Grayteq

Grayteq DLP
Performance Benchmark

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Purpose of this Document

The purpose of this document is to provide technical insight for prospects and potential Customers about the resource consumption of Grayteq DLP solutions on a standard (or so standard) office workstation, highlighting the – Lowest in the industry - resource needs the operation of Grayteq DLP requires.

Details

Grayteq DLP

Details of the Grayteq DLP Client Agent installed on the test subject workstation:

Product Version:	Grayteq DLP – Version 12.0-hoftix-0
Product level:	Red
Type:	Client Agent
Licence:	Trial
Web:	http://www.grayteq.com

Test Application

For benchmark and other tests, a well-known and proven benchmarking and testing application called AIDA64 (previously known as Everest) were used. All numeric data in the following were measured and provided by this application.

General Hardware and Software description

AIDA64 Extreme v4.70.3200

Hardware	System summary, Mainboard, Processor, Drivers
Configuration	Operating system, Security
Web	http://www.lavalys.com

CPU, Memory and HDD Measurement

AIDA64 Extreme v4.70.3200

Benchmark	Global Performance, Processor, Memory Global, Hard Disk
Web	http://www.lavalys.com

Test modes

During our benchmarking, we have accomplished tests and measurings with standard, daily load and extreme, stress situation load for both with and without Grayteq DLP Agent. This type of test is to make benchmark data comparable while the workstation is unprotected and while protected by a kernel-level (operating system core) operating Grayteq DLP Agent, highlighting the vanishingly low resource consumption raise, the use of Grayteq DLP may cause.

Standard Load Test

Standard load test contains the operations of those applications and services that are being loaded by the operating system at boot. These applications (without the need of completeness) are system components, drive applications, antivirus and personal firewall apps.

Extreme Load (Stress) Test

Extreme Load Test simulates such an extremely high resource consumption load that don't occur in everyday working circumstances. During this test almost all of the user-executable applications are running in collaboration with all auto-running system components and all third-party kernel (core) level applications.

Test without Grayteq DLP Client

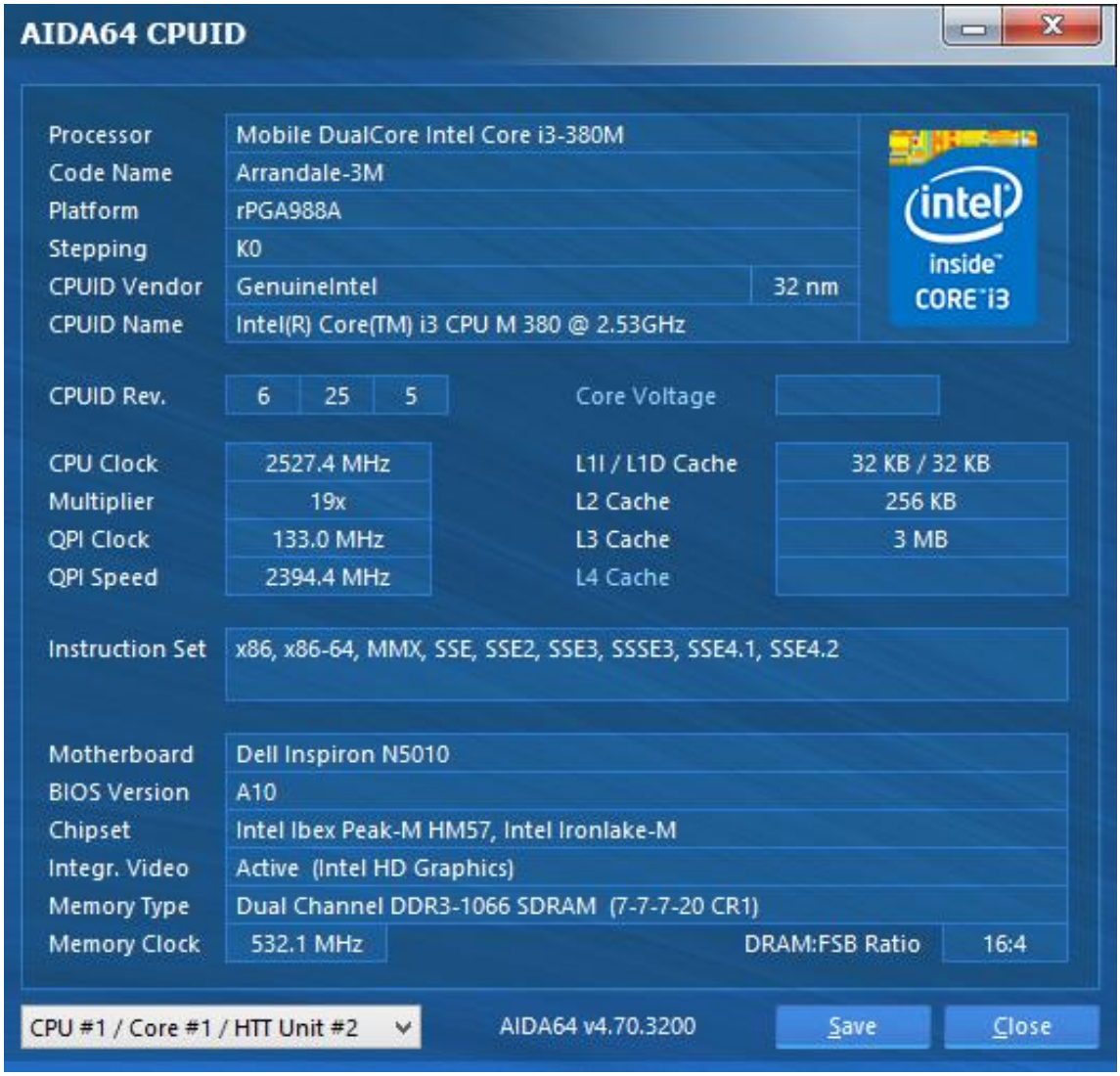
Test without Grayteq DLP Client is intended to represent the normal daily operation of a standard office workstation BEFORE the installation of a Grayteq DLP Client. Test without Grayteq DLP Client was executed both with standard load and extreme load circumstances.

