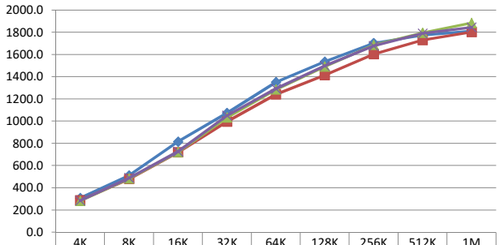
Life Testing Results of Intel Optane SSD 900P
(Random Write)

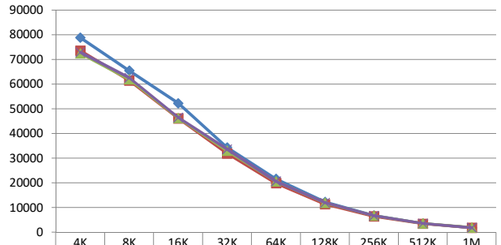
Testing Platform: Intel S2600CW / Intel Xeon CPU E5-2698 v3@2.30GHz x1 / Samsung 16GB DDR4-2133 RDIMM x4 (Total 64GB Memory) / Windows Server 2012 Standard / Intel NVMe driver
Testing Tool: Microsoft Diskspd v2.0.17
Testing Target: Intel Optane SSD 900P 280GB PCI-E HHHL
QxTy: Testing with y Threads where each thread has a queue depth of x.

Data Rate (MB/s) -- Q1T1



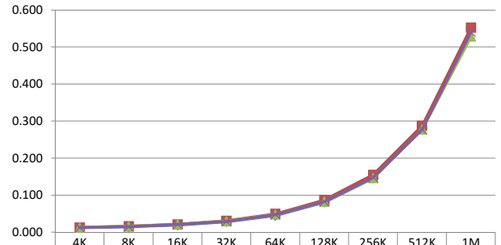
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	308.0	511.4	816.5	1073.2	1351.6	1535.9	1702.7	1775.4	1809.4
50% Worn	287.4	480.6	720.7	996.6	1241.8	1415.8	1605.1	1731.2	1803.4
100% Worn	283.1	484.0	723.1	1032.6	1287.4	1491.6	1686.8	1795.2	1885.9
110% Worn	284.8	489.2	726.6	1050.9	1292.5	1499.0	1679.1	1790.6	1845.6

IOPS -- Q1T1



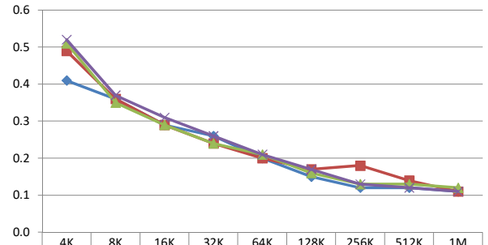
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	78844	65455	52256	34342	21626	12287	6811	3551	1809
50% Worn	73576	61517	46123	31893	19869	11327	6420	3462	1803
100% Worn	72463	61958	46275	33042	20598	11933	6747	3590	1886
110% Worn	72919	62614	46500	33629	20681	11992	6716	3581	1846

Avg. Latency (ms) -- Q1T1



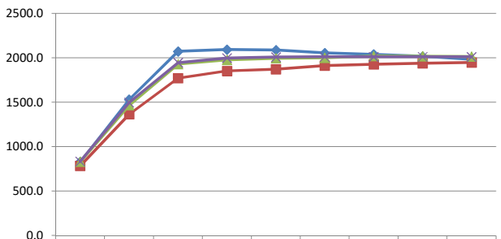
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.012	0.015	0.019	0.028	0.045	0.081	0.146	0.281	0.552
50% Worn	0.013	0.016	0.021	0.031	0.050	0.087	0.155	0.288	0.553
100% Worn	0.013	0.016	0.021	0.030	0.048	0.083	0.147	0.278	0.529
110% Worn	0.013	0.015	0.021	0.029	0.048	0.083	0.148	0.278	0.541

Avg. CPU Usage (%) -- Q1T1



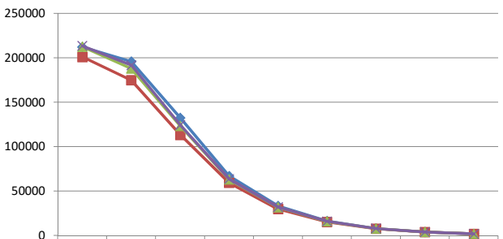
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.4	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1
50% Worn	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1
100% Worn	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1
110% Worn	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1

Data Rate (MB/s) -- Q4T1



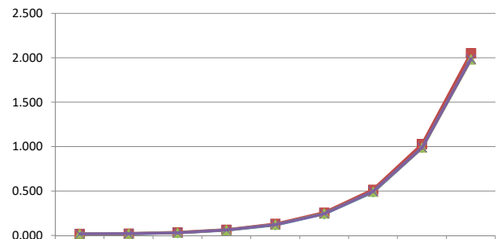
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	829.7	1531.5	2072.8	2093.0	2088.5	2054.9	2040.0	2019.0	1982.0
50% Worn	785.5	1366.9	1771.9	1854.0	1872.9	1912.8	1927.3	1938.4	1947.7
100% Worn	831.0	1468.6	1929.5	1977.5	1996.1	2000.5	2020.5	2019.0	2016.6
110% Worn	834.3	1498.1	1945.2	1998.6	2010.0	2012.2	2011.8	2012.5	2011.6

IOPS -- Q4T1



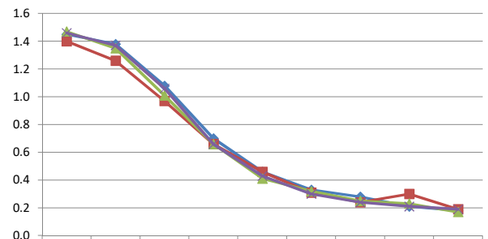
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	212407	196037	132661	66975	33416	16439	8160	4038	1982
50% Worn	201090	174964	113403	59330	29967	15302	7709	3877	1948
100% Worn	212732	187977	123490	63279	31937	16004	8082	4038	2017
110% Worn	213588	191755	124490	63954	32159	16098	8047	4025	2012

Avg. Latency (ms) -- Q4T1



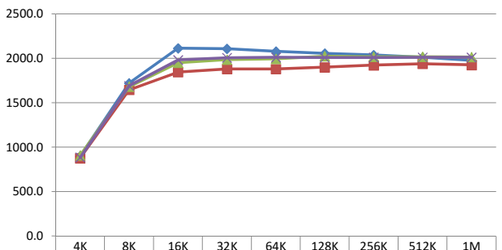
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.019	0.020	0.030	0.059	0.119	0.243	0.490	0.990	2.018
50% Worn	0.020	0.023	0.035	0.067	0.133	0.261	0.518	1.031	2.053
100% Worn	0.019	0.021	0.032	0.063	0.125	0.249	0.494	0.990	1.983
110% Worn	0.019	0.021	0.032	0.062	0.124	0.248	0.497	0.993	1.988

Avg. CPU Usage (%) -- Q4T1



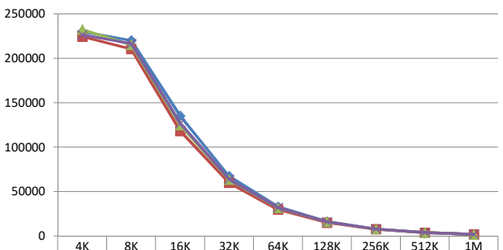
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1.5	1.4	1.1	0.7	0.5	0.3	0.3	0.2	0.2
50% Worn	1.4	1.3	1.0	0.7	0.5	0.3	0.2	0.3	0.2
100% Worn	1.5	1.4	1.0	0.7	0.4	0.3	0.3	0.2	0.2
110% Worn	1.5	1.4	1.1	0.7	0.4	0.3	0.2	0.2	0.2

Data Rate (MB/s) -- Q16T1



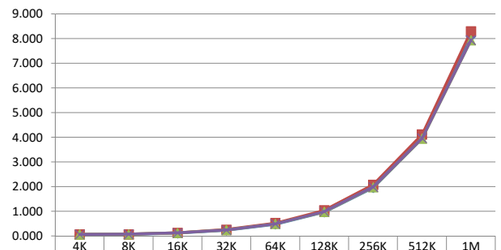
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	899.4	1721.6	2114.2	2108.2	2078.2	2056.8	2038.1	2011.7	1976.3
50% Worn	877.3	1646.1	1846.7	1880.2	1880.1	1901.1	1923.3	1939.4	1926.2
100% Worn	908.5	1682.5	1952.1	1986.5	1995.6	2024.7	2018.9	2019.5	2015.9
110% Worn	885.2	1692.9	1982.6	2006.8	2011.5	2009.8	2010.7	2013.4	2011.7

