

Five Steps to Determine When to Virtualize Your Servers

Server virtualization isn't just for big companies. Entry-level virtualization tools are free or low-cost, and there are many benefits to virtualization (including saving money). It's not a question of "if" you should virtualize your servers; it's a question of "when." In this article, I outline five steps you should take to determine when to virtualize your servers. There are a number of server virtualization solutions available today. However, this article isn't about which solution to choose. Many virtualization questions are "solution agnostic," and the question of "when" to virtualize your servers is one of them.

So, if you haven't started using virtualization or you haven't fully virtualized your IT environment, I recommend the following five steps to determine when you should make that move.

Step #1 – Understand the benefits of going virtual

You don't want to undertake a virtualization project without understanding why you are making this effort. Most of us have to justify a project like virtualization to a manager, director, VP or CIO. Even if you don't have to do that, you should be able to answer the "why" question for yourself with an answer that's more concrete than "because it's the next big thing." Below is a list of reasons why most administrators feel compelled to virtualize their server infrastructure:

- Save time – Administering virtualized servers over physical servers can save a huge amount of time.
- Save money – Any way you measure it, virtualization comes out as a cost-saving proposition. Dollars are saved in less administrative time, fewer infrastructure requirements and less energy utilization.
- Simplify management – Virtualization enables the use of advanced features like resource optimization, high availability and point-in-time snapshots of servers.
- Recover from disaster – Having a reliable disaster recovery plan is essential for ensuring business continuity. Virtualization offers hardware independence and decreased recovery time in case of a disaster or failover.

Once you and your management team are convinced that virtualization is the right decision for your company, move on to the next step.

Step #2 – Evaluate a virtualization solution.

There are many virtualization solutions available today. In addition to VMware® vSphere™ 4, you can evaluate Microsoft Hyper-V or Xen/Citrix, to name a few. If you choose to evaluate or analyze all of them, you may be spinning your wheels. To date, VMware has held the dominant position in the virtualization market space,

with more than 150,000 customers globally. No one else in the marketplace has come close to matching the maturity, breadth of offerings, reliability, or adoption rate of VMware. Many times, all that the competition can offer is a claim of a lower price tag, but make sure that you're doing an apples-to-apples cost comparison – more on that later. When selecting the right virtualization solution for your company, consider the following:

- Don't choose the "newest" or "cheapest" solution just because they are new and seemingly inexpensive.
- Look for a solution that has been around for a long period of time to ensure the technology has been tested with a variety of applications
- Look for a solution that has been proven in production IT environments
- Choose a solution that offers flexibility and options to fit the needs of your company

In my opinion, two solutions meet these criteria. They are VMware ESXi Free Edition and the VMware vSphere platform. The first is available for free and is a good way to start your company on the path toward virtualization. The second product can be evaluated for free and purchased as a low-cost package solution for smaller deployments.

While these two solutions each have their own unique fit, they both have been proven by businesses of all sizes over a long period of time and they have the most to offer of any virtualization solution available today. The only way to truly get comfortable with virtualization is to try it for yourself on your own servers and perform tests in your environment. Download and evaluate any solution before making a purchasing decision.

Step #3 – Determine if applications are going to work well with virtualization.

One of the concerns I have heard from administrators who haven't virtualized their servers yet is that they believe their applications might not be "virtualization friendly." While there may be a few cases in which this is true, the numbers of servers that can't be virtualized are small compared to the vast majority of all servers that can.

In my experience, if you understand the application, the majority of the time, you won't have any trouble consolidating a physical server into a virtualized environment. I have successfully virtualized Citrix Server, Exchange 2007 Servers, graphical applications, database servers, and other critical enterprise applications. If you are concerned that your virtual servers won't offer the performance that your applications demand visit the VMware Virtual Appliance Marketplace (<http://www.vmware.com/appliances/>). Virtual appliances are pre-built,

preconfigured, ready-to-run enterprise applications packaged with an operating system inside a virtual machine.

Step #4 – Analyze the cost of virtualizing your server infrastructure.

In Step #1, I mentioned that you can save your company money by virtualizing your servers. As most of us work for businesses, and businesses are in the business of maximizing profits, it only makes sense that before undertaking a virtualization project, you should analyze the cost and potential savings (the ROI).

For those companies who value ROI, I anticipate that the ROI of virtualization will always be there, but the question may be how long does it take to achieve that ROI? When I get asked that question, I recommend that you calculate your ROI to virtualize your servers, with the VMware ROI calculator. For example, when I used it, it showed that by consolidating and virtualizing 20 physical servers down to 3, you could save \$200,000 in server, related hardware and power, cooling and real estate costs and \$85,000 in IT staff operating costs over 3 years¹. Plus, if you have more physical servers to start with, the cost savings are even greater.

Furthermore, the typical payback period, or amount of time to break even on the investment, for a 20 server consolidation project is 1 month. What other IT projects can you say that about?

Even if you don't use numbers, I believe that the cost savings of virtualization is obvious. Virtualization requires:

- Fewer servers
- Fewer infrastructure costs – cooling, UPS, generator
- Less spent on electricity
- Less space needed for your IT infrastructure
- Less time spent administering servers
- Faster response to business needs

If you can install a product that does all those things, it will eventually (and probably very quickly) pay for itself. That's what I call "a no-brainer."

One point to note about comparing costs among virtualization vendors. Some vendors like Microsoft and Citrix will position their solutions as "free" compared with VMware. We know that no solution that you rely on to stand up your production infrastructure can really be "free." Those vendors have made their hypervisors free but shifted the cost to their management tools, which are necessary to use when managing a production environment. VMware has introduced a method for comparing "cost per application," which they position as the true way to measure cost in an apples-to-apples way. I would encourage you to explore that cost comparison further.

Step #5 – Analyze the time and skill needed to virtualize your server infrastructure

I don't want to minimize the time and skill required to create a virtual environment. Depending on the scope of the project, it could be very quick or it could be a more significant undertaking. If I were to estimate the time to learn about VMware vSphere and consolidate 20 physical servers with "typical" applications onto two or three VMware ESX Servers, it would look like this:

- Learn about VMware vSphere – via reading, video training, or a VMware class – 1 week
 - Install and configure VMware vSphere – 1 day
 - Perform test server consolidations using VMware Converter – 1 day
 - Convert all 20 physical servers to virtual servers and consolidate – 3 days
- Total time = 2 weeks**

Again, this is just a generalization with lots of assumptions made. However, as you can see, being able to learn about virtualization, get your virtual infrastructure installed and configured, and consolidate 20 servers in a matter of 2 weeks is a relatively small investment of time for an effort that yields huge benefits and fast ROI for your company. Keep in mind that VMware ESXi—the company's free solution that provides basic server optimization functionality—requires even less time. You may even choose to work with a VMware Partner who can assess your requirements and install and configure VMware virtualization software for you.

Make the move when you're ready

Virtualization isn't just for big companies anymore. There is no doubt that you should virtualize your servers – it's simply a matter of when. I believe that the time to virtualize is now, but you should make that call for yourself. Be sure to follow the five steps outlined in this article before you make a purchasing decision.

About the Author

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1. Cost savings from the VMware ROI calculator (www.vmware.com/go/calculator)

