HYBRID CLOUD
THE BEST OF BOTH THE WORLDS

Arabian Reseller speaks to industry experts who explain why hybrid cloud is a solution for businesses that want to have the cost efficiency of public cloud with the security of private cloud.

The race for digital transformation is on, with companies across almost every industry looking for ways to provide services and solutions driven by the latest technology. While the initial wave of cloud computing saw many organizations shift away from physical infrastructure, the next decade of IT deployments will see the embrace of true hybrid cloud architecture that provides far greater control and flexibility.

However, enterprises migrating to the cloud are often faced with the dilemma of choosing between public or private cloud. The right way forward is to choose the one that best suits your organisation's workloads, and that could be public, private or even a mix of both. And in the rapidly evolving cloud market, identifying emerging trends can help drive digital business decision making, vendor and technology selection and investment strategies.

The Current State of the Cloud

"Cloud, be it public or private, is gaining traction among a growing number of enterprises looking to create a more efficient IT architecture with cost-effective storage and data management solutions that let those enterprises do more with less," explains Fadi Kanafani, the Middle East Managing Director and General Manager at NetApp. "With a secure cloud solution, enterprises can deploy a cloud infrastructure that accelerates time to market with new services and increases operational

efficiency and flexibility while cutting costs."

Kanafani further adds that private clouds can offer enterprises more IT flexibility, reliable security, and cost containment versus continuing with a traditional "build and maintain your own" legacy systems approach. "Similarly, public cloud has gained more traction as an effective means to meet fast-changing IT needs and therefore it's now widely seen as a viable tool that can offer flexibility to scale computing services based on demand, thus allowing the potential to create cost savings if demand drops or as efficiencies are gained," he adds.

Kerrie Jordan, the Director for Cloud Product Management and Product Marketing at Epicor Software Corp., says that Cloud comes up in 100% of the conversations with customers, prospects, and business partners. "To dig into that a little bit, Epicor formally interviewed over 2,300 professionals as part of the 2019 Global Growth Index. The results were pretty impressive — 84% saw cloud as playing an important role in their growth strategy, 90% run cloud applications today (with 31% saying they already use cloud significantly), and 92% are planning to invest in cloud applications in the next year. That means virtually every organization has some plan to leverage cloud to some extent. When looking at industry metrics like this, it's clear that cloud is here," she adds.

According to a global survey conducted by the Business Performance Innovation (BPI) Network, in partnership with A10 Networks, a vast majority of enterprises worldwide have adopted multi-cloud strategies to keep pace with the need for digital transformation and IT efficiency. "Among key survey findings is that approximately two-thirds of companies have now deployed enterprise applications across two or more public clouds. Around 84 percent of the respondents expect to increase their reliance on public or private clouds over the next 24 months. Also, 35 percent have already moved half or more of their enterprise applications into the cloud. The rise of 5G edge clouds is expected to be a key driver for multi-cloud adoption," explains Adil Baghir, the Technology Consultant Lead for MEA at A10 Networks.

In the Middle East, with the recent announcements from several global cloud service providers as well as an increasing investment from government in this technology, Cloud seems to be approaching a tipping point. "According to a survey carried out by Equinix recently among more than 1,200 senior IT professionals from across Europe, Middle East and Africa (EMEA) show the rise of multi-cloud. More than seven in 10 (71%) organisations are likely to move more of their business functions to the cloud in the coming years. 60% of EMEA IT leaders cite proximity to cloud service providers (CSPs) as an integral factor when choosing a data center in their local market," adds Jeroen Schlosser, the Managing Director of Equinix MENA.

Challenges of Cloud Adoption

Using a hybrid cloud approach most definitely seems to be the way forward due to the benefits accrued by using private clouds and public clouds. Hybrid cloud computing is key to efficient management of a firm's application workloads as different applications require a different platform. However, hybrid cloud does not come without its fair share of challenges and issues. The challenges include security concerns, effective management problems, migration complexities, components partitioning, trust issues, scheduling and execution issues, and numerous other problems. You should remember that these problems are not insurmountable, but they will take some effort to solve.