IOPS -- Q16T1



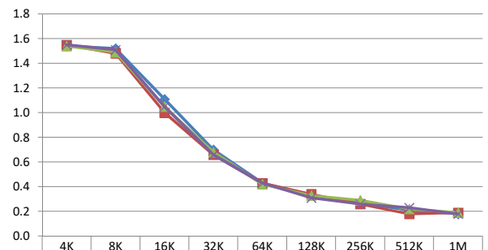
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	230256	220359	135310	67462	33252	16454	8152	4023	1976
50% Worn	224579	210703	118191	60166	30081	15209	7693	3879	1926
100% Worn	232571	215357	124933	63567	31930	16198	8075	4039	2016
110% Worn	226600	216687	126887	64219	32185	16079	8043	4027	2012

Avg. Latency (ms) -- Q16T1



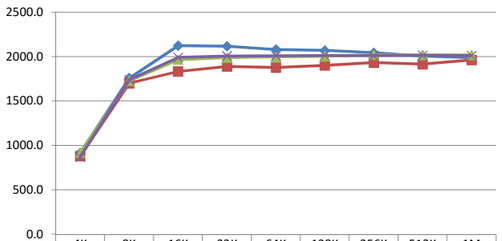
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.069	0.072	0.118	0.237	0.481	0.972	1.962	3.976	8.095
50% Worn	0.071	0.076	0.135	0.266	0.531	1.051	2.079	4.124	8.304
100% Worn	0.069	0.074	0.128	0.251	0.501	0.987	1.981	3.961	7.935
110% Worn	0.070	0.074	0.126	0.249	0.497	0.995	1.989	3.973	7.953

Avg. CPU Usage (%) -- Q16T1



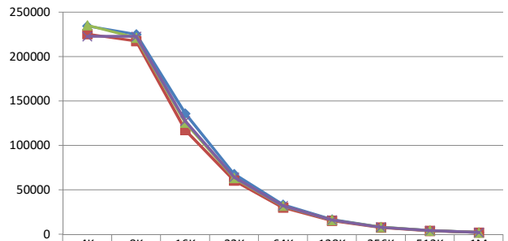
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1.5	1.5	1.1	0.7	0.4	0.3	0.3	0.2	0.2
50% Worn	1.6	1.5	1.0	0.7	0.4	0.3	0.3	0.2	0.2
100% Worn	1.5	1.5	1.1	0.7	0.4	0.3	0.3	0.2	0.2
110% Worn	1.6	1.5	1.1	0.7	0.4	0.3	0.3	0.2	0.2

Data Rate (MB/s) -- Q32T1



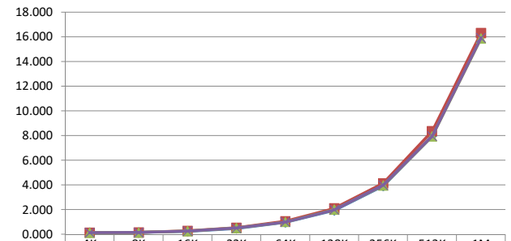
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	915.9	1758.2	2123.6	2116.9	2079.7	2069.2	2043.5	2005.7	1988.5
50% Worn	880.4	1700.0	1833.2	1887.6	1877.2	1900.0	1933.4	1914.4	1961.1
100% Worn	918.9	1728.5	1964.9	1986.7	1996.6	2001.2	2020.3	2017.2	2016.4
110% Worn	870.0	1740.0	1991.7	2006.8	2009.7	2011.6	2009.8	2012.8	2011.6

IOPS -- Q32T1



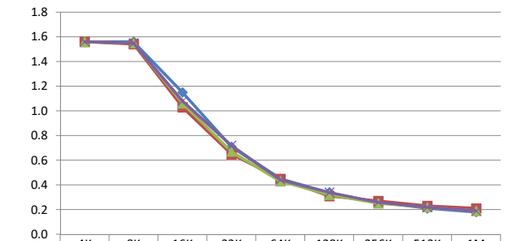
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	234483	225055	135911	67741	33274	16553	8174	4011	1989
50% Worn	225372	217599	117327	60402	30036	15200	7733	3829	1961
100% Worn	235234	221242	125753	63575	31945	16010	8081	4034	2016
110% Worn	222708	222723	127467	64218	32155	16093	8039	4026	2012

Avg. Latency (ms) -- Q32T1



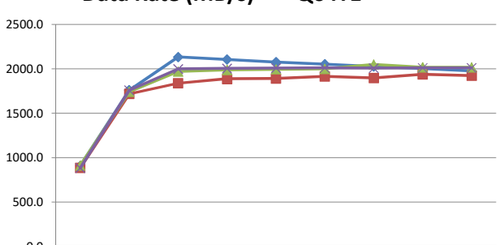
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.134	0.141	0.235	0.472	0.961	1.933	3.915	7.976	16.094
50% Worn	0.137	0.147	0.272	0.529	1.065	2.105	4.137	8.358	16.315
100% Worn	0.132	0.144	0.254	0.503	1.001	1.999	3.960	7.931	15.871
110% Worn	0.139	0.143	0.251	0.498	0.995	1.988	3.980	7.949	15.908

Avg. CPU Usage (%) -- Q32T1



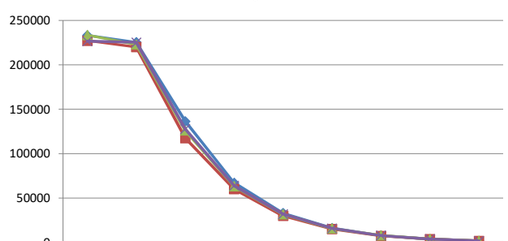
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1.6	1.6	1.2	0.7	0.5	0.3	0.3	0.2	0.2
50% Worn	1.6	1.5	1.0	0.7	0.5	0.3	0.3	0.2	0.2
100% Worn	1.6	1.6	1.1	0.7	0.4	0.3	0.3	0.2	0.2
110% Worn	1.6	1.6	1.1	0.7	0.4	0.3	0.3	0.2	0.2

Data Rate (MB/s) -- Q64T1



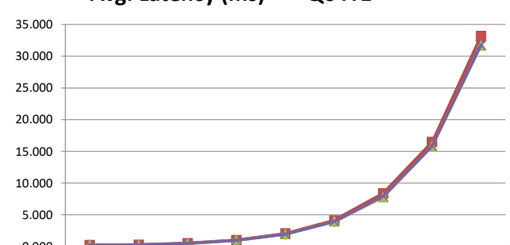
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	911.7	1762.1	2134.4	2106.2	2077.7	2054.5	2028.2	2003.0	1976.2
50% Worn	888.3	1720.8	1840.2	1888.3	1892.7	1916.4	1899.4	1938.5	1925.8
100% Worn	912.9	1742.9	1971.6	1988.7	1995.9	2001.5	2050.1	2019.0	2017.9
110% Worn	885.1	1761.4	1999.7	2006.3	2010.5	2012.1	2009.9	2012.6	2013.2

IOPS -- Q64T1



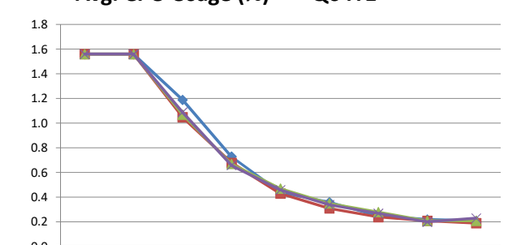
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	233400	225546	136599	67397	33244	16436	8113	4006	1976
50% Worn	227407	220261	117775	60427	30284	15331	7598	3877	1926
100% Worn	233703	223087	126180	63637	31935	16012	8200	4038	2018
110% Worn	226590	225463	127979	64201	32167	16097	8039	4025	2013

Avg. Latency (ms) -- Q64T1



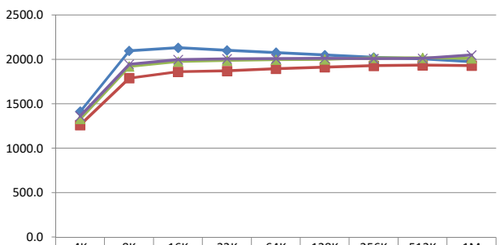
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.270	0.279	0.468	0.949	1.925	3.893	7.889	15.976	32.379
50% Worn	0.277	0.290	0.543	1.059	2.113	4.174	8.424	16.507	33.232
100% Worn	0.269	0.282	0.507	1.005	2.003	3.996	7.804	15.850	31.714
110% Worn	0.278	0.284	0.500	0.997	1.989	3.975	7.961	15.899	31.787

