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ZD-XL SQL Accelerator 1.6

Integrated Flash Hardware & Software Acceleration Solution for SQL Server

Overview

ZD-XL 1.6 SQL Accelerator is a tightly integrated hardware/software, plug-and-play acceleration solution optimized for Microsoft SQL Server applications. It leverages OCZ's industry-proven PCIe SSD hardware and application-tuned software to deliver low latency flash that resolves potential SQL Server bottleneck issues enabling the flash to be deployed as a local flash volume, a flash cache for HDD volumes, or as a combination of both. The solution includes a combination of fast flash performance, a unique cache mechanism that makes advanced and statistically-optimized decisions on what data to cache, and a dynamic cache warm-up scheduler that enables workloads to be placed on flash cache in advance of demanding and critical jobs.

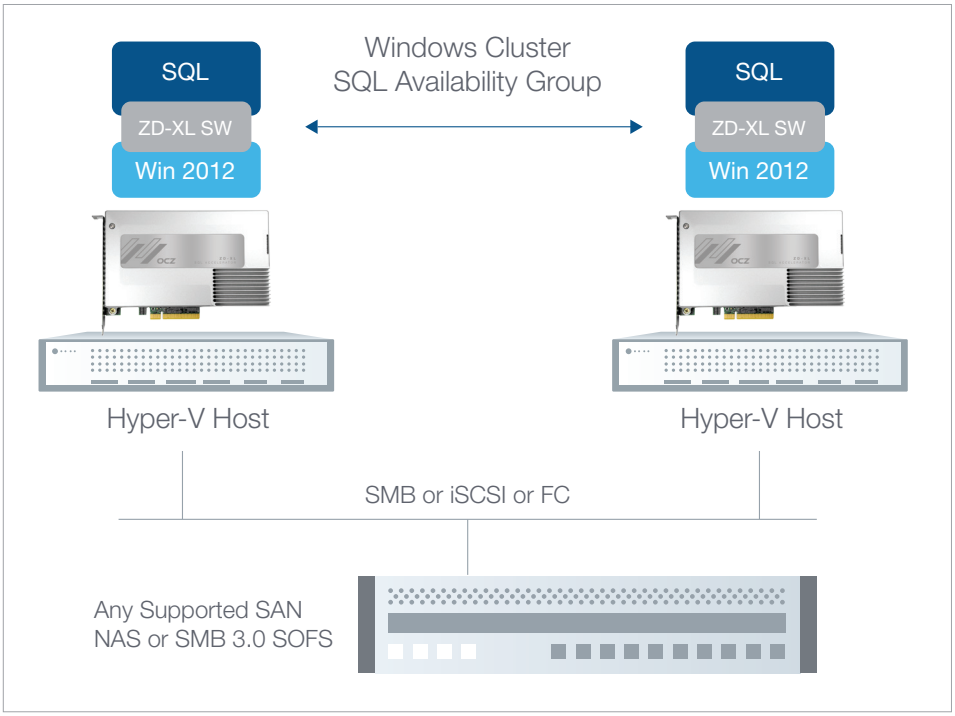
Innovative Flash Volumes & Flash Caching

The ZD-XL SQL Accelerator architecture leverages OCZ's industry-proven PCIe SSD hardware and software intellectual property (IP) to deliver low latency flash that can be deployed as local flash volumes, a flash cache for HDD volumes, or as a combination of both. For small databases that fit in flash, local flash volumes enable SQL Server to accelerate read and write operations such as tempDB files enabling them to benefit from the media's fast read/write performance. While flash volumes provide the fastest performance, flash caching lowers CAPEX and OPEX by combining smaller amounts of flash with less costly HDDs. Therefore, partitioning flash resources between local volumes and cache enables tempDB files to take advantage of the media's flash performance while hot data can be simultaneously cached from larger databases for immediate SQL Server availability. This unrivalled flash partitioning not only helps to deliver optimal storage performance, but also enables DBAs to future-proof their flash investment as database capacities grow.

