Flash Research Assignment: Virtualization and Cloud Computing

You are the CTA for a small but rapidly growing manufacturing company. You have approximately 1,000 servers in your datacenter. The average server costs $8,000 to purchase (including system software). You also spend approximately $2,000 per year per server for hardware maintenance, software maintenance, technical support, power and cooling.

You believe that there are considerable opportunities for savings by utilizing virtualization to consolidate server workloads. You believe that 80% of your servers could run as virtual machines under VMware and that, on average, you could consolidate 10 physical servers onto a single virtual machine server. These would be higher end servers costing approximately $16,000 each (including system software). In addition, they will cost more to run, approximately $3,000 (each server) per year for hardware maintenance, software maintenance, technical support, power and cooling.

Prepare a paper for the CIO that describes virtualization and focuses on the benefits of server consolidation. Describe the business case for making investments in this technology. This organization always looks at investments over a 3-year period. Assume that you are at the start of a hardware refresh cycle and you will be replacing all 1,000 servers in the next year.

The maximum length of the body of this paper is 1 page. Additional pages may be used for optional diagrams and required references.

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Flash paper#2: Virtualization and Cloud Computing

We can save $9,200,000 if our company uses VMware virtual servers instead of the traditional physical ones. VMware can built the virtualization system, by consolidating the physical traditional servers onto a single virtual machine server. We considered the benefits after three year hardware refresh cycle, converting 80% of our Physical servers to VMware virtual servers will gain the $9,200,000 net benefits.

The key capability of VMware servers is it can built the virtualization. The virtualization can increase our company IT agility, flexibility, and scalability by run multiple operating systems and applications at the same time on the same server. On the other hand, VMware virtual servers allows us to decrease the number of physical servers. 80% of our servers could run as virtual machines under VMware, which means we can have 80 Virtual servers instead of 800 physical servers. Over all total servers after we improvement VMware will be reduced to 280 servers from 1000 servers. By decreasing servers and increasing efficiency, we will experience a 68% per year decrease in maintenance cost.

The 1000 physical servers will cost us $10,000,000 during the first year, but if we invest in VMware servers, we need 80 virtual servers, which will cost $1,280,000. The first year costs will be reduced to $3,520,000. Virtual servers allow us to spend less money on maintence than physical servers. After 3 years, we have 92% ROI, in which we can gain $9,200,000 net benefits. This savings is extremely useful for investment elsewhere in our rapidly expanding company. This clearly identifies the implementation of VMware are as the best choice for our company.

Table 1

	Year 1	Year 2	Year 3	total
Trad.S (1000)	8,000,000	0	0	
Main.S (1000)	2,000,000	2,000,000	2,000,000	14,000,000
	10,000,000			
After				
Trad.S (200)	1,600,000	0	0	
Main.S (200)	400,000	400,000	400,000	
Virt.S (80)	1,280,000	0	0	
Main.V(80)	240,000	240,000	240,000	4,800,000
	3,520,000	640,000	Net benefits	9,200,000

Maintain fee decrease: 2,000,000-640,000=1,360,000
the % of maintain fee decrease: 1,360,000/2,000,000=68%
ROI= (gain from investment - cost of investment)/cost of investment
ROI=(9,200,000 - 4,800,000)/4,800,000 = 92%

Reference：

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Wallen, Jack. "10 Benefits of Virtualization in the Data Center." *Tech Republic*. N.p., 10 Apr. 2013. Web. 10 Feb. 2016.