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MIS2501

2017.10.8

Virtualization and Cloud computing

Our company should utilize virtual machines under VMware to consolidate our current server. By using this technology, our company can achieve running multiple operating systems on a physical server thereby saving spaces in the data center, reducing long-term costs and improving efficiency. Additionally, our company will have the opportunity to save $9.2 million in a three-year period.

Server consolidation and virtualization has the advantage of allowing the physical server to be used more efficiently by having multiple virtual servers work independently inside for their different needs. That means our company can perform multiple applications simultaneously on the same physical computer. By purchasing 80 virtual machines, our company can reduce the number of physical servers from 1000 to only 200, which will make full use of computer resources as well as lower server and maintenance costs. Also, virtualization can minimize downtime. If one server fails or need maintenance, all workloads can be moved to other servers without downtime.

The implementation of virtual machines will cost us $4,800,000 in a three-year period. However, running our current 1000 servers will cost us $14,000,000 over the same period. Thus, investing in 80 virtual machines will be a good choice that our company can reduce maintenance costs, increase efficiency and will have a total cost savings of $9,200,000 by the end of year three.

Citation

“The Benefits and Risks of Server Consolidation and Virtualization” *(Tech) Virtualization General.* Web. 8 June, 2017.< http://www.verteks.com/2017/06/benefits-risks-server-consolidation-virtualization/>

“Server Consolidation Benefits – With Real World Examples” *Sysprobs.* Web. 24 Sept. 2016 <http://www.sysprobs.com/server-consolidation-benefits-with-real-world-examples>

“What is virtualization?” *opensource.com.* Web. 24 Sept. 2016 <https://opensource.com/resources/virtualization>

Current server costs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| number of servers | Total cost for purchasing | maintenance fee | Total | |
| 1000 | $8,000,000 | $2,000,000 | $10,000,000 |

VMs costs

|  |  |  |  |
| --- | --- | --- | --- |
| number of VMS | purchasing costs: | maintenance fee | Total |
| 80 | $1,280,000 | $240,000 | $1,520,000 |
| number of physical | purchasing costs: | maintenance fee | Total |
| 200 | $1,600,000 | $400,000 | $2,000,000 |
|  |  |  | subtotal |
|  |  |  | $3,520,000 |

In three years comparison

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Year 1 | year 2 | year 3 | total costs |
| current server | $10,000,000 | $2,000,000 | $2,000,000 | $14,000,000 |
| new VM | $3,520,000 | $640,000 | $640,000 | $4,800,000 |
| savings |  |  |  | $9,200,000 |