VIRTUALIZATION

Infrastructure at the speed of business

Virtualization is definitely much more than just a cost-cutting procedure. Gartner rightly calls upon to see virtualization strategically as 'a catalyst of overall IT change and modernization'. Server virtualization is already a top priority for enterprises and the trend is here to stay.

■ BY: SOUMYA <SOUMYA@ACCENTINFOMEDIA.COM>   ■ PHOTO: SHUTTERSTOCK

Virtualizing of servers, network, and storage is a highly commoditized segment now. Virtualization is no longer a luxury, it is a necessity. Server virtualization is moving beyond basic consolidation into a more managed virtual environment. Many enterprises have focused on server virtualization to increase the efficiency, flexibility, and cost-effectiveness of their data centers. These businesses are also leveraging server virtualization as an important starting point in their journey to adopt cloud computing.

SERVER VIRTUALIZATION MARKET IN THE MEA:

Global Server Virtualization market was forecast to grow at 28.10% CAGR over the period 2013-2018, whereas the Virtualization Services market was set to grow at 10.35% CAGR during the same period.

In the MEA region, many companies have started to recognise virtualisation as a must have technology in order to reduce overall costs and improve efficiency. This has led to increased adoption across verticals and particularly in the banking and oil & gas sectors. Virtualisation

experts estimate an adoption rate between 80 and 90% in these verticals while the majority of large organisations in the region remain at 20 to 30%.

VIRTUALIZATION KNOWHOW IN THE ENTERPRISES:

Enterprises in the MEA are realizing the undeniable benefits of virtualisation, which is driving uptake of large scale virtual deployments. From cost savings to business flexibility and application agility inherent in emerging private and public cloud architecture, virtualisation technologies
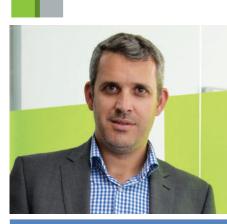
SWAPNENDU MAZUMDAR,
HEAD OF NETWORKS, EHOST-
ING DATAFORT

"It is important to know that not all applications are suitable for virtualisation. Before implementing virtualisation, enterprises need to ensure that their IT architecture, network infrastructure and workforce is compatible, efficient and will provide sufficient performance without affecting the workflow. "

JAMES SPEARMAN,
PRINCIPAL CLOUD CONSULTANT
& HEAD OF DATA CENTRE INFRA-
STRUCTURE, DIMENSION DATA

"The market is starting to change with a view to gain licensing efficiencies through Enterprise Agreements and a move to automation. We're also seeing a trend within customers to move the host environment from traditional servers into hyper converged solutions"

have become a vital part of modern data centres in the region. According to some analysts the awareness among the large enterprises has reached about 92% and 83% among SMBs. However the percentage of enterprises actually fully adopting and exploiting the complete potential of virtualization is lower.

The Middle East is a mature virtualisation market today and enterprises have deployed this technology across their non-mission critical environments. In fact, as the trend is gaining momentum and organizations are becoming more comfortable with the concept of virtualisation, they are also feeling confident about deploying it for their mission critical applications.

Other drivers are also now emerging: virtualisation improves business continuity and

resilience, and can assist in disaster recovery preparations. Many organisations are now looking at how to further automate and orchestrate their virtualisation stack in order to try and gain efficiencies from the platform.

Even SMBs are now opting for virtualised technology to support their IT needs. It is believed that this trend will continue to grow as the adoption of virtualisation becomes more feasible and cost effective.

ADOPTION RATES OF IAAS ACROSS THE MEA

Organisations are cutting down budgets on infrastructure and are looking at IaaS as it is more viable and cost effective. Also companies are being forced to consider not investing in IT

equipment, which is considered a depreciating asset. As a result IaaS will see greater adoption as more companies are squeezed for budgets. It is the early adopters who will gain the most in the long run as they will achieve economies of scale and a faster ROI compared to those that don't.

According to IDC, UAE and Saudi will lead in Infrastructure as a services (IaaS) adoption in the Middle East with the spend reaching $280 million with a year-on-year growth of 33 per cent.

