to wait months for capital. Cloud also allows the business to improve capital usage by shifting to a consumption model instead of a fixed allocation model. These two business drivers alone make the use of cloud services valuable to business. Add in several of the technical facets such as:

- Reduction in complexity by having a service provider run some (or all) of the operations
- Potential for improved security through standardization and the use of best-of-breed security technology and talent
- Guaranteed performance levels due to reference architectures and service level agreements
- Full automation with inexhaustible resources
- Highly standardized, utility-like services
- Best-of-breed security and compliance programs

Concerns and Tradeoffs

These benefits add up to compelling reasons to use cloud services. However, as with any new technology, cloud computing also includes risks and concerns that may temper adoption. Not all clouds are built the same way nor are they all designed to all meet the same business requirements. Private clouds are useful for data that needs to be kept secure or on-premises; public clouds for can be suitable for test/development, disaster recovery, data protection, and managed services; and hybrid deployments allow for workload and data sharing.

Many organizations are trying to develop a cloud strategy where appropriate while integrating legacy environments. Organizations have many reasons for maintaining legacy environments. For some, it is a matter of realizing return on investment; for others, their concern is security and compliance; and yet others have performance concerns that are not currently addressed by cloud computing. Regardless of the reason, the result is a need for a hybrid IT environment.

Though we've seen a healthy adoption as noted in Figure 1, some companies are still concerned about the reliability of cloud services, specifically around security, protection of data, and the risks of using commodity technology.

Security

According to ESG research, security in the cloud remains the number one concern among those surveyed (46%). Security concerns arise from a seeming lack of control and visibility when using an external service provider. Security programs are built around a framework based on "defense in depth," which starts with the physical security of the facility, the vendor's practices and processes, the technology that is used, and how the data is controlled and protected.

Data Protection

Data protection made it to the number two concern this year with 33% of respondents surveyed concerned about data protection in the cloud. Data protection is important to companies for several reasons, not the least of which is business continuity. Data loss minimally means lost productivity for businesses and, in the worst case, can have a major negative financial impact if a breach occurs that results in data losses. Data protection practices and technology are also an integral part of the disaster recovery process. There are several new data protection options with the cloud. One example would be to have backups stored in the cloud and potentially restored in the cloud as well.

Commodity Hardware and Software

Many enterprises use some commodity hardware and software in the data center. It may be the use of open source software placed on a commodity server to support the internal intranet site or an inexpensive storage array used for some of the companies longer term storage needs. Using commodity technology in the cloud is what some cloud providers use as well. This type of technology can be part of the equation in the public cloud used to reduce infrastructure costs. This usually implies that the applications running on commodity are designed with adequate redundancy to offset commodity technology failures or the applications themselves are not mission critical.

Self-service

For some, self-service is part of the Holy Grail for cloud service design. However, there is some downside to going totally self-service. First is the assumption that customers know what they need to select for services from the cloud provider. Second, with self-service the customer has to be technical enough to select and provision the right services. Cloud services should be selected to match the business requirements, while still ensuring that the architecture supports the security, compliance, and performance levels the business requires. The alternative may be to only allow access to self-service for non-mission-critical applications (e.g., test/dev) and to employ a more restrictive posture with mission-critical applications that are built on a fully managed service—where a fully managed service can bring the expertise, 24/7 operations, and management where needed the most.

Business Reliability and Availability

In the end, all of these concerns about security, data protection, a shift to commodity hardware and software, and self-service can have a negative impact on the reliability and availability of mission-critical applications. One way to insure both reliability and availability is for the business to build hybrid services that incorporate enterprise-grade infrastructure on-premises and off-premises. This is especially true for mission-critical applications that often have software that is designed to take advantage of capabilities built into enterprise hardware. The added benefits of having fidelity between on-premises technology and off-premises technology include unified and therefore less complex management, fewer vendors to work with and be trained on, and a simplified process for migrating workloads.

How to Mitigate the Risks

Some Rules of Thumb

The best course of action is to find the provider that is the right fit along several business dimensions. The right cloud provider should meet or exceed the business requirements for functionality and cost; has a pristine record in terms of security and reliability; and is transparent regarding how it runs and manages its cloud services, and the financial health of its cloud business.