Avg. CPU Usage (%) -- Q64T1



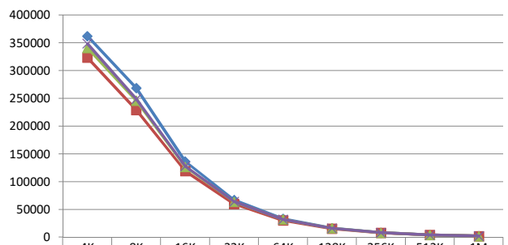
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1.6	1.6	1.2	0.7	0.4	0.4	0.3	0.2	0.2
50% Worn	1.6	1.6	1.1	0.7	0.4	0.3	0.2	0.2	0.2
100% Worn	1.6	1.6	1.1	0.7	0.5	0.4	0.3	0.2	0.2
110% Worn	1.6	1.6	1.1	0.7	0.5	0.3	0.3	0.2	0.2

Data Rate (MB/s) -- Q1T8



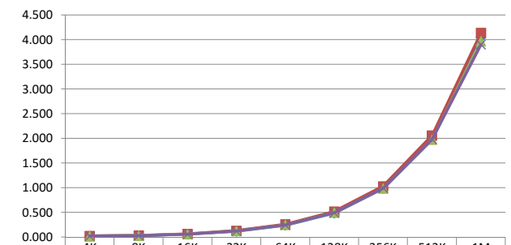
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1414.3	2098.2	2131.7	2102.9	2078.0	2049.2	2023.1	2006.3	1975.6
50% Worn	1263.1	1791.3	1862.6	1871.8	1894.4	1912.6	1930.2	1935.4	1930.6
100% Worn	1332.0	1922.0	1976.3	1989.4	1998.0	2001.2	2019.4	2017.9	2013.1
110% Worn	1362.2	1945.8	1998.6	2007.6	2008.9	2012.1	2008.7	2011.0	2049.2

IOPS -- Q1T8



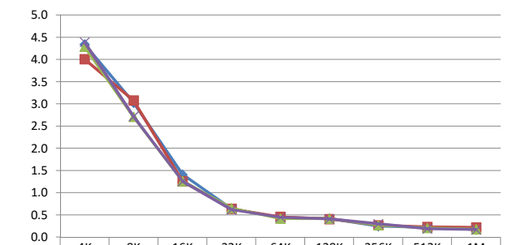
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	362060	268565	136426	67294	33248	16393	8092	4013	1976
50% Worn	323354	229290	119209	59899	30310	15301	7721	3871	1931
100% Worn	340985	246010	126480	63659	31968	16010	8078	4036	2013
110% Worn	348716	249063	127909	64244	32143	16096	8035	4022	2049

Avg. Latency (ms) -- Q1T8



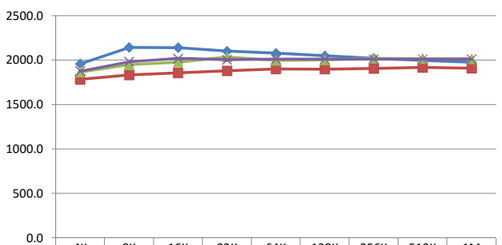
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.021	0.029	0.058	0.118	0.240	0.486	0.987	1.992	4.046
50% Worn	0.024	0.034	0.066	0.133	0.263	0.521	1.034	2.064	4.141
100% Worn	0.023	0.032	0.062	0.125	0.249	0.498	0.988	1.980	3.972
110% Worn	0.022	0.031	0.062	0.124	0.248	0.495	0.994	1.987	3.902

Avg. CPU Usage (%) -- Q1T8



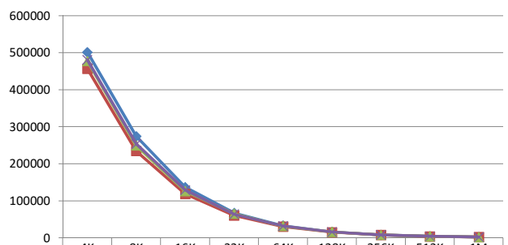
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	4.3	3.0	1.4	0.6	0.4	0.4	0.3	0.2	0.2
50% Worn	4.0	3.1	1.3	0.6	0.5	0.4	0.3	0.2	0.2
100% Worn	4.3	2.7	1.3	0.7	0.4	0.4	0.3	0.2	0.2
110% Worn	4.4	2.7	1.3	0.6	0.5	0.4	0.3	0.2	0.2

Data Rate (MB/s) -- Q4T8



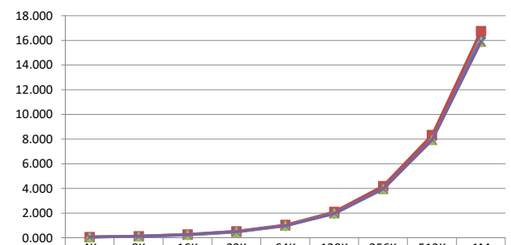
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1958.9	2142.6	2140.7	2102.0	2077.5	2048.6	2021.3	1996.8	1976.1
50% Worn	1783.4	1832.6	1855.3	1879.4	1900.8	1898.5	1906.4	1918.6	1909.3
100% Worn	1865.2	1948.4	1975.4	2035.9	1996.2	2002.2	2019.4	2015.6	2013.3
110% Worn	1877.9	1983.3	2018.9	2004.1	2009.8	2011.7	2011.0	2010.7	2011.3

IOPS -- Q4T8



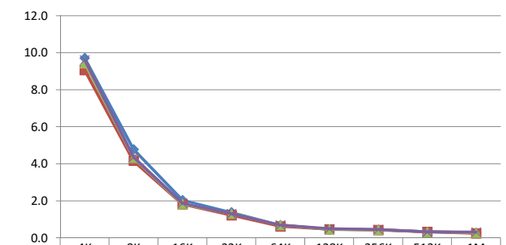
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	501486	274247	137007	67264	33240	16389	8085	3994	1976
50% Worn	456551	234570	118738	60141	30413	15188	7626	3837	1909
100% Worn	477494	249398	126428	65148	31938	16018	8078	4031	2013
110% Worn	480753	253857	129208	64130	32158	16094	8044	4021	2011

Avg. Latency (ms) -- Q4T8



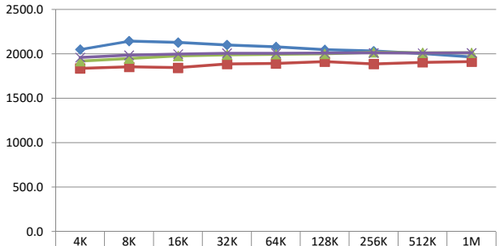
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.063	0.116	0.233	0.475	0.962	1.952	3.957	8.011	16.192
50% Worn	0.070	0.136	0.269	0.532	1.051	2.106	4.195	8.338	16.761
100% Worn	0.067	0.128	0.253	0.491	1.001	1.997	3.960	7.937	15.894
110% Worn	0.066	0.126	0.247	0.498	0.994	1.988	3.976	7.957	15.912

Avg. CPU Usage (%) -- Q4T8



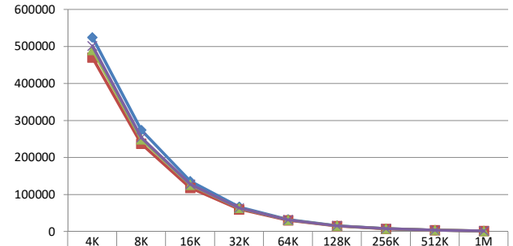
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	9.7	4.8	2.0	1.4	0.7	0.5	0.4	0.3	0.3
50% Worn	9.1	4.2	1.8	1.2	0.6	0.5	0.4	0.3	0.2
100% Worn	9.4	4.3	1.8	1.3	0.7	0.5	0.4	0.3	0.3
110% Worn	9.6	4.4	1.9	1.3	0.7	0.5	0.5	0.3	0.3

Data Rate (MB/s) -- Q16T8



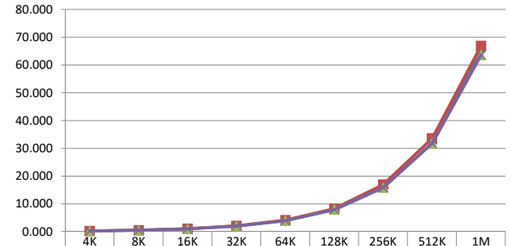
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2050.5	2144.7	2129.3	2101.1	2079.8	2048.0	2031.7	2002.5	1966.9
50% Worn	1837.5	1853.5	1845.1	1886.0	1891.2	1913.4	1887.2	1905.6	1913.2
100% Worn	1918.1	1948.7	1976.5	1990.4	1996.0	2001.3	2017.9	2013.0	2013.6
110% Worn	1959.4	1986.4	1998.8	2006.6	2007.1	2009.9	2011.1	2010.0	2011.5

