Flash Research Assignment #3: Virtualization and Cloud Computing

If our company invests in virtualization technology, we will save $18,989,280 over a three-year period. Through the use of software called VMWare, physical servers can be consolidated into virtualized machines. By implementing virtualization in this way, our company will increase efficiency, save work space, and save money.

Virtualization consolidates the system by replacing numerous physical servers through the VMWare software, which acts as a host that "virtualizes", or simulates, a real computer environment. This simulated environment has all of the capabilities that the physical one would have had, but improves efficiency due to its increase in utilization of the hardware's resources, predominantly the CPU. Currently, our organization's data center is made up entirely of costly physical server workloads not being used to their full potential. 80% of these servers can be consolidated as virtual machines during our upcoming hardware refresh cycle, reducing the total number of our physical servers to 280, 80 of which would run the virtualization software. Thus, the conversion to virtual machines would remove the need for our organization to rely on the majority of these physical servers.

By investing in virtualization software from VMWare (specifically, vSphere with Operations Management Enterprise Edition), the three-year cost including the licensing fee would only be $11,010,720, meaning that our organization would save $18,989,280. There are 1,000 physical servers that we currently have in our data center, and besides the purchasing cost, each of them requires hardware and software maintenance, technical support, power, and cooling. Collectively, this has traditionally cost us $10,000,000 per year, which, if we continued this trend, would cost us $30,000,000 over the next three years. The 80 new servers that would be purchased for virtualization would be more pricey than the other 200 physical servers that we would keep, but the investment is well worth it.

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