We will realize a net benefit of approximately $9,200,000 over the next three years when we virtualize 800 of our physical servers. Virtualization allows us to allocate the resources of a single server to several virtual machines, rather than having separate servers for each. By putting multiple virtual machines in one server, we can significantly reduce the number of servers we own.

“Virtualization is the fundamental technology that powers cloud computing. This software separates compute environments from physical infrastructures, so you can run multiple operating systems and applications simultaneously on the same machine” (Rivera). Traditional servers, like the ones we have now, can only support one function. This leads to much of their computing power sitting unused most of the time. The key capability of virtualization is the ability to consolidate servers to maximize use of their computing power.

Our initial server purchase, which includes virtual machine servers, 200 physical servers for systems we cannot virtualize, and system software, would be approximately $2,880,000. Maintenance, technical support, power and cooling for all servers would cost $1,920,000 over three years. Our cost avoidance strategy has a three year benefit of $14,000,000. Our three year net benefit realized would be $9,200,000.

Rivera, Andreas. “Virtualization vs. Cloud Computing: What's the Difference?” *Business News Daily*, 25 July 2018, www.businessnewsdaily.com/5791-virtualization-vs-cloud-computing.html.

“What Is a Virtual Machine and How Does It Work | Microsoft Azure.” *A Beginner's Guide | Microsoft Azure*, azure.microsoft.com/en-us/overview/what-is-a-virtual-machine/.

Woodford, Chris. “Cloud Computing - A Simple Introduction.” *Explain That Stuff*, 19 May 2018, www.explainthatstuff.com/cloud-computing-introduction.html.