IOPS -- Q16T8



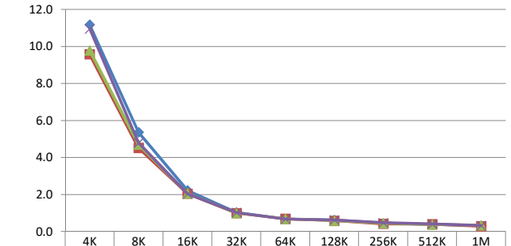
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	524938	274527	136277	67234	33277	16384	8127	4005	1967
50% Worn	470412	237250	118086	60351	30259	15307	7549	3811	1913
100% Worn	491045	249429	126493	63694	31936	16011	8071	4026	2014
110% Worn	501608	254256	127924	64212	32114	16079	8044	4020	2012

Avg. Latency (ms) -- Q16T8



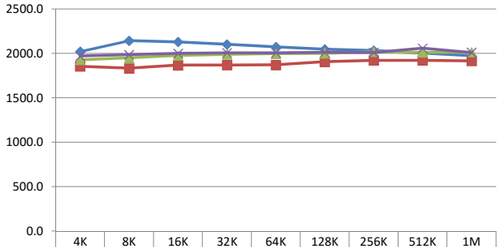
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.240	0.466	0.939	1.903	3.846	7.813	15.752	31.953	65.083
50% Worn	0.272	0.539	1.084	2.120	4.230	8.361	16.954	33.589	66.912
100% Worn	0.260	0.513	1.012	2.009	4.008	7.993	15.855	31.794	63.579
110% Worn	0.255	0.503	1.000	1.993	3.986	7.959	15.911	31.842	63.638

Avg. CPU Usage (%) -- Q16T8



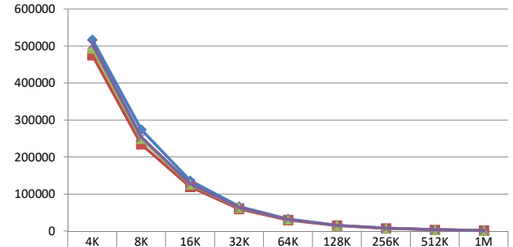
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	11.2	5.4	2.2	1.0	0.7	0.6	0.5	0.4	0.3
50% Worn	9.6	4.5	2.1	1.0	0.7	0.6	0.4	0.4	0.3
100% Worn	9.8	4.7	2.1	1.0	0.7	0.6	0.5	0.4	0.3
110% Worn	11.0	4.8	2.0	1.0	0.7	0.6	0.5	0.4	0.3

Data Rate (MB/s) -- Q32T8



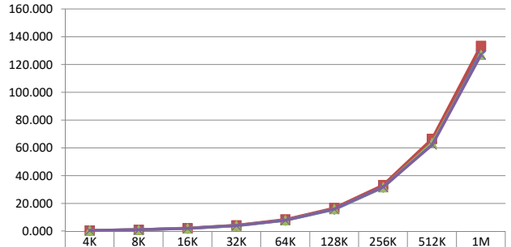
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2021.2	2143.5	2130.1	2102.2	2072.7	2047.3	2032.1	2003.1	1973.8
50% Worn	1855.6	1833.1	1868.3	1870.5	1871.8	1906.2	1922.6	1922.9	1916.2
100% Worn	1927.4	1950.2	1976.3	1988.7	1996.7	2001.2	2019.4	2012.9	2013.8
110% Worn	1971.0	1984.8	1999.7	2006.7	2007.7	2012.6	2010.5	2058.3	2010.3

IOPS -- Q32T8



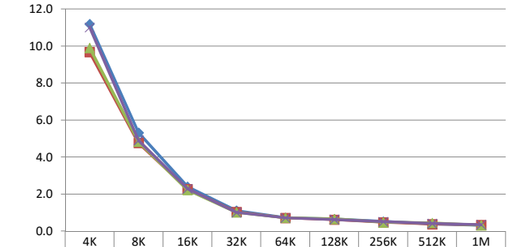
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	517423	274362	136327	67270	33163	16378	8128	4006	1974
50% Worn	475028	234632	119568	59858	29949	15250	7690	3846	1916
100% Worn	493422	249628	126486	63638	31947	16010	8078	4026	2014
110% Worn	504581	254058	127979	64213	32122	16101	8042	4117	2010

Avg. Latency (ms) -- Q32T8



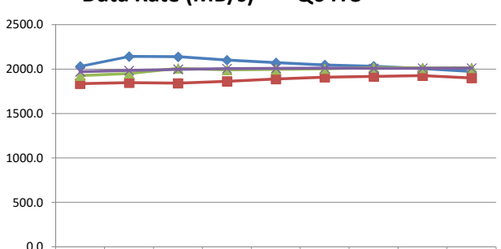
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.485	0.933	1.878	3.805	7.719	15.627	31.492	63.901	129.698
50% Worn	0.538	1.090	2.141	4.277	8.548	16.785	33.293	66.570	133.613
100% Worn	0.518	1.025	2.023	4.023	8.012	15.992	31.693	63.594	127.114
110% Worn	0.507	1.007	2.000	3.986	7.968	15.901	31.836	62.198	127.326

Avg. CPU Usage (%) -- Q32T8



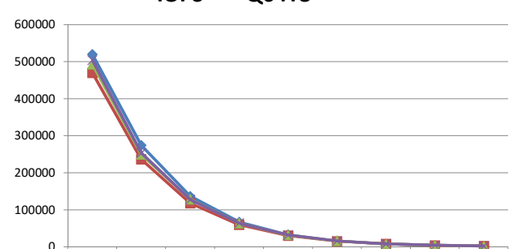
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	11.2	5.3	2.4	1.1	0.7	0.7	0.5	0.4	0.3
50% Worn	9.7	4.8	2.3	1.0	0.7	0.6	0.5	0.4	0.3
100% Worn	9.9	4.8	2.2	1.0	0.7	0.7	0.5	0.4	0.3
110% Worn	11.0	4.9	2.3	1.0	0.7	0.6	0.5	0.4	0.4

Data Rate (MB/s) -- Q64T8



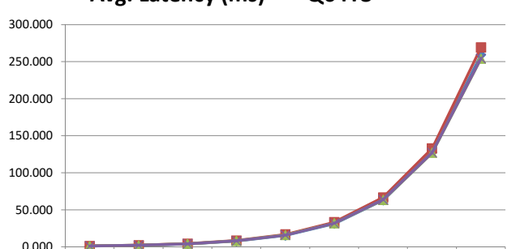
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2031.5	2142.3	2138.6	2100.9	2072.0	2046.4	2031.8	2004.2	1973.5
50% Worn	1836.8	1847.6	1841.4	1862.4	1887.9	1909.4	1919.2	1925.5	1901.1
100% Worn	1926.1	1951.0	2008.6	1991.0	1996.8	2002.9	2018.5	2013.2	2014.5
110% Worn	1970.6	1983.8	1998.0	2006.2	2009.7	2011.0	2008.2	2009.1	2011.4

IOPS -- Q64T8



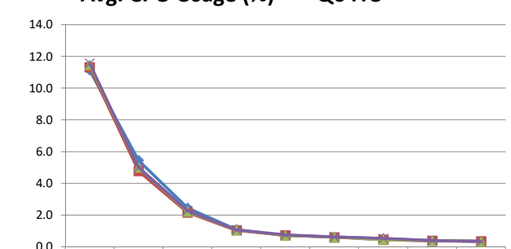
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	520057	274209	136869	67230	33152	16371	8127	4008	1974
50% Worn	470225	236491	117849	59596	30207	15275	7677	3851	1901
100% Worn	493075	249729	128552	63712	31948	16023	8074	4026	2014
110% Worn	504479	253928	127873	64197	32156	16088	8033	4018	2011

Avg. Latency (ms) -- Q64T8



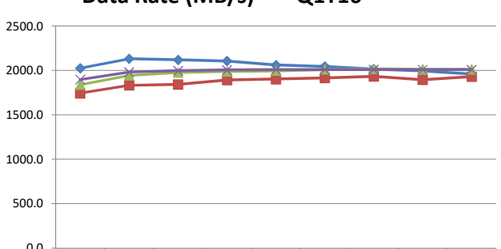
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.969	1.867	3.740	7.614	15.445	31.273	62.999	127.742	259.427
50% Worn	1.088	2.164	4.344	8.589	16.951	33.525	66.704	132.944	269.350
100% Worn	1.034	2.049	3.982	8.034	16.023	31.947	63.407	127.160	254.192
110% Worn	1.007	2.016	4.003	7.976	15.922	31.824	63.726	127.420	254.625

