

# BA\_roofline

CPU name: Intel(R) Xeon(R) CPU E5-2699 v3 @ 2.30GHz CPU type: Intel Xeon Haswell EN/EP/EX processor  
CPU clock: 2.29 GHz

- Control Group

Result of likwid under roof\_latency group and sleep 1s Number of cores used: 18 Run 5 times and calculate the average

- The first take

Event	Counter	Sum	Min	Max	Avg
INSTR_RETIRED_ANY STAT	FIXC0	32500683	0	7121418	1.805594e+06
CPU_CLK_UNHALTED_CORE STAT	FIXC1	51320020	0	10287405	2.851112e+06
CPU_CLK_UNHALTED_REF STAT	FIXC2	96318066	0	19717417	5.351004e+06
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT	PMC0	21207117	0	4574608	1.178173e+06
CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT	PMC1	33797440	0	6435056	1.877636e+06
CYCLE_ACTIVITY_STALLS_TOTAL STAT	PMC2	36304050	0	6863595	2.016892e+06
LLC_LOOKUP_ANY STAT	CBOX0C0	254919	0	254919	14162.1667
LLC_LOOKUP_ANY STAT	CBOX1C0	257773	0	257773	14320.7222
LLC_LOOKUP_ANY STAT	CBOX2C0	237936	0	237936	13218.6667
LLC_LOOKUP_ANY STAT	CBOX3C0	192986	0	192986	10721.4444
LLC_LOOKUP_ANY STAT	CBOX4C0	201781	0	201781	11210.0556
LLC_LOOKUP_ANY STAT	CBOX5C0	203672	0	203672	11315.1111
LLC_LOOKUP_ANY STAT	CBOX6C0	252549	0	252549	14030.5000
LLC_LOOKUP_ANY STAT	CBOX7C0	225818	0	225818	12545.4444
LLC_LOOKUP_ANY STAT	CBOX8C0	257402	0	257402	14300.1111
LLC_LOOKUP_ANY STAT	CBOX9C0	199501	0	199501	11083.3889
LLC_LOOKUP_ANY STAT	CBOX10C0	211184	0	211184	11732.4444
LLC_LOOKUP_ANY STAT	CBOX11C0	208027	0	208027	11557.0556
LLC_LOOKUP_ANY STAT	CBOX12C0	192791	0	192791	10710.6111
LLC_LOOKUP_ANY STAT	CBOX13C0	215107	0	215107	11950.3889
LLC_LOOKUP_ANY STAT	CBOX14C0	212569	0	212569	11809.3889
LLC_LOOKUP_ANY STAT	CBOX15C0	234499	0	234499	13027.7222
LLC_LOOKUP_ANY STAT	CBOX16C0	200775	0	200775	11154.1667
LLC_LOOKUP_ANY STAT	CBOX17C0	205412	0	205412	11411.7778
LLC_LOOKUP_DATA_READ STAT	CBOX0C1	81206	0	81206	4511.4444
LLC_LOOKUP_DATA_READ STAT	CBOX1C1	82473	0	82473	4581.8333
LLC_LOOKUP_DATA_READ STAT	CBOX2C1	69758	0	69758	3875.4444
LLC_LOOKUP_DATA_READ STAT	CBOX3C1	47300	0	47300	2627.7778
LLC_LOOKUP_DATA_READ STAT	CBOX4C1	56540	0	56540	3141.1111
LLC_LOOKUP_DATA_READ STAT	CBOX5C1	59980	0	59980	3332.2222
LLC_LOOKUP_DATA_READ STAT	CBOX6C1	77788	0	77788	4321.5556
LLC_LOOKUP_DATA_READ STAT	CBOX7C1	61198	0	61198	3399.8889
LLC_LOOKUP_DATA_READ STAT	CBOX8C1	80566	0	80566	4475.8889
LLC_LOOKUP_DATA_READ STAT	CBOX9C1	53456	0	53456	2969.7778
LLC_LOOKUP_DATA_READ STAT	CBOX10C1	60078	0	60078	3337.6667
LLC_LOOKUP_DATA_READ STAT	CBOX11C1	58247	0	58247	3235.9444
LLC_LOOKUP_DATA_READ STAT	CBOX12C1	52077	0	52077	2893.1667
LLC_LOOKUP_DATA_READ STAT	CBOX13C1	60089	0	60089	3338.2778
LLC_LOOKUP_DATA_READ STAT	CBOX14C1	56786	0	56786	3154.7778
LLC_LOOKUP_DATA_READ STAT	CBOX15C1	68451	0	68451	3802.8333
LLC_LOOKUP_DATA_READ STAT	CBOX16C1	48301	0	48301	2683.3889
LLC_LOOKUP_DATA_READ STAT	CBOX17C1	51396	0	51396	2855.3333

Metric	Sum	Min	Max	Avg
Time: Runtime (RDTSC) [s] STAT	17.8830	0.9935	0.9935	0.9935
Time: Runtime unhalsted [s] STAT	0.0420	0	0.0086	0.0023
inverseClock STAT	7.844366e-09	4.357981e-10	4.357981e-10	4.357981e-10
Clock [MHz] STAT	18530.1182	1196.9329	1530.8738	1029.4511
Uncore Clock [MHz] STAT	601.3544	0	601.3544	33.4086
Time: Core total stall STAT	0.0296	5.783431e-06	0.0057	0.0016
Time: Core l2 stall STAT	0.0173	2.572917e-06	0.0038	0.0010
Time: Core ldm stall STAT	0.0275	2.212392e-06	0.0054	0.0015
CPI STAT	82.8630	0.9856	32.5074	4.6035
Power PKG [W] STAT	14.8670	0	14.8670	0.8259
Power DRAM [W] STAT	2.0618	0	2.0618	0.1145
Energy PKG [J] STAT	14.7711	0	14.7711	0.8206
Energy DRAM [J] STAT	2.0485	0	2.0485	0.1138
L2M Pending[%] STAT	592.5766	20.1576	49.7546	32.9209
LD Pending[%] STAT	824.2187	28.5801	74.3678	45.7899
LLC Any bandwidth [Bytes/s] STAT	255388200	0	255388200	1.418823e+07
LLC data read bandwidth [Bytes/s] STAT	72511870	0	72511870	4.028437e+06
LLC read bandwidth [Bytes/s] STAT	187827000	0	187827000	1.043483e+07
LLC write bandwidth [Bytes/s] STAT	24326770	0	24326770	1.351487e+06
LLC Any volume [Bytes] STAT	253740864	0	253740864	1.409671e+07
LLC data read volume [Bytes] STAT	72044160	0	72044160	4.002453e+06
LLC read volume [Bytes] STAT	186615488	0	186615488	1.036753e+07
LLC write volume [Bytes] STAT	24169856	0	24169856	1.342770e+06
DRAM read bandwidth [Bytes/s] STAT	19321880	0	19321880	1.073438e+06
DRAM write bandwidth [Bytes/s] STAT	4946272	0	4946272	274792.8889
DRAM read volume [Bytes] STAT	19197248	0	19197248	1.066514e+06
DRAM write volume [Bytes] STAT	4914368	0	4914368	273020.4444
Time: MEM busy STAT	0.0004	0	0.0004	2.222222e-05
Time: L3 busy STAT	0.0005	0	0.0005	2.777778e-05
Ins [] STAT	32500683	0	7121418	1.805594e+06
Cycle [] STAT	51320020	0	10287405	2.851112e+06
Stall_l2M [] STAT	21207117	0	4574608	1.178173e+06
Stall_mem [] STAT	33797440	0	6435056	1.877636e+06
L3_Latency [] STAT	5.3490	0	1.1538	0.2972
DRAM_latency [] STAT	89.7094	0	17.0807	4.9839

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8.592320e+06 || CYCLE\_ACTIVITY\_STALLS\_L2\_PENDING STAT | PMC0 | 33547907 | 0 | 4591096 |  
1.863773e+06 || CYCLE\_ACTIVITY\_STALLS\_LDM\_PENDING STAT | PMC1 | 58800639 | 0 | 7782826 |  
3.266702e+06 || CYCLE\_ACTIVITY\_STALLS\_TOTAL STAT | PMC2 | 62950766 | 0 | 8242624 |  
3.497265e+06 || LLC\_LOOKUP\_ANY STAT | CBOX0C0 | 244239 | 0 | 244239 | 13568.8333 ||  
LLC\_LOOKUP\_ANY STAT | CBOX1C0 | 232412 | 0 | 232412 | 12911.7778 || LLC\_LOOKUP\_ANY STAT |  
CBOX2C0 | 282597 | 0 | 282597 | 15699.8333 || LLC\_LOOKUP\_ANY STAT | CBOX3C0 | 247894 | 0 |  
247894 | 13771.8889 || LLC\_LOOKUP\_ANY STAT | CBOX4C0 | 245431 | 0 | 245431 | 13635.0556 ||  
LLC\_LOOKUP\_ANY STAT | CBOX5C0 | 221222 | 0 | 221222 | 12290.1111 || LLC\_LOOKUP\_ANY STAT |  
CBOX6C0 | 342116 | 0 | 342116 | 19006.4444 || LLC\_LOOKUP\_ANY STAT | CBOX7C0 | 261060 | 0 |  
261060 | 14503.3333 || LLC\_LOOKUP\_ANY STAT | CBOX8C0 | 262228 | 0 | 262228 | 14568.2222 ||  
LLC\_LOOKUP\_ANY STAT | CBOX9C0 | 273570 | 0 | 273570 | 15198.3333 || LLC\_LOOKUP\_ANY STAT |  