Test with Grayteq DLP Client

Test with Grayteq DLP Client is to represent to operation of a standard office workstation AFTER Grayteq DLP Client being installed. These test measurement occured with all-time running Grayteq DLP Client Agent with and without protection policies. These tests were executed both in standard and extreme load circumstances and resulted that any resource consumption raise Grayteq DLP Client Agent might cause is within a 2% range if security policies are applied or not. Accordingly, all of such test results occured with applied security policies.

System measurement

Motherboard and CPU



Test results

Memory and Cache Test – Standard Load

MEMORY & CACHE TEST – STANDARD LOAD				
Feature	**Measure**	**Unit**	**W/O Grayteq DLP**	**W/ Grayteq DLP**
Memory - Standard	Read	MB/s	8305	8253
	Write	MB/s	7488	7465
	Copy	MB/s	10345	10439
	Latency	ns	121,7	121,5
L1 Cache - Standard	Read	MB/s	80782	80791
	Write	MB/s	80776	80777
	Copy	GB/s	157,58	157,59
	Latency	ns	1,6	1,6
L2 Cache - Standard	Read	MB/s	51592	51968
	Write	MB/s	51083	51290
	Copy	MB/s	63593	63666
	Latency	ns	7,6	4,1
L3 Cache - Standard	Read	MB/s	50223	50153
	Write	MB/s	21384	21188
	Copy	MB/s	30055	29579
	Latency	ns	20,6	20,7

Memory and Cache Test – Stress Load

MEMORY & CACHE TEST – STRESS LOAD				
Feature	**Measure**	**Unit**	**W/O Grayteq DLP**	**W/ Grayteq DLP**
Memory - Stress Test	Read	MB/s	49433	49400
	Write	MB/s	21428	21334
	Copy	MB/s	29989	29767
	Latency	ns	20,3	22,5
L1 Cache - Stress Test	Read	MB/s	42409	42406
	Write	MB/s	9460	9457
	Copy	MB/s	18600	18904
	Latency	ns	1,5	1,5
L2 Cache - Stress Test	Read	MB/s	20190	19900
	Write	MB/s	9109	9069
	Copy	MB/s	15422	15214
	Latency	ns	8,9	8,8
L3 Cache - Stress Test	Read	MB/s	20089	21135
	Write	MB/s	9080	9105
	Copy	MB/s	14339	15214
	Latency	ns	6,5	6,7

