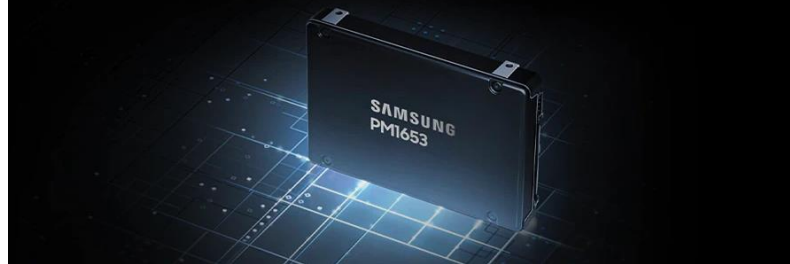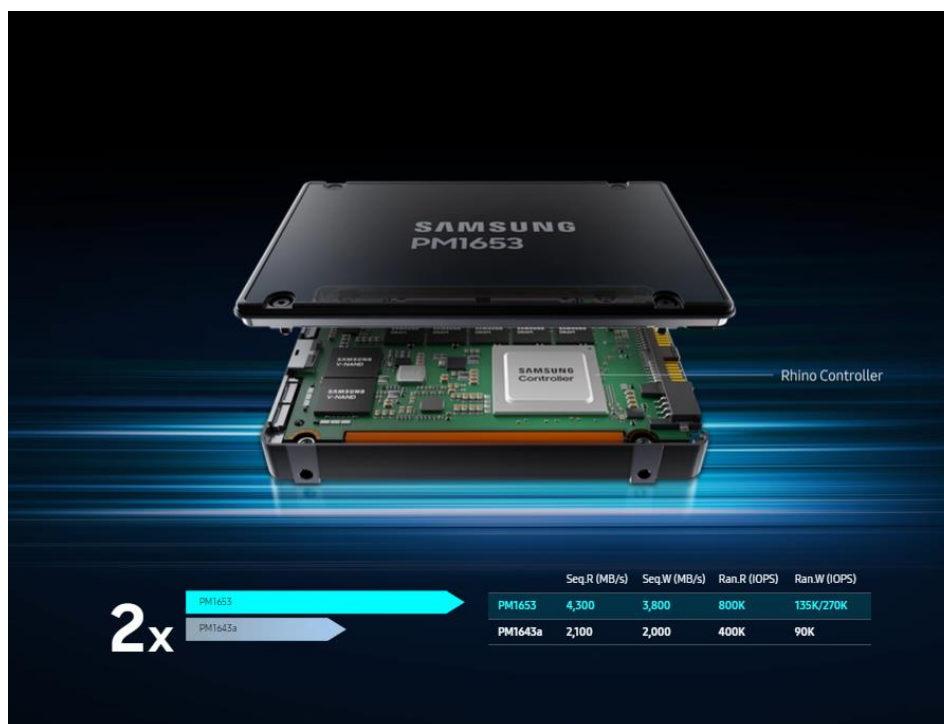A landmark release for Enterprise SSDs

PM1653 - A Big Leap Forward for Enterprise Storage

Access a whole new level of SSD performance. Now more than ever, enterprises require high-performance storage solutions that are capable of processing heavy workloads quickly and efficiently. Optimized with the latest 24G SAS interface and featuring dual ports for added stability, Samsung's PM1653 offers enterprises the performance they need to keep up with today's rapidly evolving data demands.

24G SAS: Class-Leading Performance

The PM1653's 24G SAS support streamlines storage infrastructure by maximizing throughput.
This is possible thanks to the addition of a cutting-edge Rhino controller that doubles the PM1653's bandwidth. This allows it to offer roughly twice the performance and more than double the random speeds of the previous generation.

	Seq.R (MB/s)	Seq.W (MB/s)	Ran.R (IOPS)	Ran.W (IOPS)
PM1653	4,300	3,800	800K	135K/270K
PM1643a	2,100	2,000	400K	90K

Remarkably Reliable

The stability to succeed. The PM1653's dual ports feature two pairs of signal pins that are connected to a separate storage system. Utilizing that system, it continuously performs service checks to ensure that if one port fails, the other is capable of maintaining stable service. Such reliability enhances TCO while also adding much-needed stability to mission-critical enterprise applications.