CBOX10C0 | 231627 | 0 | 231627 | 12868.1667 || LLC\_LOOKUP\_ANY STAT | CBOX11C0 | 236416 | 0 |  
236416 | 13134.2222 || LLC\_LOOKUP\_ANY STAT | CBOX12C0 | 234998 | 0 | 234998 | 13055.4444 ||  
LLC\_LOOKUP\_ANY STAT | CBOX13C0 | 233971 | 0 | 233971 | 12998.3889 || LLC\_LOOKUP\_ANY STAT |  
CBOX14C0 | 253244 | 0 | 253244 | 14069.1111 || LLC\_LOOKUP\_ANY STAT | CBOX15C0 | 310193 | 0 |  
310193 | 17232.9444 || LLC\_LOOKUP\_ANY STAT | CBOX16C0 | 230307 | 0 | 230307 | 12794.8333 ||  
LLC\_LOOKUP\_ANY STAT | CBOX17C0 | 267147 | 0 | 267147 | 14841.5000 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX0C1 | 71928 | 0 | 71928 | 3996 || LLC\_LOOKUP\_DATA\_READ  
STAT | CBOX1C1 | 65754 | 0 | 65754 | 3653 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX2C1 | 86831 | 0  
| 86831 | 4823.9444 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX3C1 | 69743 | 0 | 69743 | 3874.6111 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX4C1 | 75019 | 0 | 75019 | 4167.7222 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX5C1 | 65044 | 0 | 65044 | 3613.5556 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX6C1 | 115825 | 0 | 115825 | 6434.7222 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX7C1 | 73764 | 0 | 73764 | 4098 || LLC\_LOOKUP\_DATA\_READ  
STAT | CBOX8C1 | 78664 | 0 | 78664 | 4370.2222 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX9C1 |  
86718 | 0 | 86718 | 4817.6667 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX10C1 | 66712 | 0 | 66712 |  
3706.2222 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX11C1 | 67275 | 0 | 67275 | 3737.5000 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX12C1 | 69522 | 0 | 69522 | 3862.3333 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX13C1 | 67040 | 0 | 67040 | 3724.4444 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX14C1 | 71203 | 0 | 71203 | 3955.7222 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 102792 | 0 | 102792 | 5710.6667 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 58793 | 0 | 58793 | 3266.2778 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 77953 | 0 | 77953 | 4330.7222 || LLC\_LOOKUP\_READ  
STAT | CBOX0C2 | 185440 | 0 | 185440 | 10302.2222 || LLC\_LOOKUP\_READ STAT | CBOX1C2 |  
167828 | 0 | 167828 | 9323.7778 || LLC\_LOOKUP\_READ STAT | CBOX2C2 | 208123 | 0 | 208123 |  
11562.3889 || LLC\_LOOKUP\_READ STAT | CBOX3C2 | 182111 | 0 | 182111 | 10117.2778 ||  
LLC\_LOOKUP\_READ STAT | CBOX4C2 | 182080 | 0 | 182080 | 10115.5556 || LLC\_LOOKUP\_READ  
STAT | CBOX5C2 | 165442 | 0 | 165442 | 9191.2222 || LLC\_LOOKUP\_READ STAT | CBOX6C2 | 255587  
| 0 | 255587 | 14199.2778 || LLC\_LOOKUP\_READ STAT | CBOX7C2 | 196173 | 0 | 196173 | 10898.5000  
|| LLC\_LOOKUP\_READ STAT | CBOX8C2 | 189999 | 0 | 189999 | 10555.5000 || LLC\_LOOKUP\_READ  
STAT | CBOX9C2 | 204681 | 0 | 204681 | 11371.1667 || LLC\_LOOKUP\_READ STAT | CBOX10C2 |  
168587 | 0 | 168587 | 9365.9444 || LLC\_LOOKUP\_READ STAT | CBOX11C2 | 175654 | 0 | 175654 |  
9758.5556 || LLC\_LOOKUP\_READ STAT | CBOX12C2 | 173090 | 0 | 173090 | 9616.1111 ||  
LLC\_LOOKUP\_READ STAT | CBOX13C2 | 170558 | 0 | 170558 | 9475.4444 || LLC\_LOOKUP\_READ  
STAT | CBOX14C2 | 190344 | 0 | 190344 | 10574.6667 || LLC\_LOOKUP\_READ STAT | CBOX15C2 |  
238551 | 0 | 238551 | 13252.8333 || LLC\_LOOKUP\_READ STAT | CBOX16C2 | 160782 | 0 | 160782 |

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8932.3333 || LLC_LOOKUP_READ STAT | CBOX17C2 | 189014 | 0 | 189014 | 10500.7778 ||
LLC_LOOKUP_WRITE STAT | CBOX0C3 | 16212 | 0 | 16212 | 900.6667 || LLC_LOOKUP_WRITE STAT |
CBOX1C3 | 17785 | 0 | 17785 | 988.0556 || LLC_LOOKUP_WRITE STAT | CBOX2C3 | 31182 | 0 | 31182 |
1732.3333 || LLC_LOOKUP_WRITE STAT | CBOX3C3 | 23395 | 0 | 23395 | 1299.7222 ||
LLC_LOOKUP_WRITE STAT | CBOX4C3 | 22618 | 0 | 22618 | 1256.5556 || LLC_LOOKUP_WRITE STAT
| CBOX5C3 | 18291 | 0 | 18291 | 1016.1667 || LLC_LOOKUP_WRITE STAT | CBOX6C3 | 33207 | 0 |
33207 | 1844.8333 || LLC_LOOKUP_WRITE STAT | CBOX7C3 | 18609 | 0 | 18609 | 1033.8333 ||
LLC_LOOKUP_WRITE STAT | CBOX8C3 | 24270 | 0 | 24270 | 1348.3333 || LLC_LOOKUP_WRITE STAT
| CBOX9C3 | 29655 | 0 | 29655 | 1647.5000 || LLC_LOOKUP_WRITE STAT | CBOX10C3 | 21369 | 0 |
21369 | 1187.1667 || LLC_LOOKUP_WRITE STAT | CBOX11C3 | 20285 | 0 | 20285 | 1126.9444 ||
LLC_LOOKUP_WRITE STAT | CBOX12C3 | 21303 | 0 | 21303 | 1183.5000 || LLC_LOOKUP_WRITE STAT
| CBOX13C3 | 18870 | 0 | 18870 | 1048.3333 || LLC_LOOKUP_WRITE STAT | CBOX14C3 | 18827 | 0 |
18827 | 1045.9444 || LLC_LOOKUP_WRITE STAT | CBOX15C3 | 23400 | 0 | 23400 | 1300 ||
LLC_LOOKUP_WRITE STAT | CBOX16C3 | 30992 | 0 | 30992 | 1721.7778 || LLC_LOOKUP_WRITE
STAT | CBOX17C3 | 40777 | 0 | 40777 | 2265.3889 || CAS_COUNT_RD STAT | MBOX0C0 | 113528 | 0 |
113528 | 6307.1111 || CAS_COUNT_WR STAT | MBOX0C1 | 28674 | 0 | 28674 | 1593 ||
CAS_COUNT_RD STAT | MBOX1C0 | 123754 | 0 | 123754 | 6875.2222 || CAS_COUNT_WR STAT |
MBOX1C1 | 32855 | 0 | 32855 | 1825.2778 || CAS_COUNT_RD STAT | MBOX4C0 | 93528 | 0 | 93528 |
5196 || CAS_COUNT_WR STAT | MBOX4C1 | 19811 | 0 | 19811 | 1100.6111 || CAS_COUNT_RD STAT |
MBOX5C0 | 123357 | 0 | 123357 | 6853.1667 || CAS_COUNT_WR STAT | MBOX5C1 | 36053 | 0 |
36053 | 2002.9444 || UNCORE_CLOCK STAT | UBOXFIX | 697323148 | 0 | 697323148 |
3.874017e+07 || PWR_PKG_ENERGY STAT | PWR0 | 16.0503 | 0 | 16.0503 | 0.8917 ||
PWR_DRAM_ENERGY STAT | PWR3 | 2.3318 | 0 | 2.3318 | 0.1295 | +-----+
-----+-----+-----+-----+-----+

+-----+-----+-----+-----+-----+ |
Metric | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+
-----+-----+ | Time: Runtime (RDTSC) [s] STAT | 17.8308 | 0.9906 | 0.9906 | 0.9906 || Time:
Runtime unhalted [s] STAT | 0.0675 | 0 | 0.0101 | 0.0038 || inverseClock STAT | 7.844234e-09 | 4.357908e-
10 | 4.357908e-10 | 4.357908e-10 || Clock [MHz] STAT | 20864.3966 | 1196.9087 | 1571.8162 | 1159.1331 ||
Uncore Clock [MHz] STAT | 703.9413 | 0 | 703.9413 | 39.1078 || Time: Core total stall STAT | 0.0509 |
