

A2

Blackscholes

Table 1: Blackscholes: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	397,358,081	84,398	507,838,614	242,356	30,583,394	0.783	0.792	99.208
westmere-1	397,187,321	86,413	507,826,013	242,322	30,582,723	0.782	0.792	99.208
westmere-2	397,186,853	84,241	507,838,513	242,499	30,582,523	0.782	0.793	99.207
westmere-3	397,229,303	85,151	507,819,013	244,689	30,582,823	0.782	0.800	99.200
westmere-4	397,226,990	84,349	507,858,713	242,392	30,582,323	0.782	0.793	99.207
westmere-5	397,202,935	81,293	507,846,413	243,301	30,582,723	0.782	0.796	99.204
westmere-6	397,223,062	84,553	507,837,413	244,958	30,582,423	0.782	0.801	99.199
westmere-7	397,194,914	84,688	507,835,227	242,674	30,583,625	0.782	0.793	99.207

Overall (aggregated): CPI = 0.782, MR% = 0.795, Accuracy% = 99.205

Bodytrack

Table 2: Bodytrack: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	51,904,075	77,835	85,133,619	114,164	7,241,560	0.611	1.577	98.423
westmere-1	53,443,648	55,344	87,041,147	118,233	7,375,363	0.615	1.603	98.397
westmere-2	51,180,721	58,907	84,076,651	111,106	7,149,938	0.609	1.554	98.446
westmere-3	53,734,203	55,689	87,632,188	116,158	7,421,325	0.614	1.565	98.435
westmere-4	51,307,670	55,335	84,238,301	112,719	7,165,118	0.610	1.573	98.427
westmere-5	91,333,215	1,002,802	168,602,950	158,206	12,647,352	0.548	1.251	98.749
westmere-6	53,789,071	97,466	87,452,163	119,128	7,416,939	0.616	1.606	98.394
westmere-7	51,004,694	56,266	83,687,345	111,969	7,116,928	0.610	1.573	98.427

Overall (aggregated): CPI = 0.598, MR% = 1.514, Accuracy% = 98.486

Canneal

Table 3: Canneal: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	91,789,378	15,257,314	36,065,249	142,626	2,219,350	2.968	6.426	93.574
westmere-1	91,786,938	15,330,342	35,963,525	141,387	2,211,730	2.978	6.393	93.607
westmere-2	91,517,927	15,249,999	35,958,992	141,554	2,210,448	2.969	6.404	93.596
westmere-3	91,238,717	15,209,678	35,833,336	142,116	2,205,232	2.971	6.444	93.556
westmere-4	91,738,320	15,263,083	36,036,302	142,674	2,215,609	2.969	6.439	93.561
westmere-5	92,231,619	15,350,345	36,174,025	141,717	2,220,358	2.974	6.383	93.617
westmere-6	91,715,132	15,279,591	36,001,557	142,218	2,215,845	2.972	6.418	93.582
westmere-7	91,541,340	15,266,322	35,928,888	142,044	2,209,681	2.973	6.428	93.572

Overall (aggregated): CPI = 2.972, MR% = 6.417, Accuracy% = 93.583

Fluidanimate

Table 4: Fluidanimate: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	439,440,990	15,114,198	609,062,673	3,969,194	84,564,992	0.746	4.694	95.306
westmere-1	436,881,131	13,938,333	629,954,949	4,120,308	88,034,441	0.716	4.680	95.320
westmere-2	466,918,916	14,460,457	662,274,016	4,297,366	92,035,334	0.727	4.669	95.331
westmere-3	396,926,840	15,020,158	558,608,922	3,612,361	78,357,679	0.737	4.610	95.390
westmere-4	423,273,383	15,639,446	586,970,898	3,762,345	81,920,476	0.748	4.593	95.407
westmere-5	481,031,886	14,081,230	671,894,029	4,198,521	93,859,389	0.737	4.473	95.527
westmere-6	509,620,267	14,522,894	702,244,357	4,374,553	97,375,570	0.746	4.492	95.508
westmere-7	411,131,835	14,528,368	579,079,391	3,804,612	80,809,893	0.735	4.708	95.292