Avg. CPU Usage (%) -- Q64T8



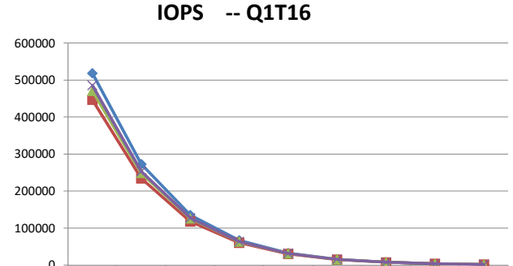
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	11.1	5.5	2.5	1.1	0.7	0.6	0.5	0.4	0.4
50% Worn	11.3	4.8	2.2	1.0	0.7	0.6	0.4	0.4	0.4
100% Worn	11.5	5.0	2.2	1.1	0.7	0.6	0.5	0.4	0.3
110% Worn	11.6	5.0	2.3	1.1	0.8	0.6	0.5	0.4	0.3

Data Rate (MB/s) -- Q1T16



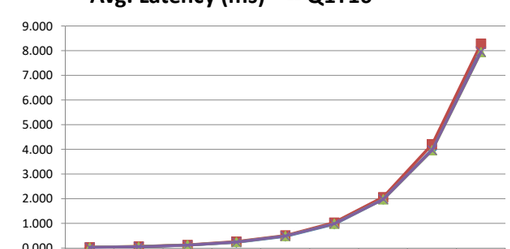
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2026.0	2133.1	2120.5	2106.9	2062.0	2045.2	2016.0	1994.9	1958.6
50% Worn	1745.4	1834.8	1843.9	1892.3	1903.0	1914.9	1934.1	1895.1	1929.5
100% Worn	1841.0	1945.2	1976.5	1988.3	1996.1	2010.2	2018.7	2013.4	2013.5
110% Worn	1898.2	1982.6	1996.8	2006.1	2009.7	2010.8	2010.3	2010.0	2009.3

IOPS -- Q1T16



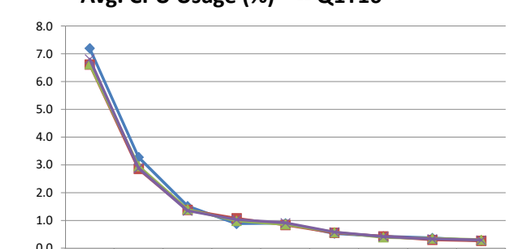
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	518650	273040	135712	67420	32991	16362	8064	3990	1959
50% Worn	446817	234855	118007	60553	30449	15319	7736	3790	1929
100% Worn	471294	248983	126498	63626	31938	16081	8075	4027	2014
110% Worn	485927	253778	127794	64194	32155	16087	8041	4020	2009

Avg. Latency (ms) -- Q1T16



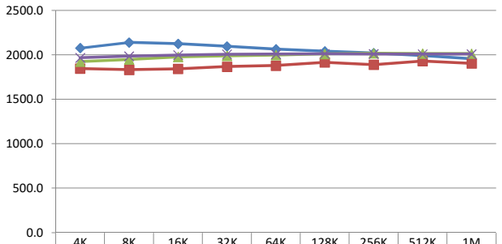
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.030	0.058	0.117	0.236	0.483	0.976	1.982	4.008	8.166
50% Worn	0.035	0.067	0.135	0.263	0.523	1.043	2.066	4.219	8.290
100% Worn	0.033	0.063	0.126	0.250	0.499	0.993	1.980	3.971	7.944
110% Worn	0.032	0.062	0.124	0.248	0.496	0.993	1.988	3.977	7.961

Avg. CPU Usage (%) -- Q1T16



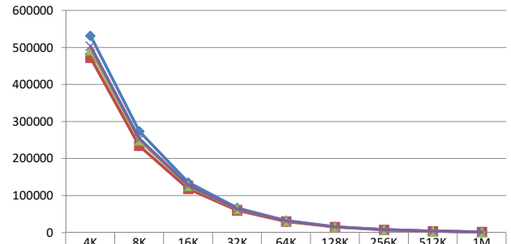
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	7.2	3.3	1.5	0.9	0.9	0.5	0.4	0.4	0.3
50% Worn	6.6	2.9	1.4	1.1	0.8	0.6	0.4	0.3	0.3
100% Worn	6.6	3.0	1.4	1.0	0.9	0.6	0.4	0.4	0.3
110% Worn	6.8	2.9	1.4	1.0	0.9	0.6	0.4	0.3	0.3

Data Rate (MB/s) -- Q4T16



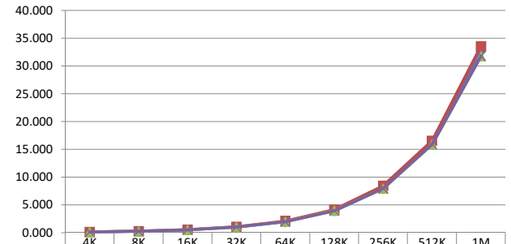
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2077.6	2140.2	2125.6	2096.4	2066.1	2041.7	2021.3	1991.2	1956.4
50% Worn	1847.1	1834.0	1843.7	1868.3	1879.5	1916.4	1891.0	1931.2	1904.3
100% Worn	1924.6	1948.9	1978.4	1989.4	1998.1	2011.4	2017.5	2015.3	2014.5
110% Worn	1968.0	1984.9	1998.6	2006.8	2008.9	2012.3	2010.7	2009.4	2009.9

IOPS -- Q4T16



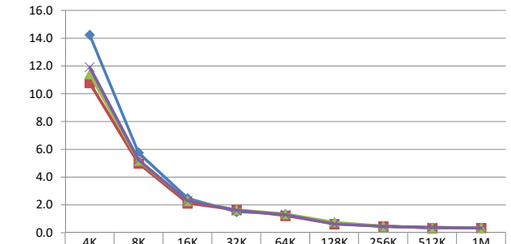
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	531863	273947	136036	67086	33058	16333	8085	3982	1956
50% Worn	472847	234751	117998	59786	30072	15331	7564	3862	1904
100% Worn	492685	249460	126617	63660	31969	16091	8070	4031	2015
110% Worn	503812	254065	127910	64218	32143	16098	8043	4019	2010

Avg. Latency (ms) -- Q4T16



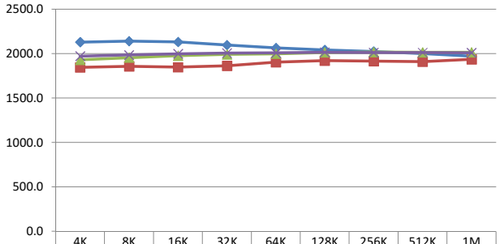
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.120	0.233	0.470	0.953	1.935	3.917	7.916	16.071	32.713
50% Worn	0.135	0.272	0.542	1.070	2.127	4.174	8.459	16.568	33.606
100% Worn	0.129	0.256	0.505	1.005	2.001	3.977	7.928	15.880	31.773
110% Worn	0.126	0.251	0.500	0.996	1.990	3.975	7.957	15.926	31.837

Avg. CPU Usage (%) -- Q4T16



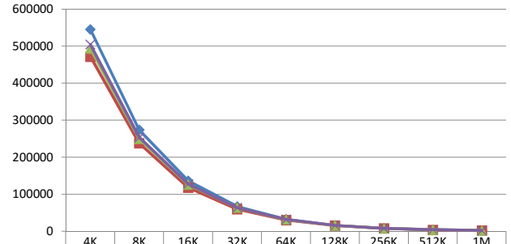
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	14.3	5.8	2.5	1.5	1.3	0.7	0.5	0.3	0.3
50% Worn	10.8	5.0	2.1	1.6	1.2	0.6	0.5	0.3	0.4
100% Worn	11.4	5.2	2.3	1.7	1.3	0.8	0.5	0.4	0.4
110% Worn	11.9	5.3	2.3	1.6	1.3	0.6	0.4	0.4	0.3

Data Rate (MB/s) -- Q16T16



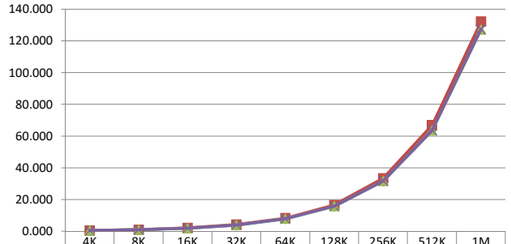
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2129.4	2139.2	2130.8	2096.3	2064.4	2041.5	2024.1	1999.7	1969.3
50% Worn	1843.6	1857.2	1846.3	1863.0	1904.1	1920.6	1914.9	1910.4	1935.5
100% Worn	1930.2	1954.0	1977.2	1989.6	1997.7	2011.9	2017.3	2013.6	2014.0
110% Worn	1971.1	1984.2	1998.1	2006.2	2007.1	2013.9	2010.2	2011.1	2009.5

