Riwen Zhang

Flash Assignment #2 Virtualization

September 20, 2015

By investing in server virtualization, we will be transferring 80 percent of our servers onto virtual machine; and our company will see a net benefit of $9.2 million over a three-year period. The basic concept of virtualization is to consolidate multiple operating systems into a single machine. Utilizing virtualization to consolidate server workloads will result in the reduction of 720 physical servers, which means that fewer floor spaces is needed in the data center and less power will be consumed.

Virtualization is the abstraction of IT resource, such as servers and operating systems, which enables more flexibility and better efficiency to deliver resources to meet service needs through consolidation. In this case, VMware is a rapidly growing tool used to consolidate server workloads. It helps our company to adjust to changing market trends faster and easier. The consolidation rate of 10:1 enables 10 physical machines to run on a virtual machine. There are fewer physical servers needed by VMware to consolidate applications to optimize resource utilization. With the service provided by VMware, our company will only need to implement 280 servers (200 physical servers and 80 virtual machine servers) instead of 1000 servers we currently use. Therefore, VMware will help to simplify our IT infrastructure by cutting power consumption and increasing floor space for our data center.

The investment on virtualization for our company will pay for itself within three years. Cost for hardware maintenance, software maintenance, technical support, power and cooling plus total amount spent for machine purchase will be $4.8 million instead of $14 million if we implement virtual machines. It will bring our company a net benefit of $9.2 million in total. In sum, not investing in this wonderful opportunity will be an unwise decision.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Traditional Model** |  |  |
|  | **year 1** | **year 2** | **year 3** | **total cost** |
| **Traditional servers cost (1000)** | $8,000,000.00 | 0 | 0 | $8,000,000.00 |
| **Traditional server maintainance cost** | $2,000,000.00 | $2,000,000.00 | $2,000,000.00 | $6,000,000.00 |
| **Total cost** | $10,000,000.00 | $2,000,000.00 | $2,000,000.00 | **$14,000,000.00** |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Virtual Machine Model** |  |
|  | **year 1** | **year 2** | **year 3** | **total cost** |
| **Traditional servers cost (200)** | 1600000 | 0 | 0 | 1,600,000 |
| **Virtual machine servers cost (80)** | $1,280,000.00 | 0 | 0 | 1,280,000 |
| **Traditional server maintainance cost** | $400,000.00 | $400,000.00 | $400,000.00 | 1,200,000 |
| **Virtual machine servers maintainance cost** | $240,000.00 | $240,000.00 | $240,000.00 | 720,000 |
| **Total cost** | 3520000 | 640000 | 640000 | **4,800,000** |

 **Server Purchase Saving $5,120,000**

**Maintenance Cost Saving $4,080,000**

**Net Benefit $9,200,000**

References

*“Small & Midsize Business Solution.” Vmware.com.* VMware, n.d. Web. 21 Sep. 2015. < http://www.vmware.com/smb/server-consolidation.html>

Dawson, Philip, and Nathan Hill. *"Hyper Cycle for Virtualization,2015."* *Gartner*. Gartner, Inc, 8 July 2015. Web. 22 Sept. 2015. <http://www.gartner.com/document/3089927?ref=QuickSearch&sthkw=Hype Cycle for Virtualization, 2015 – Gartner&refval=156147375&qid=4be877b91ffe9b2058f429c909dd954c>.

Smith, David*. "Hyper Cycle for Cloud Computing, 2014." Gartner*. Gartner, Inc, 24 July 2014. Web. 22 Sept. 2015. <http://www.gartner.com/document/2807621?ref=TypeAheadSearch&qid=09ecae6fcd5211d8268e2170d579bd50>.