2.491276e-05 | 0.0067 | 0.0028 || Time: Core l2 stall STAT | 0.0269 | 1.656730e-05 | 0.0037 | 0.0015 ||
Time: Core ldm stall STAT | 0.0474 | 1.873907e-05 | 0.0063 | 0.0026 || CPI STAT | 34.2575 | 1.0331 | 3.7368 |
1.9032 || Power PKG [W] STAT | 16.2026 | 0 | 16.2026 | 0.9001 || Power DRAM [W] STAT | 2.3539 | 0 |
2.3539 | 0.1308 || Energy PKG [J] STAT | 16.0503 | 0 | 16.0503 | 0.8917 || Energy DRAM [J] STAT | 2.3318 | 0
| 2.3318 | 0.1295 || L2M Pending[%] STAT | 653.7438 | 28.6600 | 50.2432 | 36.3191 || LD Pending[%] STAT |
1025.0537 | 32.3121 | 80.7195 | 56.9474 || LLC Any bandwidth [Bytes/s] STAT | 297883600 | 0 | 297883600
| 1.654909e+07 || LLC data read bandwidth [Bytes/s] STAT | 88549620 | 0 | 88549620 | 4.919423e+06 ||
LLC read bandwidth [Bytes/s] STAT | 219926500 | 0 | 219926500 | 1.221814e+07 || LLC write bandwidth
[Bytes/s] STAT | 27848830 | 0 | 27848830 | 1.547157e+06 || LLC Any volume [Bytes] STAT | 295083008 | 0
| 295083008 | 1.639350e+07 || LLC data read volume [Bytes] STAT | 87717120 | 0 | 87717120 |
4.873173e+06 || LLC read volume [Bytes] STAT | 217858816 | 0 | 217858816 | 1.210327e+07 || LLC write
volume [Bytes] STAT | 27587008 | 0 | 27587008 | 1.532612e+06 || DRAM read bandwidth [Bytes/s] STAT |
29342550 | 0 | 29342550 | 1.630142e+06 || DRAM write bandwidth [Bytes/s] STAT | 7584458 | 0 |
7584458 | 421358.7778 || DRAM read volume [Bytes] STAT | 29066688 | 0 | 29066688 | 1614816 || DRAM
write volume [Bytes] STAT | 7513152 | 0 | 7513152 | 417397.3333 || Time: MEM busy STAT | 0.0006 | 0 |
0.0006 | 3.333333e-05 || Time: L3 busy STAT | 0.0006 | 0 | 0.0006 | 3.333333e-05 || Ins [] STAT |
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+-----+ | Event | Counter | Sum | Min | Max | Avg | +-----+
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+-----+ INSTR_RETIRED_ANY STAT | FIXC0 |
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43648388 | 0 | 6978084 | 2.424910e+06 || CPU_CLK_UNHALTED_CORE STAT | FIXC1 | 76757120 | 0 |
```

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| 10312223 | 4.264284e+06 || CPU_CLK_UNHALTED_REF STAT | FIXC2 | 143396812 | 0 | 19645105 |
```

```
7.966490e+06 || CYCLE_ACTIVITY_STALLS_L2_PENDING STAT | PMC0 | 32084348 | 0 | 4030231 |
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1.782464e+06 || CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT | PMC1 | 53607427 | 0 | 7184540 |
```

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2.978190e+06 || CYCLE_ACTIVITY_STALLS_TOTAL STAT | PMC2 | 56899724 | 0 | 7501065 |
```

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3.161096e+06 || LLC_LOOKUP_ANY STAT | CBOX0C0 | 276035 | 0 | 276035 | 15335.2778 ||
```

```
LLC_LOOKUP_ANY STAT | CBOX1C0 | 221422 | 0 | 221422 | 12301.2222 || LLC_LOOKUP_ANY STAT |
```

```
CBOX2C0 | 243674 | 0 | 243674 | 13537.4444 || LLC_LOOKUP_ANY STAT | CBOX3C0 | 222554 | 0 |
```

```
222554 | 12364.1111 || LLC_LOOKUP_ANY STAT | CBOX4C0 | 218774 | 0 | 218774 | 12154.1111 ||
```

```
LLC_LOOKUP_ANY STAT | CBOX5C0 | 200611 | 0 | 200611 | 11145.0556 || LLC_LOOKUP_ANY STAT |
```

```
CBOX6C0 | 275076 | 0 | 275076 | 15282 || LLC_LOOKUP_ANY STAT | CBOX7C0 | 229594 | 0 |
```

```
229594 | 12755.2222 || LLC_LOOKUP_ANY STAT | CBOX8C0 | 231131 | 0 | 231131 | 12840.6111 ||
```

```
LLC_LOOKUP_ANY STAT | CBOX9C0 | 251435 | 0 | 251435 | 13968.6111 || LLC_LOOKUP_ANY STAT |
```

```
CBOX10C0 | 223788 | 0 | 223788 | 12432.6667 || LLC_LOOKUP_ANY STAT | CBOX11C0 | 218411 | 0 |
```

```
218411 | 12133.9444 || LLC_LOOKUP_ANY STAT | CBOX12C0 | 220398 | 0 | 220398 | 12244.3333 ||
```

```
LLC_LOOKUP_ANY STAT | CBOX13C0 | 224018 | 0 | 224018 | 12445.4444 || LLC_LOOKUP_ANY
```

```
STAT | CBOX14C0 | 223246 | 0 | 223246 | 12402.5556 || LLC_LOOKUP_ANY STAT | CBOX15C0 |
```

```
304828 | 0 | 304828 | 16934.8889 || LLC_LOOKUP_ANY STAT | CBOX16C0 | 257918 | 0 | 257918 |
```

```
14328.7778 || LLC_LOOKUP_ANY STAT | CBOX17C0 | 224346 | 0 | 224346 | 12463.6667 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX0C1 | 93227 | 0 | 93227 | 5179.2778 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX1C1 | 64677 | 0 | 64677 | 3593.1667 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX2C1 | 73264 | 0 | 73264 | 4070.2222 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX3C1 | 62583 | 0 | 62583 | 3476.8333 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX4C1 | 66478 | 0 | 66478 | 3693.2222 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX5C1 | 60081 | 0 | 60081 | 3337.8333 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX6C1 | 91186 | 0 | 91186 | 5065.8889 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX7C1 | 66464 | 0 | 66464 | 3692.4444 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX8C1 | 66959 | 0 | 66959 | 3719.9444 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX9C1 | 80739 | 0 | 80739 | 4485.5000 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX10C1 | 66411 | 0 | 66411 | 3689.5000 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX11C1 | 62038 | 0 | 62038 | 3446.5556 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX12C1 | 66869 | 0 | 66869 | 3714.9444 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX13C1 | 65354 | 0 | 65354 | 3630.7778 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX14C1 | 64347 | 0 | 64347 | 3574.8333 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX15C1 | 108019 | 0 | 108019 | 6001.0556 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX16C1 | 75156 | 0 | 75156 | 4175.3333 ||
```

```
LLC_LOOKUP_DATA_READ STAT | CBOX17C1 | 58858 | 0 | 58858 | 3269.8889 ||
```

```
LLC_LOOKUP_READ_STAT | CBOX0C2 | 206564 | 0 | 206564 | 11475.7778 || LLC_LOOKUP_READ
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STAT | CBOX1C2 | 158979 | 0 | 158979 | 8832.1667 | | LLC_LOOKUP_READ STAT | CBOX2C2 | 178684
| 0 | 178684 | 9926.8889 | | LLC_LOOKUP_READ STAT | CBOX3C2 | 161984 | 0 | 161984 | 8999.1111 | |
