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Flash Research Paper #2
Virtualization and Cloud Computing

Upgrading our datacenter to utilize virtualization would provide a three-year net benefit of \$9,200,000 to the company. Our current datacenter relies on 1,000 physical servers, each with ongoing support costs. That is 1,000 pieces of equipment that require space, maintenance, cooling, and power – and therefore a lot of money. Virtualization can use the physical resources of one server to act as many, which would reduce our required number of servers to 280 and provide savings in all the items listed previously. In order to significantly reduce costs from our company's digital infrastructure while maximizing the use of our resources, we should upgrade our datacenter to support virtualization.

Virtualization creates software-based representations of physical servers. It uses system resources more efficiently by partitioning them between virtual machines (VMs). Our current design has servers that each run one operating system at a time and, as a result, use only a fraction of their physical resources. Each VM server we purchase can run up to 10 virtual servers. Although we cannot replace every standard server with a VM server – we would still require 200 – we would be able to reduce the remaining 800 down to 80. Additional benefits include easier storage and management of equipment, and reduced energy consumption for power and cooling. This is due to server consolidation, which in our case would be turning 1,000 into only 280.

Upgrading our servers to utilize virtualization would cost the company \$4,800,000 over three years and would provide a benefit of \$14,000,000 over that span. This would result in a net benefit of \$9,200,000 after three years from the project start date. The company will save money immediately due to the reduction in hardware and operational expenses.

References

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