Features

- Supports Microsoft Hyper-V and VMware ESXi environments
- Accelerates SQL Server at a per database level
- Delivers remote caching capabilities over the network for blade and rack servers
- Complements Microsoft SQL Server 2014 Buffer Pool Extension service
- Integrates best practice wizards
- Provides automated load analysis and flash warm-up scheduling
- Designed in a Full-Height/Half-Length (FH/HL) format supporting 800GB, 1.6TB and 3.2TB usable capacities
- Provides complete power loss data protection, end-to-end data protection, advanced ECC and other capabilities that extend drive life and protect data
- Backed by a 5-year warranty

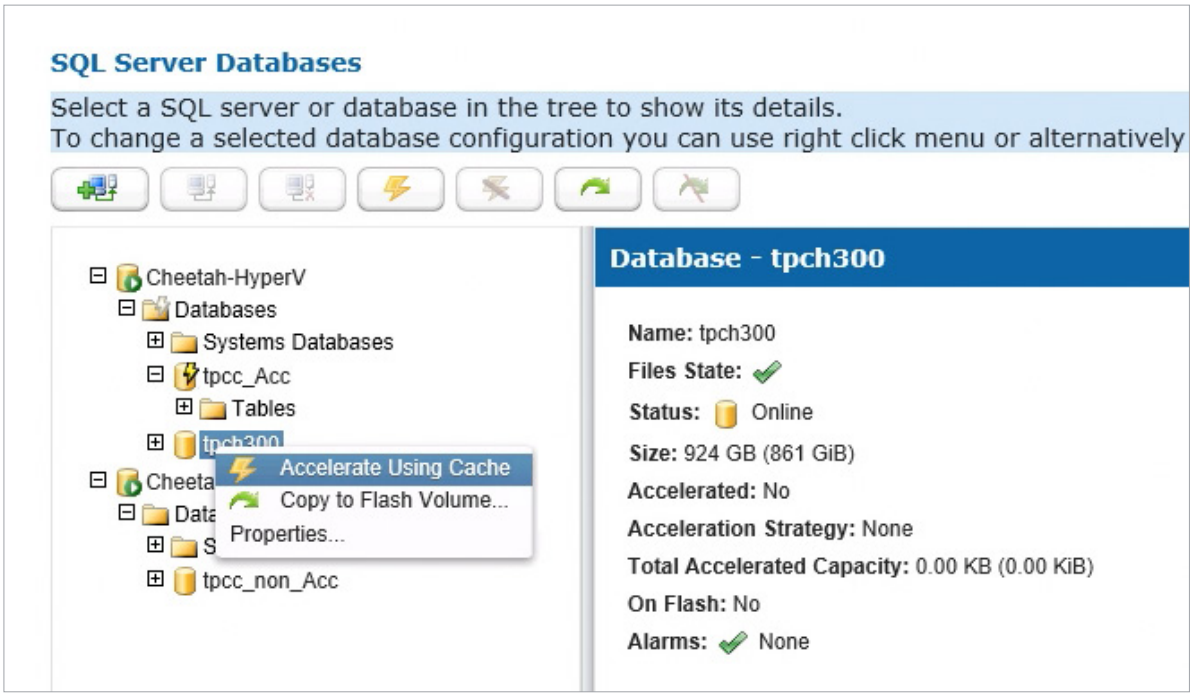
VMware ESXi and Microsoft Hyper-V Support



SQL Server 2014 enables both virtual and physical resources to be provisioned on demand through flash virtualization. Even if the SQL Server environment is not virtualized today, at some point in the future some or all of the SQL Server instances may need to move to a virtualized environment. When this occurs, ZD-XL SQL Accelerator 1.6 supports both VMware ESXi and Microsoft Hyper-V hypervisors enabling its flash resources to be dynamically deployed exactly to the needs of VMs to enable provisioning on demand.