- Trust in the cloud is measured by people, process, and technology. For process, make sure the provider has a strong security program based on industry standards and is willing to share details on what standards it adheres to and what controls within the standards are used. When it comes to the people side of things, review what certifications the individuals responsible for security have and if they use third parties, make sure they apply the same background checks on them as they do their own employees. For technology, make sure the vendor offers the security technology needed with options such as encryption, dedicated servers, and strong physical data center protections.
- One reason a company might consider using cloud services is because the cloud provider has functionality that the company doesn't have or can't easily get. It might be as simple as providing a virtual server (in the cloud) for a remote office that doesn't have a data center or the staff to manage the server. It may be as complex as temporarily needing 1,000 virtual servers to test out a new application at scale.
- Cost is always touted as the reason to go to the cloud. The true answer to that can only be found by taking a good hard look at what a company is planning on using a public cloud for and how it is going to use it. Usage models vary a great deal and are an important part of the function of cost. For example, if the cloud provider has a price of $.01/MB ingress and $.30/MB for egress, applications that collect data are a better fit than applications that generate data that is sent out.
- Reliability comes from using services from a financially healthy provider and that offers services that are reliable in nature. It is important to make sure that the provider is healthy from a financial perspective and that cloud services are growing with a real commitment to becoming a successful cloud provider. The services provided also need to be reviewed to make sure the provider has adequate data protection services as well as redundancy through multiple locations or at least multiple zones within a data center.

- Transparency is fairly subjective and hard to measure, but the Internet is available as a source to see what people are saying about the provider and what kind of press it has gotten in the past. ESG also recommends asking to see results from audits (especially compliance and ISO type audits) and talking customers as references.

Though a myriad of good business practices could be applied, these rules of thumb provide a good starting point for assessing cloud service providers.

One name in the industry has been delivering off-premises computing services for decades that is also a cloud services provider: Sungard Availability Services (AS).

Sungard Availability Services' Cloud Services

As you might expect, Sungard's Availability Services division has been around for a while–in fact, over 30 years. Sungard AS services include colocation, managed services, recovery, business continuity, consulting, software services, and public cloud services. Sungard AS' cloud services are unique in several ways:

- **White Glove Experience** – Sungard AS offers both single tenant and multi-tenant clouds with hands-on help from its expert cloud team. Cloud is often thought of as self-service, but many companies don't have the experience, training, or time to become experts in cloud computing. Sungard AS experts help with the service selection, sizing, provisioning, patching, and management of services to make sure that the business meets the availability guarantees of 99.95%, which Sungard AS stands behind.
- **Guaranteed Availability** – In addition to the experts making sure the service stays running 24/7, Sungard AS has also built and acquired the technology needed to support those guarantees. From using enterprise-quality infrastructure brands such as EMC, Cisco, and Juniper for hardware to cloud technology from Citrix and VMware. Sungard AS also has designed redundancy with five regional locations, a high availability architecture with redundant hardware, and a business continuity option with a 30-minute recovery point objective (RPO) and four-hour recovery time objective (RTO).
- **Change Management** – Instead of having to work all weekend, a Sungard AS cloud customer can put in a work order request for an immediate change or a scheduled change and leave the technical details to the Sungard AS cloud team. A key part of Sungard AS' rigor in change management is tied to its use of the principles of ITIL and using ITSM to deliver its services.
- **Security and Compliance** – Security processes include compliance and standards certifications such as ISO 20000-1 and SSAE 16 Type II audits. Sungard AS' security professionals use all the best-of-breed software and procedures to assure trusted services are delivered including log management, threat management, IDS services, and virtual firewalls. PCI DSS and HIPAA customer requirements can be met with the processes and infrastructure that is available for customer applications that require this level of compliance.
- **Unique Services** – Many companies just need basic infrastructure services, but some need options that fit their businesses when it comes to disaster recovery and data protection. Others need integration of their services. Sungard AS offers a broad portfolio of services, including the ability to support heterogeneous environments. In addition, it offers unique services that come from its long heritage in disaster planning and recovery. The first one is called Managed Recovery, which can use cloud as the target for recovery and Sungard AS provides the white glove support needed to make the recovery successful. The second service is called Recover2Cloud, which can provide discrete services like server replication or storage replication and vaulting.
- **Business Reliability** – As mentioned earlier, Sungard AS has been in the business of ensuring business reliability for over 30 years with over 7,000 customers and over 90 resilient facilities around the world. Transparency as a business is important when customers give up control—they want to trade that control for visibility. Sungard AS ensures visibility by assigning a trusted cloud advisor to the customer and providing continuous access to him for design changes, system updates, and status of his infrastructure.

