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

By switching 80% of our servers to virtual machines that run under VMware, our company can save up to 9.2 million dollars over the course of three years. Virtual Machines can run simultaneously on a single computer, thus we have the potential to reduce the number of physical servers in our data center. Currently, our data center is operating with 1,000 servers.  By consolidating, our data center would only need 280 virtual machines resulting in immediate benefits and significant savings for our company.

Right now, we have 1,000 servers in the data center that are operating with less than 15% capacity. Servers that run with limited capacity create inefficiencies in a data center and present challenges like server sprawl and other complexities. Using virtual machines under VMware would allow our company the ability to have up to 80% more utilization of server resources and enables multiple operating systems to run on the same platform. In addition to providing more capacity, using virtualization will allow our data center to operate in a more energy efficient manner due to server consolidation.

Utilizing virtualization to consolidate servers in our data center will decrease hardware maintenance, software maintenance and technical support resulting in costs of only 4.8 million dollars over the course of three years as seen in figure three. Switching 80% of the servers in our data center will result in a 9.2 million dollar net benefit over the course of three years and should be immediately implemented to save our company substantial costs.

**Figure 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Current Costs | Year 1 | Year 2 | Year 3 | Total |
| New Servers (1,000) | 8,000,000 | 0 | 0 | 8,000,000 |
| Maintenance (1,000) | 2,000,000 | 2,000,000 | 2,000,000 | 6,000,000 |
| Total Current Costs | 10,000,000 | 2,000,000 | 2,000,000 | 14,000,000 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Future Costs | Year 1 | Year 2 | Year 3 | Total |
| 200 Traditional Servers | 1,600,000 | 0 | 0 | 1,600,000 |
| 80 Vmware Servers | 1,280,000 | 0 | 0 | 1280000 |
| Maintenance of 200 traditional servers | 400,000 | 400,000 | 400,000 | 1,200,000 |
| Maintenance of 80 VMware Servers | 240,000 | 240,000 | 240,000 | 720,000 |
| Future Costs Total | 3520000 | 640000 | 640000 | 4,800,000 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 3 Year Benefits |  |  |  | **9,200,000** |

Work Cited

The Advantages of Using Virtualization Technology in the Enterprise. (2012, March 5). Retrieved February 12, 2015, from: https://software.intel.com/en-us/articles/the-advantages-of-using-virtualization-technology-in-the-enterprise

Top 10 benefits of server virtualization. (2011, November 11). Retrieved February 12, 2015, from:http://www.infoworld.com/article/2621446/server-virtualization/top-10-benefits-of-server-virtualization.html

Virtualization. (2015, January 1). Retrieved February 12, 2015, from http://www.vmware.com/virtualization#sthash.04qoHXwp.dpuf