

your guide to virtualisation



As the costs of power and space continue to rise, more and more businesses are choosing virtualisation to increase the flexibility, optimisation and efficiency of their systems.

Every once in a while, a new technology is introduced that promises to have far-reaching impacts on how organisations manage technology. Although there are almost always huge benefits, issues such as deployment and general management of the technology are also important concerns. Just a few short years ago, the term virtualisation was generally reserved for specific applications relegated to running on desktop computers or a few select servers within an environment.

As a result of a variety of both business and technical reasons, things have changed quickly with virtualisation providing dramatic cost savings and related benefits across all sizes of businesses.

history of business systems

In the earliest days of business I.T. & computing, mainframe computers provided centralised CPU, memory and storage resources to terminals operated by end users. This was followed by the rise of the desktop computer, where both end-user computers and central servers share the burden of processing and data storage.

Although there are obvious functionality and usability benefits, modern I.T. environments have become complicated with many "moving parts" that must be managed by I.T. staff. Add

to that the need to quickly adapt to business changes while dealing with decreased budgets and reduced human resources, and the list of challenges is long.

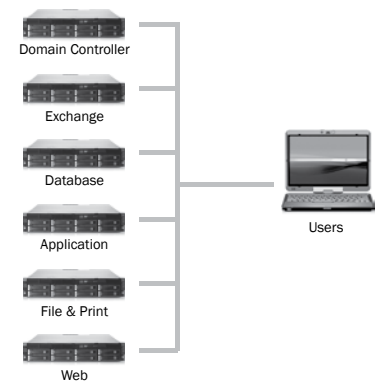
virtualisation

A major goal of server virtualisation is to allow multiple Operating Systems (OSs) and applications to run on a given piece of hardware concurrently. Each system is installed within an isolated space known as a Virtual Machine (VM) and runs independently of the others, unaware of the virtual environment. They can use CPU, memory, disk and network resources just as they would on a physical server.

For many organisations, a large share of the overall I.T. budget is dedicated to maintaining the server room. All the hardware, software and networking devices that the business relies on must be properly maintained and remain available for use.

The more servers and network devices an I.T. department needs to support, the greater the chance of failure. More machines also means more monitoring, and if any device becomes unavailable, I.T. staff generally have to scramble to return it to service as quickly as possible. Many of these costs and risks can be decreased by reducing the number of "moving parts" in the data centre.

traditional network



business benefits

Hardware independence

One of the major sources of I.T. management complexity is that OSs and software are tied to the hardware on which they're installed. Virtualisation solves this problem as it allows virtual machines to be moved freely between servers. For example, software developers might perform the initial configuration of a VM in a test environment. Once it is ready, the VM is copied in its entirety to a live system, where it works without

cost factors of maintaining a data centre

Physical space

All the many devices that must be supported within a data centre take up physical space. Each rack consumes floor space, and because the size of the data centre is usually limited, just providing enough room for expansion can be a costly challenge.

Power capacity

In recent years the cost of the electricity powering servers has become a major cost by itself. Modern CPUs use significantly more power than their older counterparts and many businesses have found that their per-rack power consumption is increasing each year.

Power protection

To ensure critical devices remain available should a circuit fail, data centres must provide redundant power connections and battery backups. To have full redundancy, this can easily double the amount of power that must be available, clearly impacting the bottom line of the business.

Cooling

Ranging from CPUs to hard disks and network devices, all the pieces of hardware in a data centre generate heat. To ensure that critical systems don't overheat, administrators must invest in monitoring solutions and cooling infrastructure – both adding to the cost of managing a data centre.

