

World's densest, totally silent solid state drive

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The ruler-shaped Intel SSD DC P4500 can hold up to 32 terabytes. It draws just one-tenth the power of a traditional spinning hard drive. Credit: Walden Kirsch/Intel Corporation

Fast disappearing from data centers are power-hungry spinning hard disk drives that hum, buzz, run warm (or even hot), require fans and expensive cooling systems, and can crash unexpectedly.

Intel's newest solid state drive, the Intel SSD DC P4500, is about the size of an old-fashioned 12-inch ruler, and can store 32 terabytes. That's equivalent to triple the entire printed collection of the U.S. Library of Congress.

The new SSD is Intel's densest drive ever, and is built on Intel 3-D NAND technology, which stacks [memory cells](#) atop each other in multiple extremely thin layers, instead of just one. Memory cells in the P4500 are stacked 64 layers deep.

Older [disk](#) drives produce a great deal of heat. In most [data centers](#) today, the single biggest cost is air conditioning to keep them cool. This is one of the reasons some of the world's biggest data companies—IBM, Microsoft, Tencent—are using the new "ruler" SSD to support their cloud and data center operations.

In data centers, the no-moving-parts ruler-shaped SSDs can be lined up 32 side-by-side, to hold up to a petabyte in a single server slot. Compared with a traditional SSD, the "ruler" requires half the airflow to keep cool. And compared with hard disk storage, the new 3-D NAND SSD sips one-tenth the power and requires just one-twentieth the space.

Provided by Intel

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