"Some of the key challenges of cloud adoption include ensuring secure data transfer and data access to meet compliance requirements," says Srinivasa Raghavan, the Product Manager at Site24x7, a service by ZOHO Corp. "Managing IT infrastructure spending while the ease of adding resources in the cloud threatens to push costs out of bounds. In addition, lack of expertise in implementing and managing the cloud and ensuring the proper governance process is followed for resources in the cloud are also the challenges. Also, managing multiple clouds as more organisations look to a multi-cloud strategy to avoid being locked into one provider is a key challenge."

Cloud adoption also requires a standardised IT operating model to design, develop, migrate workloads to and from the cloud. "Non standard practices only add to the challenges and delays the speed to reach out and solve business challenges. Governance, compliance and security consideration are other areas where businesses need to plan their approach before adopting cloud. Also, lack of skills and cost control could be the long term operational challenges why most SME do not adopt cloud easily," explains Rohit Bhargava, the Practice Head for Could and Security at Cloud Box Technologies.

Baghir says that improving multi-cloud security is seen as the most critical challenge, followed by a lack of multi-cloud talent and expertise, the need for centralized visibility, and the capacity to more effectively manage application and infrastructure complexity. "Data locality is another issue as various countries have data privacy laws and compliance requirements based on location. The data is critical in all enterprise architectures. Insecure interfaces and APIs represent another security challenge," adds Baghir.

"The main challenge in my opinion is data migration to the cloud," adds Kanafani. "Although there are native services provided by the cloud providers for migrating data, these solutions might require significant restructuring of the application during a "lift-and-shift" operation or they may not be as fast, taking days or months to

move the data. Therefore, a data migration strategy must be in place to ensure that the applications dependent on that data face minimal disruption and the migration budget does not get blown out of proportion."

The enterprise faces evolving challenges as the Internet of Things (IoT), big data and tight regulatory compliance continues to alter the digital landscape. "With the increasing frequency of data breaches, security is continually a top-of-mind concern. Performance—specifically the need to locate services "at the edge" to reduce latency—is also a top priority. Security and performance requirements of multi-cloud connectivity can be confidently addressed through the capabilities of private connections and virtualization. Private cloud connectivity, software-defined networks (SDN) and network functions virtualization (NFV) are giving enterprises greater control and flexibility in managing multi-cloud connectivity and security," explains Schlosser.

IaaS Helping the Adoption of Cloud Solutions

Infrastructure as a Service (IaaS) is growing faster than any other segment of the cloud services market — outpacing both SaaS and PaaS, and Gartner predicts that growth will continue for at least the next 5 years. According to Gartner, worldwide IaaS revenue this year is expected to exceed $72 billion. In the IaaS model, cloud providers host the infrastructure components traditionally residing in an on-premises data center, including servers, storage, and networking hardware, as well as the virtualisation layer, allowing users to scale quickly to meet demand.

"By leveraging on-demand Platform-as-a-Service (PaaS), Infrastructure-as-a-Service (IaaS) and Software-as-a-Service (SaaS) offerings from cloud service providers (CSP)s and IT service providers, companies can accelerate their digital business transformation to open new markets and grow their revenue through new sources," says Schlosser. He also adds that as more cloud activity accumulates at the edge, private interconnection will be the fastest and safest way to access the necessary resources and services to make any cloud strategy a success.

"Infrastructure as a service (IaaS) offers customers access to computing resources such as servers, storage, and networking. Organizations use their own platforms and applications within a service provider's infrastructure or co-location provider. This has helped in the adoption of cloud solutions due to its main features and flexibility. Customers can pay for IaaS on-demand without purchasing hardware," says Kanafani. "Also, there are no costs associated with buying and maintaining hardware. In addition, there is no singular point of failure, because data lives in the cloud. Another nice feature of IaaS is the scalability of the infrastructure empowering the virtualization of administrative tasks. In the end, it all comes down to which service fits the organization's specific project or future plans best. IaaS is just one of a growing number of cloud service provider models to diversify provider offerings and cut waste from data management."

