

## Samsung Mass Produces Biggest SSDs

Written by Alice Marshall  
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Samsung announces it has started mass producing its biggest Serial Attached SCSI (SAS) SSD yet-- the PM1643, a 30.72TB drive featuring 64-layer 3-bit 512Gb V-NAND chips.



Aimed for enterprise systems, the PM1643 doubles the capacity of the previous 15.36TB Samsung SSD through the combination of 32 new 1TB NAND flash packages. Each package is comprised of 16 stacked layers of 512Gb V-NAND chips, and allows the storage of approximately 5700 5GB HD movie files in a 2.5-inch device.

Also included in the SSD is a 12Gb/s SAS interface and random read/write speeds reaching up to 400000 and 50000 IOPS respectively, and sequential read/write of up to 1200MB/s and 1700MB/s. Further improvements include a controller architecture integrating 9 controllers from the previous high-capacity SSD lineup into a single package and Through Silicon Via (TSV) technology interconnecting 8Gb DDR4 chips to create 10 4GB TSV DRAM packages, totaling 40GB of DRAM.

Security comes through enhanced software with metadata protection and data retention and recovery support, and an error correction code (ECC) code ensuring high reliability and minimal storage maintenance. Samsung claims endurance levels clock at one full drive write per day (DWPD), or the writing of 30.72TB of data every day over the 5-year warranty period without failure. Mean time between failure (MTBF) is at 2 million hours.

Samsung started mass producing the 30.72TB PM1643 in January 2018. It also plans to expand the lineup with 15.36TB, 7.68TB, 3.84TB, 1.92TB, 960GB and 800GB versions later this year.

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