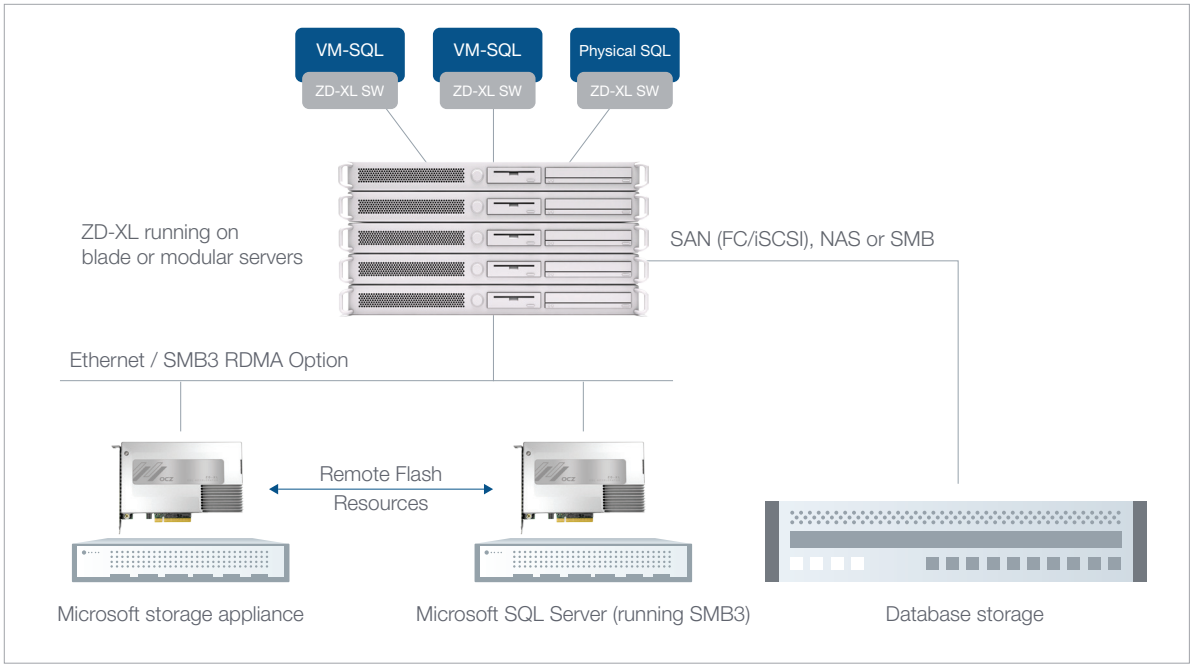
Tight Integration with Microsoft SQL Server Management

ZD-XL SQL Accelerator 1.6 provides new, unique and tight integration with SQL Server 2014 enabling its flash resources and associated management capabilities to connect directly to the application providing the utmost in application management integration.