Harddisk test – Standard and Stress Load

READ TEST SUITE						
Feature	**Measure**	**Unit**	**W/O Grayteq DLP**		**W/ Grayteq DLP**	
			Result	CPU %	Result	CPU %
Read Test - Standard	Linear Read (Begin)	MB/s	59,5	4	60,8	7
Disk Drive: Maxtor 6N040T0	Linear Read (Middle)	MB/s	54,2	3	53,5	6
Volume: 38167MB	Linear Read (End)	MB/s	35,9	3	36,8	3
	Random Read	MB/s	46,6	10	40,3	10
	Buffered Read	MB/s	128,8	6	122,5	10
	Average Read Access	ms	17,84	0	18,5	3
Read Test – Stress Test	Linear Read (Begin)	MB/s	60,2	6	60,2	6
Disk Drive: Maxtor 6N040T0	Linear Read (Middle)	MB/s	48,8	4	48,8	4
Volume: 38167MB	Linear Read (End)	MB/s	21,7	8	21,7	8
	Random Read	MB/s	41,4	8	41,4	8
	Buffered Read	MB/s	123,6	4	123,6	4
	Average Read Access	ms	18,66	3	18,66	3

System Stability Test – Standard and Stress Load

SYSTEM STABILITY TEST				
Item	**Measure**	**Unit**	**W/O Grayteq DLP**	**W/ Grayteq DLP**
Temperatures - Stress Test				
CPU	Minimum	Celsius	49	57
CPU	Maximum	Celsius	87	87
CPU	Average	Celsius	76,6	81,2
CPU Core #1	Minimum	Celsius	44	52
CPU Core #1	Maximum	Celsius	89	88
CPU Core #1	Average	Celsius	74,2	79,5
CPU Core #2	Minimum	Celsius	50	58
CPU Core #2	Maximum	Celsius	90	89
CPU Core #2	Average	Celsius	76.6	80,7
PCH Diode	Minimum	Celsius	70	66
PCH Diode	Maximum	Celsius	72	72
PCH Diode	Average	Celsius	71,7	69,7

SYSTEM STABILITY TEST				
Item	**Measure**	**Unit**	**W/O Grayteq DLP**	**W/ Grayteq DLP**
IMC	Minimum	Celsius	59	60
IMC	Maximum	Celsius	75	75
IMC	Average	Celsius	68,3	72,1
DIMM	Minimum	Celsius	54	58
DIMM	Maximum	Celsius	64	64
DIMM	Average	Celsius	61,2	61,7
WDC	Minimum	Celsius	47	44
WDC	Maximum	Celsius	49	48
WDC	Average	Celsius	48,2	46
GMCH	Minimum	Celsius	15	15
GMCH	Maximum	Celsius	24	23
GMCH	Average	Celsius	18,3	16,3
AUX	Minimum	Celsius	70	66
AUX	Maximum	Celsius	72	72
AUX	Average	Celsius	71,7	69,7

SYSTEM STABILITY TEST				
Item	**Measure**	**Unit**	**W/O Grayteq DLP**	**W/ Grayteq DLP**
Cooling Fans - Stress Test				
CPU	Minimum	Celsius	4440	4520
CPU	Maximum	Celsius	4960	5000
CPU	Average	Celsius	4893	4929

Conclusion

According to the above detailed test results, it can be stated that neither in Standard load conditions nor Extreme, Stress load conditions,

Grayteq DLP Client Agent DOES NOT CAUSE significant resource consumption raise

in a standard office workstation that might be even recognizable by the user. According to the above it can be stated that

Grayteq DLP Client Agent DOES NOT CAUSE system- or network slowdown

that might recognizably effect the standard user experience. For further investigation or review of our benchmark test results and conclusion, all of the above test results (in .png files) and addition test results are available for download from Grayteq DLP website.