ACTUAL "ECONOMIC" IMPACT OF SERVER VIRTUALISATION

One very important advantage of server virtualization is the reduction of servers- if five to ten servers can be reduced to one and it can give the same service, it is an economical saving as well as it helps in reduced carbon footprint since running servers require huge amount of power and cooling.

Lesser hardware leads to a smaller footprint in terms of Cost impact, lower opex including Power and cooling requirements, lesser hardware meaning lesser break-fix issues and lesser but skilled resources. The potential economic impact on business from disruptions is higher since more eggs are in one basket and hence the headroom of failure needs to be carefully assessed.

In order to reap maximal returns from investment in virtualization, one need to ensure that focus of requirement is not lost, and right technology stack and the right technology partners are chosen.

SECURITY CONCERNS AND SOLUTIONS

"Moving to the cloud does not lessen the security risks when compared to the physical network. Customers may need to be more diligent than ever since the cloud implies easier access and to maximize hardware resources, applications of different trust levels may be running on the same machines" says Matt Keil, Product Marketing Director. Data Center & Virtualization, Palo Alto Networks.

The same levels of application control and threat prevention should be used to protect both your cloud computing environment and your physical network. Cloud security solution needs to be able implement security policies based on the concept of Zero Trust as a means of controlling traffic between workloads while preventing lateral movement of threats. Gartner advocates that organizations "favor security vendors that span physical and virtual environments with a consistent policy management and enforcement framework". In order to ensure security keeps

MOHIT PAL, DATACENTER SPE-
CIALIST | MIDDLE EAST, FUJITSU

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VIDYASAGAR PATRO, MAN-
AGER- PRE SALES, ENTERPRISE
INFRASTRUCTURE, EMITAC
ENTERPRISE SOLUTIONS (EES)

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pace with the speed of change your workflows may exhibit, one's security solution should include features that will allow you to lessen, and in some cases, eliminate the manual processes that security policy updates often require.

"Virtual servers are every bit as vulnerable as physical servers when it comes to cyber security threats. However, to get the maximum value from virtualisation, it is absolutely critical that the organisation ensures that all the necessary security protocols are in place" says Swapnendu Mazumdar, Head of Networks, eHosting DataFort . They need to sign up with a reputed security vendor that offers reliable policy management and enforcement framework, for both their physical and virtual environments. Apart from securing network controls with strong password, firewalls and other security solutions, they need to also separate critical operations from the rest whilst migrating their systems.

James Spearman of Dimension Data has a slightly different take though; according to him,

"Server virtualisation with private data centres typically do not require any additional considerations for security policy as they fall in the remit of an organisations' CISO and will therefore be required to comply with the organisations security policy and procedure. At a technical level, the implementation of security solutions changes. As an example CISO should consider the deployment of hypervisor aware security solutions for antivirus and server intrusion prevention. Hosted Virtualisation solutions and IaaS platforms have various security considerations that will differ based upon the service provider being utilised, geographic location, key regulatory requirements and corporate policy."

MANAGEMENT OF VIR-TUALIZED SERVERS- A NIGHTMARE?

Introduction of a virtual environment has traditionally been initiated with little thought to the platform management and a higher focus

on the cost savings. As the adoption and growth of the environment has occurred within the organisation it has introduced new inefficiencies and complexity, examples being virtual server sprawl and resource starvation. With proper planning and correct toolset choice it is possible to reign back the environment and simplify the management even across multi hypervisor platforms. Whilst the advantage of virtualisation allows organisations to reduce their physical infrastructure footprint what you don't see can often be as difficult to manage as what you can.

Virtualised servers, which have additional layers of management and monitoring that is not required by physical servers, need individual maintenance and proper system assessment. This could be difficult to manage and hence, outsourcing is a relatively more viable option.

With the key vendors in this area coming out with more matured management tools like Operations Management, Infrastructure Navigation etc. - this nightmare has been well addressed now. Furthermore, the IT managers are taking full care to avoid the sprawl.

SELECTING A VIRTUALIZATION SOLUTION:

CIOs who are not very familiar with virtualization choose to go with the market leaders. Those familiar with virtualization consider applications, costs, benefits, environment and decide accordingly from the options in offer.

