Quyen Le

MIS 2501 - Section 001

Professor Doyle

February 27th, 2018

Virtualization & Cloud Computing

Having 80% of our current physical servers consolidated on to virtual machine servers will result in a $9,200,000 three-year net benefit for our company. Server consolidation allows us to reduce the number of servers in our data center by running several operating systems on a single machine. With fewer servers, our company can save money in maintenance, technical support, power and cooling, which significantly lower the total expenses that will be incurred.

Most physical servers operate at just 5 to 15% of their capacity, which leads to under-utilization. Running the servers as virtual machines increases the utilization of the servers to as much as 80%. Because the servers now simultaneously manage their workloads and host additional virtual workloads, the total number of servers needed can be cut down. Specifically, as 10 physical servers can be consolidated on to one virtual machine, we only have to install 280 servers instead of 1,000 servers in our data center. Fewer data servers also mean less spending on hardware and software maintenance and technical support, as well as less energy consumption for our company.

By eliminating 1,000 physical servers in the next hardware refresh cycle, we can save $14,000,000 in installation and maintenance expenditures of those servers. Optimizing VMware will only cost us $4,800,000 to install and maintain 200 physical servers and 80 virtual servers. As a result, conducting server consolidation will yield our company a net benefit of $9,200,000 over three years.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Year 1** | **Year 2** | **Year 3** | **Total** |
| *Elimination of physical servers* |
| **Savings** | Installation cost | 8,000,000 |  |  | 8,000,000 |
|  | Maintenance cost | 2,000,000 | 2,000,000 | 2,000,000 | 6,000,000 |
|  | Total savings |  |  |  | 14,000,000 |
| *Installation of VMware* |
| **Costs** | Installation cost |  |  |  |  |
|  |   200 physical servers | 1,600,000 |  |  | 1,600,000 |
|  |   80 virtual servers | 1,280,000 |  |  | 1,280,000 |
|  | Maintenance cost |  |  |  |  |
|  |   200 physical serves | 400,000 | 400,000 | 400,000 | 1,200,000 |
|  |   80 virtual servers | 240,000 | 240,000 | 240,000 | 720,000 |
|  | Total costs |  |  |  | 4,800,000 |
| **Net benefits** |  |  |  |  | 9,200,000 |

**References:**

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