



DATA CENTRE CONVERGENCE IS NOW A REALITY

It has happened - convergence across all aspects of the IT environment is now a reality. Starting with data centre convergence and network convergence, and moving to communications convergence and even convergence in user devices, it's true to say that the days of siloed, single-application systems, networks or devices are officially gone.

As IT continues to evolve, change and improve - technology has come full circle and - once again - the data centre is the place where it's all happening. All of today's buzzwords - virtualisation, consolidation, cloud, utility or grid computing - are firmly rooted in the data centre.

The more services move into the cloud, the more critical the role of the data centre becomes, whether in-house or outsourced.

What questions should you be asking of your data centre provider to ensure you're getting value for money and reaping the benefits of technology improvements?

IT departments have some serious challenges in the data centre, most of it having to do with the conflicting forces of trying to deliver business agility while managing operational costs. While enterprises gear up to meet demands for greater collaboration, quicker access to applications and information and compliance with ever-stricter regulatory compliance -- they are being constricted by issues relating to power and cooling, inefficient asset utilisation, escalating security and provisioning needs, and business continuance.

So, what are the challenges facing Data Centre Managers today?

- Too many physical servers that are distributed around nationally and globally
- Too many physical servers that need to be physically stored and secured, powered-up
- Hardware & Software upgrades
- Regular backed ups
- Replication (data, users, directories etc.)
- Servers grossly underutilised with too much memory, disk, CPU etc.
- Far too complex and costly

What's driving the need for data centre virtualisation?

We know that if business continuity is a key objective of an organisation, it means that operations are up and running 24x7. Best practices suggest using geographic redundancy to establish multiple data centres or sites located in different geographic regions, each with replicated applications and data.

Do you need to replicate everything?

No, not necessarily, just those things that are deemed mission critical. Some organisations will feel that the bulk of their applications and data are mission critical, whereas others will have a smaller subset.

What do you have to consider to virtualise your data centre?

A key part of the answer to this question is the architecture itself. It starts with the application:-

- Can this application be deployed in a manner that it can be virtualised?
- Does it support clustering or are there tools that help it support clustering so that each application instance recognises state? If that's the case, that application is a great candidate for virtualisation within the broader context of the application delivery network framework.
- Can the underlying applications be replicated in real time between redundant sites so that they can resolve requests at any site at any time, ensuring that the data is current? If you can't replicate the data in real time, there might still be an opportunity to virtualise redundant sites if the data being served doesn't require up-to-the-minute freshness.

There are a lot of scenarios where that does makes sense.

- What day-old data is acceptable? Ultimately, you have to look at the underlying application infrastructure to determine what you can virtualise. The same is true for virtualising connectivity and links. You also have to consider the amount of data and performance during the replication process. In this case, the primary challenge is not about the bandwidth or link capacity. The challenge is how much of that data can be concurrently transferred or put into the pipe while eliminating protocol communication overhead.

What are the benefits of data centre virtualisation?

From an architecture standpoint, there are so many benefits to virtualising your resources that deliver applications. The savings are profound such as better use of infrastructure, 99.999% availability, and simplified management – it really boils down to better operational efficiency. With virtualisation, there's efficiency in the underlying hardware requirements. In essence, you need less hardware or less expensive hardware to do the same work.

For things like on-going maintenance and management, there are significant efficiencies to be realised. For redundant active-active data centres that are managed by an intelligent DNS system, one can very easily bring down one data centre for maintenance without affecting the other data centre or impacting users. The benefits of virtualisation really runs the gambit – on-going maintenance and management, reduction of hardware acquisition costs, and better architecture for availability, security, and performance. This is why virtualisation is really becoming the standard for how you design your IT resources for the future.

Convergence technology in the Data Centre

By reducing the number of devices you have to manage and the number of ways you manage them, your data centre infrastructure will be simpler. With a simplified infrastructure, you will be able to manage your data centre more effectively and more consistently, thereby reducing the cost of managing the data centre and reducing your total cost of ownership (TCO). Everything in the corporate IT environment is now a candidate for consolidation, including servers, desktops, applications, storage, networks, and processes.

What goes into a Data Centre?

- Operating Systems (MS Server 200x, Linux, Unix)
- Virtualisation Software (VMWare, Citrix, MS Hyper V)
- Servers (Cisco UCS, HP, Dell, IBM)
- Storage (EMC, NetApp, Hitachi)
- Data Centre switching
- Local Area Network (Switching)
- Optimisation (WAAS)
- Wide Area Network (WAN)

Advantages and benefits

- Improved flexibility
- Improved reliability
- Increased resource utilisation on physical servers
- More effective storage utilisation – easily change allocation
- Reduced server and air-conditioning power consumption
- Simplified hardware and software upgrades
- Far fewer locations to support
- Reduced complexity, fewer physical servers, simplified cabling infrastructure and cabinets
- Reduced space requirement therefore reduced floor rentals
- Simplified and cost effective “server” replication
- Simplified backups

KSS Technologies has the knowledge, skills and tools to help you migrate from a traditional Data Centre or distributed system platforms to a Virtualised Data Centre by Consolidation, Automation, Virtualisation and Simplifying network architecture as well as remotely managing the network.

For more information on how you can utilise Data Centre technologies to reduce your overall cost of running IT, contact your KSS Account Manager or enquiry@kss.co.za