Deployment costs

Even well-managed I.T. departments can struggle to keep pace with the changing needs of business. In many cases virtualisation can greatly simplify the process of deploying new hardware to support changing needs – reducing the time involved to hours, rather than days.

green

REDUCING ENERGY COSTS & ENVIRONMENTAL IMPACT WITH VIRTUALISATION

Annual server & cooling energy saving: 24,324 kWh

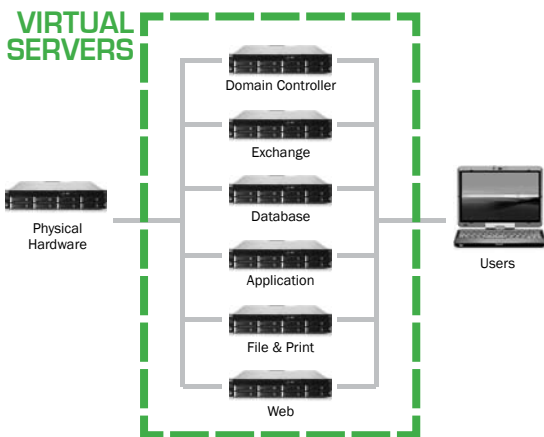
Annual energy cost saving: £1,356.32

EQUIVALENT TO:

120 planted trees **6** cars off the road
32,619 annual CO2 emission (lbs)

based on a six server network

virtualised network



Benefits:

- Server Consolidation
- Infrastructure Optimisation
- Improved Flexibility
- Increased Availability
- Improved Business Continuity
- Improved Manageability
- Enhanced Security



the bottom line

Consolidate equipment – Reduce the physical number of servers and network devices you use

Lower energy costs – Annual energy costs are reduced by an average of 84% by virtualisation

Deployment costs – Reduce the costs involved with the maintenance of servers and deployment of new equipment

the worry of compatibility – making the process of hardware upgrades simpler and safer.

Increasing hardware utilisation

Many I.T. departments devote a significant amount of their time to managing the busiest servers on their network. Although these systems are certainly important, a simple fact is that the majority of servers within a data centre are vastly under utilised. Each of these servers takes up physical space, requires electricity to power and generates heat – increasing data centre costs significantly. Consolidating servers and sharing resources can result in a dramatic increase in Return on Investment due to better utilisation of existing infrastructure.

Support for legacy applications

Older applications that have special requirements (often politely referred to as “legacy” applications) are a constant thorn in the side of systems administrators. For example, an old accounting system might require the use of Windows NT 4.0 or even MS-DOS, forcing the I.T. department to maintain older hardware because they have no way of porting these applications to

modern systems. Older hardware is more expensive to maintain and more likely to fail, which is where virtualisation can help. By supporting older Operating Systems, legacy applications can be hosted on modern hardware and consolidated on to a single server, simplifying administration while maintaining compatibility.

Simplified administration

Server sprawl is a constant problem in many data centres. The problem is that as new servers are deployed, the number and types of servers that must be supported increase dramatically. Additional costs are frequently the result of server sprawl. Managing more servers usually requires more systems administrators (or more time from already-overworked staff). Through the use of virtualisation many of these costs can be reduced. It's much easier to manage multiple VMs on a single physical server than to manage multiple physical servers.

Platform standardisation

Consistency is an important aspect of a well-managed I.T. environment. Unfortunately, in many I.T. environments, the deployment process for new servers is handled on an ad-hoc basis.

Differences in hardware platforms and application requirements might lead to OS inconsistencies and more complicated support. Virtualisation offers a potential solution by providing a standardised virtual hardware configuration.

Business continuity

Business continuity planning and disaster recovery are important concerns for I.T. environments of any size. The goal is to minimise or eliminate a disruption in service, even after major disasters occur. Through the use of virtualisation – working with a disaster recovery specialist like **acs** – a virtual environment can be secured safely off-site and restored in moments with minimal reconfiguration.

To learn more and explore the benefits of virtualisation, please call Sarah Muse today on 01604 704000 to arrange your FREE VMware suitability audit.

SAVE £450 (usual price £900)
1/2 PRICE SUITABILITY AUDIT

Quote SOL0708B when you call Sarah Muse on 01604 704000