IOPS -- Q16T16



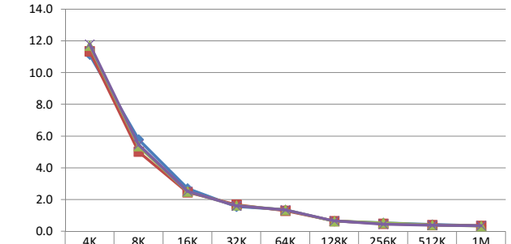
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	545116	273824	136370	67083	33031	16332	8097	3999	1969
50% Worn	471957	237717	118166	59616	30466	15365	7660	3821	1935
100% Worn	494128	250110	126542	63668	31963	16096	8069	4027	2014
110% Worn	504613	253981	127876	64198	32114	16112	8041	4022	2010

Avg. Latency (ms) -- Q16T16



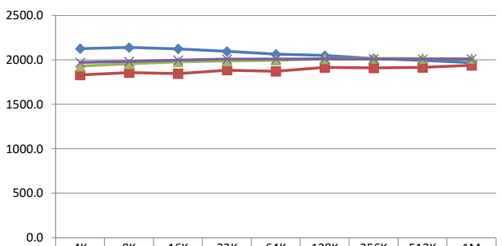
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.469	0.934	1.876	3.816	7.749	15.677	31.623	64.010	130.011
50% Worn	0.542	1.076	2.166	4.293	8.400	16.661	33.422	66.995	132.269
100% Worn	0.517	1.023	2.023	4.020	8.008	15.902	31.726	63.558	127.111
110% Worn	0.507	1.007	2.002	3.987	7.971	15.889	31.839	63.654	127.410

Avg. CPU Usage (%) -- Q16T16



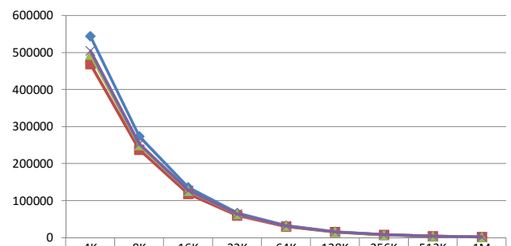
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	11.1	5.8	2.7	1.6	1.4	0.6	0.5	0.4	0.3
50% Worn	11.3	5.0	2.5	1.7	1.3	0.7	0.5	0.4	0.3
100% Worn	11.7	5.4	2.5	1.6	1.4	0.6	0.5	0.4	0.3
110% Worn	11.8	5.5	2.5	1.6	1.4	0.7	0.5	0.4	0.4

Data Rate (MB/s) -- Q32T16



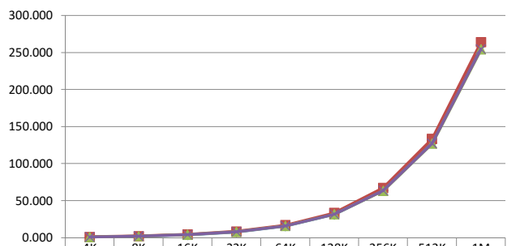
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2126.2	2139.6	2124.4	2095.8	2064.9	2049.2	2015.7	1994.6	1968.4
50% Worn	1832.4	1858.3	1845.5	1885.1	1872.9	1916.3	1909.9	1916.7	1939.4
100% Worn	1930.1	1955.8	1978.6	1988.8	1996.3	2013.2	2017.5	2015.0	2013.9
110% Worn	1971.9	1981.8	1997.1	2008.1	2008.8	2011.6	2010.5	2009.7	2010.0

IOPS -- Q32T16



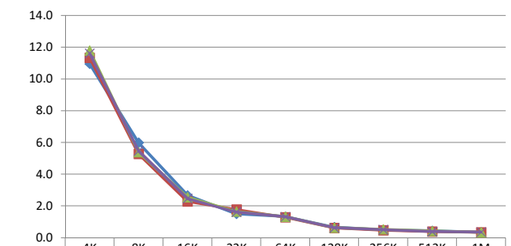
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	544307	273868	135960	67064	33038	16394	8063	3989	1968
50% Worn	469084	237857	118113	60324	29967	15330	7640	3833	1939
100% Worn	494101	250344	126632	63643	31941	16106	8070	4030	2014
110% Worn	504810	253668	127816	64259	32141	16093	8042	4019	2010

Avg. Latency (ms) -- Q32T16



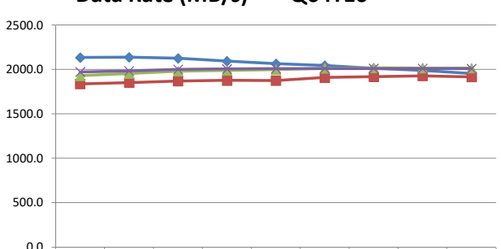
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.936	1.869	3.765	7.635	15.498	31.235	63.500	128.334	260.098
50% Worn	1.091	2.152	4.335	8.486	17.084	33.402	67.025	133.549	264.043
100% Worn	1.036	2.045	4.043	8.045	16.028	31.788	63.432	127.049	254.270
110% Worn	1.014	2.018	4.004	7.967	15.926	31.818	63.659	127.386	254.720

Avg. CPU Usage (%) -- Q32T16



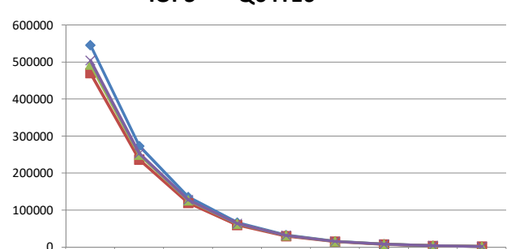
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	11.0	6.0	2.7	1.5	1.3	0.7	0.5	0.4	0.3
50% Worn	11.3	5.3	2.3	1.8	1.3	0.6	0.5	0.4	0.3
100% Worn	11.8	5.4	2.5	1.7	1.3	0.6	0.5	0.4	0.3
110% Worn	11.6	5.5	2.5	1.6	1.3	0.6	0.5	0.4	0.4

Data Rate (MB/s) -- Q64T16



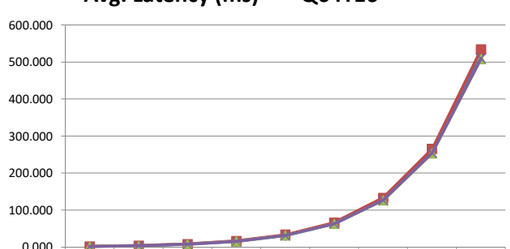
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2134.2	2137.7	2125.0	2095.0	2064.6	2044.6	2011.9	1987.6	1953.8
50% Worn	1838.4	1851.0	1869.3	1877.6	1874.7	1909.8	1919.1	1927.0	1916.3
100% Worn	1929.9	1954.5	1979.7	1989.7	1998.3	2013.6	2018.7	2016.8	2014.0
110% Worn	1972.2	1983.2	2002.2	2005.4	2010.3	2010.6	2010.1	2010.4	2008.5

IOPS -- Q64T16



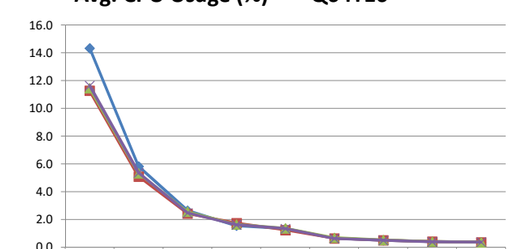
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	546348	273629	136001	67039	33034	16357	8048	3975	1954
50% Worn	470629	236931	119632	60083	29995	15278	7676	3854	1916
100% Worn	494049	250175	126701	63670	31973	16109	8075	4034	2014
110% Worn	504893	253843	128139	64172	32165	16085	8041	4021	2008

Avg. Latency (ms) -- Q64T16



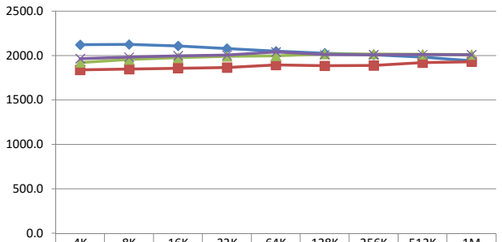
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1.847	3.742	7.527	15.271	31.003	62.608	127.247	257.579	524.170
50% Worn	2.175	4.322	8.560	17.044	34.141	67.026	133.420	265.749	534.521
100% Worn	2.072	4.093	8.082	16.083	32.028	63.577	126.814	253.907	508.398
110% Worn	2.027	4.033	7.991	15.958	31.838	63.657	127.350	254.700	509.863