Some factors to consider while selecting the right vendor are:

1. Customer References – A reliable partner is one with experience and positive testimonials/ customer references in implementing similar virtualized solutions

2. Long term relationships – Virtualisation providers that have maintained relationships with many clients tend to be some of the most effective ones. Clients will not stick with a provider if they are unsatisfied, so continuity can be read as a sign of competence

3. Custom solutions – There is no single computing environment suited for all companies. That is why a good virtualisation partner will consider company direction, critical success factors, and business objectives when crafting an infrastructure. A network that is designed to meet the specific needs of a client will be far more valuable than one that forces the client to alter its setup to accommodate it

4. Security: Security is critical for any business and while choosing a vendor it is essential to know the level of security that the service provider offers

Besides the above, it is always advisable to

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KARTIK SHANKAR, SENIOR SALES MANAGER, STORIT DISTRIBUTION

"From a technology perspective, virtualization will shift the role currently played by hardware infrastructure on to software layer further. Specifically the network infrastructure will also face major shaping"

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MATT KEIL, PRODUCT MARKETING DIRECTOR. DATA CENTER & VIRTUALIZATION, PALO ALTO NETWORKS

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select a vendor which offers guaranteed SLAs and 24/7 Service desk support. The other important factors that should also be kept in mind are compatibility with existing application, relevant infrastructure, internal expertise, simplicity of management and flexibility of scaling out.

More enterprises are starting to look into the vendors that align to their preferred consumption strategy, IT strategy and how best to enable agility in the future and deliver against hybrid IT capabilities as they start to plan their journey to cloud. It is also particularly important to look at the general management of the platform and standardise where possible to reduce management overhead.

Vidyasagar Patro, Manager- Pre Sales, Enterprise Infrastructure, Emitac Enterprise Solutions (EES) puts it in simple words- "As TCO/ROI is one of the key concerns – a Virtualization technology from a vendor that has a long roadmap, easy available upgrades and good support can be a great plus point".

VIRTUALIZATION SOLUTIONS IN THE MARKET:

With a view to building flexible and scalable datacentre infrastructure with to support long term client requirement Dimension Data engages at a strategic and business level utilising Next Generation Datacentre Development Model.

"Through our global vendor relationships were able to deliver vendor independent solutions tailored to the exact requirements within the datacentre. In addition to this we understand the compute, storage and virtualisation platform are reliant on underlying components (network, security, applications etc.) We therefore provide our clients with a holistic solution and strategy to encompass all elements", says James Spearman, Principal Cloud Consultant & Head of Data Centre Infrastructure, Dimension Data.

According to Matt Keil, Product Marketing Director, Data Center & Virtualization, Palo Alto Networks, "We provide customers with a way to protect their business critical applications and

data, regardless of where those workloads are located – be it a public, private or hybrid cloud". Their VM-Series of virtualized NGFWs allow customers to apply three levels of security to the applications that reside in their cloud computing environment-iidentifying and tightly controlling which applications are allowed to traverse and talk to the different workloads; granting application and data access based on user need and associated credentials in Active Directory or any other user repository and denying access to all other users by default and stopping known and unknown cyber attacks from penetrating and then moving laterally from workload to workload with application-specific threat prevention policies.

As compute workloads change, or are added or removed, features within PAN-OS, Palo Alto's security operating system, will see those contextual changes, proactively learning which IP addresses are changing, and those changes are used to drive security policy updates in a dynamic manner. The result is a dramatic reduction in the delay that may occur between workload changes and security policy updates.

Mohit Pal, Datacenter Specialist, Middle East for Fujitsu says, "Our experience in thousands of successfully realized server virtualization projects directly influences the development of our products, solutions and services. Fujitsu PRIMERGY servers and Fujitsu ETERNUS storage systems for example are optimized for server virtualization and cloud infrastructure scenarios. This is proven by many benchmark records".

