Michelle Purnama
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Virtualization and Cloud Computing

Our company could experience a net benefit of $9.2 million over the next three years when we consolidate and virtualize our physical servers. Server consolidation and virtualization will reduce the number of physical servers required by migrating to virtual servers, resulting in decreased operational expenses and increased efficiency.

On average, a physical server consumes only 15-30% of the server's resources, and we observe a similar trend of server underutilization with our current servers. Through server consolidation, we can run multiple server applications in one server, increasing utilization rate to over 80% on average. Out of 1,000 servers, we can switch 800 of them to run as virtual machines, and they can further be consolidated into 80 physical servers. Therefore, we can reduce the number of physical servers from 1,000 to 280, reducing operational expenses while increasing efficiency.

The 3-year cost of using 1,000 physical servers is $14,000,000, which comprises of purchase and maintenance expenses. After we consolidate and virtualize them to 200 physical servers and 80 virtual servers, the 3-year cost to replace and maintain them will be $4,800,000. This will result in a net benefit of $9,200,000 over 3 years.

Current

# physical servers	1,000
Cost per physical server	8,000
Maintenance cost per server per year	2,000

After Virtualization

% servers run as VMs	80%
# servers run as VMs	800
# physical servers	200
Cost per physical server	8,000
Maintenance cost per server per year	2,000
# VM servers	80
Cost per VM server	16,000
Maintenance cost per VM server per year	3,000

	Year 1	Year 2	Year 3	Total
Current	10,000,000	2,000,000	2,000,000	14,000,000
After Virtualization	3,520,000	640,000	640,000	4,800,000
Savings	6,480,000	1,360,000	1,360,000	9,200,000

Net benefit over 3 years: $9,200,000

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