Avg. CPU Usage (%) -- Q64T16



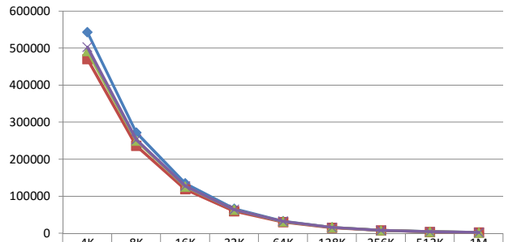
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	14.3	5.8	2.6	1.6	1.3	0.7	0.5	0.4	0.4
50% Worn	11.3	5.1	2.4	1.8	1.2	0.6	0.5	0.4	0.4
100% Worn	11.5	5.3	2.6	1.6	1.4	0.7	0.5	0.4	0.4
110% Worn	11.6	5.4	2.5	1.6	1.3	0.6	0.5	0.4	0.4

Data Rate (MB/s) -- Q1T32



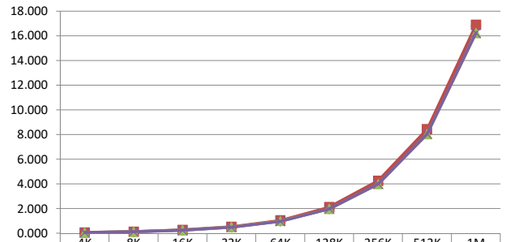
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2122.4	2124.8	2108.7	2078.9	2049.4	2026.4	2007.7	1982.4	1940.5
50% Worn	1838.6	1847.4	1857.9	1864.1	1894.0	1884.4	1889.1	1920.3	1930.8
100% Worn	1922.0	1955.2	1976.6	1989.8	1995.7	2017.1	2016.6	2013.5	2011.0
110% Worn	1965.3	1981.5	1998.1	2006.0	2039.9	2010.5	2008.9	2010.6	2009.6

IOPS -- Q1T32



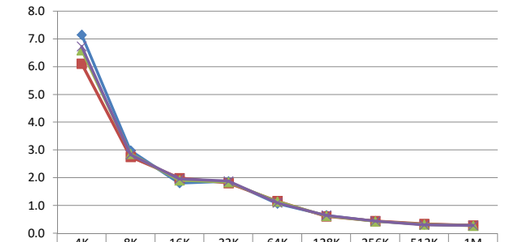
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	543341	271976	134957	66526	32790	16211	8031	3965	1941
50% Worn	470671	236473	118904	59652	30303	15075	7556	3841	1931
100% Worn	492042	250261	126500	63674	31931	16137	8067	4027	2011
110% Worn	503115	253631	127881	64194	32639	16084	8036	4021	2010

Avg. Latency (ms) -- Q1T32



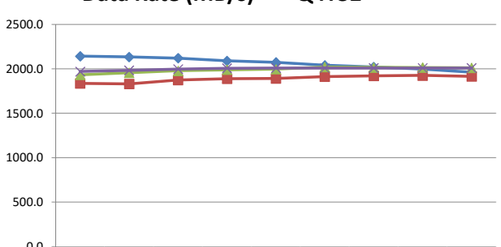
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.058	0.117	0.236	0.479	0.974	1.972	4.002	8.176	16.817
50% Worn	0.067	0.134	0.268	0.534	1.054	2.121	4.254	8.440	16.902
100% Worn	0.064	0.127	0.252	0.500	1.000	1.981	3.984	8.049	16.227
110% Worn	0.063	0.125	0.249	0.496	0.979	1.987	4.000	8.061	16.243

Avg. CPU Usage (%) -- Q1T32



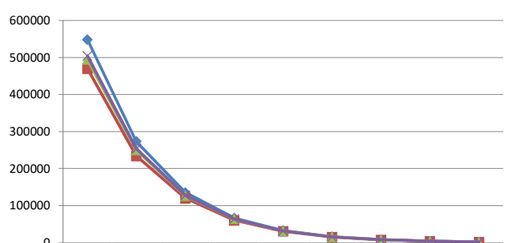
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	7.2	3.0	1.8	1.9	1.1	0.7	0.4	0.3	0.3
50% Worn	6.1	2.8	2.0	1.8	1.2	0.6	0.4	0.3	0.3
100% Worn	6.6	2.9	1.9	1.8	1.1	0.6	0.4	0.3	0.3
110% Worn	6.7	2.8	2.0	1.9	1.1	0.7	0.4	0.3	0.3

Data Rate (MB/s) -- Q4T32



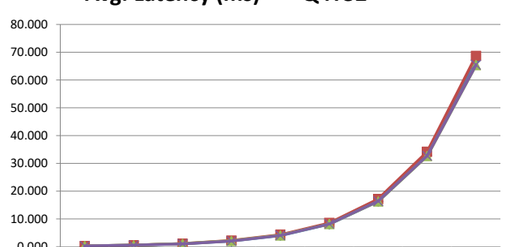
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2143.1	2134.6	2121.0	2091.4	2074.2	2041.3	2021.0	1996.7	1961.4
50% Worn	1836.6	1830.9	1875.5	1889.9	1892.9	1913.1	1921.8	1926.6	1916.5
100% Worn	1932.2	1956.4	1979.2	1990.2	1996.5	2020.8	2017.3	2014.5	2013.1
110% Worn	1971.1	1984.4	1999.1	2006.9	2010.8	2009.7	2010.5	2010.2	2010.1

IOPS -- Q4T32



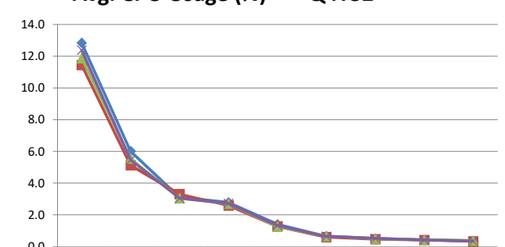
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	548624	273231	135746	66924	33188	16331	8084	3993	1961
50% Worn	470179	234352	120031	60475	30286	15304	7687	3853	1916
100% Worn	494635	250417	126671	63687	31945	16166	8069	4029	2013
110% Worn	504600	254003	127941	64221	32172	16078	8042	4020	2010

Avg. Latency (ms) -- Q4T32



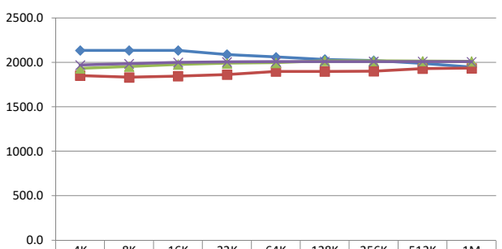
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.239	0.481	0.970	1.968	3.969	8.066	16.295	32.988	67.168
50% Worn	0.279	0.561	1.097	2.177	4.349	8.606	17.136	34.187	68.737
100% Worn	0.265	0.526	1.039	2.067	4.123	8.148	16.324	32.694	65.439
110% Worn	0.260	0.518	1.029	2.051	4.095	8.193	16.380	32.763	65.542

Avg. CPU Usage (%) -- Q4T32



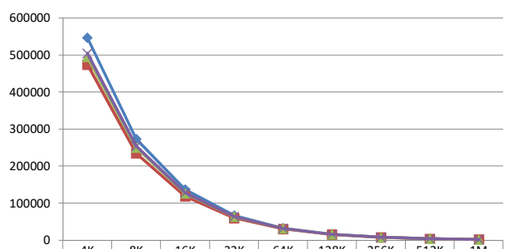
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	12.8	6.0	3.1	2.8	1.4	0.7	0.5	0.4	0.4
50% Worn	11.5	5.1	3.3	2.6	1.3	0.6	0.5	0.4	0.3
100% Worn	11.9	5.6	3.1	2.7	1.3	0.7	0.5	0.4	0.4
110% Worn	12.4	5.5	3.1	2.7	1.3	0.7	0.5	0.4	0.4

Data Rate (MB/s) -- Q16T32



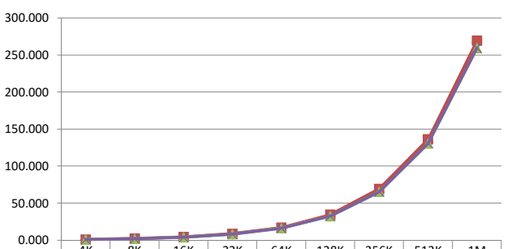
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2136.5	2135.7	2135.8	2089.9	2060.7	2033.7	2022.3	1990.3	1948.3
50% Worn	1852.9	1833.7	1845.9	1864.7	1899.4	1898.1	1902.6	1931.7	1935.1
100% Worn	1933.3	1954.5	1978.5	1990.8	1996.4	2017.8	2017.1	2014.3	2012.1
110% Worn	1971.0	1985.6	1999.8	2005.6	2008.4	2010.5	2010.4	2010.7	2008.2

