Master Thesis - Security Aspects in Virtual Networks

SITREP 15

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April 9, 2015

Work done

This is an overview of the work performed in the past day:

- Performed some benchmarking to compare the performances between encrypted and non-encrypted disks. Therefore, I used two different tools, to obtain more accurate results. The findings are listed below.

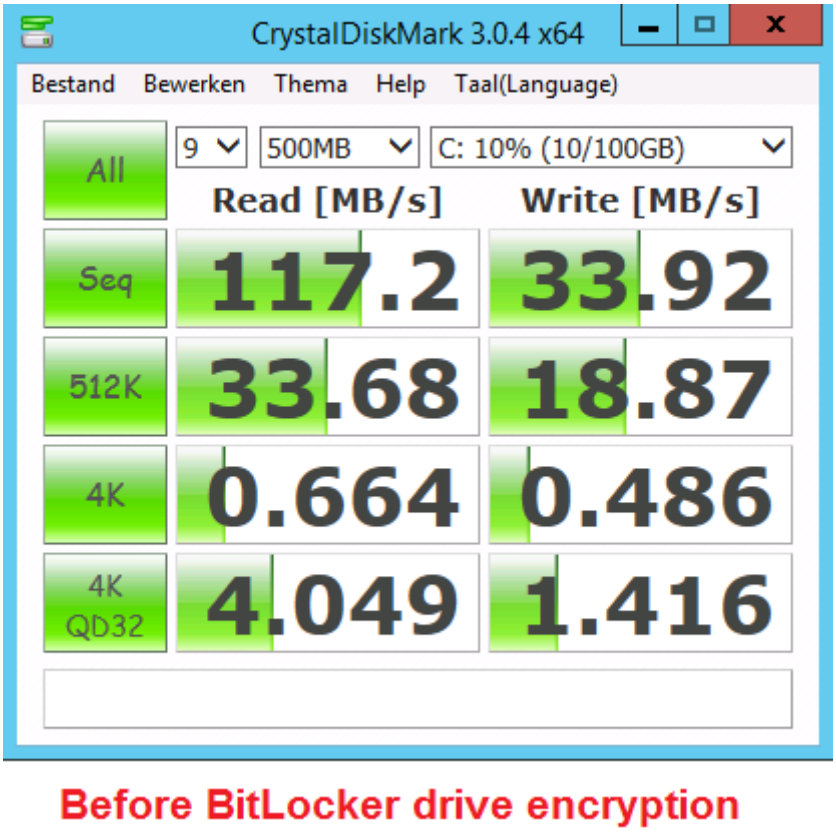
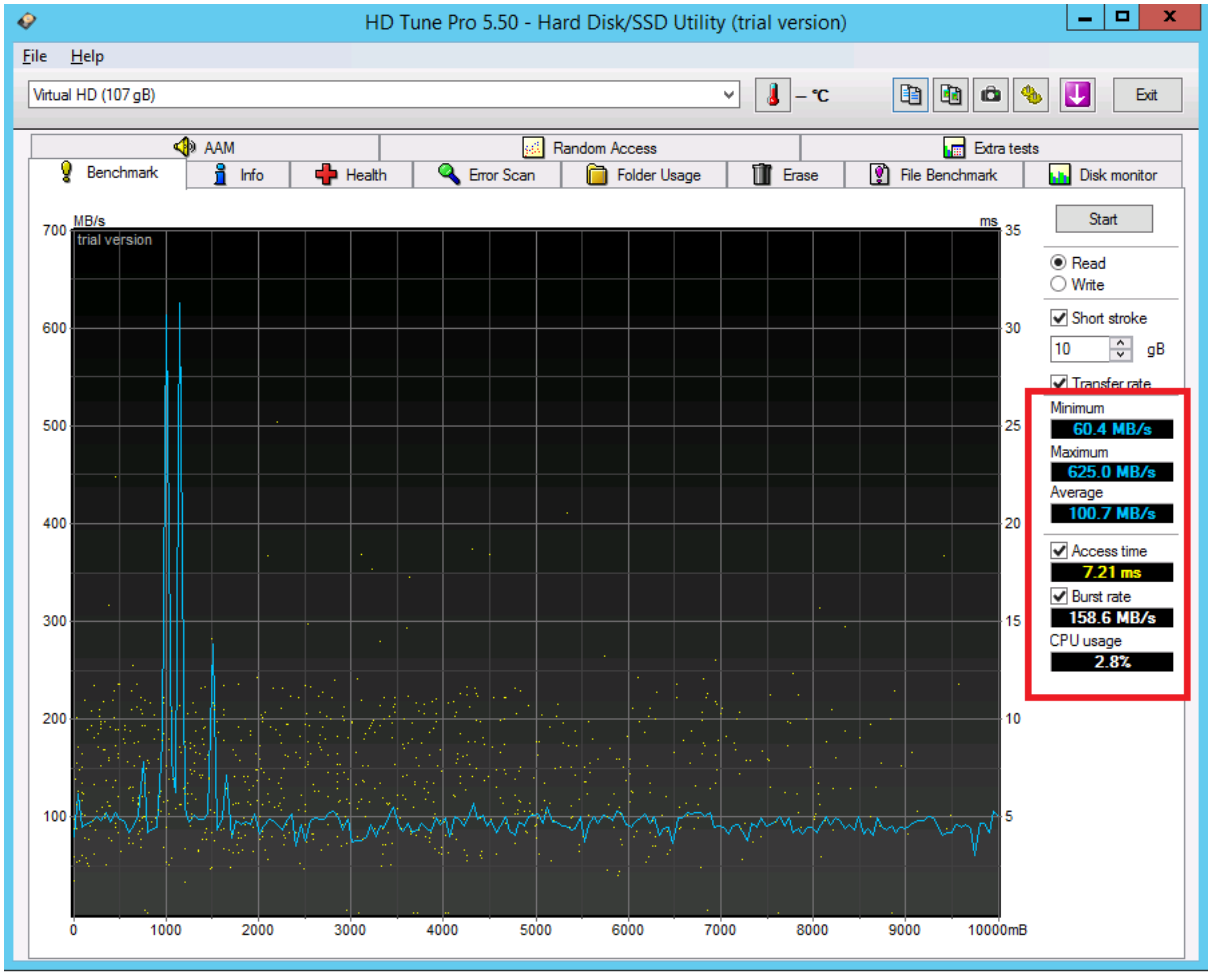


