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Enterprise IT Architecture

With the cooling systems we have in place at our data centers currently, we are wasting money by using fans and heat-producing equipment to cool our vital servers. Hot water cooling systems are the way of the future and can be implemented into our existing data centers to make them more efficient, costing us less money and making a good environmental impact.

Hot water cooling systems pump existing water from the building through tubes that pass by each CPU and direct-to-chip liquid-cooling technology allows the removal of noisy fans to cool chips. Once the water is pumped in and passes by the CPU's and other heat-producing elements of the server, the hot "waste" water is pumped out of the server and back into the building. Direct-to-chip technology allows room-temperature water to absorb the heat from server CPU's and remove it efficiently from inside the server. No air is exchanged with the server room, which means the server room air conditioning system, which is loud and uses high amounts of energy, can be removed. Direct-to-chip liquid cooling even allows for the hot water that is removed from the servers to be used in other parts of the building, cutting water heating costs dramatically.

There is a distinct business case for implementing direct-to-chip liquid cooling technology into our server rooms, and that case is cost savings. By using the liquid cooling system in our servers, we can save up to \$3,460 per rack per year. Asetek produces a system called ISAC or inside server air condition, which is priced to create an immediate payback of all invested funds. This means that by implementing the ISAC system into each of our server racks, our investment can be paid back immediately through cooling-cost savings. The choice to move to liquid cooling in our systems is also environmentally friendly because it cuts the need for high-noise, high-energy consumption air conditioning systems out of the equation, lowering our total system energy needs.