LLC_LOOKUP_READ STAT | CBOX4C2 | 159648 | 0 | 159648 | 8869.3333 | | LLC_LOOKUP_READ
STAT | CBOX5C2 | 146819 | 0 | 146819 | 8156.6111 | | LLC_LOOKUP_READ STAT | CBOX6C2 | 202521 |
0 | 202521 | 11251.1667 | | LLC_LOOKUP_READ STAT | CBOX7C2 | 168836 | 0 | 168836 | 9379.7778 | |
LLC_LOOKUP_READ STAT | CBOX8C2 | 165609 | 0 | 165609 | 9200.5000 | | LLC_LOOKUP_READ
STAT | CBOX9C2 | 183455 | 0 | 183455 | 10191.9444 | | LLC_LOOKUP_READ STAT | CBOX10C2 |
161769 | 0 | 161769 | 8987.1667 | | LLC_LOOKUP_READ STAT | CBOX11C2 | 160478 | 0 | 160478 |
8915.4444 | | LLC_LOOKUP_READ STAT | CBOX12C2 | 161484 | 0 | 161484 | 8971.3333 | |
LLC_LOOKUP_READ STAT | CBOX13C2 | 159973 | 0 | 159973 | 8887.3889 | | LLC_LOOKUP_READ
STAT | CBOX14C2 | 164810 | 0 | 164810 | 9156.1111 | | LLC_LOOKUP_READ STAT | CBOX15C2 |
230806 | 0 | 230806 | 12822.5556 | | LLC_LOOKUP_READ STAT | CBOX16C2 | 182651 | 0 | 182651 |
10147.2778 | | LLC_LOOKUP_READ STAT | CBOX17C2 | 157861 | 0 | 157861 | 8770.0556 | |
LLC_LOOKUP_WRITE STAT | CBOX0C3 | 27177 | 0 | 27177 | 1509.8333 | | LLC_LOOKUP_WRITE STAT |
CBOX1C3 | 17673 | 0 | 17673 | 981.8333 | | LLC_LOOKUP_WRITE STAT | CBOX2C3 | 25191 | 0 | 25191 |
1399.5000 | | LLC_LOOKUP_WRITE STAT | CBOX3C3 | 18582 | 0 | 18582 | 1032.3333 | |
LLC_LOOKUP_WRITE STAT | CBOX4C3 | 19161 | 0 | 19161 | 1064.5000 | | LLC_LOOKUP_WRITE STAT |
CBOX5C3 | 16701 | 0 | 16701 | 927.8333 | | LLC_LOOKUP_WRITE STAT | CBOX6C3 | 23512 | 0 | 23512 |
1306.2222 | | LLC_LOOKUP_WRITE STAT | CBOX7C3 | 17897 | 0 | 17897 | 994.2778 | |
LLC_LOOKUP_WRITE STAT | CBOX8C3 | 19110 | 0 | 19110 | 1061.6667 | | LLC_LOOKUP_WRITE STAT |
CBOX9C3 | 28282 | 0 | 28282 | 1571.2222 | | LLC_LOOKUP_WRITE STAT | CBOX10C3 | 19281 | 0 |
19281 | 1071.1667 | | LLC_LOOKUP_WRITE STAT | CBOX11C3 | 17284 | 0 | 17284 | 960.2222 | |
LLC_LOOKUP_WRITE STAT | CBOX12C3 | 19523 | 0 | 19523 | 1084.6111 | | LLC_LOOKUP_WRITE STAT
| CBOX13C3 | 17859 | 0 | 17859 | 992.1667 | | LLC_LOOKUP_WRITE STAT | CBOX14C3 | 17552 | 0 |
17552 | 975.1111 | | LLC_LOOKUP_WRITE STAT | CBOX15C3 | 27854 | 0 | 27854 | 1547.4444 | |
LLC_LOOKUP_WRITE STAT | CBOX16C3 | 34629 | 0 | 34629 | 1923.8333 | | LLC_LOOKUP_WRITE
STAT | CBOX17C3 | 26581 | 0 | 26581 | 1476.7222 | | CAS_COUNT_RD STAT | MBOX0C0 | 113159 | 0 |
113159 | 6286.6111 | | CAS_COUNT_WR STAT | MBOX0C1 | 22051 | 0 | 22051 | 1225.0556 | |
CAS_COUNT_RD STAT | MBOX1C0 | 121807 | 0 | 121807 | 6767.0556 | | CAS_COUNT_WR STAT |
MBOX1C1 | 24275 | 0 | 24275 | 1348.6111 | | CAS_COUNT_RD STAT | MBOX4C0 | 91726 | 0 | 91726 |
5095.8889 | | CAS_COUNT_WR STAT | MBOX4C1 | 12425 | 0 | 12425 | 690.2778 | | CAS_COUNT_RD
STAT | MBOX5C0 | 119804 | 0 | 119804 | 6655.7778 | | CAS_COUNT_WR STAT | MBOX5C1 | 28371 | 0 |
28371 | 1576.1667 | | UNCORE_CLOCK STAT | UBOXFIX | 640514924 | 0 | 640514924 | 3.558416e+07
| | PWR_PKG_ENERGY STAT | PWR0 | 15.2393 | 0 | 15.2393 | 0.8466 | | PWR_DRAM_ENERGY STAT |
PWR3 | 2.2231 | 0 | 2.2231 | 0.1235 | +-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+

+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Metric | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+ | Time: Runtime (RDTSC) [s] STAT | 17.8578 | 0.9921 | 0.9921 | 0.9921 | | Time:
Runtime unhalted [s] STAT | 0.0627 | 0 | 0.0086 | 0.0035 | | inverseClock STAT | 7.844238e-09 | 4.357910e-
10 | 4.357910e-10 | 4.357910e-10 | | Clock [MHz] STAT | 21691.1543 | 1197.0720 | 1943.0443 | 1205.0641 | |
Uncore Clock [MHz] STAT | 645.6443 | 0 | 645.6443 | 35.8691 | | Time: Core total stall STAT | 0.0464 |
1.651947e-05 | 0.0063 | 0.0026 | | Time: Core l2 stall STAT | 0.0263 | 9.333608e-06 | 0.0034 | 0.0015 | |
Time: Core ldm stall STAT | 0.0438 | 8.927617e-06 | 0.0060 | 0.0024 | | CPI STAT | 39.7990 | 1.1907 |
10.4039 | 2.2111 | | Power PKG [W] STAT | 15.3613 | 0 | 15.3613 | 0.8534 | | Power DRAM [W] STAT | 2.2409 |
0 | 2.2409 | 0.1245 | | Energy PKG [J] STAT | 15.2393 | 0 | 15.2393 | 0.8466 | | Energy DRAM [J] STAT |

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2.2231 | 0 | 2.2231 | 0.1235 | | L2M Pending[%] STAT | 660.3110 | 19.4737 | 53.7049 | 36.6839 | | LD
Pending[%] STAT | 1033.7805 | 27.7101 | 78.6166 | 57.4323 | | LLC Any bandwidth [Bytes/s] STAT |
275291600 | 0 | 275291600 | 1.529398e+07 | | LLC data read bandwidth [Bytes/s] STAT | 83395980 | 0 |
83395980 | 4633110 | | LLC read bandwidth [Bytes/s] STAT | 200823000 | 0 | 200823000 | 1.115683e+07 | |
LLC write bandwidth [Bytes/s] STAT | 25408190 | 0 | 25408190 | 1.411566e+06 | | LLC Any volume [Bytes]
STAT | 273104576 | 0 | 273104576 | 1.517248e+07 | | LLC data read volume [Bytes] STAT | 82733440 | 0 |
82733440 | 4.596302e+06 | | LLC read volume [Bytes] STAT | 199227584 | 0 | 199227584 | 1.106820e+07 |
| LLC write volume [Bytes] STAT | 25206336 | 0 | 25206336 | 1400352 | | DRAM read bandwidth [Bytes/s]
STAT | 28804580 | 0 | 28804580 | 1.600254e+06 | | DRAM write bandwidth [Bytes/s] STAT | 5620460 | 0 |
5620460 | 312247.7778 | | DRAM read volume [Bytes] STAT | 28575744 | 0 | 28575744 | 1.587541e+06 | |
DRAM write volume [Bytes] STAT | 5575808 | 0 | 5575808 | 309767.1111 | | Time: MEM busy STAT | 0.0006 |
0 | 0.0006 | 3.333333e-05 | | Time: L3 busy STAT | 0.0006 | 0 | 0.0006 | 3.333333e-05 | | Ins [] STAT |
43648388 | 0 | 6978084 | 2.424910e+06 | | Cycle [] STAT | 76757120 | 0 | 10312223 | 4.264284e+06 | |
Stall_l2m [] STAT | 32084348 | 0 | 4030231 | 1.782464e+06 | | Stall_mem [] STAT | 53607427 | 0 | 7184540
| 2.978190e+06 | | L3_Latency [] STAT | 7.5189 | 0 | 0.9445 | 0.4177 | | DRAM_latency [] STAT | 100.4605 | 0 |
13.4638 | 5.5811 | +-----+-----+-----+-----+-----+-----+-----+-----+-----+
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      +-----+ | Event | Counter | Sum | Min | Max | Avg | +-----+-----+-----+
      +-----+-----+-----+-----+-----+-----+ | INSTR_RETIRED_ANY STAT | FIXC0 |
      55891389 | 272 | 7502343 | 3.105077e+06 | | CPU_CLK_UNHALTED_CORE STAT | FIXC1 | 93791522 |
