Jack Farrow II­­

MIS 2501-001, Spring 2013

Flash Research Paper 3: Virtualization and Cloud Computing

Inefficiency in the deployment of IT resources is a key ingredient in the recipe for business failure. Applying more than is required to do the job is as bad as not applying enough. The “sweet spot” is, as Gartner’s *Hype Cycle for Virtualization 2012* points out, to “deliver exactly the right amount of resources needed—no more, and no less.” Our data center is currently operating a large number of inefficient, single-application servers. I believe we should replace these with new, super-efficient, **virtualized servers**operating **virtual machines***.*

*Virtualization*, according to CDW-G’s *Virtualization and Infrastructure Optimization Reference Guide* is “a method of decoupling an application and the resources required to run it…from the underlying hardware host.”(3) By utilizing special software (commercially available from multiple vendors), systems operators can create *virtual machines* (VMs), each of which runs an operating system and one or more applications. **­A single physical server can run multiple VMs**, radically increasing server efficiency. Virtualized servers can operate at up to 85% utilization, vs. <25% utilization for non-virtualized, single-application servers (5).

Installing virtualized servers in our data center will bring our company immediate, tangible benefits. Our data center is currently packed with approximately 1,000 single application servers not running virtual machines. **Each of these servers** **is idle more than 75% of the time***.* By consolidating the current applications housed in multiple physical servers as virtual machines in a single VM server **we can eliminate approximately 800 of our current physical servers, with no reduction in operating capacity***.* Consolidation into virtualized servers dramatically reduces the square footage of space required in the data center, allowing us either to re-purpose the space or relocate to a smaller, more cost-effective facility. And because they are fewer, the efficient virtualized servers also cost significantly less to power, cool, and maintain than the many single application servers we currently operate.

The business case for converting to virtualized servers is compelling. We currently spend $1.6M annually on maintenance, tech support, power, and cooling for the 800 servers I propose we replace. The 80 VM servers with which we’d replace them could be purchased and installed for a total cost of about $1.28 M, with an additional $240,000 expected annual cost for maintenance, tech support, power, and cooling. Our year one costs would actually reflect a **net savings of $80,000. I project our total savings over a 3-year period to equal $2.8M.** Consolidating our servers into virtualized machines allows us to deliver exactly the right amount of resources, and saves us big money in the process. I recommend immediate adoption of this proposal.

References

Dawson, P., Hill, N. (2012). Gartner’s Hype Cycle for Virtualization 2012. Retrieved from http:// http://my.gartner.com/portal/server.pt?open=512&objID=260&mode=2&PageID=3460702&resId=2091816&ref=QuickSearch&content=html

Coutinho, N., Schaapman, P.,Temin, T. (nd). Virtualization and Infrastructure Optimization Reference Guide. Retrieved from http:// http://webobjects.cdw.com/webobjects/media/pdf/CDWG-Virtualization-Infrastructure-Optimization-Reference-Guide.pdf

Rouse, M. (2009). Server Virtualization. Retrieved from http://searchservervirtualization.techtarget.com/definition/server-virtualization