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Flash Research Assignment: Servers and Storage Technologies

September 19, 2013

By switching to a liquid-cooled data center we can reduce our energy use by 95%, dramatically cutting our costs. We currently have an air cooling system that is prone to overheating and costs 50% more than a liquid-cooled system. Liquid cooling systems reuse the hot air that comes out of the data center that cuts the cost of heating the building. Adopting this technology now will give us a competitive advantage against our competitors.

Using a traditional air cooling system is expensive and unreliable due to broken fans and overheating. Air cooling collects dust in the equipment which can cause malfunctions and uses three times the amount of energy than a liquid-cooling system. Liquid-cooling can run pipes through each rack to eliminate overheating and the need of raised floors which takes up a vast amount of space in the data center. Liquid cooling uses water blocks which are made out of copper or aluminum that sit directly on top of a chip. The cooled water runs through the water block channels absorbing the heat and pumps it into a radiator that ejects the hot water. Green Revolution Cooling discovered a non- conductive white mineral oil that can retain 1,200 times more heat by volume than your typical air system.

The liquid-cooling system not only reduces our carbon footprint by 50% but also saves us money on our next energy bill. The company currently spends more money powering our air system than on our equipment maintenance. Liquid cooling can lower our downtime costs by always keeping our computer cool. This advance technology cannot only extract the heat out of the equipment utilize it to heat the office building. According to Gartner this technology has a high benefit with less than two years to mainstream adoption.

References:

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