He goes on to add that they have specific solutions focusing on virtualization including hyper converged virtualization appliances. Fujitsu together with VMware has generated an entire ready-to-run hyper converged infrastructure appliance -FUJITSU Integrated System PRIMEFLEX for VMware EVO: RAIL. The flexible and scalable FUJITSU vShape solution combines all aspects of a virtual environment, based on reliable technologies and best practice solutions, with simple implementation and operation. VMWare and Hyper-V. Fujitsu Cluster-in-a-box provides a fully pre-configured and pre-installed, high-availability IT environment for small and medium-sized companies within one chassis. These solutions offer an excellent price/performance ratio that keeps expenditure and risk to an absolute minimum for the customer. Fujitsu has also invented Dynamic Infrastructures for VMware vCloud Suite- an infrastructure solution offering the most convenient way to introduce and run a modern VMware private or hybrid cloud IaaS platform that drives business growth and improves customer satisfaction at signifi-

SAEED AGHA, GENERAL MANAGER - MIDDLE EAST AT PALO ALTO NETWORKS

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cantly lower cost compared with do-it-yourself approaches.

According to Arunkumar N, Product Manager, Manage Engine, "We offer end-to-end performance visibility into the entire virtualized data center - including virtual desktops, hypervisors, VMs, applications running on the VMs, servers and the storage hardware. It helps IT admins to proactively identify performance issues and initiate remedial actions quickly to ensure a great user experience." They further offer support for multiple virtualization vendors including VMware, Microsoft Hyper-V, and Citrix.

Vidyasagar Patro, Manager- Pre Sales, Enterprise Infrastructure, Emitac Enterprise Solutions comments, "With EMITAC's skill sets, our focus for this year FY2015 is going to be on emerging technologies like - Open and Secure Cloud solutions, Desktop Virtualization (VDI), Big Data Analytics and Converged Infrastructure". He adds that with their long experience as one of the key SIs in the region and covering the whole portfolio of products right from infrastructure to application level, they expect to address a huge market as a trusted technical advisor.

Mohit, Datacenter Specialist, Middle East for Fujitsu lists the leading virtualization vendors- VMWare, Microsoft,Citrix, Linux and Oracle. The list by Vidyasagar Patro, Manager- Pre Sales, Enterprise Infrastructure, EES reads HP, Microsoft, VMware, Citrix, and Symantec. SorIT works with VMware, Microsoft, Xen and KVM.

According to Swapnendu Mazumdar, Head of Networks, eHosting DataFort, one of the main challenges that application owners and businesses face before implementation of virtualization is the choice of applications to move to a virtualized environment. "It is important to know that not all applications are suitable for virtualisation. Before implementing virtualisation, enterprises need to ensure that their IT architecture including components such as Networks, Operating systems, CPUs and Storage Devices, etc. are compatible, efficient and will provide sufficient performance without affecting the workflow. Ensuring the network infrastructure is prepared for virtualization and hiring skilled professionals is another challenge we would like to highlight."

With the shift into virtualisation there's a much lower dependency on the physical hardware which of course addresses the physical power and cooling element of the old platform but as James Spearman, Principal Cloud Consultant & Head of Data Centre Infrastructure, Dimension Data points it out, other issues start to creep in that need to be addressed. These include management of the hypervisor platform, server sprawl, licensing considerations, BCS/DR of virtual workloads, shared storage for virtual workloads and staff skill uplift.

FACILITATING SERVER VIRTUALIZATION:

While the benefits of virtualisation are apparent, one also needs to consider the changes to the

CHALLENGES IN SERVER VIRTUALIZATION

BEFORE VIRTUALIZATION

- Determining which classes of applications get virtualized at what phase
- Determining the correct roadmap for migration
- Theoretical calculation of the virtualized workloads
- Application compatibility of the platform
- Sizing the SAN and planning a backup

THE WOES

AFTER VIRTUALIZATION

- VM sprawl wasting compute resources and congesting the Network traffic
- Troubleshooting
- Performance monitoring and tuning
- Network Congestion
- Transforming the IT processes built for physical server to a virtualized environment
- Training employees to use the new systems and setting policies for effective resource utilisation
- Getting the right skills to monitor the environment
- Confusion in software licensing
- Security

ARUNKUMAR N, PRODUCT MANAGER, MANAGEENGINE

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infrastructure necessitated with virtualisation as well as other hidden costs. Dimension Data advises clients to take into consideration the 10 aspects when calculating ROI for virtualisation; namely cost of centralised storage, reduced pool of servers, reduced cost of real estate, reduced cost of power and cooling, reduced network requirements, cost of implementation, cost of software licenses, cost of backup and disaster recovery, cost of security enhancements and cost of training and operations.

