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**Flash Research Assignment: Virtualization and Cloud Computing**

Given the upcoming hardware refresh cycle, we can save $9.2 million by consolidating 72% of our traditional servers to virtual machine servers. Virtualization allows multiple virtual machines to run on a single virtual machine server. As a result, we can reduce the number of servers we need to procure and maintain from 1,000 servers to 280, eliminating the associated costs of those additional machines.

The key capability of virtualization is the technology’s ability to efficiently utilize server hardware resources by distributing those resources across multiple virtual machines. Currently, each of our legacy servers uses only 5% of its total processing capacity. With a virtual machine server, 80% of a server’s capacity can be accessed to run an average of ten virtual machines. As a result, we can use this technology to consolidate 800 traditional servers onto 80 virtual machine servers. With fewer physical servers, our data center will consume less power and have lower overall maintenance costs than our legacy data center.

The cost of virtualization over three years is $4.8 million, consisting of the procurement and annual maintenance of 280 servers. Over three years virtualization will enable us to avoid the $14 million cost of purchasing and maintaining 1,000 servers. The net benefit of virtualization is $9.2 million over three years, making this a compelling investment for our company.

**References**

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