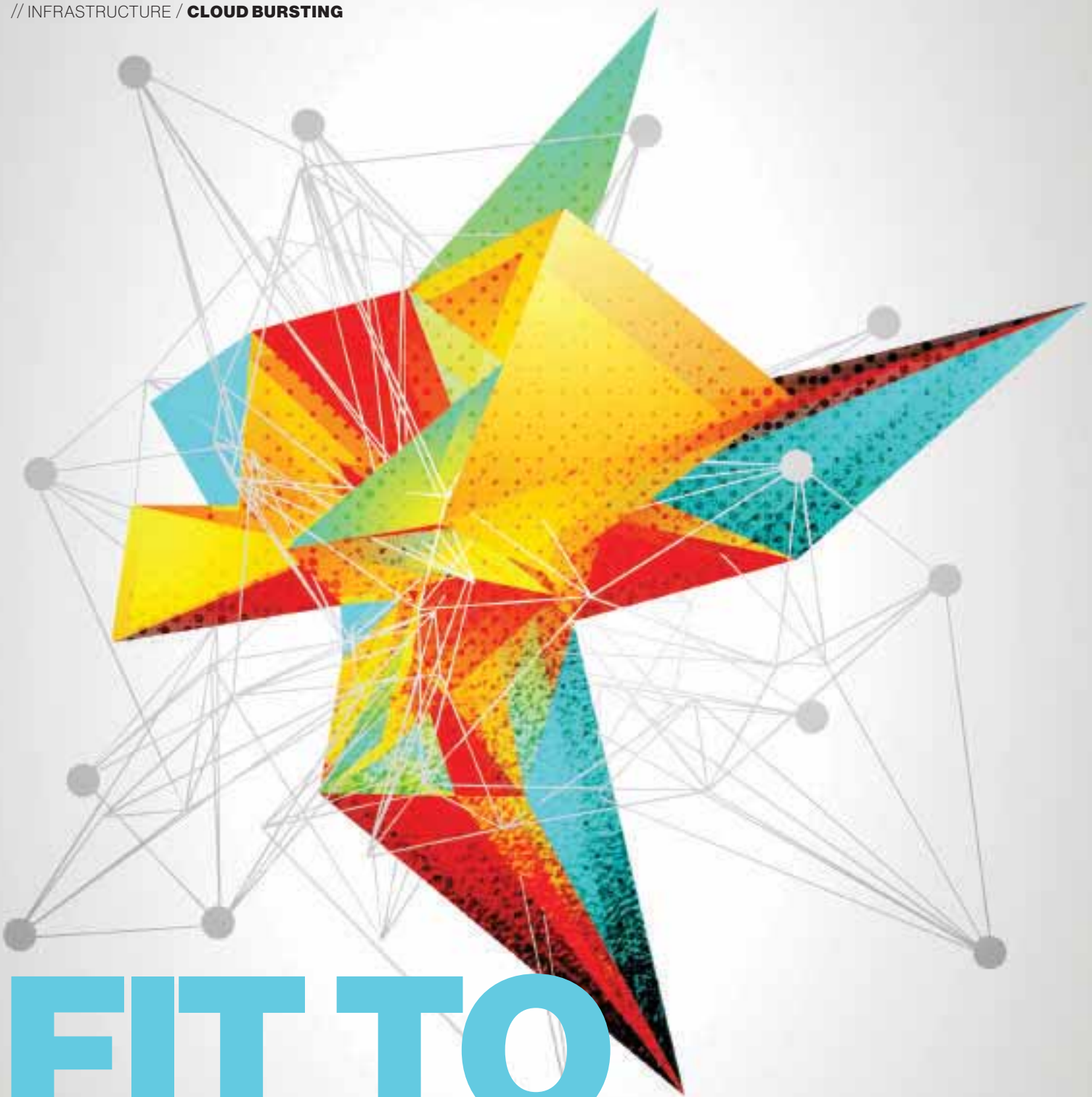


FIT TO BURST

CLOUD BURSTING WILL BE A HOT TOPIC IN THE REGION AND COULD HOLD THE ANSWER FOR ENTERPRISES THAT NEED EXTRA COMPUTING CAPABILITIES AT CERTAIN TIMES OF THE YEAR, WRITES PIERS FORD

If you still are not sure what cloud computing actually means, the arrival of cloud bursting as the latest industry buzz phrase has probably already pushed you to new levels of exasperation. But keep calm. It turns out to be a relatively simple concept, which in the long run could hold the answer for organisations that only need to boost their storage and application capacity intermittently.

If you are running the network for an educational institution, for example, activity probably peaks at registration time. A retailer, on the other hand, might need to boost their capacity for a few weeks over the holiday seasons, before demand returns to normal levels. If you were already running a private cloud, leasing extra space from a public cloud provider to give users access to high-performance, non-business critical applications during these periods could be an ideal solution.