      8356 | 9632741 | 5.210640e+06 | | CPU_CLK_UNHALTED_REF STAT | FIXC2 | 179362119 | 16031 |
      18462721 | 9.964562e+06 | | CYCLE_ACTIVITY_STALLS_L2_PENDING STAT | PMC0 | 40066161 |
      3427 | 3988391 | 2.225898e+06 | | CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT | PMC1 |
      64410123 | 3173 | 6736900 | 3.578340e+06 | | CYCLE_ACTIVITY_STALLS_TOTAL STAT | PMC2 |
      68461258 | 7240 | 7069600 | 3.803403e+06 | | LLC_LOOKUP_ANY STAT | CBOX0C0 | 239885 | 0 |
      239885 | 13326.9444 | | LLC_LOOKUP_ANY STAT | CBOX1C0 | 250338 | 0 | 250338 | 13907.6667 | |
      LLC_LOOKUP_ANY STAT | CBOX2C0 | 288603 | 0 | 288603 | 16033.5000 | | LLC_LOOKUP_ANY STAT
      | CBOX3C0 | 284729 | 0 | 284729 | 15818.2778 | | LLC_LOOKUP_ANY STAT | CBOX4C0 | 234432 | 0 |
      234432 | 13024 | | LLC_LOOKUP_ANY STAT | CBOX5C0 | 233498 | 0 | 233498 | 12972.1111 | |
      LLC_LOOKUP_ANY STAT | CBOX6C0 | 296270 | 0 | 296270 | 16459.4444 | | LLC_LOOKUP_ANY STAT
      | CBOX7C0 | 287340 | 0 | 287340 | 15963.3333 | | LLC_LOOKUP_ANY STAT | CBOX8C0 | 256020 | 0 |
      256020 | 14223.3333 | | LLC_LOOKUP_ANY STAT | CBOX9C0 | 253044 | 0 | 253044 | 14058 | |
      LLC_LOOKUP_ANY STAT | CBOX10C0 | 244390 | 0 | 244390 | 13577.2222 | | LLC_LOOKUP_ANY
      STAT | CBOX11C0 | 235979 | 0 | 235979 | 13109.9444 | | LLC_LOOKUP_ANY STAT | CBOX12C0 |
      284690 | 0 | 284690 | 15816.1111 | | LLC_LOOKUP_ANY STAT | CBOX13C0 | 244437 | 0 | 244437 |
      13579.8333 | | LLC_LOOKUP_ANY STAT | CBOX14C0 | 318920 | 0 | 318920 | 17717.7778 | |
      LLC_LOOKUP_ANY STAT | CBOX15C0 | 282303 | 0 | 282303 | 15683.5000 | | LLC_LOOKUP_ANY
      STAT | CBOX16C0 | 249230 | 0 | 249230 | 13846.1111 | | LLC_LOOKUP_ANY STAT | CBOX17C0 |
      240598 | 0 | 240598 | 13366.5556 | | LLC_LOOKUP_DATA_READ STAT | CBOX0C1 | 67855 | 0 |
      67855 | 3769.7222 | | LLC_LOOKUP_DATA_READ STAT | CBOX1C1 | 73194 | 0 | 73194 | 4066.3333 | |
      LLC_LOOKUP_DATA_READ STAT | CBOX2C1 | 90391 | 0 | 90391 | 5021.7222 | |
      LLC_LOOKUP_DATA_READ STAT | CBOX3C1 | 87265 | 0 | 87265 | 4848.0556 | |
      LLC_LOOKUP_DATA_READ STAT | CBOX4C1 | 68218 | 0 | 68218 | 3789.8889 | |
      LLC_LOOKUP_DATA_READ STAT | CBOX5C1 | 70883 | 0 | 70883 | 3937.9444 | |
      LLC_LOOKUP_DATA_READ STAT | CBOX6C1 | 94241 | 0 | 94241 | 5235.6111 | |
      
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LLC\_LOOKUP\_DATA\_READ STAT | CBOX7C1 | 86511 | 0 | 86511 | 4806.1667 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX8C1 | 73557 | 0 | 73557 | 4086.5000 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX9C1 | 73803 | 0 | 73803 | 4100.1667 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX10C1 | 71345 | 0 | 71345 | 3963.6111 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX11C1 | 65755 | 0 | 65755 | 3653.0556 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX12C1 | 91951 | 0 | 91951 | 5108.3889 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX13C1 | 70039 | 0 | 70039 | 3891.0556 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX14C1 | 103592 | 0 | 103592 | 5755.1111 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 88332 | 0 | 88332 | 4907.3333 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 65192 | 0 | 65192 | 3621.7778 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 61246 | 0 | 61246 | 3402.5556 || LLC\_LOOKUP\_READ  
STAT | CBOX0C2 | 179888 | 0 | 179888 | 9993.7778 || LLC\_LOOKUP\_READ STAT | CBOX1C2 | 182584  
| 0 | 182584 | 10143.5556 || LLC\_LOOKUP\_READ STAT | CBOX2C2 | 213113 | 0 | 213113 | 11839.6111 ||  
LLC\_LOOKUP\_READ STAT | CBOX3C2 | 207840 | 0 | 207840 | 11546.6667 || LLC\_LOOKUP\_READ  
STAT | CBOX4C2 | 172055 | 0 | 172055 | 9558.6111 || LLC\_LOOKUP\_READ STAT | CBOX5C2 | 173440  
| 0 | 173440 | 9635.5556 || LLC\_LOOKUP\_READ STAT | CBOX6C2 | 218361 | 0 | 218361 | 12131.1667 |  
| LLC\_LOOKUP\_READ STAT | CBOX7C2 | 214707 | 0 | 214707 | 11928.1667 || LLC\_LOOKUP\_READ  
STAT | CBOX8C2 | 185155 | 0 | 185155 | 10286.3889 || LLC\_LOOKUP\_READ STAT | CBOX9C2 |  
187446 | 0 | 187446 | 10413.6667 || LLC\_LOOKUP\_READ STAT | CBOX10C2 | 178917 | 0 | 178917 |  
9939.8333 || LLC\_LOOKUP\_READ STAT | CBOX11C2 | 176423 | 0 | 176423 | 9801.2778 ||  
LLC\_LOOKUP\_READ STAT | CBOX12C2 | 210679 | 0 | 210679 | 11704.3889 || LLC\_LOOKUP\_READ  
STAT | CBOX13C2 | 177422 | 0 | 177422 | 9856.7778 || LLC\_LOOKUP\_READ STAT | CBOX14C2 |  
238370 | 0 | 238370 | 13242.7778 || LLC\_LOOKUP\_READ STAT | CBOX15C2 | 213438 | 0 | 213438 |  
11857.6667 || LLC\_LOOKUP\_READ STAT | CBOX16C2 | 172070 | 0 | 172070 | 9559.4444 ||  
LLC\_LOOKUP\_READ STAT | CBOX17C2 | 166658 | 0 | 166658 | 9258.7778 || LLC\_LOOKUP\_WRITE  
STAT | CBOX0C3 | 13034 | 0 | 13034 | 724.1111 || LLC\_LOOKUP\_WRITE STAT | CBOX1C3 | 19632 | 0 |  
19632 | 1090.6667 || LLC\_LOOKUP\_WRITE STAT | CBOX2C3 | 31483 | 0 | 31483 | 1749.0556 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX3C3 | 30940 | 0 | 30940 | 1718.8889 || LLC\_LOOKUP\_WRITE STAT  
| CBOX4C3 | 20431 | 0 | 20431 | 1135.0556 || LLC\_LOOKUP\_WRITE STAT | CBOX5C3 | 19304 | 0 |  
19304 | 1072.4444 || LLC\_LOOKUP\_WRITE STAT | CBOX6C3 | 23581 | 0 | 23581 | 1310.0556 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX7C3 | 23069 | 0 | 23069 | 1281.6111 || LLC\_LOOKUP\_WRITE STAT |  
CBOX8C3 | 19644 | 0 | 19644 | 1091.3333 || LLC\_LOOKUP\_WRITE STAT | CBOX9C3 | 21773 | 0 |  
21773 | 1209.6111 || LLC\_LOOKUP\_WRITE STAT | CBOX10C3 | 20726 | 0 | 20726 | 1151.4444 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX11C3 | 17962 | 0 | 17962 | 997.8889 || LLC\_LOOKUP\_WRITE STAT |  
CBOX12C3 | 29234 | 0 | 29234 | 1624.1111 || LLC\_LOOKUP\_WRITE STAT | CBOX13C3 | 18789 | 0 |  
18789 | 1043.8333 || LLC\_LOOKUP\_WRITE STAT | CBOX14C3 | 35891 | 0 | 35891 | 1993.9444 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX15C3 | 17509 | 0 | 17509 | 972.7222 || LLC\_LOOKUP\_WRITE STAT |  