Figure 1: Read - and write speeds according to "CrystalDiskMark" before the drive has been encrypted by BitLocker. Note that I use an actual system (virtual) disk.



Before BitLocker drive encryption

Figure 2: Here I use HDTune Pro to perform the benchmarking.

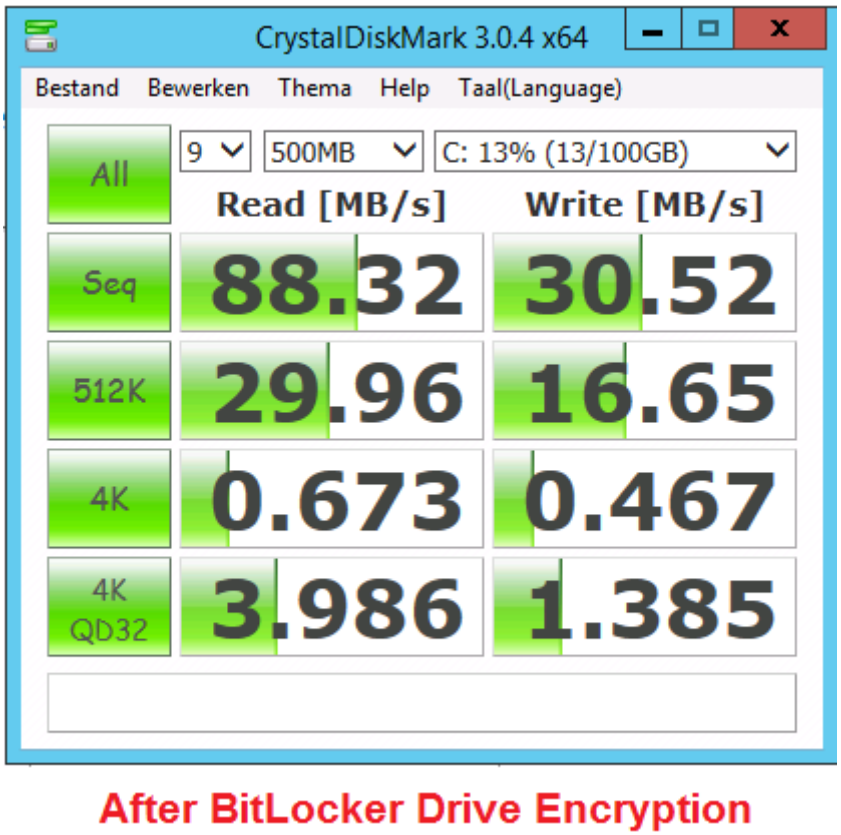


Figure 3: These are the results after the system drive has been encrypted using BitLocker. The sequential read speed drops from 117 MB/s to 88 MB/s and the sequential write speed drops from 34 MB/s to 30 MB/s.