"Cloud computing has been an industry buzzword for a long time," agrees Rajesh Abraham, director of product development at regional service provider eHosting Datafort (eHDF). "However, a comprehensive understanding of what 'the cloud' is remains a grey area – partly because there is no clear definition.

"Cloud bursting is a hybrid cloud deployment model in which an application runs on a private cloud or data centre, and bursts to a public cloud when demand for computing capacity spikes. It requires sophisticated middleware to manage demand for computing resources to monitor the availability of private cloud capacity."

THE REGION

Abraham says cloud computing is still a relatively new phenomenon in the Middle East.

"However, moving into 2013, and with the increasing adoption of public and private cloud computing services, it's predicted that cloud bursting will be at the top of executive and CIO minds with respect to the direction of cloud computing.

> "Ideally, cloud bursting provides the best of both worlds. It allows the enterprise to maintain ownership and control over its application on-premises while having fail-safe off-premises solution when needed."
>
> **Hatem Bamatraf, executive VP, enterprise, du**

"In the case of eHDF, some of our hosted private cloud customers have additional virtual private servers in their various application tiers [web, middle tier etc] configured and ready to be started any time they have a business spike. Most of the time these additional servers are not in use. They incur only minimal charges, and this arrangement allows the organisation to address regular load and peak load in a cost effective manner."

At data storage vendor EMC, Gulf systems engineer manager Ahmad Muammar says hybrid cloud has proved the best option among early adopters of the cloud computing model in the Middle East – a mix of private and public services.

"We have witnessed fast adoption for virtualisation as a critical step in the journey to private cloud," he states. "At the same time, several cloud service providers have started to move from merely co-location into managed services and eventually a good amount of cloud offerings. The last phase has not finished yet in the Middle East, but we are seeing seri-

CLOUD BURSTING SECURITY MATTERS

Cloud bursting will bring with it a number of regulatory and compliance issues, many of which are security-related. Some of these will be the responsibility of the service provider, while others will impact the customer.

"Cloud bursting is often cited as a viable option for retailers that experience peaks in demand during the holiday shopping season," said Hatem Bamatraf, EVP, enterprise, at du.

"However, cloud computing service providers do not necessarily offer a PCI DSS-compliant environment and retailers could very well be putting customer's sensitive data at risk by bursting it to the public cloud."

More widely, companies need to prepare for the impact of known and unknown trends and consider solutions for next-generation firewalls, application control and visualisation, bandwidth management, secure remote access, clean VPN and data leakage prevention, according to Florian Malecki, product marketing manager at Dell SonicWall.

"Securing the cloud depends on working out where and how to apply measures to meet the user's needs. You need application intelligence, control and visualisation that will work with you in leveraging your move to cloud securely."

Rajesh Abraham, director of product development at eHosting Datafort, said many regulatory and compliance factors will depend on the type and size of the business. He recommended a checking of software vendors' and service providers' policy for cloud bursting, in particular, service providers' reporting capability when it comes to tracking access control as well as general audit requirements.

Hatem Bamatraf from du says that cloud bursting provides companies with flexibility.

Florian Malecki from Dell SonicWall says companies need to prepare for known and unknown trends.

Gregor Petri from Gartner says one of the cloud bursting issues is non-compatibility of enterprise apps.

ous steps from both enterprise and cloud service providers in fully embracing the cloud concept."

COMPLEXITY

Muammar defines cloud bursting as a special case of the hybrid cloud, where a particular application can 'burst' its workload to the cloud.

"We see some enterprises moving some of their applications, such as emails, web apps and backups, to cloud providers while keeping the rest on-site," says Muammar. "However, the concept of bursting a portion of certain applications to the cloud has not matured yet."

And before this aspect of the cloud market approaches anything like maturity, organisations that are considering it will need to balance the potential benefits of cloud bursting with some logistical challenges.

"Ideally, cloud bursting provides the best of both worlds," explains Hatem Bamatraf, executive vice president, enterprise, at regional telecoms firm du. "It allows the enterprise to maintain ownership and control over its application on-premises while having a fail-safe off-premises solution when needed. But there's a trade-off. This flexibility comes with a more complex computing environment to manage."

> "If the providers and management software providers can make the process secure, reliable and manageable in a vendor-agnostic manner, the days of zero service downtime are not far off."
>
> **Rajesh Abraham, director of product development, eHDF**

A cloud bursting environment has to be built and maintained by the enterprise and the provider, even if it is not used for many months at a time, explains Bamatraf. Every change to the on-premises application needs to be replicated to the mostly dormant bursting environment.

Aside from security considerations, this is one of the trickiest design factors for a cloud bursting model and IT decision makers should seek out a service provider who understands the difference between fully-managed cloud and a bursting environment that is, essentially, a disaster-avoidance solution.

"This minor difference is important," explains Bamatraf. "A cloud bursting environment is basically always on deck but might never see any action. It is the special team of the data centre world.