CBOX16C3 | 34308 | 0 | 34308 | 1906 || LLC\_LOOKUP\_WRITE STAT | CBOX17C3 | 31081 | 0 | 31081 |  
1726.7222 || CAS\_COUNT\_RD STAT | MBOX0C0 | 126514 | 0 | 126514 | 7028.5556 ||  
CAS\_COUNT\_WR STAT | MBOX0C1 | 35229 | 0 | 35229 | 1957.1667 || CAS\_COUNT\_RD STAT |  
MBOX1C0 | 115397 | 0 | 115397 | 6410.9444 || CAS\_COUNT\_WR STAT | MBOX1C1 | 21239 | 0 | 21239 |  
1179.9444 || CAS\_COUNT\_RD STAT | MBOX4C0 | 107364 | 0 | 107364 | 5964.6667 ||  
CAS\_COUNT\_WR STAT | MBOX4C1 | 26512 | 0 | 26512 | 1472.8889 || CAS\_COUNT\_RD STAT |  
MBOX5C0 | 120834 | 0 | 120834 | 6713 || CAS\_COUNT\_WR STAT | MBOX5C1 | 26747 | 0 | 26747 |  
1485.9444 || UNCORE\_CLOCK STAT | UBOXFIX | 542755642 | 0 | 542755642 | 3.015309e+07 ||  
PWR\_PKG\_ENERGY STAT | PWR0 | 13.9830 | 0 | 13.9830 | 0.7768 || PWR\_DRAM\_ENERGY STAT |



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PWR3 | 1.8250 | 0 | 1.8250 | 0.1014 | +-----+-----+-----+
+-----+-----+-----+ +-----+-----+-----+
-----+-----+-----+ | Metric | Sum | Min | Max | Avg | +-----+
-----+-----+-----+ +-----+-----+-----+ | Time: Runtime
(RDTSC) [s] STAT | 17.8848 | 0.9936 | 0.9936 | 0.9936 | | Time: Runtime unhalted [s] STAT | 0.0782 |
6.986219e-06 | 0.0080 | 0.0043 | | inverseClock STAT | 7.844297e-09 | 4.357943e-10 | 4.357943e-
10 | 4.357943e-10 | | Clock [MHz] STAT | 22009.7926 | 1196.0691 | 1637.7926 | 1222.7663 | | Uncore
Clock [MHz] STAT | 546.2578 | 0 | 546.2578 | 30.3477 | | Time: Core total stall STAT | 0.0571 |
6.053162e-06 | 0.0059 | 0.0032 | | Time: Core l2 stall STAT | 0.0334 | 2.865219e-06 | 0.0033 | 0.0019
| | Time: Core ldm stall STAT | 0.0537 | 2.652857e-06 | 0.0056 | 0.0030 | | CPI STAT | 66.3575 | 1.2381
| 30.7206 | 3.6865 | | Power PKG [W] STAT | 14.0733 | 0 | 14.0733 | 0.7818 | | Power DRAM [W] STAT |
1.8368 | 0 | 1.8368 | 0.1020 | | Energy PKG [J] STAT | 13.9830 | 0 | 13.9830 | 0.7768 | | Energy DRAM
[J] STAT | 1.8250 | 0 | 1.8250 | 0.1014 | | L2M Pending[%] STAT | 711.1608 | 10.8882 | 48.1544 |
39.5089 | | LD Pending[%] STAT | 1121.1086 | 28.3927 | 75.6539 | 62.2838 | | LLC Any bandwidth
[Bytes/s] STAT | 304332300 | 0 | 304332300 | 16907350 | | LLC data read bandwidth [Bytes/s] STAT
| 90395220 | 0 | 90395220 | 5.021957e+06 | | LLC read bandwidth [Bytes/s] STAT | 223420600 | 0 |
223420600 | 1.241226e+07 | | LLC write bandwidth [Bytes/s] STAT | 27593930 | 0 | 27593930 |
1.532996e+06 | | LLC Any volume [Bytes] STAT | 302381184 | 0 | 302381184 | 1.679895e+07 | | LLC
data read volume [Bytes] STAT | 89815680 | 0 | 89815680 | 4989760 | | LLC read volume [Bytes]
STAT | 221988224 | 0 | 221988224 | 1.233268e+07 | | LLC write volume [Bytes] STAT | 27417024 | 0 |
27417024 | 1523168 | | DRAM read bandwidth [Bytes/s] STAT | 30281110 | 0 | 30281110 |
1.682284e+06 | | DRAM write bandwidth [Bytes/s] STAT | 7067842 | 0 | 7067842 | 392657.8889 | |
DRAM read volume [Bytes] STAT | 30086976 | 0 | 30086976 | 1.671499e+06 | | DRAM write volume
[Bytes] STAT | 7022528 | 0 | 7022528 | 390140.4444 | | Time: MEM busy STAT | 0.0006 | 0 | 0.0006 |
3.333333e-05 | | Time: L3 busy STAT | 0.0006 | 0 | 0.0006 | 3.333333e-05 | | Ins [] STAT | 55891389 |
272 | 7502343 | 3.105077e+06 | | Cycle [] STAT | 93791522 | 8356 | 9632741 | 5.210640e+06 | |
Stall_l2m [] STAT | 40066161 | 3427 | 3988391 | 2.225898e+06 | | Stall_mem [] STAT | 64410123 |
3173 | 6736900 | 3.578340e+06 | | L3_Latency [] STAT | 8.4801 | 0.0007 | 0.8442 | 0.4711 | |
DRAM_latency [] STAT | 111.0832 | 0.0055 | 11.6186 | 6.1713 | +-----+
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+-----+ | Event | Counter | Sum | Min | Max | Avg | +-----+
+-----+-----+-----+-----+-----+ | INSTR_RETIRED_ANY STAT | FIXC0 |
43076772 | 1743 | 5737867 | 2393154 | | CPU_CLK_UNHALTED_CORE STAT | FIXC1 | 94613446 |
13020 | 11385668 | 5.256303e+06 | | CPU_CLK_UNHALTED_REF STAT | FIXC2 | 178842641 | 24955 |
21822400 | 9.935702e+06 | | CYCLE_ACTIVITY_STALLS_L2_PENDING STAT | PMC0 | 41478628 |
4211 | 4871467 | 2.304368e+06 | | CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT | PMC1 |
70652065 | 4375 | 7778690 | 3.925115e+06 | | CYCLE_ACTIVITY_STALLS_TOTAL STAT | PMC2 |
74397608 | 10977 | 8371765 | 4.133200e+06 | | LLC_LOOKUP_ANY STAT | CBOX0C0 | 246147 | 0 |
246147 | 13674.8333 | | LLC_LOOKUP_ANY STAT | CBOX1C0 | 204480 | 0 | 204480 | 11360 | |
LLC_LOOKUP_ANY STAT | CBOX2C0 | 228753 | 0 | 228753 | 12708.5000 | | LLC_LOOKUP_ANY STAT
| CBOX3C0 | 205346 | 0 | 205346 | 11408.1111 | | LLC_LOOKUP_ANY STAT | CBOX4C0 | 200751 | 0 |
200751 | 11152.8333 | | LLC_LOOKUP_ANY STAT | CBOX5C0 | 190093 | 0 | 190093 | 10560.7222 | |
LLC_LOOKUP_ANY STAT | CBOX6C0 | 260877 | 0 | 260877 | 14493.1667 | | LLC_LOOKUP_ANY STAT
| CBOX7C0 | 230964 | 0 | 230964 | 12831.3333 | | LLC_LOOKUP_ANY STAT | CBOX8C0 | 219590 | 0 |
219590 | 12199.4444 | | LLC_LOOKUP_ANY STAT | CBOX9C0 | 207938 | 0 | 207938 | 11552.1111 | |

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LLC\_LOOKUP\_ANY STAT | CBOX10C0 | 206983 | 0 | 206983 | 11499.0556 || LLC\_LOOKUP\_ANY  
STAT | CBOX11C0 | 196417 | 0 | 196417 | 10912.0556 || LLC\_LOOKUP\_ANY STAT | CBOX12C0 |  
198675 | 0 | 198675 | 11037.5000 || LLC\_LOOKUP\_ANY STAT | CBOX13C0 | 204747 | 0 | 204747 |  
11374.8333 || LLC\_LOOKUP\_ANY STAT | CBOX14C0 | 215021 | 0 | 215021 | 11945.6111 ||  
LLC\_LOOKUP\_ANY STAT | CBOX15C0 | 286019 | 0 | 286019 | 15889.9444 || LLC\_LOOKUP\_ANY  
STAT | CBOX16C0 | 217092 | 0 | 217092 | 12060.6667 || LLC\_LOOKUP\_ANY STAT | CBOX17C0 |  
211637 | 0 | 211637 | 11757.6111 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX0C1 | 78490 | 0 | 78490 |  