Overall (aggregated): CPI = 0.736, MR% = 4.611, Accuracy% = 95.389

Freqmine

Table 5: Freqmine: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	1,595,549,919	42,347,361	2,285,309,058	9,706,961	531,218,159	0.717	1.827	98.17
westmere-1	304,264,150	13,948,717	388,772,997	1,627,950	120,302,915	0.819	1.353	98.64
westmere-2	301,910,924	12,127,657	369,550,013	1,605,305	114,172,057	0.850	1.406	98.59
westmere-3	316,262,101	13,258,274	401,941,821	1,804,640	123,679,342	0.820	1.459	98.54
westmere-4	303,701,982	12,518,012	384,096,855	1,647,591	119,115,889	0.823	1.383	98.61
westmere-5	316,261,063	14,440,662	403,844,557	1,798,538	124,091,093	0.819	1.449	98.55
westmere-6	303,928,151	13,018,956	382,331,947	1,619,038	118,110,391	0.829	1.371	98.62
westmere-7	303,266,916	14,433,084	384,169,301	1,657,833	118,079,508	0.827	1.404	98.59

Overall (aggregated): CPI = 0.776, MR% = 1.568, Accuracy% = 98.432

Streamcluster

Table 6: Streamcluster: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	130,117,818	391,636	197,699,942	147,117	23,274,683	0.660	0.632	99.368
westmere-1	126,855,035	13,724	190,194,955	150,393	22,578,594	0.667	0.666	99.334
westmere-2	124,946,476	1,930	189,897,853	157,697	23,041,373	0.658	0.684	99.316
westmere-3	125,049,719	1,881	190,272,259	149,376	23,125,167	0.657	0.646	99.354
westmere-4	124,822,994	1,736	190,320,772	147,877	23,142,070	0.656	0.639	99.361
westmere-5	125,025,087	1,599	192,419,606	155,324	23,615,532	0.650	0.658	99.342
westmere-6	124,921,327	2,045	191,254,730	152,510	23,350,563	0.653	0.653	99.347
westmere-7	125,008,896	1,292	191,706,958	150,336	23,452,147	0.652	0.641	99.359

Overall (aggregated): CPI = 0.657, MR% = 0.652, Accuracy% = 99.348

Swapptions

Table 7: Swapptions: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	70,852,405	24,793	110,662,201	316,954	11,487,123	0.640	2.759	97.241
westmere-1	70,828,392	23,171	110,652,028	316,771	11,485,447	0.640	2.758	97.242
westmere-2	70,815,433	20,123	110,651,976	316,766	11,485,442	0.640	2.758	97.242
westmere-3	70,817,435	21,685	110,651,995	316,767	11,485,443	0.640	2.758	97.242
westmere-4	70,818,460	20,629	110,652,022	316,771	11,485,446	0.640	2.758	97.242
westmere-5	70,816,850	22,197	110,651,984	316,767	11,485,443	0.640	2.758	97.242
westmere-6	70,818,708	22,333	110,652,014	316,770	11,485,445	0.640	2.758	97.242
westmere-7	70,818,629	23,736	110,652,020	316,770	11,485,446	0.640	2.758	97.242

Overall (aggregated): CPI = 0.640, MR% = 2.758, Accuracy% = 97.242

X264

Table 8: X264: Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	373,270,595	4,563,194	652,372,156	3,298,386	26,794,559	0.579	12.310	87.690
westmere-1	366,496,763	2,893,937	635,116,547	3,360,301	25,832,946	0.582	13.008	86.992
westmere-2	365,311,364	3,626,460	634,730,633	3,534,704	26,249,290	0.581	13.466	86.534
westmere-3	367,321,905	4,186,961	642,310,190	3,255,820	26,634,617	0.578	12.224	87.776
westmere-4	332,749,827	2,706,529	575,327,876	3,084,232	23,429,068	0.583	13.164	86.836
westmere-5	395,399,741	4,593,806	693,749,873	3,580,654	29,025,069	0.577	12.336	87.664
westmere-6	345,928,377	3,191,302	600,122,523	3,176,907	24,657,589	0.582	12.884	87.116
westmere-7	324,740,354	2,496,066	566,346,144	2,929,660	22,789,478	0.578	12.855	87.145

Overall (aggregated): CPI = 0.580, MR% = 12.765, Accuracy% = 87.235

A2 Overall Summary (aggregated per benchmark)

Table 9: A2: Aggregated metrics per benchmark

Benchmark	CPI (overall)	MR% (overall)	Accuracy% (overall)
Blackscholes	0.782	0.795	99.205
Bodytrack	0.598	1.514	98.486
Canneal	2.972	6.417	93.583
Fluidanimate	0.736	4.611	95.389
Freqmine	0.776	1.568	98.432
Streamcluster	0.657	0.652	99.348
Swapptions	0.640	2.758	97.242
X264	0.580	12.765	87.235

