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MIS 2501

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Flash Research Assignment 2 – Virtualization and Cloud Computing

 Using VMware in our data center will save us millions. Our datacenter currently houses about 1,000 servers that cost a lot to maintain. Using higher end, VMware-capable servers, we can consolidate most of our servers’ workload onto virtual machines. Instead of replacing all 1,000 of our servers in the next hardware refresh cycle, we can purchase fewer machines and save a combined $9 million in purchasing and maintenance over the next three years.

 What VMware does is allow virtualization. Virtualization helps reduce expenses by allowing a user to run a “machine within a machine.” It accomplishes this through running multiple operating systems on one computer. With this technology our company can cut the amount of physical servers needed by 80%, and the remaining 20% can still run at the same capacity as our original 1,000 servers. Fewer machines means less maintenance, which can save valuable time and money. Virtualization also decreases downtime through fault tolerance. Virtual machines allow full backups and snapshots and can also be redeployed on another machine if necessary.

 In the short term, upgrading to the new servers will be more expensive but will give a much better return on investment in the long term. If we are going to replace all our servers, it will actually cost $4.8 million less to buy the new servers because we will not need to buy nearly as many machines. Furthermore, they will cost much less to maintain over the next three years. Our old servers will cost us $6 million in maintenance over the next three years, but the new servers will cost $1.8 million in maintenance. Between what we save in purchasing new machines and in maintenance of those machines, the company can expect a total net benefit of $9 million for the next three years.

**References**

“10 Benefits of Virtualization in the Data Center”. *Tech Republic*. Jack Wallen. 2013. Web. <http://www.techrepublic.com/blog/10-things/10-benefits-of-virtualization-in-the-data-center/>

“Top 10 Benefits of Server Virtualization”. David Marshall. *Infoworld.* 2011. Web. <http://www.infoworld.com/article/2621446/server-virtualization/top-10-benefits-of-server-virtualization.html>

“Virtualization Basics”. VMware. Web. <http://www.vmware.com/virtualization/virtualization-basics/what-is-virtualization>

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| **Purchasing Costs** |
| **System** | **Price/Unit** | **Units** | **Total Cost** |
| Current |  $8,000  | 1000 |  $ 8,000,000  |
| Upgraded |  $16,000  | 200 |  $3,200,000  |
|   |   | **Net Benefit** |  **$ 4,800,000**  |
|  |  |  |  |
|  |  |  |  |
| **3-Year Maintenance Costs** |
|  | **Year 1** | **Year 2** | **Year 3** | **Total** |
| **Current** |  $2,000,000  |  $2,000,000  |  $2,000,000  |  $6,000,000  |
| **Upgraded** |  $600,000  | $600,000  |  $600,000  |  $1,800,000  |
|   |   | **3-Year Benefit** |  **$ 4,200,000** |