4360.5556 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX1C1 | 57711 | 0 | 57711 | 3206.1667 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX2C1 | 66072 | 0 | 66072 | 3670.6667 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX3C1 | 54262 | 0 | 54262 | 3014.5556 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX4C1 | 57955 | 0 | 57955 | 3219.7222 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX5C1 | 55122 | 0 | 55122 | 3062.3333 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX6C1 | 83138 | 0 | 83138 | 4618.7778 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX7C1 | 68078 | 0 | 68078 | 3782.1111 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX8C1 | 62408 | 0 | 62408 | 3467.1111 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX9C1 | 61941 | 0 | 61941 | 3441.1667 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX10C1 | 60039 | 0 | 60039 | 3335.5000 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX11C1 | 52373 | 0 | 52373 | 2909.6111 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX12C1 | 56520 | 0 | 56520 | 3140 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX13C1 | 57814 | 0 | 57814 | 3211.8889 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX14C1 | 60531 | 0 | 60531 | 3362.8333 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 97981 | 0 | 97981 | 5443.3889 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 56272 | 0 | 56272 | 3126.2222 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 55527 | 0 | 55527 | 3084.8333 || LLC\_LOOKUP\_READ  
STAT | CBOX0C2 | 179184 | 0 | 179184 | 9954.6667 || LLC\_LOOKUP\_READ STAT | CBOX1C2 | 143597  
| 0 | 143597 | 7977.6111 || LLC\_LOOKUP\_READ STAT | CBOX2C2 | 161585 | 0 | 161585 | 8976.9444 ||  
LLC\_LOOKUP\_READ STAT | CBOX3C2 | 142557 | 0 | 142557 | 7919.8333 || LLC\_LOOKUP\_READ STAT  
| CBOX4C2 | 143313 | 0 | 143313 | 7961.8333 || LLC\_LOOKUP\_READ STAT | CBOX5C2 | 136555 | 0 |  
136555 | 7586.3889 || LLC\_LOOKUP\_READ STAT | CBOX6C2 | 188299 | 0 | 188299 | 10461.0556 ||  
LLC\_LOOKUP\_READ STAT | CBOX7C2 | 167516 | 0 | 167516 | 9306.4444 || LLC\_LOOKUP\_READ STAT  
| CBOX8C2 | 152624 | 0 | 152624 | 8479.1111 || LLC\_LOOKUP\_READ STAT | CBOX9C2 | 150028 | 0 |  
150028 | 8334.8889 || LLC\_LOOKUP\_READ STAT | CBOX10C2 | 146273 | 0 | 146273 | 8126.2778 ||  
LLC\_LOOKUP\_READ STAT | CBOX11C2 | 139764 | 0 | 139764 | 7764.6667 || LLC\_LOOKUP\_READ  
STAT | CBOX12C2 | 140581 | 0 | 140581 | 7810.0556 || LLC\_LOOKUP\_READ STAT | CBOX13C2 |  
143550 | 0 | 143550 | 7975 || LLC\_LOOKUP\_READ STAT | CBOX14C2 | 154446 | 0 | 154446 |  
8580.3333 || LLC\_LOOKUP\_READ STAT | CBOX15C2 | 212237 | 0 | 212237 | 11790.9444 ||  
LLC\_LOOKUP\_READ STAT | CBOX16C2 | 144880 | 0 | 144880 | 8048.8889 || LLC\_LOOKUP\_READ  
STAT | CBOX17C2 | 145636 | 0 | 145636 | 8090.8889 || LLC\_LOOKUP\_WRITE STAT | CBOX0C3 |  
21787 | 0 | 21787 | 1210.3889 || LLC\_LOOKUP\_WRITE STAT | CBOX1C3 | 15086 | 0 | 15086 | 838.1111 |  
| LLC\_LOOKUP\_WRITE STAT | CBOX2C3 | 24123 | 0 | 24123 | 1340.1667 || LLC\_LOOKUP\_WRITE STAT  
| CBOX3C3 | 16762 | 0 | 16762 | 931.2222 || LLC\_LOOKUP\_WRITE STAT | CBOX4C3 | 15877 | 0 |  
15877 | 882.0556 || LLC\_LOOKUP\_WRITE STAT | CBOX5C3 | 14590 | 0 | 14590 | 810.5556 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX6C3 | 21405 | 0 | 21405 | 1189.1667 || LLC\_LOOKUP\_WRITE STAT |  
CBOX7C3 | 18502 | 0 | 18502 | 1027.8889 || LLC\_LOOKUP\_WRITE STAT | CBOX8C3 | 17231 | 0 | 17231  
| 957.2778 || LLC\_LOOKUP\_WRITE STAT | CBOX9C3 | 18470 | 0 | 18470 | 1026.1111 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX10C3 | 18325 | 0 | 18325 | 1018.0556 || LLC\_LOOKUP\_WRITE STAT

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| CBOX11C3 | 15264 | 0 | 15264 | 848 | | LLC_LOOKUP_WRITE STAT | CBOX12C3 | 16091 | 0 | 16091 |
893.9444 | | LLC_LOOKUP_WRITE STAT | CBOX13C3 | 15338 | 0 | 15338 | 852.1111 | |
LLC_LOOKUP_WRITE STAT | CBOX14C3 | 16081 | 0 | 16081 | 893.3889 | | LLC_LOOKUP_WRITE STAT |
CBOX15C3 | 25069 | 0 | 25069 | 1392.7222 | | LLC_LOOKUP_WRITE STAT | CBOX16C3 | 26859 | 0 |
26859 | 1492.1667 | | LLC_LOOKUP_WRITE STAT | CBOX17C3 | 25411 | 0 | 25411 | 1411.7222 | |
CAS_COUNT_RD STAT | MBOX0C0 | 133144 | 0 | 133144 | 7396.8889 | | CAS_COUNT_WR STAT |
MBOX0C1 | 38335 | 0 | 38335 | 2129.7222 | | CAS_COUNT_RD STAT | MBOX1C0 | 112443 | 0 | 112443
| 6246.8333 | | CAS_COUNT_WR STAT | MBOX1C1 | 20142 | 0 | 20142 | 1119 | | CAS_COUNT_RD STAT
| MBOX4C0 | 104434 | 0 | 104434 | 5801.8889 | | CAS_COUNT_WR STAT | MBOX4C1 | 25545 | 0 |
25545 | 1419.1667 | | CAS_COUNT_RD STAT | MBOX5C0 | 120247 | 0 | 120247 | 6680.3889 | |
CAS_COUNT_WR STAT | MBOX5C1 | 26763 | 0 | 26763 | 1486.8333 | | UNCORE_CLOCK STAT |
UBOXFIX | 525148648 | 0 | 525148648 | 2.917492e+07 | | PWR_PKG_ENERGY STAT | PWR0 |
13.6923 | 0 | 13.6923 | 0.7607 | | PWR_DRAM_ENERGY STAT | PWR3 | 1.7842 | 0 | 1.7842 | 0.0991 | +-
-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
Metric | Sum | Min | Max | Avg | +-----+-----+-----+-----+
-----+-----+ Time: Runtime (RDTSC) [s] STAT | 17.8884 | 0.9938 | 0.9938 | 0.9938 | | Time:
Runtime unhalted [s] STAT | 0.0779 | 1.087507e-05 | 0.0095 | 0.0043 | | inverseClock STAT | 7.844171e-09 |
4.357873e-10 | 4.357873e-10 | 4.357873e-10 | | Clock [MHz] STAT | 21740.0646 | 1197.2028 | 1354.1053 |
1207.7814 | | Uncore Clock [MHz] STAT | 528.4099 | 0 | 528.4099 | 29.3561 | | Time: Core total stall STAT |
0.0612 | 9.168639e-06 | 0.0070 | 0.0034 | | Time: Core l2 stall STAT | 0.0342 | 3.517276e-06 | 0.0039 |
0.0019 | | Time: Core ldm stall STAT | 0.0581 | 3.654259e-06 | 0.0063 | 0.0032 | | CPI STAT | 45.7314 |
0.9163 | 7.4699 | 2.5406 | | Power PKG [W] STAT | 13.7774 | 0 | 13.7774 | 0.7654 | | Power DRAM [W] STAT |
1.7953 | 0 | 1.7953 | 0.0997 | | Energy PKG [J] STAT | 13.6923 | 0 | 13.6923 | 0.7607 | | Energy DRAM [J] STAT
| 1.7842 | 0 | 1.7842 | 0.0991 | | L2M Pending[%] STAT | 743.4477 | 29.9070 | 52.4016 | 41.3026 | | LD
Pending[%] STAT | 1194.5547 | 33.6022 | 83.5322 | 66.3642 | | LLC Any bandwidth [Bytes/s] STAT |
253180500 | 0 | 253180500 | 1.406558e+07 | | LLC data read bandwidth [Bytes/s] STAT | 73556950 | 0 |
73556950 | 4.086497e+06 | | LLC read bandwidth [Bytes/s] STAT | 179837900 | 0 | 179837900 |
