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Capacity Crisis: High Density Devices to Blame Data Centers Running Out of Space and Are on Power Overload

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STAMFORD, Conn. – Forty-three percent of data centers are running out of physical space and power density in racks is at an all time high, a survey by the Aperture Research Institute has discovered.

The Aperture Research Institute is the first organization dedicated to researching data centers, their challenges, and best practice management. It was established by Aperture Technologies Inc., the leading global provider of software for managing the physical infrastructure of data centers.

The survey of over 100 enterprise data managers, representing over 600 data centers, covered a spectrum of company sizes and industries, including banking, insurance, healthcare, data services, retail and telecommunications.

Nearly 90 percent of those surveyed indicated that 75 percent or more of the space in their data centers was already allocated to IT equipment.

More than 43 percent of respondents reported that 90 percent or more of their data centers were in use, which may suggest that future needs are being planned with the rapid growth in processing and storage across all industries.

Compounding these concerns is the fact that servers and racks are using more power than ever before. Nearly 38 percent of respondents said that their average rack was using from 7 to 18 kilowatts or more. As well as putting pressure on the power supply infrastructure, such a power high density will also increase demand for cooling and increase the risk of downtime.

One of the reasons power density has risen is the use of blade servers. Blade servers offer a smaller physical footprint, allowing more servers to be placed in a rack, but they require more power and cooling. Of the respondents, 90 percent reported that their companies had blade servers in their data centers, but nearly 74 percent said that less than a fifth of their new servers would be blade servers.

The increased complexity of these blade servers and the intense demands of power and cooling also increase the risk of human error, which was cited by over 57 percent of respondents as a leading cause of outages.

As many as 18 percent of respondents said they didn't know what the average power density of their racks was, suggesting they didn't have the tools or process to manage capacity and are at an even greater risk of outage due to error.

"Data centers are facing a time of crisis because of the increased demands on their physical resources and management," said Steve Yellen, vice president of marketing at Aperture. "There's a gap between IT and data center facilities that's resulting in a rapid increase in high density equipment without thinking about the ability of a data center to reliably support that capacity. With these data centers stretching thinner and thinner, more and more instances of downtime and failure are likely to occur."