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The Essentials Series: Virtualization and Disaster Recovery

Replication and Recovery Management Solutions

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Transforming
IT Management

Replication and Recovery Management Solutions

An important aspect to implementing virtualization and disaster recovery is the pricing model. Every company is different and their needs vary; every virtualization solution is unique as well. One of the important factors for a decision maker to consider is the environment you currently have (for example, a mixed environment) and what the pricing structure you are investigation offers in terms of simplicity, implementation, and scalability—not to mention cost.

Pricing Models Come in All Shapes and Sizes

Pricing models are typically uniform in concept (per-socket, per-instance, per-processor, or per-CPU models) although you might discover unique naming for these solutions depending on the vendor you are working with. Also, very often a pricing solution comes with variations depending on the needs of the client, which is why it is always best before a company begins the implementation phase to perform thorough research of the available options. Many vendors are flexible in their pricing models and with some research (and maybe a bit of negotiation), it will be possible to find a solution that satisfies all parties involved in the process.

In addition to virtualization options, some companies provide entire solutions for disaster recovery. With these product suites, you must factor in the cost spending/savings you hope to achieve with the added functionality they provide. You might prefer to pick and choose pieces of your solution from multiple vendors, but traditionally, a single, economical package with a complete set of tools at your disposal from a single vendor is the easiest way to meet your needs.

Virtualization Licensing Price Models

- Per-instance—A fee is charged based upon each instance of the application server running in its own virtual machine. With virtualization, it is not uncommon for virtual clusters to have physical servers with different CPU configurations (two-way, four-way). A simple failover from a two-way to a four-way system may violate CPU-based licensing, whereas per-instance would hold up in a disaster recovery virtualized environment.

- Per-processor (or per-CPU)—This model allows a company to license by processor (the number of processors within a system) and allows multiple virtualized instances of the OS on that machine. Thus, you might have a license based on the physical processor(s) within the system but unlimited virtualization on top of that. Some pricing models even focus on the number of sockets or the number of cores within the processor, perhaps ignoring the virtualization aspect altogether.

Server Virtualization ROI

One of the first steps a company needs to make in the direction of virtualization implementation is an in-depth analysis of the expected return on investment (ROI) of the endeavor. There are many sophisticated formulas to calculate ROI; basically, they all boil down to calculating how much you will spend and how much you will gain by a particular solution.

ROI calculation is no easy task and different interpretations could lead to very different results. To calculate ROI, you need to determine the costs your company could mitigate or eliminate by adopting virtualization. This looks pretty simple and straightforward but in reality there are many factors to consider. Very often, some direct costs don't get adequate weight (that is, they are underestimated or overestimated) in the equation and indirect costs are not counted at all. The same applies to the expected benefits. When the deviations are substantial, the final result will also vary significantly.

Let's have a look at a simple example. Imagine that you want to obtain 20 virtualization licenses for your IT department. You might first ask, What is the current state of your existing servers? In the event the systems are moderately old, you may need to upgrade. If your machines are very old, it might not make sense to upgrade them, so the only choice is to buy new (powerful) machines. Your options are:

- Use your existing machines as they are

- Upgrade your existing machines

- Buy newer, more powerful machines

The first case is the most favorable in terms of costs because you will not have to spend a cent on new hardware. In fact, if your hardware has been underutilized, this scenario is quite probable.

The third case is the most expensive; however, when calculating costs, what you are hoping to see is that even with the purchase of new systems, this will ultimately provide a reasonable ROI while providing for the failover and data recoverability you need. To clarify, if you want to have 20 dedicated machines at $2000 each, this is $40,000 altogether. If you want to have 20 machines but you plan to use virtualization, you can get 10 machines (or even 5 or less) and deploy multiple virtual servers on them. If you get 10 machines of the same power as the machines for the case without virtualization, this means that in the second case, you will have to pay $20,000 less. Obviously, there are costs related to implementing virtualization, so it is not precise to say that right now you have saved $20,000 because of virtualization. And certainly you need to see that in the long run the savings of less personnel and increased high availability and disaster recovery should all factor into the ROI.

The second case, which is the most common, is to upgrade your existing machines in order to make them powerful enough to host a virtualization solution. Here, costs also vary, but you can go with $500 to $800 or even less per machine for more RAM and/or a faster CPU. Of course, this does not mean you should get the cheapest 4GB of RAM you can find—you will be building a server, not a PC for a temp worker doing data entry; thus, you can't afford to get the cheapest, low-quality components. Still, all equal, upgrading an existing machine is much cheaper than buying a brand new one.