IOPS -- Q16T32



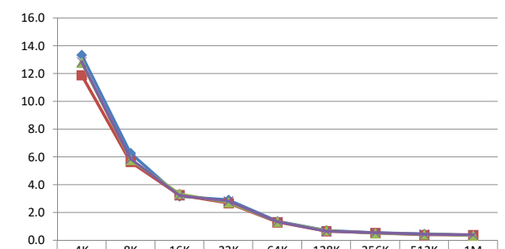
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	546937	273366	136693	66877	32971	16270	8089	3981	1948
50% Worn	474336	234709	118140	59670	30390	15185	7610	3863	1935
100% Worn	494936	250178	126623	63706	31942	16142	8069	4029	2012
110% Worn	504571	254156	127990	64178	32135	16084	8042	4021	2008

Avg. Latency (ms) -- Q16T32



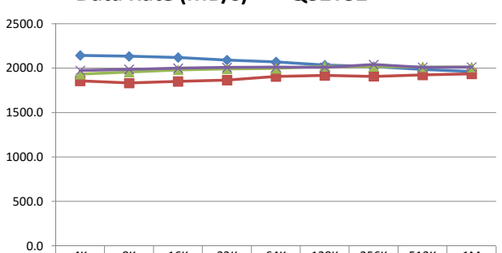
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	0.963	1.927	3.855	7.879	15.982	32.388	65.143	132.376	267.744
50% Worn	1.110	2.245	4.460	8.832	17.338	34.703	69.242	136.392	269.529
100% Worn	1.065	2.106	4.161	8.272	16.495	32.643	65.306	130.809	259.301
110% Worn	1.044	2.073	4.116	8.209	16.398	32.762	65.529	131.035	259.775

Avg. CPU Usage (%) -- Q16T32



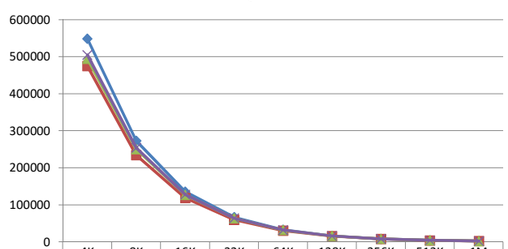
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	13.3	6.3	3.2	2.9	1.4	0.7	0.5	0.5	0.3
50% Worn	11.9	5.6	3.3	2.7	1.3	0.7	0.5	0.4	0.4
100% Worn	12.8	5.8	3.3	2.7	1.3	0.7	0.5	0.4	0.4
110% Worn	12.9	5.9	3.2	2.8	1.3	0.7	0.5	0.4	0.4

Data Rate (MB/s) -- Q32T32



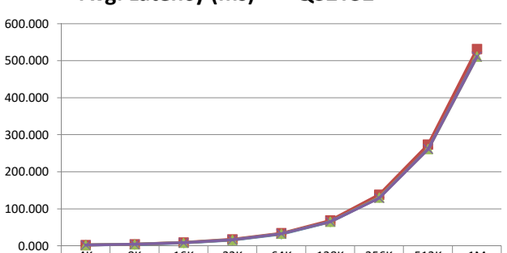
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2143.3	2133.0	2120.1	2090.6	2071.0	2035.2	2016.8	1983.6	1960.3
50% Worn	1855.2	1831.8	1849.9	1864.2	1905.3	1919.2	1907.1	1922.4	1935.4
100% Worn	1931.6	1956.3	1980.4	1991.6	1996.5	2019.3	2017.5	2012.1	2011.8
110% Worn	1972.3	1985.6	1998.3	2007.3	2011.5	2009.8	2039.2	2009.2	2011.1

IOPS -- Q32T32



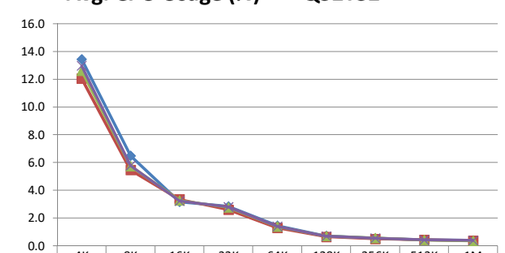
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	548689	273025	135688	66900	33137	16281	8067	3967	1960
50% Worn	474919	234466	118393	59653	30485	15353	7628	3845	1935
100% Worn	494496	250403	126746	63732	31944	16154	8070	4024	2012
110% Worn	504907	254160	127890	64233	32184	16079	8157	4018	2011

Avg. Latency (ms) -- Q32T32



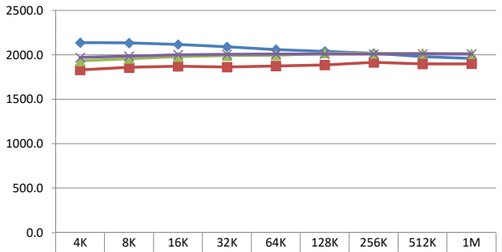
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	1.921	3.859	7.768	15.756	31.811	64.731	130.644	265.445	524.703
50% Worn	2.219	4.494	8.936	17.667	34.570	68.644	138.164	273.898	531.619
100% Worn	2.131	4.209	8.316	16.535	32.989	65.236	130.587	261.676	511.261
110% Worn	2.087	4.147	8.241	16.409	32.753	65.546	129.212	262.077	511.466

Avg. CPU Usage (%) -- Q32T32



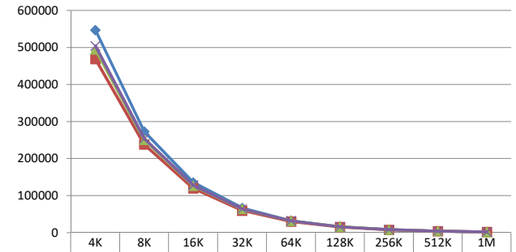
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	13.4	6.5	3.2	2.8	1.5	0.7	0.5	0.4	0.4
50% Worn	12.1	5.5	3.4	2.6	1.3	0.7	0.5	0.4	0.4
100% Worn	12.6	5.8	3.3	2.8	1.4	0.7	0.6	0.4	0.4
110% Worn	13.0	5.8	3.2	2.8	1.4	0.7	0.6	0.4	0.4

Data Rate (MB/s) -- Q64T32



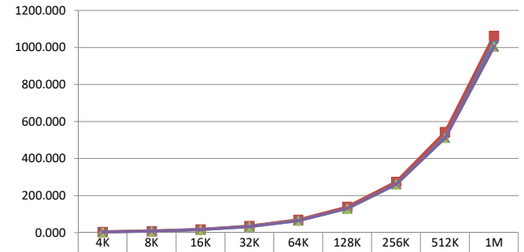
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	2137.5	2134.3	2118.7	2090.8	2059.7	2039.3	2018.9	1981.5	1960.3
50% Worn	1831.0	1859.4	1872.0	1864.7	1875.5	1885.5	1916.2	1897.8	1899.9
100% Worn	1932.1	1958.4	1980.5	1991.7	1996.2	2019.2	2016.9	2014.2	2012.3
110% Worn	1970.6	1985.1	2001.5	2005.6	2010.3	2010.0	2009.9	2011.4	2011.0

IOPS -- Q64T32



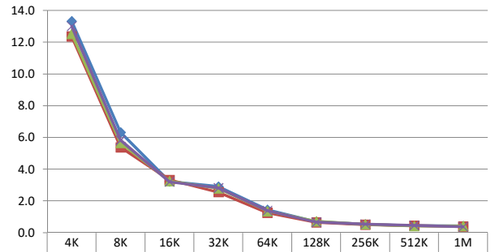
	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	547195	273193	135595	66907	32955	16314	8075	3963	1960
50% Worn	468732	238002	119810	59670	30008	15084	7665	3796	1900
100% Worn	494618	250671	126751	63734	31940	16153	8068	4028	2012
110% Worn	504472	254099	128094	64179	32165	16080	8040	4023	2011

Avg. Latency (ms) -- Q64T32



	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	3.851	7.716	15.549	31.506	63.966	129.197	260.897	520.802	1032.143
50% Worn	4.497	8.857	17.594	35.328	70.259	139.740	274.862	543.678	1063.926
100% Worn	4.261	8.409	16.629	33.079	65.996	130.482	261.164	512.361	1005.558
110% Worn	4.178	8.296	16.457	32.846	65.530	131.083	262.074	513.210	1006.009

Avg. CPU Usage (%) -- Q64T32



	4K	8K	16K	32K	64K	128K	256K	512K	1M
0% Worn	13.3	6.3	3.2	2.9	1.5	0.7	0.5	0.4	0.4
50% Worn	12.4	5.4	3.3	2.6	1.3	0.7	0.5	0.4	0.4
100% Worn	12.5	5.7	3.3	2.8	1.4	0.7	0.5	0.4	0.4
110% Worn	13.0	5.8	3.2	2.8	1.4	0.7	0.5	0.5	0.4