A3

Blackscholes

Table 1: Blackscholes (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	397,446,864	85,351	507,838,614	251,368	30,583,394	0.783	0.822	99.178
westmere-1	397,276,138	84,387	507,826,013	251,611	30,582,723	0.782	0.823	99.177
westmere-2	397,275,995	83,135	507,838,513	250,802	30,582,523	0.782	0.820	99.180
westmere-3	397,310,836	83,867	507,819,013	253,092	30,582,823	0.783	0.828	99.172
westmere-4	397,313,278	84,707	507,858,713	250,894	30,582,323	0.782	0.820	99.180
westmere-5	397,287,157	83,408	507,846,413	251,697	30,582,723	0.782	0.823	99.177
westmere-6	397,313,483	84,997	507,837,413	254,062	30,582,423	0.783	0.831	99.169
westmere-7	397,278,199	84,070	507,835,255	251,177	30,583,627	0.782	0.821	99.179

Overall (aggregated): CPI = 0.783, MR% = 0.823, Accuracy% = 99.177

Bodytrack

Table 2: Bodytrack (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	93,895,047	1,065,019	171,722,180	172,862	12,889,025	0.553	1.341	98.659
westmere-1	53,364,799	54,738	86,769,237	125,337	7,350,087	0.616	1.705	98.295
westmere-2	51,364,591	54,745	84,319,855	117,503	7,168,806	0.610	1.639	98.361
westmere-3	51,661,583	56,015	84,724,866	119,812	7,205,318	0.610	1.663	98.337
westmere-4	51,974,021	54,368	85,262,627	120,242	7,252,010	0.610	1.658	98.342
westmere-5	51,401,803	55,831	84,433,681	116,682	7,178,732	0.609	1.625	98.375
westmere-6	51,198,938	60,162	83,867,761	120,888	7,141,735	0.611	1.693	98.307
westmere-7	53,334,095	55,679	86,766,962	124,569	7,349,046	0.615	1.695	98.305

Overall (aggregated): CPI = 0.599, MR% = 1.602, Accuracy% = 98.398

Canneal

Table 3: Canneal (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	91,940,679	15,277,755	36,066,321	152,121	2,219,416	2.973	6.854	93.146
westmere-1	91,932,615	15,356,579	35,963,516	150,644	2,211,723	2,983	6.811	93.189
westmere-2	91,384,444	15,226,463	35,833,122	151,584	2,205,243	2,975	6.874	93.126
westmere-3	91,656,165	15,273,649	35,958,016	150,970	2,210,390	2,974	6.830	93.170
westmere-4	91,891,517	15,286,299	36,037,732	151,796	2,215,692	2,974	6.851	93.149
westmere-5	92,415,812	15,388,733	36,173,385	150,823	2,220,317	2,980	6.793	93.207
westmere-6	91,874,108	15,301,473	36,001,520	151,479	2,215,828	2,977	6.836	93.164
westmere-7	91,685,426	15,274,862	35,929,219	151,578	2,209,696	2,977	6.860	93.140

Overall (aggregated): CPI = 2.977, MR% = 6.839, Accuracy% = 93.161

Fluidanimate

Table 4: Fluidanimate (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	441,532,387	15,128,333	609,064,319	4,114,052	84,563,302	0.750	4.865	95.135
westmere-1	439,002,932	13,966,905	629,925,326	4,273,228	88,025,526	0.719	4.855	95.145
westmere-2	469,056,290	14,452,622	662,278,701	4,453,873	92,034,206	0.730	4.839	95.161
westmere-3	398,388,022	14,988,567	558,612,283	3,732,911	78,355,353	0.740	4.764	95.236
westmere-4	424,787,920	15,625,809	586,960,057	3,886,259	81,916,137	0.750	4.744	95.256
westmere-5	482,754,685	14,107,205	671,842,215	4,332,951	93,845,397	0.740	4.617	95.383
westmere-6	511,360,176	14,541,308	702,255,069	4,506,323	97,375,754	0.749	4.628	95.372
westmere-7	413,167,973	14,571,550	579,067,840	3,946,494	80,804,518	0.739	4.884	95.116

