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Enterprise IT Architecture

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Flash Paper 2: Virtualization

If we invest in VMWare’s virtual servers, our IT operations would become more streamlined, saving the company over $1.3 million each year. By investing in virtual servers, we could reduce server space and increase our utilization to as high as 80%. Virtualization would make scaling our business more cost efficient and would result in a three-year benefit of $4,080,000.

Virtualization enables organizations to create a virtual representation of something that is traditionally a physical object, like a server. This capability allows us to reduce power consumption, floor space, and maintenance time on physical hardware. We could reduce server space by consolidating 10 virtual servers into 800 of our existing servers. Currently, our traditional servers can only run one operating system and application at a time, operating at only 5-15% of their total capacity. In contrast, virtual servers can run multiple applications and operating systems at a time, which would increase our existing hardware utilization to as high as 80% with VMWare. This means that our business would be operating at a much more efficient level and would make IT operations simpler.

To consolidate our existing servers, 80 of the new servers would be needed, each costing $16,000 each. We still need to replace 200 of the traditional servers, which cost $8,000 each. The total initial investment cost for all the servers is $2,880,000. Currently, each of our current servers require $2,000 each in maintenance costs each year, resulting in $2,000,000 in total maintenance costs alone. The new servers require $3,000 each in maintenance costs, but there will be far less servers to maintain. Overall maintenance costs will reduce from $2,000,000 to $640,000 to maintain the 200 traditional servers and the 80 new servers. The money we save on maintenance results in a three-year net benefit of $1,200,000. Investing in virtualization would save the company money and make our IT operations more scalable, enabling us to respond quickly to changing business needs.

“The Advantages of Using Virtualization Technologies in the Enterprise”. *Intel.* Last modified April 5, 2012. <https://software.intel.com/en-us/articles/the-advantages-of-using-virtualization-technology-in-the-enterprise>

“What is Virtualization?”. *Vmware.* Accessed February 25, 2017. <http://www.vmware.com/solutions/virtualization.html>

“Server Consolidation”. *Vmware.* Accessed February 25,2017. <http://www.vmware.com/solutions/consolidation.html>

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| --- | --- | --- |
| **Current Servers** |   |   |
|   | Cost | Total Cost |
| 1,000 Servers  | 8,000 | 8,000,000 |
|   |   |   |
| **Maintenance**  |   |   |
|   | Cost | Total Cost |
| 1,000 Servers | 2,000 | 2,000,000 |

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| --- | --- | --- |
|  |  |  |
| **Consolidate Servers with VMs** |  |
| .80 \* 1000 = 800 Servers  |  |  |
| 800 / 10 = 80 VMS needed |  |  |
|  |  |  |
| 80 \* 16,000= 1,280,000 new VM servers |  |
| 200 \* 8,000= 1,600,000 traditional servers |  |  |
| $2,880,000 initial investment for 1,000 new servers |
|  |  |  |
|  |  |  |
| 80 \* 3,000 = 240,000 cost to maintain new servers each year |
| 200 \* 2,000 = 400,000 cost to maintain remaining traditional servers |  |
| total maintenance cost=  | 640,000 |  |

|  |  |
| --- | --- |
| **Savings in Maintenance Costs** |  |
| Old Servers | 2,000,000 |
| New Servers | 640,000 |
| Savings each year | 1,360,000 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Year 1** | **Year 2** | **Year 3** | **Cumulative Total** |
| **Total Cost** | 2,880,000 |   |   | 2,880,000 |
| **Total Benefits** | 1,360,000 | 1,360,000 | 1,360,000 | 4,080,000 |
| **Net Benefits** |   |   |   | 1,200,000 |