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Virtualization and Cloud Computing

Our company has the opportunity to save \$9.2 million over three years by investing in server virtualization. Virtualization has the ability to consolidate servers by running multiple virtual servers on one machine simultaneously. Having virtual machines will decrease the amount of servers we need to maintain and cut our costs by \$9.2 million annually.

A key concept to virtualization is the idea of consolidating all of our servers. Server consolidation allows one physical server to operate multiple virtual servers simultaneously. Software called hypervisor on the physical server decouples the virtual machines, automatically allocating all of the computing resources needed to run that virtual machine. Virtualization has the ability to partition all of the resources and allow the servers to run at maximum capacity. Server virtualization will give us the ability to run fewer servers at maximum capacity, for example instead of running 20 physical servers at 15% capacity we can cut the server count and run four virtualization servers at 80% and receive the same benefit.

Converting to virtual machines would cost \$4.8 million over three years. If we bought 1000 physical servers instead of implementing virtualization, over three years we can expect to pay at least \$14 million. Implementing server virtualization the company can expect to see a decrease in costs like energy, cooling, and maintenance and see a three-year net benefit of \$9.2 million.

AS-IS COSTS:				
Costs	year 1	year 2	year 3	TOTAL
Physical Servers (hardware/software) 1,000 @ \$8,000 ea.	8,000,000			8,000,000
Maintenance (annual/monthly/quarterly,semi- annually costs) \$2,000 per machine, per year	2,000,000	2,000,000	2,000,000	6,000,000
Training (\$XX,XXX/employee)				
				\$14,000,000

TO BE COSTS:				
Costs	year 1	year 2	year 3	TOTAL
Hypervisor Software (hardware/software) 80 @ \$16,000 ea.	1,280,000			1,280,000
Maintenance (annual/monthly/quarterly,semi- annually costs) \$3,000 per machine, per year	240,000	240,000	240,000	720,000
Training (\$XX,XXX/employee)				
Physical Servers (hardware/software) 200 @ \$8,000 ea.	1,600,000			1,600,000
Maintenance (annual/monthly/quarterly,semi- annually costs) \$2,000 per machine, per year	400,000	400,000	400,000	1,200,000
				4,800,000

"VMware Basics." *VMware*. N.p.. Web. 25 Feb 2014.

<<https://www.vmware.com/virtualization/virtualization-basics/how-virtualization-works.html>>.

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"How Stuff Works." *How Server Virtualization Works*. N.p.. Web. 25 Feb 2014.

<<http://www.howstuffworks.com/server-virtualization.htm>>.