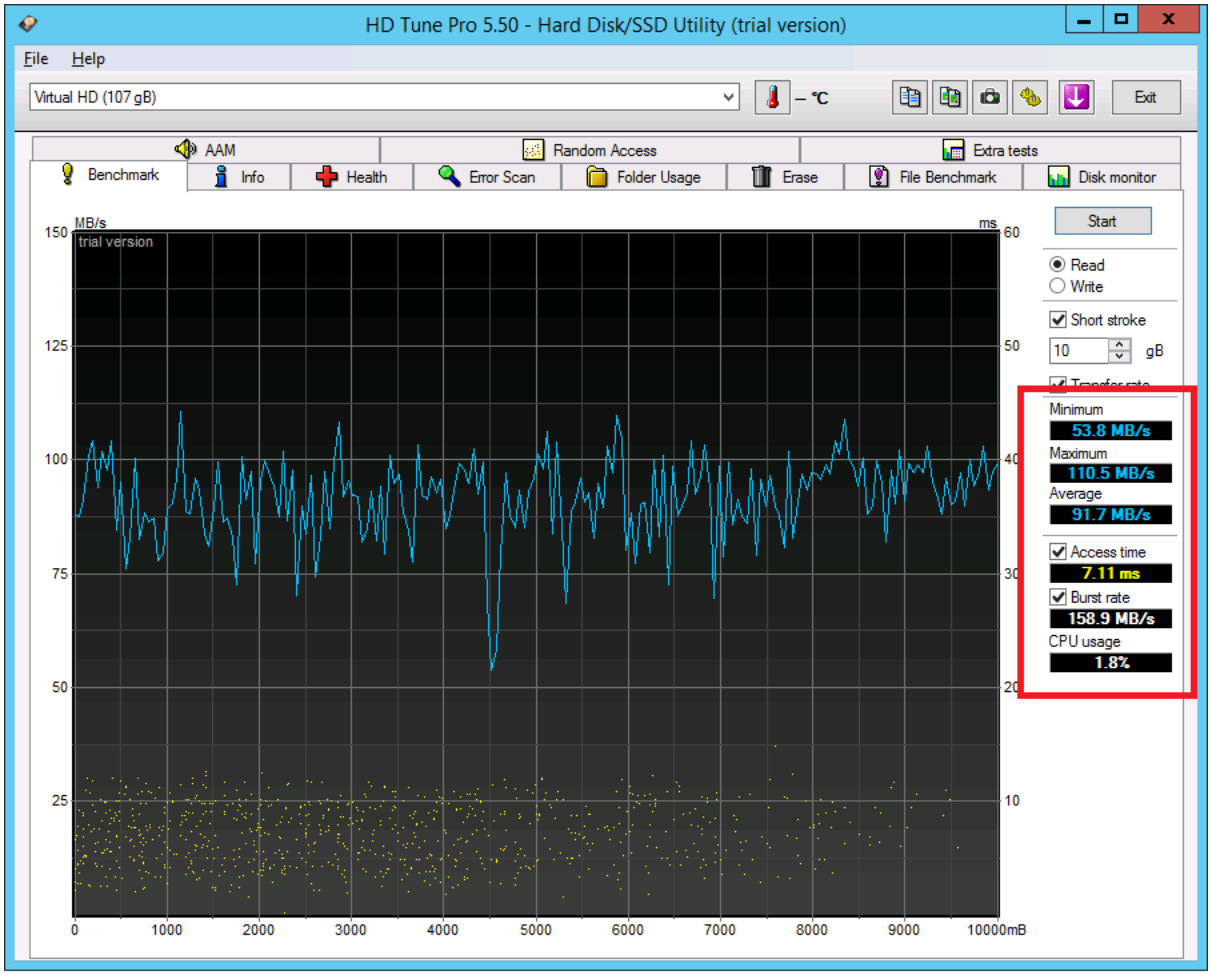


Figure 4: Also HDTune confirms the speed drop: from 100 MB/s on average to 91 MB/s on average.

Let us summarize the performance differences:

	Before	After	Difference in %
Read 1	117	88	24 % slower
Read 2	100	92	8 % slower
Write	34	30	12 % slower

So in conclusion, if we take the average of the two reading speed differences, we can state that the reading speed is 16% slower and the writing speed is 12% slower.

Note that the disk access time **remains the same** according to HDTune. The question now is: do we choose for performance but less security, or do we choose for security with a performance decrease of approximately 15%?

Planning

Problems

Issues

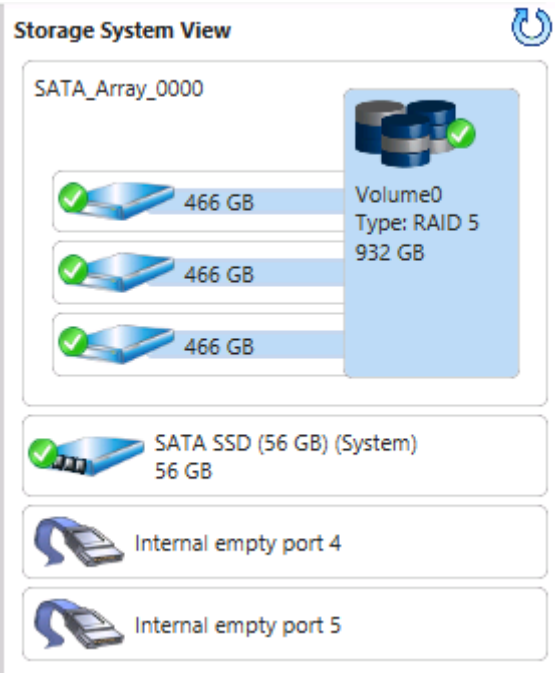


Figure 5: I have installed the Intel Rapid Storage Technology tool and this tool confirmes that all three the disks are working normally, despite the LED not blinking.

Assistance