

CNT 4603: System Administration Fall 2013

Final Thoughts On Virtualization

Instructor : Dr. Mark Llewellyn
markl@cs.ucf.edu
HEC 236, 4078-823-2790
<http://www.cs.ucf.edu/courses/cnt4603/fall2013>

Department of Electrical Engineering and Computer Science
Computer Science Division
University of Central Florida



Final Thoughts On Virtualization

- People often say that the best way to learn something is to make mistakes. You learn many lessons about the right way to do something by doing it wrong to begin with. However, it is best to benefit from others' mistakes.
- With this in mind the following few pages elaborate on the uses of virtualization and common mistakes to avoid when utilizing virtualization.



Don't Wait

- Virtualization is a “relatively” new technology being applied in the IT world.
- New products and services are being introduced by vendors almost daily.
- An organization that waits until the dust settles in adopting virtualization technology will find itself far behind the competition if it waits for the ultimate virtualization product to appear.
- Better to start small and experiment with virtualization measures at some level in the organization rather than wait and do everything at once.



Don't Skimp On Training

- Many IT organizations are willing to spend large amounts of money on new hardware and software yet skimp on ensuring that their employees learn how to use the new systems.
- Because virtualization is a fairly new technology most people in an organization will not already be familiar with it. There will be a learning curve and for some it might be quite steep.
- Adequate training of employees on the tools will go a long way to ensuring the success of any virtualization project.



Don't Apply Virtualization Everywhere

- We discussed earlier that one of the primary reasons to employ virtualization is to provide better hardware utilization.
- Lightly loaded systems are the most likely candidates for virtualization. So too are important but lightly used systems like DNS and DHCP.
- By contrast, systems that already achieve high utilization aren't good candidates for virtualization. The perfect example of this is a dedicated database server. Not only are these system generally heavily loaded and utilizing most of the capacity of the hardware on which they are running, they're also critical to business operations.



Don't Apply Virtualization Everywhere (cont.)

- Furthermore, they are often tuned to take particular advantage of the hardware system on which they are running.
- Moving them to a virtual machine loses the performance benefits that might have been gained on the hardware they were running on with a little bit of tuning.
- Since virtual machines share resources with other virtual machines (on the same hardware), this sharing of resources might cause critical systems to experience performance issues.



Virtualization Is Not Static

- A virtualization implementation is not static.
- Business environments, economies, and infrastructures all change to meet current business realities. The virtualization infrastructure must be flexible and adaptable to these changes.
- Virtualization products are constantly changing. A state of the art virtualization solution implemented 18 months ago might need to be re-examined in light of new virtualization developments.



Research Vendor Support Policies

- As virtualization spreads like a wildfire through the IT industry, many players are still figuring out how to respond to it, particularly the software vendors.
- Policies on how to support software in a virtual environment are as varying as the weather in Florida.
- The traditional stance of software companies when faced with a problem is to shift the blame to any other plausible party. This means that if you experience a problem with two software products interoperating, each vendor will blame the other one for the problem.



Research Vendor Support Policies (cont.)

- Since virtualization may impose a software layer between an application and the underlying hardware, some software vendors are reluctant to provide full support for their product in a virtual environment.
- Be sure to assess the support policies for each vendor whose products you want to migrate to virtual machines.
- If you find their support level lacking, you might consider leaving those machines as nonvirtualized systems.



Don't Overlook The Hardware

- The hardware supporting a virtualized infrastructure plays a critical role in allowing the software to take advantage of that hardware.
- Too often, as a means for lowering the initial cost, the current existing physical servers are used as the foundation for the virtualized environment.
- These machines might have been fine for a “one application-one server” world, but they are woefully inadequate when used as a platform for running high-density virtualization.
- As more and more virtualization ready hardware comes onto the market, this will be even more important.