More Capacity, More Efficiency

Featuring Samsung's latest sixth-generation,
128-layer V-NAND and a maximum capacity of 30.72TB, the PM1653 offers the capacity to keep up with the exponential growth of business data. Such large capacity significantly expands the amount of storage that can be used in the enterprise market.

Samsung's Highest Performing SAS Enterprise SSD to Take Server Storage Performance to Next Level

As the industry's first 24G SAS storage based on 100+ layer vertical NAND, the PM1653 will provide maximum speed and capacity to effectively handle AI and big data workloads in enterprise servers

Samsung Electronics, the world leader in advanced memory technology, today announced its launch of the industry's highest performing 24G SAS (SAS-4) SSD — the PM1653. Based on the latest SAS interface, the new drive can support twice the speed of the previous 12G SAS-3 generation. The PM1653 is also the industry's first 24G SAS SSD made with sixth-generation (1xx-layer) V-NAND chips, enabling storage capacities from 800GB to 30.72TB for advanced enterprise server systems. "As the leading provider of SAS storage for a decade, Samsung has been offering the most advanced and reliable enterprise solutions in full support of the critical workloads of global server OEMs, governments and financial institutions. Samsung enterprise solutions are also accredited by the U.S. National Institute of Standards and Technology for the most powerful data security," said Kwangil Park, senior vice president of the Memory Product Planning Team at Samsung Electronics. "Like we have done with the PM1653, Samsung will continue to collaborate with our customers to accommodate the ever-growing demand of the enterprise server market for the most uncompromising offerings available."

In order to build a robust 24G SAS ecosystem across the enterprise market, host bus adapter (HBA) system readiness is also essential. Samsung has been closely working with Broadcom, a leading HBA provider, to ensure a seamless and timely transition to this new SAS milestone. "Broadcom values the innovation that 24G SAS products, such as the Samsung SSD PM1653, will bring to the enterprise server market," said Jas Tremblay, vice president and general manager of the Data Center Solutions Group at Broadcom. "The combination of the PM1653 SSD and Broadcom's next-generation SAS RAID products delivers up to 5X RAID 5 performance; which will be critical to meet the strong demands of the 24G ecosystem."

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The PM1653 has been optimized for high-performance enterprise servers, offering the industry's highest random read speed – a key metric for server storage performance – of up to 800K IOPS. Its sequential read speed can reach 4,300MB/s, which is the maximum available speed for the 24G SAS interface and twice the speed of the previous-generation PM1643a drive. Leveraging its dual-port system, the new SSD will give enterprise server OEMs the flexibility of using one or both ports depending on their system environment. Even if one port was to experience a failure during operation, data can be transferred and accessed through the other port with superior enterprise-grade reliability. The PM1653 is capable of supporting 24G and the legacy 12G SAS-3 platform as well. Samsung has begun sampling the PM1653 SSD with select customers, and plans to begin mass production in the second half of this year.

Samsung ENTERPRISE-SSD

Part Number	Model	Interface	Form Factor	Capacity	Sequential Read	Sequential Write	Random Read	Random Write	DWPD
MZILG960HCHQ	PM1653	SAS 24.0 Gbps	2.5 inch	960 GB	4200 MB/s	1200 MB/s	600K IOPS	55K IOPS	1(5yrs)
MZILG1T9HCJR	PM1653	SAS 24.0 Gbps	2.5 inch	1.92 TB	4200 MB/s	2400 MB/s	720K IOPS	85K IOPS	1(5yrs)
MZILG3T8HCLS	PM1653	SAS 24.0 Gbps	2.5 inch	3.84 TB	4200 MB/s	3700 MB/s	770K IOPS	135K IOPS	1(5yrs)
MZILG7T6HBLA	PM1653	SAS 24.0 Gbps	2.5 inch	7.68 TB	4200 MB/s	3700 MB/s	770K IOPS	135K IOPS	1(5yrs)
MZILG15THBLA	PM1653	SAS 24.0 Gbps	2.5 inch	15.36 TB	4200 MB/s	3700 MB/s	800K IOPS	140K IOPS	1(5yrs)
MZILG30THBLA	PM1653	SAS 24.0 Gbps	2.5 inch	30.72 TB	4200 MB/s	3300 MB/s	800K IOPS	140K IOPS	1(5yrs)

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