HAS ANYONE ONE SEEN MY VIRTUAL DESKTOP?

A dive into desktop virtualization and infrastructure: Is this real or some kind of technology voodoo?

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Virtualization, now there is an overly broad and used technology term. It seems that every time a technology subject comes up these days, part of the discussion involves the word virtualized. What happened to the real technology? Has it all been replaced with the virtual stuff, and why does it still cost so much if it really is not there to begin with?

Actually, virtualization as a concept has been around for decades. Virtualization is the process of separating the operating system (software) and the utility of the hardware (server, storage device, or network device) such that the two can be managed much more efficiently and independently.

A study by CDW, a leading technology provider, indicated that 90% of businesses deployed some level of virtualization within their network. Contrast this to the fact that of those that had virtualized, on average, most had only achieved a 37% virtualization penetration within their networks leaving the other 63% still physical. And it was sometime early last year when an industry analyst announced that virtual servers outnumbered physical servers for the first time. Early on, virtualized servers were used primarily for testing environments in IT and a number of years ago, became popular in production deployments as well.

Traditionally, we thought of a server as a hardware box with its own operating system (OS), storage, and network connection. Today, with the use of virtualized methods, a single physical box might host 10 to 30 virtualized servers, running separate applications, but sharing a common storage device and network connections that are distributed based on need. You can begin to understand the advantages of virtualization which saves on resources to maintain the system and to ramp up production environments allowing distribution of computing services however they are needed.

So how does virtualization apply to our individual desktops and infrastructure?

There are two primary technologies, the Virtualized Desktop Infrastructure (VDI) and Desktop Virtualization. VDI is a form of virtualization that allows for multiple desktop operating systems (say one for each employee) to be hosted and that share the same physical hardware server in a central location, the data center. Using this form of virtualization, as many as 10 to 60 independent desktop environments can run on a single box allowing hundreds of employees to be served up

their desktops with a handful of machines for IT to manage. I think you get the picture… So VDI is the centralized infrastructure that supports these virtual machines.

The second technology is Desktop Virtualization, which is the separation of the desktop operating system and application environment from the client device (workstation or PC that sits on a desk). These thin-client devices (no hard drive) are like terminals instead of PCs and the individual desktop sessions that are viewed on these devices are actually run on a centralized server (VDI) at the data center. The employee sees their desktop as if it is running directly on the device in front of them. Depending on the method of presenting the desktop, the device that the employee might use to access the virtualized desktop might be a traditional PC or workstation, it might be a terminal station, a lobby computer in a hotel, or even a smart phone or tablet. Regardless of the device, the desktop looks the same, is secure, and can be accessed from multiple locations depending on the mobility of the employee or type of job. Each individual’s desktop can be customized if necessary, to that employee’s needs and responsibilities.

What is the big deal about virtualized desktops?

So you are probably thinking, I get that in a virtualized environment, my desktop is running over at the data center rather than on my PC, hence it is virtual. I also understand that my desktop can be delivered to whatever device I need to do my job, so what are the “real” benefits to all of this virtualization?

Delivering a customizable, secure, and stable desktop to each and every employee no matter what device they are using is the epitome of every IT professional’s existence. Virtualization of the desktop enables this to happen like never before. Specifically, desktop virtualization and infrastructure helps to achieve:

Productive scalability Since virtualized desktops are centralized and multiple instances can be hosted on a single physical machine, it takes much less time to ramp up additional desktops to meet an influx of new employees, or handle an acquisition or merger. In fact, virtual machines for hosting desktops can be spun up automatically into production as employees start their day. As more desktops are booted early in the morning, more centralized hosts can be brought on stream to meet demand at peak hours of the day. The reverse is true at the end of the day. For larger corporations, this can save considerable power and data center resources matching production with demand for desktops through desktop virtualization.

Another productivity benefit relates to the individual employees desktop experience. Since keystrokes and desktop sessions are maintained centrally through virtualization, using the latest tools, IT staff can pinpoint issues. Individual employee work sessions are captured, analyzed, and isolated and issues are resolved much more quickly than ever before. From this, productivity across the organization improves.

Life cycle management of the desktop It does not take much imagination to begin to appreciate the capability to manage, maintain, patch, and deploy desktops centrally, particularly in the banking industry where branch networks are geographically dispersed. Through virtualization, patches and refinements can be maintained across the entire environment of desktops (hundreds if not thousands) by just a couple of IT professionals that are trained properly using the latest service platforms.

Security Through the virtualization of the desktop, each session can be locked down to protect the data that is being shared on the network along with the devices and services that may be required to have access to that desktop for that employee to perform their job. Printing, desktop ports, use of thumb drives, etc. and all be locked more securely than ever before.

Disaster recovery One of the single most important advantages to a virtual desktop environment and the infrastructure that supports it is the comprehensive ability to recover from an unplanned event. Because the physical machines are

virtualized, their state of readiness can be replicated to a secondary data center in real time. Permissions can be automated to transfer services from one data center to the other when a known failure is recognized. In some cases and when engineered properly, the desktops can be load balanced between the primary and secondary data centers so that if one data center fails, the second data center picks up the load automatically and the end user does not even realize their desktop is now delivered to their workstation from the new location. This prevents lost productivity and down time when undesirable events occur.

What is “real” about virtualized desktops and the infrastructures that support them?

It is true that a virtualized desktop strategy is much more flexible to deploy, easier to maintain, adds to productivity in the workforce, and is more easily recovered in a disaster. However, when asked, is it less expensive, I would say, no, not at this time. While certain aspects of desktop virtualization can and will save on certain costs, like number of employees to service desktops or longevity of thin-client desktop devices over traditional PCs, other aspects are more expensive. For instance, the price of talent necessary to service a virtualized desktop environment and infrastructure versus the traditional structure tends to be more costly as is the technology to ensure recovery. While companies like Citrix, VMware, Microsoft, Quest and others are continuing to hone their solutions and drive down costs through competition and advancements, their customers can reap many of the other benefits mentioned earlier.

With complexity can come simplicity…

Virtualization has continued to be a thriving trend in all IT shops and desktop virtualization has a very compelling business case. The level of complexity in our IT infrastructures has grown exponentially with the advent of virtualized environments and methodology. Virtualization is evolving quickly and the level of understanding to plan and maintain these infrastructures is becoming much more complex and demanding of IT staff.

But with complexity comes automation and stability, which can mean simplicity to the end user or customer. In the case of a virtualized desktop, just knowing that the desktop is dependable and adaptable to the end user (particularly relating to mobility) is one less thing the employee needs to worry about when they start their day, and that is worth it when spread across the entire enterprise. Whether a virtualized desktop environment is right for your institution depends on many factors including: your institution’s geographical footprint, the existing desktop investment, and the cost to maintain your existing desktop environment over its life cycle. One thing is for sure, expectations of acceptable performance will continue to rise on the part of the organization and our customers. Additionally, since managing and maintaining our IT infrastructure with fewer FTEs is a constant consideration in today’s economic environment, virtualization of the desktop as mentioned earlier, can certainly help.

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