TECHNOLOGY BRIEF
Intel® Solid-State Drive 320 Series
Non-Volatile Memory Storage Solutions from Intel

Intel® Solid-State Drive 320 Series and Dell PowerEdge*

Taking the Lead in Read-Intensive Workload Performance

Intel® Solid-State Drive (Intel® SSD) technology brings a compelling performance boost to Dell PowerEdge* servers with significant energy savings

Today's server applications are in the early stages of realizing the benefits of solid-state drives (SSDs). Across the data center, solid state drives are increasing performance, reducing power consumption and improving reliability. Based on the integration of NAND Flash memory and controller/firmware technology, SSDs are faster, require less power and are more reliable than a hard disk drive (HDD). Working together, Dell and Intel make these benefits a reality by offering Dell PowerEdge servers with the Intel® Solid-State Drive 320 Series for read-intensive workloads in the data center.

Data Center Applications

Data center workloads vary in the amount of data they write. Some workloads, such as logging, have a very high number of write operations, while others have a mix of read and write operations like database applications. Many other data center workloads are dominated by reads. Search, Content Delivery and Video on Demand represent these application types.

It is important to consider the anticipated workload when planning an SSD deployment. The Intel SSD 320 Series is the ideal choice for workloads that consist of mainly read-intensive operations and this device can also be an appropriate option for some mixed workloads if employing "over-provisioning".

The Capabilities of an SSD

Solid-state drives are available with different levels of performance and endurance capabilities. (Endurance is the amount of write operations the SSD is capable of sustaining over its life and is specified as Total Terabytes Written (Total TBW) or total drive writes per day). Different implementations of controller, firmware and NAND Flash memory technology lead to a variety of performance and endurance levels.

A key factor in the endurance and performance of the SSD is how efficiently the SSD controller/firmware applies read and write operations to the drives.

Intel SSDs have a long history of applying industry-leading technology across the controller, firmware and NAND Flash memory to maximize the endurance and performance capabilities of the SSDs.

Choosing the Right SSD

To help users understand the options and choose the right SSD for their desired workload, Intel provides SSD tools that can accurately forecast an SSD's service life in a given workload. Once the forecast life of the Intel 320 Series SSD is understood for a workload, it can also be extended in some cases by "overprovisioning" the drive. Learn more about these tools in the Intel® Solid-State Drive 320 Series Enterprise Server/Storage Application Product Specification Addendum.[1]

The Intel SSD 320 Series thrives in workloads where read operations are most common and where the tools described in Addendum document enable customers using Dell PowerEdge servers to apply the benefits of Intel SSDs to mixed workloads.

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Dell Part Number Information

Intel SSD 320 Series Capacity	Current Dell Part Number	Current Manufacturer Part Number on AVL
160GB	TMC3T	SSDSA2BW160G3D
300GB	MT7K5	SSDSA2BW300G3D
600GB	MCCKT	SSDSA2BW600G3D

Dell PowerEdge*/Intel® SSD 320 Series Supported Platforms

PowerEdge Brand	Supported Storage Controllers	Supported Operating Systems	Supported RAID Levels
R720, R720XD, R620, T620, R820, R320, R420, R520 T320, T420, M520, M620, M820, R910	H310, H710*, H710P[2]	Microsoft Windows* 2003 SRV R2, W2K8 SRV, W2K8 SRV R2,W2K8 Virt, Win8, RHEL, SuSE, Xen, Vmware, Solaris, Microsoft Windows PE	0, 1, 5

Dell PowerEdge-C/Intel SSD 320 Series Platforms

PowerEdge Brand	Supported Storage Controllers	Supported Operating Systems
PE C5220	Intel C204 LSI 2008 Mezz	Novell SUSE Linux* Enterprise Server 11 SP1/SP2 Red Hat* Enterprise Linux 6.0 (6.1, 6.2) Microsoft Windows Server* 2008 R2 Enterprise x64 SP1 Microsoft Windows HPC Server 2008 R2 x64 SP1
PE C6220	LSI 9265-8i, LSI 9202-16e, LSI 9285-8e LSI 9210-8i, Intel C600 LSI2008 Mezz	Novell SUSE Linux Enterprise Server 11 SP1/SP2 Red Hat Enterprise Linux 6.0 (6.1) Microsoft Windows Server 2008 R2 Enterprise x64 SP1 Microsoft Windows Server 2008 R2 Hyper-V™ SP1 Microsoft Windows HPC Server® 2008 R2 x64 SP1
PE C8220X PE 8000XD	LSI 9265-8i, LSI 9211-8i LSI 9280-8e, LSI 9202-16e, Intel C600, LSI 2008 Mezz	Novell SUSETM Linux Enterprise Server 11 SP2 Red Hat Enterprise Linux® 6.0 (6.1) Microsoft Windows Server 2008 R2 Enterprise x64 SP1 Microsoft Windows Server 2008 R2 Hyper-V Role Microsoft Windows Server 2008 Enterprise x64 R2 HPC SP1 Server Management Embedded BMC w/IPMI 2.0 support

Notes:

1. http://www.intel.com/content/www/us/en/solid-state-drives/solid-state-drives-320-series.html > Product Information
2. Pass-through of Self-Monitoring, Analysis and Reporting Technology (SMART) attributes will be a future capability for RAID configurations in Microsoft Windows.

Solid-State Computing Starts with Intel Inside.® For more information, visit www.intel.com/go/ssd

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