"The cloud provider needs to offer an environment where that team can be called up at any time in an automated, pro-

THE FUNDAMENTALS OF...

Cloud bursting

Cloud bursting is an app deployment model in which an application runs in a private cloud or data centre and bursts into a public cloud when capacity demand spikes. A company only pays for extra compute resources when they are needed.

grammatic way, from the management platform as if the resources were on-premises. It does no good to keep resources at the ready if you can't spin them up on your terms. Choosing a provider that can tie into your event management system is a make-or-break decision"

This is something that service providers will need to address from their own perspective.

Another major problem with the cloud bursting model is the enterprise applications, which are almost never written for a cloud bursting scenario.

"We do see some new global scale applications that can scale horizontally [by placing more servers next to each other instead of upgrading the server to be a bigger one] but scaling horizontally means they can use servers in the same cloud, not necessarily in another cloud. So again, applications will need to be created and, or written to be able to burst. We do see sometimes that some [batch] jobs are run externally, for example running a simulation job or a large report or planning run externally," explains Gregor Petri, research director at IT research firm Gartner.

THE GAME CHANGER

Rajesh Abraham at eHDF says cloud bursting will be a game changer for the industry.

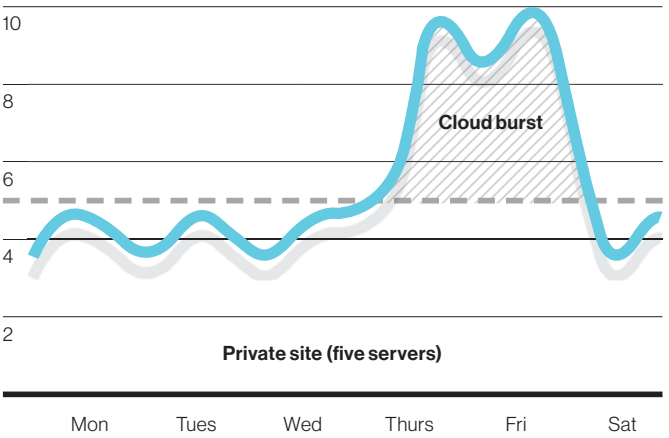
"If the providers and management software providers can make the process secure, reliable and manageable in a vendor-agnostic manner, the days of zero service downtime are not far off," he explains. "The data will be transported outside the client data centre boundaries when bursting is used, so WAN traffic will increase. There are specialised technologies to maximise the efficiency and security, conserve bandwidth and minimise the data security risk, which can be employed to address and enable cloud bursting."

At EMC, Ahmad Muammar says customers should answer some key questions in order to see if they are ready for cloud bursting, or indeed require it at all. Which applications are impacted by business seasonality, for example. How much business growth is expected? What is your operations strategy in capacity management – lead or lag? Is the application you have in mind a likely candidate for bursting? How much risk are you willing to take by moving your data out? And which cloud provider is compatible with your infrastructure?

> "We see some enterprises moving some of their applications, such as emails, web apps and backups, to cloud providers while keeping the rest on-site. However, the concept of bursting a portion of certain applications to the cloud has not matured yet."
>
> **Ahmad Muammar, Gulf systems engineer manager, EMC**

Bamatraf also offered a daunting list of smaller considerations which confirm that cloud bursting is not necessarily a straightforward, easy strategy to switch on. These considerations include virtual platform choice, VM management, dynamic routing, application monitoring, service-level agreements, a centralised message bus and dynamic DNS, which is a way of changing a Domain Name System to point to different IP addresses.

CLOUD BURSTING COSTS AND SERVER REQUIREMENTS Source: IDC, 2012



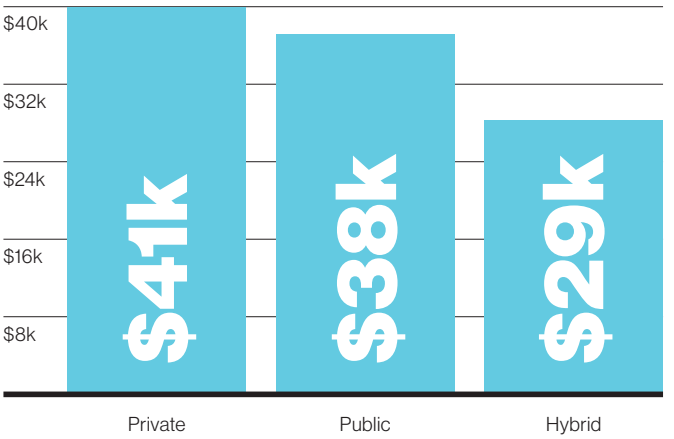


Figure 1 (left) illustrates a scenario where a business typically requires five "extra large" servers for its daily needs, but two days a week experiences a spike up to ten servers. Figure 2 (right) uses Amazon's EC2 Cost Calculator, showing that a hybrid approach is most efficient and lowers costs by up to 29% a year.