IT organizations realize the substantial agility and cost benefits of rapidly growing cloud IaaS offerings, such as Amazon Web Services (AWS) and Microsoft Azure. Leading enterprises are evolving their IT strategy by adopting various cloud computing models and software-defined networking (SDN) technology architectures for their internal private data centres to achieve automation, business agility, and dramatically reduced operational costs. "IaaS cloud data centre operators, by contrast, strive to deliver dynamically provisioned computing services and to increase responsiveness to the changing business needs, they also deliver end-user tenants vastly greater business agility, service provisioning times, and economics," adds Baghir.

Eliminating Trade-Offs and Offering Best-of-Breed Solutions

According to Kanafani, not everything belongs to a public cloud, which is why so many forward-thinking companies are choosing a hybrid

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mixture of cloud services. Hybrid clouds offer the benefits of both public and private clouds and take advantage of existing architecture in a data center. "The hybrid approach allows applications and components to interoperate across boundaries (for example, cloud versus on-premises), between cloud instances, and even between architectures (for example, traditional versus modern digital). The same level of distribution and access flexibility is also needed for data. Whether you're handling workloads or datasets, in the dynamic digital world, you should plan for things to move around in response to evolving needs. Where applications or data live today might not be the best place for them to live over time," he adds.

According to Baghir, hybrid cloud infrastructures provide organisations with the flexibility to get the maximum advantages of multiple cloud options. They can provide the best solutions from multiple cloud providers. "For example, some organizations plan to publish their critical applications on a public cloud to optimize the performance while storing sensitive data on their private cloud. This is a win-win model that addresses both the performance of critical applications on a public cloud, as well as the security concerns, in a cost-effective approach," he says.

Agility is a growing business need. The hybrid cloud allows enterprises to both keep up with responding to customer needs by innovating faster, while not shaking up the whole organization by moving to a full cloud environment. "With organizations often dealing with workloads that fluctuate in use, the hybrid cloud offers the benefit of unlimited resources on demand and an additional benefit of close monitoring of all resources being used to best balance your organization's demand with supply," explains Schlosser. "Hybrid cloud model is an excellent way to continue managing current business requirements while being able to support current and future growth."

Bhargava explains that hybrid approach is good for organization that have a certain level of IT infrastructure maturity. Those who can offer some services via public cloud without compromising current business needs and demand. "A major portion of opportunities are from SME that have run out of power and space in their data center to have new infrastructure. Hence Public cloud could be a time saver and flexible solution. As more and more application vendors provide native cloud connectivity, you would observe seamless connections from a private cloud to public cloud without users noticing any hiccups. BYOL or bring your own license is another good way to have a hybrid approach by using or migrating current licenses to/from cloud. Multi-cloud strategy at an advance level would surely dictate smooth communication from different cloud for each application," says Bhargava.

According to Jordan, hybrid environments are common today, and increasingly so, for good reason. "Hybrid cloud offers businesses the freedom to choose their own path to cloud — maybe they want to keep HQ users on premises but take a newly acquired division to the cloud. Maybe they intend to deploy financial applications locally but supply chain solutions in the cloud. Over time, companies tend to bring on applications in different areas of the business, and integrations to leverage data across this unique mix of systems can actually be highly valuable and create a competitive differentiator," she explains.

Raghavan says that hybrid cloud deployments can help businesses effectively deal with the problem of ensuring security while keeping costs low. "Businesses can decide what sort of data to store externally in the public cloud, and what information should reside inside their private data center. That way, they can protect any sensitive data from external threats like data breaches and data loss," he says. "The public cloud may look cheap at the start, but in the long run, the infrastructure costs are not justifiable. Having a private data center for longer running resources and using the cloud for shorter running workloads will help businesses optimise their cloud spending."

Building a hybrid cloud architecture is a complicated undertaking for any organization, but one that can provide a number of significant performance and efficiency benefits. As more organizations shift away from on-premises infrastructure and embrace colocation and cloud solutions, hybrid cloud architecture will likely become more commonplace. By laying out their security and workload needs well in advance, companies can build the dynamic networks that not only help them to service customers today, but also grow their business into the future.

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