Thompson Nguyen

Flash Research Assignment: Virtualization and Cloud Computing

Instead of repurchasing physical servers at the start of this hardware refresh cycle, we have an opportunity to save the company $9,200,000 over a three year period by utilizing VMWare to consolidate our server workloads. VMWare is a virtualization software that will allow us to consolidate 10 of our physical servers onto a single virtual machine server. This will allow us to greatly reduce the amount of physical servers in our data center and overall, decrease our maintenance costs.

Virtualization software like VMWare allows a company to maximize their physical server resources by allowing multiple virtual servers to be run on a single machine. Each virtual server operate independently and can run its own operating system and applications. Depending on the workload, performance will not be affected. Overall, the ability to consolidate our servers will allow us to reduce the amount of physical servers that is in our data center from 1,000 to 280 which effectively reduces our physical servers by 80% and allow us to decrease our maintenance and operating cost.

By utilizing VMWare to consolidate our server workloads, we will save a total of $14,000,000 over a three year period by not having to repurchase and maintain 800 physical servers in this hardware refresh cycle. The total cost for virtualization will be $4,800,000 for the new servers, maintenance, technical support, and power and cooling over a three year period. This will result in a net benefit of $9,200,000 for the company after three years.

Cost/Physical Server	8,000		
Cost/Virtual Server	16,000		
Maintenance Cost/Physical	2,000		
Maintenance Cost/Virtual	3,000		
Option 1		Total Cost	
Physical Servers	1,000		8,000,000
Virtual Servers	0		-
			8,000,000
Option 2		Total Cost	
Physical Servers	200		1,600,000
Virtual Servers	80		1,280,000
			2,880,000
Option 1		Total Maintenance Cost	
Maintenance Physical Servers	1,000		2,000,000
Maintenance Virtual Servers	0		-
			2,000,000
Option 2		Total Maintenance Cost	
Maintenance Physical Servers	200		400,000
Maintenance Virtual Servers	80		240,000
			640,000

Costs	Year 1	Year 2	Year 3	Total
Physical Servers (200)	1,600,000	0	0	1,600,000
Virtual Servers (80)	1,280,000	0	0	1,280,000
Physical Maintenance	400,000	400,000	400,000	1,200,000
Virtual Maintenance	240,000	240,000	240,000	720,000
Total Cost For Virtualization	3,520,000	640,000	640,000	4,800,000

Savings from Virtualization	Year 1	Year 2	Year 3	Total
Physical Servers (1000)	8,000,000	0	0	8,000,000
Physical Maintenance	2,000,000	2,000,000	2,000,000	6,000,000
Total Savings	10,000,000	2,000,000	2,000,000	14,000,000
Net Benefits	6,480,000	1,360,000	1,360,000	9,200,000

"Server Consolidation." *Server Virtualization & Consolidation*. Web. 24 Sept. 2015.
<http://www.vmware.com/consolidation/overview.html>.

"Server Consolidation Benefits – With Real World Examples." *Sysprobs Not Another Tech Blog*. Web. 24 Sept. 2015. <http://www.sysprobs.com/server-consolidation-benefits-with-real-world-examples>.

"How Do Virtual Servers Work." *NetStandard*. 7 Aug. 2014. Web. 24 Sept. 2015.
<http://www.netstandard.com/virtual-servers-work/>.