**Virtualization and Cloud Computing**

 As we reach another hardware refresh cycle, our company can save almost $9.2 million in costs over a three-year period by utilizing virtualization to consolidate the server workload. Currently, 80% of our physical servers can replaced by virtual machines under VMWare. This would allow us to shrink the number of servers we use from 1000 to 280.

 Virtualization of servers allows for consolidation of 10 physical servers onto a single virtual machine. Under VMWare, 800 out of our 1000 servers can be replaced by virtual machines. Since 10 physical servers can be consolidated into one virtual machine server, our company can essentially shrink the number of servers required from 1000 to 280 servers with virtualization capabilities and 200 traditional servers. Virtualization also improves the efficiency of maintenance for both hardware and software. Virtual machines can be moved from one computer to another which can be very helpful when we experience downtime.

 With 200 traditional servers and 80 virtual server machines required, the company’s total hardware purchase cost would be $2,880,000. The annual cost of maintenance would be $640,000 annually. Over a three-year period, the total cost of the servers would be $4,800,000, as opposed to the $14,000,000 that would otherwise be needed with all traditional servers. This translates into a cost saving of $9,200,000 over three years.

**Calculations:**

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| --- |
| Physical Servers |
| Number of Servers | 1000 |
| Installation Cost Per Machine | $8,000  |
| Total Installation Cost | $8,000,000  |
| Maintenance Cost Per Machine | $2,000  |
| Total Maintenance Cost | $2,000,000  |
| Total Cost Over 3 Years | $14,000,000  |

|  |
| --- |
| Virtual & Physical Servers |
| Number of Servers | 280 |
| Installation Cost Per Physical Server | $8,000  |
| Installation Cost Per Virtual Server | $16,000  |
| Total Installation Cost | $4,480,000  |
| Maintenance Cost Per Physical Server | $2,000  |
| Maintenance Cost Per Virtual Server | $3,000  |
| Total Maintenance Cost | $640,000  |
| Total Cost Over 3 Years | $4,480,000  |

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