Overall (aggregated): CPI = 0.739, MR% = 4.770, Accuracy% = 95.230

Freqmine

Table 5: Freqmine (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	1,600,038,236	42,076,941	2,284,358,633	10,048,729	530,923,608	0.719	1.893	98.10
westmere-1	317,122,804	13,771,533	410,055,007	1,807,806	127,239,956	0.807	1.421	98.57
westmere-2	302,663,974	14,560,343	382,535,409	1,777,556	117,620,454	0.827	1.511	98.48
westmere-3	304,483,302	13,160,458	379,523,858	1,712,656	117,111,612	0.837	1.462	98.53
westmere-4	304,027,830	14,338,440	382,083,638	1,804,307	117,009,414	0.833	1.542	98.45
westmere-5	304,678,829	13,408,498	376,365,295	1,742,945	115,805,860	0.845	1.505	98.49
westmere-6	317,112,733	11,786,750	398,686,874	1,829,398	123,551,884	0.825	1.481	98.51
westmere-7	305,019,799	11,919,505	385,402,237	1,738,127	119,724,012	0.822	1.452	98.54

Overall (aggregated): CPI = 0.778, MR% = 1.641, Accuracy% = 98.359

Streamcluster

Table 6: Streamcluster (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	130,447,352	374,697	198,336,579	151,015	23,621,091	0.660	0.639	99.361
westmere-1	128,360,456	14,362	192,391,296	154,833	23,062,326	0.667	0.671	99.329
westmere-2	126,180,073	2,134	192,670,779	162,069	23,658,226	0.655	0.685	99.315
westmere-3	126,350,643	1,910	192,452,368	153,706	23,607,355	0.657	0.651	99.349
westmere-4	126,270,433	2,114	192,639,765	153,626	23,657,401	0.655	0.649	99.351
westmere-5	126,422,458	1,221	194,246,945	160,433	24,019,470	0.651	0.668	99.332
westmere-6	126,477,494	1,185	193,933,264	157,521	23,947,984	0.652	0.658	99.342
westmere-7	127,607,969	17,193	194,915,949	156,868	23,950,293	0.655	0.655	99.345

Overall (aggregated): CPI = 0.656, MR% = 0.660, Accuracy% = 99.340

Swaptions

Table 7: Swaptions (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	70,942,274	26,419	110,662,176	330,501	11,487,121	0.641	2.877	97.123
westmere-1	70,915,958	22,632	110,652,022	330,321	11,485,446	0.641	2.876	97.124
westmere-2	70,903,582	21,429	110,651,976	330,316	11,485,442	0.641	2.876	97.124
westmere-3	70,904,323	21,918	110,651,997	330,315	11,485,443	0.641	2.876	97.124
westmere-4	70,905,717	21,678	110,652,022	330,321	11,485,446	0.641	2.876	97.124
westmere-5	70,905,123	19,647	110,652,014	330,320	11,485,445	0.641	2.876	97.124
westmere-6	70,904,848	22,517	110,651,963	330,315	11,485,441	0.641	2.876	97.124
westmere-7	70,904,035	22,190	110,652,042	330,320	11,485,449	0.641	2.876	97.124

Overall (aggregated): CPI = 0.641, MR% = 2.876, Accuracy% = 97.124

X264

Table 8: X264 (A3): Per-core stats and derived metrics

core	cycles	cCycles	instrs	mispredBranches	condBranches	CPI	MR%	Accuracy%
westmere-0	371,863,825	4,061,617	644,595,470	3,418,139	26,278,741	0.583	13.007	86.903
westmere-1	369,476,863	2,920,975	636,858,009	3,499,375	25,876,934	0.585	13.523	86.477
westmere-2	370,867,731	4,363,618	643,060,423	3,652,333	26,880,126	0.584	13.587	86.413
westmere-3	369,584,579	4,131,999	642,380,173	3,377,218	26,637,466	0.582	12.678	87.322
westmere-4	334,931,645	2,681,586	575,384,375	3,196,502	23,430,887	0.587	13.642	86.358
westmere-5	397,040,839	4,362,259	693,168,136	3,712,841	28,901,366	0.579	12.847	87.153
westmere-6	347,737,175	3,307,547	598,396,409	3,277,935	24,614,485	0.587	13.317	86.683
westmere-7	326,546,045	2,386,238	566,271,818	3,046,157	22,795,611	0.581	13.363	86.637

Overall (aggregated): CPI = 0.583, MR% = 13.232, Accuracy% = 86.768

A3 Overall Summary (aggregated per benchmark)

Table 9: A3: Aggregated metrics per benchmark

Benchmark	CPI (overall)	MR% (overall)	Accuracy% (overall)
Blackscholes	0.783	0.823	99.177
Bodytrack	0.599	1.602	98.398
Canneal	2.977	6.839	93.161
Fluidanimate	0.739	4.770	95.230
Freqmine	0.778	1.641	98.359
Streamcluster	0.656	0.660	99.340
Swaptions	0.641	2.876	97.124
X264	0.583	13.232	86.768