Sungard AS' managed cloud offerings allow a business to worry about business while Sungard AS' cloud experts worry about the health and management of the cloud services. ESG spoke with some of Sungard AS' customers to get their perspectives on the services they've received.

Customer Interview 1 – Hospitality Industry (SMB)

The first customer was not an IT person per se—she just inherited the responsibility of keeping the systems up and running. The customer works for a hotel which has two restaurants, a bar, a coffee shop, and 62 rooms. Before engaging Sungard AS, the customer had 14 servers running on-premises. This meant that the customer had to be on call if anything failed—whether during the work day or late at night on weekends during time off.

Since moving to Sungard AS' cloud, the customer was able to reduce her servers to just one on-premises with only four virtual machines running in the cloud and a SQL database. The biggest concern the customer had was if the software she used would work on Sungard AS' cloud. According to the customer, "Sungard AS worked closely with the software provider and with a few tweaks, the system was up and running on Sungard AS' cloud. They were really easy to work with and now I don't worry about the systems at all—they notify me if there are any issues. I usually don't even think about it all—it just works and I get a monthly checkup from them with all the status of what happened over the month and what we used for resources." The customer also said she now has a real disaster recovery plan, making her more compliant while improving her ability to focus on customers instead of the technology.

Customer Interview 2 – Supply Chain Management

The second customer was the CEO and business owner of a unique pay-to-procure business that provides an SAP-based platform that is hosted on Sungard AS' cloud providing services to a myriad of businesses including long-term care, nursing, hospitality, and education organizations. The CEO said that he couldn't have built a successful business without it being virtualized from the beginning and able to scale out as new customers are acquired. The Sungard AS cloud has allowed him to hire people only focused on the business with Sungard AS acting as his IT on his behalf—24/7.

The key reasons for choosing Sungard AS included Sungard AS' longstanding reputation as a large and well known entity and its heritage that includes its experience with supporting companies' security and availability requirements. When asked if there was anything else to share, the CEO said, "They were very helpful to our business model. Sungard AS' cloud allows us to grow as we need with capitol expenses only accrued at the time of growth—spending at the point of deployment."

Summary

Finding the right solution in the cloud can be a daunting task. And the barriers are that much harder to overcome if the company isn't cloud savvy with trained architects, engineers, and development people. Sungard AS provides the best of both worlds by being the trusted advisor for the customer with Sungard AS' Cloud Services. As customers have attested, Sungard AS reduced their number of servers while providing improved availability and allowing them to focus on their business.

Reliability and transparency are really important when a business is going to move part of its mission-critical operation to a service provider. Sungard AS has built an enterprise-grade cloud offering that leverages its heritage in ensuring businesses don't have downtime due to infrastructure failures. What makes this offering enterprise-grade is more than branded hardware and software: It is also the people such as the cloud advisors and the processes such as ITSM with a long history of providing highly reliable services.

The Bigger Truth

Experimenting with cloud is certainly one way to go—if you have the time and resources to go down that path. Most businesses would rather be more agile, competitive, and focused on what they are best at doing. Cloud holds promise for companies to enjoy the benefits of being more agile and competitive. Vendors like Sungard AS provide an option that is just like what an enterprise would have to build on-premises. Bullet proof, proven, and well managed are the hallmarks of an enterprise data center, which is exactly what Sungard AS is known for when it comes to its other services.

The white glove approach to services isn't cheap, but is certainly necessary when that cost is compared with business outages or worse, a provider going out of business and leaving customers without their data. Whether a business is Fortune 100 or a small hotel with a couple of servers, the ability to get out of the infrastructure business is getting closer to a reality with services like what Sungard AS has to offer. Cloud isn't nirvana, but it can enable companies to be more agile, which often makes them more competitive. Time is the one thing businesses can't get back—whether it's the time needed to procure and provision systems, or the time lost due to an outage and an extensive restore. Managed cloud makes a lot of sense for enterprises by allowing them to have choice without having to worry about how to design and provision cloud, or be concerned with patches, updates, and troubleshooting problems.

Enterprise Strategy Group | **Getting to the bigger truth.**

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