Megan Gallagher

Virtualization and Cloud Computing

I highly recommend that we consolidate most of our physical servers to virtual machines using VMware to save over $9,000,000 in a three-year span. By choosing to utilize virtualization, processes such as maintenance will not affect any other server other than the one being used. Virtualization can reduce our costs over a three year span to just $4,800,000..

Through VMware Virtualization and consolidation, we can consolidate our 1,000 physical servers to 280, using 80 virtual machines. We can put 10 virtual machines on one physical server, which would increase utilization rates. Because a virtual machine is an independent machine, many of them can run on the same host or computer simultaneously. Virtual Machines are self-contained software files, meaning that if needed, they can easily be transferred from different physical servers while running, also known as live migration. By utilizing live migration through virtualization, servers can be taken down for maintenance and not affect the working environment. Virtualization allows a company to make use of servers that have one main function each. This means that when an issue occurs, other servers will not be affected. Furthermore, snapshots, or backups, of your virtual machine in such an event can quickly fix the issue.

By utilizing virtualization through VMware to consolidate physical servers to virtual machines, we are saving money and lowering operating costs by as much as 50%. Currently, we pay $2,000 per physical machine in maintenance, and each physical machine has an initial cost $8,000. Virtual machines cost $3,000 to maintain and $16,000 to purchase; however, we would only need 80 of them, as opposed to 800. If we continue using physical servers exclusively, we will be spending $14,000,000 over a three-year span, virtualization would cost $4,800,000, which results in a net benefit of $9,200,000 over a three year span.

Works Referenced

Babcock, Charles. "Live Migration Adds To Virtual Machines' Appeal - InformationWeek." *InformationWeek*. UBM Tech, 20 July 2007. Web. 28 Sept. 2014. <http://www.informationweek.com/live-migration-adds-to-virtual-machines-appeal/d/d-id/1057320>.

"Server Consolidation and Containment With Virtual Infrastructure." *VMware*. VMware, Inc. Web. 24 Sept. 2014. <http://www.vmware.com/pdf/server\_consolidation.pdf>.

"Virtualization Basics." *VMware Virtual Machine & Virtualization Benefits*. VMware, Inc. Web. 22 Sept. 2014. <http://www.vmware.com/virtualization/virtualization-basics/how-virtualization-works>.

Wallen, Jack. "10 Benefits of Virtualization in the Data Center." *TechRepublic*. CBS Interactive, 10 Apr. 2013. Web. 24 Sept. 2014. <http://www.techrepublic.com/blog/10-things/10-benefits-of-virtualization-in-the-data-center/>.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | year 1 | year 2 | year 3 | total |
| 200 physical servers purchase | 1600000 | 0 | 0 | 1600000 |
| 80 virtual servers purchase | 1280000 | 0 | 0 | 1280000 |
| 200 physical maintenance | 400000 | 400000 | 400000 | 1200000 |
| 80 virtual maintenance | 240000 | 240000 | 240000 | 720000 |
| total costs |  |  |  | 4800000 |
|  |  |  |  |  |
| eliminate 1000 new physical | 8000000 | 0 | 0 | 8000000 |
| eliminate 1000 maintenance | 2000000 | 2000000 | 2000000 | 6000000 |
| total benefits |  |  |  | 14000000 |
|  |  |  |  |  |
| net benefits |  |  |  | 9200000 |