

## Virtualization and Cloud Computing

The upgrade of our organizations 1000 total physical servers to 200 physical servers and 800 virtual servers will generate a net benefit of \$9,200,000.00 over the next three years. By upgrading to virtual machines our datacenter will optimize hardware capabilities, save space inside the physical data center, and reduce the yearly cost of \$2,000,000.00 for maintenance.

Our current machines are only able to utilize 5% of a physical server due to the each system being able to run a single operation at a given time. Virtualization allows a single machine to act as multiple and utilizes 90% of server capability. Virtual machines are able to utilize much more capability because virtual servers have the ability to run multiple operating systems at a given time. VMware is today's leading virtualization software. Virtual machines are higher end servers run under VMware and will allow us to consolidate 10 physical servers onto one single virtual machine server. By replacing our organization's 1000 physical servers to 200 physical servers and 800 virtual servers we will be able to ensure return on investment and significantly increased processing power.

The upgrade to 200 physical servers and 800 virtual servers will have a one-time instillation fee of \$1,200,000.00 incurred in the first year. When analyzing the investment over a 2-year period our organization will generate a net benefit of \$9,200,000.00 and upgrade utilization by 85%.

Three-Year 1000 Physical Server Analysis				
	Year 1	Year 2	Year 3	Total
Physical Server Initial Cost	\$8,000,000.00	\$0.00	\$0.00	\$8,000,000.00
Physical Server Maintenance Cost	\$2,000,000.00	\$2,000,000.00	\$2,000,000.00	\$6,000,000.00
			Total Cost:	\$14,000,000.00

Three-Year 200 Physical 800 Virtual Server Analysis				
	Year 1	Year 2	Year 3	Total
Physical Server Initial Cost	\$1,600,000.00	\$0.00	\$0.00	\$1,600,000.00
Virtual Server Initial Cost	\$1,200,000.00	\$0.00	\$0.00	\$1,200,000.00
Physical Server Maintenance Cost	\$400,000.00	\$400,000.00	\$400,000.00	\$1,200,000.00
Virtual Server Maintenance Cost	\$240,000.00	\$240,000.00	\$240,000.00	\$720,000
			Total Cost:	\$4,800,000.00

Three-Year Total Cost Comparison	
1000 Physical Servers	\$14,000,000.00
200 Physical Servers & 800 Virtual Servers	\$4,800,000.00
Total Net Benefit	\$9,200,000.00

"Server Virtualization & Consolidation." *VMware*. N.p., 2013. Web. 29 Sept. 2013. <<http://www.vmware.com/consolidation/overview>>.

"Virtualize Your IT Infrastructure." *VMware: Benefits of Virtualization, Increase IT Efficiency and Virtual Management*. VMware, Inc. Web. 20 Feb. 2012. <<http://www.vmware.com/virtualization/>>.

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