Dongjie Wang

MIS2501

Flash Research Paper: Data Centers and Networking

According to the financial reporting, we are losing $14,800 per minute during the downtime when using Tier I Data Center. We should change from Tier I Data Center to Tier III Data Center, which is a higher level system that is more efficient and productive, and it will save the company $13,229,056 after three years. Currently, Tier I Data Center is vulnerable to interruption from planned and unplanned actions, which is causing severe operational and financial problems. In order to make the system more efficient, I highly suggest changes to be made immediately.

Compared to the Tier I system, the Tier III system has multiple independent distribution paths as well as redundant components. This new feature reduces the down time and provides better overall performances, because it prevents interruption from planned activities. For example, "if equipment is served by one distribution path, but in the event that path fails, another takes over as a failover." Tier III is a combination of Tier I, Tier II, and dual-powered equipment and multiple links. Thus, research from uptimeinstitute.com showed that many corporations in the United States are using Tier III data center to maintain day to day operation. It means Tier III is much more efficient than Tier I, as well as more cost saving.

Tier I has availability levels of 99.671%, while Tier III has guaranteed availability of 99.982%. To elaborate, the difference of downtime is rather significant; Tier I has 1,734.48 minutes of annual downtime compared to Tier III's 105.12 minutes of annual downtime, meaning we will save 1,729.36 minutes (see Table 1). Moreover, by utilizing Tier III, the company could save $24,114,528 annually in failure cost. The initial investment of the installment of Tier III is $35,000,000; however, this investment will save the company $13,229,056, which is our net profit after three years (see Table 2). In order to stay competitive and increase profit for the organization, implementation of Tier III is highly recommended due to the significant amount of monetary savings. Although, this investment appears to be grand initially, it will help build customers loyalty and make our Data Center more cost effective.

Work Cited

Hatton, Ben. "Data Center Tiers Explained." *RSS*. N.p., 21 Feb. 2014. Web. 25 Jan. 2015. <http://www.thedatacave.com/data-center-tiers-explained>.

"Three Benefits of Data Centre Tiers." *Canadian Web Hosting Blog and News*. N.p., n.d. Web. 25 Jan. 2015. <http://blog.canadianwebhosting.com/data-center-tiers/>.

Uptime Insttitute Professional Services, LLC, ed. "Data Center Site Infrastructure Tier Standard: Topology." *Uptime Institute, LLC* (2010): 2-6. Print.

Table 1

Downtime Saving Per Year				
	Minutes in a year	Availability	Downtime	Downtime Cost
Tier I	525600	99.67%	1734.48 minutes	$25,670,304
Tier III	525600	99.98%	105.12 minutes	$1,555,776
Saving			1,729.36 minutes	$24,114,528

Table 2

Net Profit after 3 Years				
	Year 1	Year 2	Year 3	Total
Cost	$35,000,000	$0	$0	$35,000,000
Benefit	$0	$24,114,528	$24,114,528	$48,229,056
Net Profit				$13,229,056