Test Results in HD Tach Disk Benchmark 3.0.4.0

Objective – Performance measurement using an *X-Wall MX-256C (AES CBC 256-bit strength)* real-time crypto processor attached behind a Silicon Image PCIe (**Gen 1**) to **SATA 3Gbit** controller and before the connected **SATA 3Gibt** disk drives to execute commonly known hard disk benchmark. The hardware configuration is configured as below:

Host PCIe (Gen 2) Interface → Silicon Image PCIe to SATA Controller → *X-Wall MX-256C* Crypto Processor → SATA 3Gbit Disk Drives

Summary – Performance as being measured reveals insignificant performance variation using the *X-Wall MX-256C real-time crypto processor*. In some instances, the performance measurement is up only to an insignificant percentage.
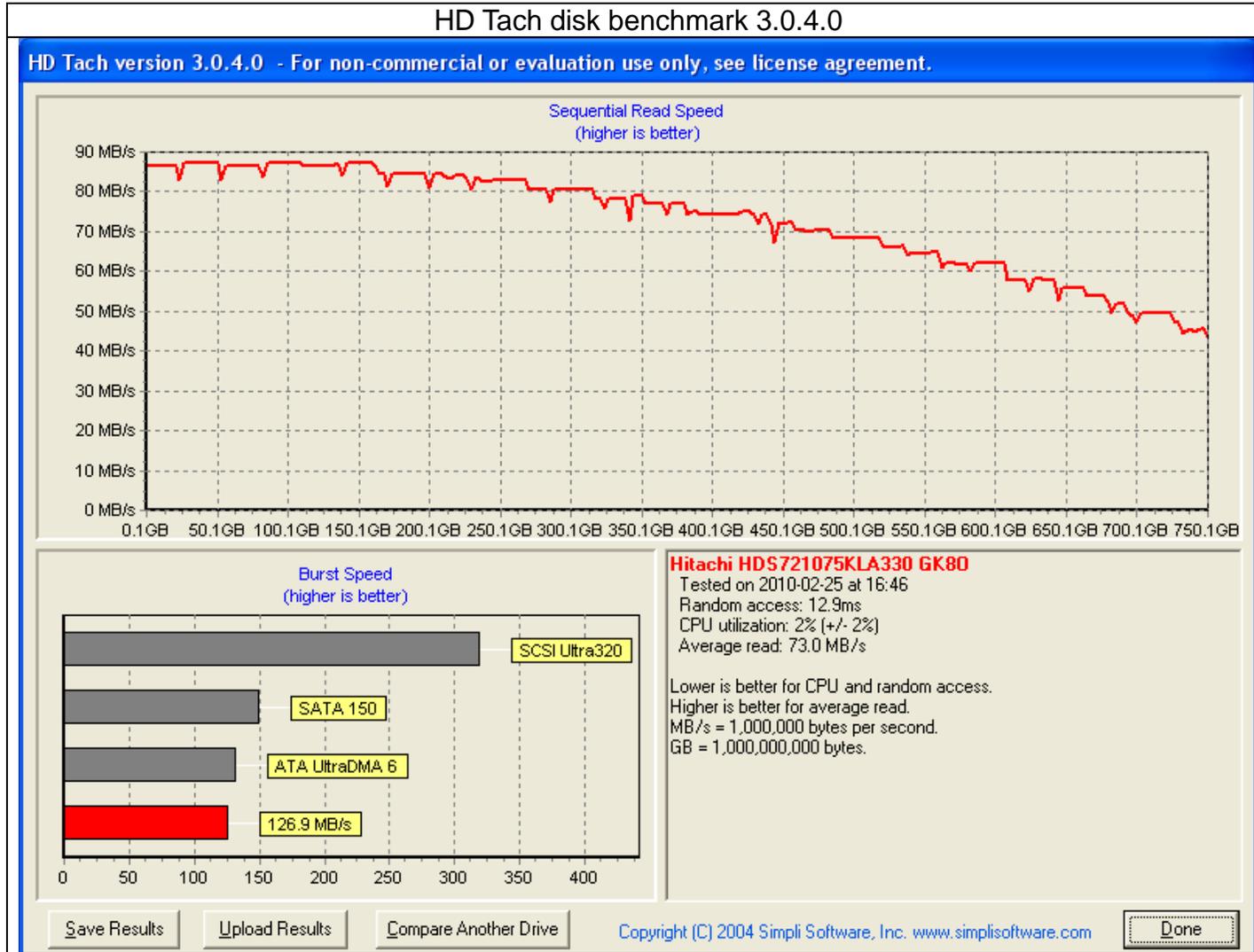
Recommendations –

1. Select either Hitachi or Western Digital SATA 3Gbit hard drives such as HDP725025GLA380, HDS721075KLA330, and WD1200JS-55MHB0 and avoid using Seagate ST9500325AS/ST3808110AS/ST3320620NS;
2. Both Hitachi and Western Digital hard drives appear to have a much better errors handling over the NCQ whereas specific Seagate models may cause unwanted performance degradation;

Test Bed Configurations

Test platform configurations	
CPU	Intel Duo 2 Core E7400
Mainboard	ASUS P5QL-E
Chipset	Intel G45 + AHCI10
RAM	DDR II800 4G
OS	Windows XP 32bit SP3
OS disk drive	Seagate ST320620NS 320G SATAII 7200RPM
Test disk drive - I	Hitachi HDS721075KLA330 750G SATA II 7200RPM
Test disk drive - II	Seagate ST320620NS 320G SATAII 7200RPM
PCIe to SATA Adapter	Silicon Image PCIe (Gen 1) to SATA (3Gbit) Controller SI3132
X-Wall MX chip	X-Wall MX-256C with AES CBC 256-bit strength

ENOVA

Hitachi SATA 3Gbit disk drive WITHOUT the *X-Wall MX-256C* Crypto Processor

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Sequential Read Speed
(higher is better)

Burst Speed
(higher is better)

SCSI Ultra320

SATA 150

ATA UltraDMA 6

126.9 MB/s

Hitachi HDS721075KLA330 GK80
Tested on 2010-02-25 at 16:46
Random access: 12.9ms
CPU utilization: 2% (+/- 2%)
Average read: 73.0 MB/s

Lower is better for CPU and random access.
Higher is better for average read.
MB/s = 1,000,000 bytes per second.
GB = 1,000,000,000 bytes.

Save Results   Upload Results   Compare Another Drive   Copyright (C) 2004 Simpli Software, Inc. www.simplisoftware.com   Done

Hitachi SATA 3Gbit disk drive WITH *X-Wall MX-256C* Crypto Processor

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