In addition to the savings you will realize by spending less on hardware while still performing the same amount of work, virtualization offers savings on an ongoing basis:

- **You will need less space**—10 machines less could save you the need to rent additional room(s) or you could stop renting some of your current facilities. This could save you let's say $1000 a month. (Of course, if your premises are located in an expensive region, the rent for the additional room could be more and your savings will be higher.) This is $12,000 per year, which is the price of six new machines!

- **You will need less energy**—10 machines less also means less energy for powering and cooling them. Energy expenses are a major article in any IT budget, and the more you cut down the energy bill, the better. The savings in this group could be $200 to $500 (partially depending on how much you will spend on cooling, which largely varies among locations and seasons), which results in at least $2400 to $3000 a year in savings.

- **You will need less staff**—This benefit might not be the most tangible and you will hardly cut your IT department because of virtualization, but it is a fact that virtualization helps to reduce the staff you need. Here, savings vary enormously—if you require 10 hours of service less at $50 per hour, this is $500 a month saved. 10 hours a month (or 2.5 hours a week) is not much and it is quite possible that you will save more admin hours a month, resulting in $6000 to $10,000 or even more savings per year.

Keep in mind, however, that a substantial ROI may not occur immediately. In some cases, it may even take a year or two to begin seeing results. But you are looking at virtualization as a solution first, as a savings avenue second. All solutions initially come at a price, but having an easier method of data protection and business continuity that actually brings down your costs over the long run is worth pursuing.

As you can see, ROI can vary widely among companies, so you need to do your homework and calculate ROI in your case as precisely as possible. Doing so will ensure your expectations for a virtualization solution are realistic.

Selling the Solution

The first step in the decision-making process is to determine ROI calculations, but the process does not end here. Together with (or even before) the ROI analysis, you need to consider the pricing model you will be using. There are many pricing models and your choice largely affects your ROI. Let's focus on two solution types—purchase of a virtualization solution and rental of a virtualization solution.

Purchase a Virtualization Solution

The first option you have is to purchase a virtualization solution. Purchasing a virtualization solution doesn't mean hiring a team of developers who will create a custom-made solution for you because this approach is way too expensive (also, with virtualization becoming a mainstream technology, this inevitably leads to drop in prices, so there are many affordable and solid ready-made virtualization solutions).

Being that the prices of licenses vary dramatically, before you go shopping, have a look at the price lists of the major vendors and see what they offer. However, you need to have in mind that the final price depends on many factors, such as: Are you a new client? How many licenses do you plan to buy? Will you buy training and support? Thus, you must be prepared for drastic differences in the offers you will get. On the positive side, it is possible to negotiate a fair price.

You might also want to hire a consultant to handle everything around the selection of the product, the procedure of purchasing it, and the deployment itself. This route might be a bit more expensive, but if you don't have the in-house resources (that is, people who can handle this task) or if you need the solution soon, hiring a consultant could be the better choice and possibly even the more cost effective choice in the end.

Rent a Virtualization Solution

An alternative to purchasing a virtualization solution is to rent virtualization. There are many services, for instance Software as a Service (SaaS), cloud computing, managed capacity, managed services, server-instance based solutions, and a la carte offerings that essentially revolve around the fact that you don't buy the license and you don't deploy the solution in-house but rent the installation from another company and pay a (most often) monthly fee for the service. There are differences between each of the listed solutions, so before you make a determination, check what you will be getting from your virtualization solution hosting provider and how much it will cost.

Renting a virtualization solution can be cheaper than purchasing and deploying it in-house, but this is not an absolute rule. There are cases when renting a virtualization solution is more expensive than purchasing it, especially in the long run and from a technical point of view. Also, there are pros and cons for using SaaS, clouds, and son, but generally these services are a better option for small companies with no dedicated IT staff and with a few machines only because when you outsource virtualization to pros, it is much easier for you and (as a rule) more efficient than deploying the solution in-house.

Summary

In a world that requires 24/7 business continuity, data protection and disaster recovery options have reached a new level through virtualization. Enabling the ability to provide real-time replication, simplified and centralized management, and immediate failover with high availability, all the while using fewer resources, virtualization is a solution every company should consider.