Dimension Data utilises a client centric approach which takes into consideration their existing investments and current state. This is contrasted against the organisations strategic and IT goals to architect the desired solution. "With these two views providing perspective, we are able to build a practical roadmap for the implementation of further virtualisation, modernisation of the data centre and assist clients on their journey to private data centre infrastructure, hybrid and cloud based solutions" says James Spearman, Dimension Data.

Dimension Data's Server Virtualisation Assessment provides greater visibility into your IT infrastructure and allows the organisation to analyse, benchmark and predict capacity utilisation. It helps identify consolidation opportunities and model various scenarios, including virtualisation. They additionally have Virtualisation Maturity Assessment: for a holistic view of the data centre virtualisation maturity, covering areas such as the network, security, storage, backup, facilities, applications and workloads considerations helping you to extract maximum value from your virtualisation investment.

Vidyasagar Patro, Manager- Pre Sales, Enterprise Infrastructure, Emitac Enterprise Solutions says, "We facilitate our potential enterprise customers by evangelizing the Virtualization technology that is the best fit for their business requirement. We as their technical advisors make it easy for them to adopt the Virtualization technology with right designing, sizing and to implementation. Most importantly we emphasise a lot and give utmost importance on post-implementation support."

2015 FORECAST FOR VIRTUALIZATION MARKET:

Mazumdar of e HDF says, "We have seen the server virtualisation marketplace evolving over the past few years and have also noticed customer attitudes and stances towards virtualisation mature rapidly. In 2014, we witnessed virtualisation making a huge impact on IT and we definitely believe that the technology is poised to grow in 2015."

A recent report on server virtualization from Infonetics Research states that 75% of surveyed companies are willing to adopt the technology in the interest of improved application performance. The report predicts that by 2015 more than half of data center servers will be virtualized and the number of virtual machines per server will reach 30.

James Spearman of Dimension Data says, "The market is starting to change however in the hypervisor choice with a view to gaining licensing efficiencies through Enterprise Agreements and a move to automation within virtualisation environments. We're also seeing a trend within customers to move the host environment from traditional servers into hyper converged solutions that are built to leverage the full benefits of virtualisation".

"Software define infrastructure and network is the major innovation shaping up the server virtualisation market in 2015" says Kartik Shankar, Senior Sales Manager, StorIT Distribution. "From a technology perspective, virtualization will shift

the role currently played by hardware infrastructure on to software layer further. Specifically the network infrastructure will also face major shaping".

Enterprises are keen to take advantage of the agility, scalability and cost benefits of cloud-based virtual data centers (VDCs) by building their own private cloud, purchasing public cloud services from providers, or adopting a hybrid cloud approach. Most enterprises are ultimately aiming for the portability of both the application and security policies, regardless of where the application is deployed. However, when it comes to security, most public cloud environments are based on inconsistent network architectures common in traditional data centers and still rely on legacy security technologies –such as stateful inspection and port-based firewalls – that aren't capable of securing public cloud or hosted VDCs against sophisticated cyber threats.

"In 2015, all this growth will be both a blessing and a curse" comments Saeed Agha, General Manager - Middle East at Palo Alto Networks. The blessing he says is that cloud applications offer quick integration, empower business, offer convenience reduce IT requirements, and enable employees to access data wherever they are. As a result, cloud apps are experiencing unparalleled acceptance in the business world. On the flip side, this unparalleled growth generates a breeding ground for cyber criminals, and provides access into companies' networks, making network security more crucial than ever before. Many new apps are using uncommon port numbers far beyond the common ports for HTTP and SSL traffic, creating a security nightmare for IT and security professionals.

FINALLY…

High availability of virtual machines is now a given. The next stage in the evolution of the VM market could be to ensure high availability of apps that run on the VMs, irrespective of the operating system and type of application. This can be achieved by automated virtual machine restart and load balancing. "Although VMware has been the market leader for years in the hypervisor market, rivals have started catching up in terms of performance and features" says Arunkumar N, Product Manager, ManageEngine. The need for cross platform virtualization management tools will increase as more businesses look to run their virtualization projects across a combination of VMware, Hyper-V, and Citrix offerings to reduce costs. Among other aspects, security should be in focus in the coming year. Hybrid cloud solutions could find more adoption in enterprises. ◥