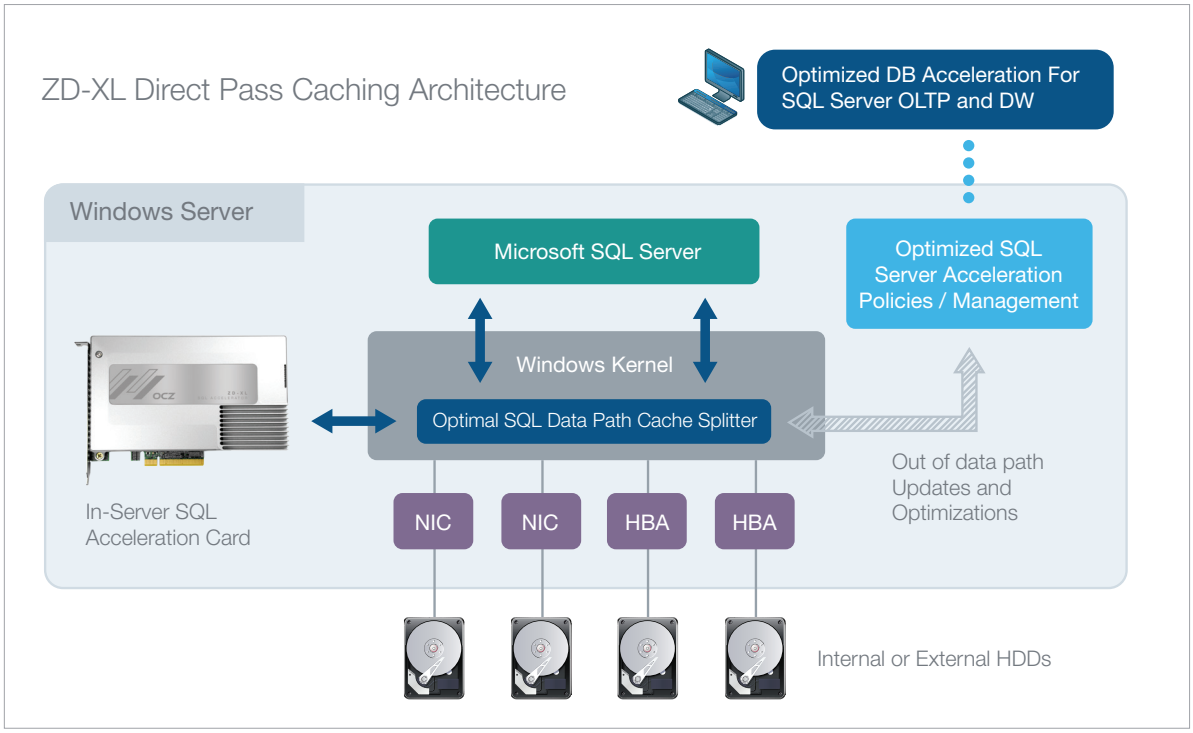
Remote Flash Services for Blade Servers

With SQL Server 2014, OCZ enables ZD-XL SQL Accelerator 1.6 software to run next to the database application on blade or specific rack-mounted servers while the SSD flash is located remotely on either a commodity server or storage appliance. As a result, ZD-XL SQL Accelerator 1.6 software bypasses the storage stack to provide direct connection of its flash cache remotely.



Direct Pass Caching Technology

When SQL Server databases are larger than the available flash resources, ZD-XL SQL Accelerator employs advanced application-optimized caching policies as part of its proprietary Direct Pass Caching Technology that efficiently selects what data to place in flash cache so that the right data is selected for the specific workload.



Specifications

Physical

Usable Capacities (IDEMA)	800GB / 1600GB / 3200GB
NAND Components	Multi-Level Cell (MLC)
Interface	PCIe Gen 2 x8
Form Factor	Full-Height/Half-Length (FH/HL)
Storage Controller	VCA 2.0 (Virtualized Controller Architecture™)
Dimenstions (L x W x H)	126.3mm x 180.9mm x 21.6mm
Weight	350g

Sustained Performance

(based on ZD4RPFC8MT320-3200 model)

Max Read	Up to 2,900 MB/s
Max Write	Up to 2,200 MB/s
Sustained Random 4K Reads[1]	Up to 252,000 IOPS
Sustained Random 4K Writes[1]	Up to 76,000 IOPS
Sustained Random 8K Reads[1]	Up to 155,000 IOPS
Sustained Random 8K Writes[1]	Up to 31,000 IOPS

[1] Based on SNIA (Storage Networking Industry Association) workloads

Environmental

Power Consumption	800GB: 18.4W Idle, 20.8W Active 1600GB: 20.3W Idle, 23.1W Active 3200GB: 20W Idle, 22.8W Active
Operating Temperature	0°C ~ 55°C
Non-Operating Temperature	-45°C ~ 85°C
Airflow Requirements	300LFM (Linear Feet per Minute) at 25°C 550LFM (Linear Feet per Minute) at 40°C
Certifications and Declarations	RoHS, FCC , CE, BSMI, C-TICK, VCCI, KCC, UL

Reliability/Security

Mean Time Between Failures (MTBF)	2 million hours
Endurance Rating	Minimum of 0.68PB (800GB), 1.3PB (1600GB), 2.5PB (3200GB)
Power Fail Protection	Full in-flight data protection for unexpected system power loss
Data Path Protection	End-to-end data path protection at every data juncture
Data Reliability	Read Unrecoverable Bit Error Rate (UBER) 10^{-17}
Data Encryption	Data compression, Data de-duplication, and AES 128bit encryption
Product Health Monitoring	Self-Monitoring, Analysis and Reporting Technology (SMART) Support with enterprise attributes
Data Recovery	In case of block failures, RAID mechanisms are used to recover data

Compatibility

PCI Express	PCI Express x8 or x16 slot; Fully compliant with the PCI Express Electromechanical Specification Rev. 2.0, and PCI Express Base Specification Rev. 2.0
Serial ATA (SATA)	SATA Rev. 2.6 compliant ATA feature set; ATA-8 compliant
Operating Systems	Microsoft Hyper-V Server: 2012 R2, 2012, 2008 R2 VMware vSphere ESXi: 5.5, 5.1, 5.0, 4.1 Microsoft SQL Server: 2014, 2012 R2, 2012, 2008 R2 Windows Server (64-bit): 2012 R2, 2012, 2008 R2
Power Management	Supports ATA Power Management Specification
Power Requirements	PCIe 12V & 3.3V

Additional Features

Performance Optimization	TRIM (requires OS support)
Proprietary Virtualized Controller Architecture (VCA) 2.0	Virtualizes SSD devices into a massively parallel array of memory Consolidated SMART support
Upgradable Firmware	Field-upgradable firmware
Service & Support	5-year warranty; Dedicated FAE support