9.990994e+06 | | LLC write bandwidth [Bytes/s] STAT | 22041380 | 0 | 22041380 | 1.224521e+06 | | LLC
Any volume [Bytes] STAT | 251617920 | 0 | 251617920 | 1.397877e+07 | | LLC data read volume [Bytes]
STAT | 73102976 | 0 | 73102976 | 4.061276e+06 | | LLC read volume [Bytes] STAT | 178728000 | 0 |
178728000 | 9.929333e+06 | | LLC write volume [Bytes] STAT | 21905344 | 0 | 21905344 | 1.216964e+06 | |
DRAM read bandwidth [Bytes/s] STAT | 30284060 | 0 | 30284060 | 1.682448e+06 | | DRAM write
bandwidth [Bytes/s] STAT | 7134271 | 0 | 7134271 | 396348.3889 | | DRAM read volume [Bytes] STAT |
30097152 | 0 | 30097152 | 1672064 | | DRAM write volume [Bytes] STAT | 7090240 | 0 | 7090240 |
393902.2222 | | Time: MEM busy STAT | 0.0006 | 0 | 0.0006 | 3.333333e-05 | | Time: L3 busy STAT | 0.0005
| 0 | 0.0005 | 2.777778e-05 | | Ins [] STAT | 43076772 | 1743 | 5737867 | 2393154 | | Cycle [] STAT |
94613446 | 13020 | 11385668 | 5.256303e+06 | | Stall_l2m [] STAT | 41478628 | 4211 | 4871467 |
2.304368e+06 | | Stall_mem [] STAT | 70652065 | 4375 | 7778690 | 3.925115e+06 | | L3_Latency [] STAT |
10.5502 | 0.0011 | 1.2391 | 0.5861 | | DRAM_latency [] STAT | 121.5929 | 0.0075 | 13.3872 | 6.7552 | +-----
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- Stream benchmark Result of likwid under roof\_latency group using Stream benchmark Number of cores used: 18 Run Stream benchmark 5 times and calculate the average

- The first take

Event	Counter	Sum	Min	Max	Avg
INSTR_RETIRED_ANY STAT	FIXC0	6496000609	69495	6439635040	3.608889e+08
CPU_CLK_UNHALTED_CORE STAT	FIXC1	4268013526	243407	4178508179	2.371119e+08
CPU_CLK_UNHALTED_REF STAT	FIXC2	2882859675	425914	2714844836	1.601589e+08
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT	PMC0	432080244	121218	398391881	24004458
CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT	PMC1	803593429	121305	745276231	4.464408e+07
CYCLE_ACTIVITY_STALLS_TOTAL STAT	PMC2	1149196816	188600	1086663284	6.384427e+07
LLC_LOOKUP_ANY STAT	CB0X0C0	14457771	0	14457771	803209.5000
LLC_LOOKUP_ANY STAT	CB0X1C0	14593861	0	14593861	810770.0556
LLC_LOOKUP_ANY STAT	CB0X2C0	14604915	0	14604915	811384.1667
LLC_LOOKUP_ANY STAT	CB0X3C0	14574571	0	14574571	809698.3889
LLC_LOOKUP_ANY STAT	CB0X4C0	14579725	0	14579725	809984.7222
LLC_LOOKUP_ANY STAT	CB0X5C0	14526817	0	14526817	807045.3889
LLC_LOOKUP_ANY STAT	CB0X6C0	14682670	0	14682670	815703.8889
LLC_LOOKUP_ANY STAT	CB0X7C0	14608053	0	14608053	811558.5000
LLC_LOOKUP_ANY STAT	CB0X8C0	14559403	0	14559403	808855.7222
LLC_LOOKUP_ANY STAT	CB0X9C0	14490579	0	14490579	805032.1667
LLC_LOOKUP_ANY STAT	CB0X10C0	14539181	0	14539181	807732.2778
LLC_LOOKUP_ANY STAT	CB0X11C0	14513367	0	14513367	806298.1667
LLC_LOOKUP_ANY STAT	CB0X12C0	14577499	0	14577499	809861.0556
LLC_LOOKUP_ANY STAT	CB0X13C0	14522360	0	14522360	806797.7778
LLC_LOOKUP_ANY STAT	CB0X14C0	14648739	0	14648739	813818.8333
LLC_LOOKUP_ANY STAT	CB0X15C0	14691752	0	14691752	816208.4444
LLC_LOOKUP_ANY STAT	CB0X16C0	12292896	0	12292896	682938.6667
LLC_LOOKUP_ANY STAT	CB0X17C0	12245080	0	12245080	680282.2222
LLC_LOOKUP_DATA_READ STAT	CB0X0C1	4678885	0	4678885	259938.0556
LLC_LOOKUP_DATA_READ STAT	CB0X1C1	4710120	0	4710120	261673.3333
LLC_LOOKUP_DATA_READ STAT	CB0X2C1	4707907	0	4707907	261550.3889
LLC_LOOKUP_DATA_READ STAT	CB0X3C1	4685337	0	4685337	260296.5000
LLC_LOOKUP_DATA_READ STAT	CB0X4C1	4707989	0	4707989	261554.9444
LLC_LOOKUP_DATA_READ STAT	CB0X5C1	4689421	0	4689421	260523.3889
LLC_LOOKUP_DATA_READ STAT	CB0X6C1	4726629	0	4726629	262590.5000
LLC_LOOKUP_DATA_READ STAT	CB0X7C1	4706002	0	4706002	261444.5556
LLC_LOOKUP_DATA_READ STAT	CB0X8C1	4695318	0	4695318	260851
LLC_LOOKUP_DATA_READ STAT	CB0X9C1	4677437	0	4677437	259857.6111
LLC_LOOKUP_DATA_READ STAT	CB0X10C1	4681286	0	4681286	260071.4444
LLC_LOOKUP_DATA_READ STAT	CB0X11C1	4685677	0	4685677	260315.3889
LLC_LOOKUP_DATA_READ STAT	CB0X12C1	4702675	0	4702675	261259.7222
LLC_LOOKUP_DATA_READ STAT	CB0X13C1	4693692	0	4693692	260760.6667
LLC_LOOKUP_DATA_READ STAT	CB0X14C1	4700187	0	4700187	261121.5000
LLC_LOOKUP_DATA_READ STAT	CB0X15C1	4783309	0	4783309	265739.3889
LLC_LOOKUP_DATA_READ STAT	CB0X16C1	3904206	0	3904206	216900.3333
LLC_LOOKUP_DATA_READ STAT	CB0X17C1	3899439	0	3899439	216635.5000

LLC_LOOKUP_READ	STAT	CBOX0C2	7943850	0	7943850	441325
LLC_LOOKUP_READ	STAT	CBOX1C2	7984866	0	7984866	443603.6667
LLC_LOOKUP_READ	STAT	CBOX2C2	7987857	0	7987857	443769.8333
LLC_LOOKUP_READ	STAT	CBOX3C2	7953486	0	7953486	441860.3333
LLC_LOOKUP_READ	STAT	CBOX4C2	7975029	0	7975029	443057.1667
LLC_LOOKUP_READ	STAT	CBOX5C2	7945973	0	7945973	441442.9444
LLC_LOOKUP_READ	STAT	CBOX6C2	8022289	0	8022289	445682.7222
LLC_LOOKUP_READ	STAT	CBOX7C2	7995613	0	7995613	444200.7222
LLC_LOOKUP_READ	STAT	CBOX8C2	7962164	0	7962164	442342.4444
LLC_LOOKUP_READ	STAT	CBOX9C2	7934209	0	7934209	440789.3889
LLC_LOOKUP_READ	STAT	CBOX10C2	7937776	0	7937776	440987.5556
LLC_LOOKUP_READ	STAT	CBOX11C2	7955604	0	7955604	441978
LLC_LOOKUP_READ	STAT	CBOX12C2	7968825	0	7968825	442712.5000
LLC_LOOKUP_READ	STAT	CBOX13C2	7953645	0	7953645	441869.1667
LLC_LOOKUP_READ	STAT	CBOX14C2	7983543	0	7983543	443530.1667
LLC_LOOKUP_READ	STAT	CBOX15C2	8108901	0	8108901	450494.5000
LLC_LOOKUP_READ	STAT	CBOX16C2	6641457	0	6641457	368969.8333
LLC_LOOKUP_READ	STAT	CBOX17C2	6633085	0	6633085	368504.7222
LLC_LOOKUP_WRITE	STAT	CBOX0C3	3207232	0	3207232	178179.5556
LLC_LOOKUP_WRITE	STAT	CBOX1C3	3284626	0	3284626	182479.2222
LLC_LOOKUP_WRITE	STAT	CBOX2C3	3293255	0	3293255	182958.6111
LLC_LOOKUP_WRITE	STAT	CBOX3C3	3281050	0	3281050	182280.5556
LLC_LOOKUP_WRITE	STAT	CBOX4C3	3287189	0	3287189	182621.6111
LLC_LOOKUP_WRITE	STAT	CBOX5C3	3278845	0	3278845	182158.0556
LLC_LOOKUP_WRITE	STAT	CBOX6C3	3284673	0	3284673	182481.8333
LLC_LOOKUP_WRITE	STAT	CBOX7C3	3284619	0	3284619	182478.8333
LLC_LOOKUP_WRITE	STAT	CBOX8C3	3277734	0	3277734	182096.3333
LLC_LOOKUP_WRITE	STAT	CBOX9C3	3271778	0	3271778	181765.4444
LLC_LOOKUP_WRITE	STAT	CBOX10C3	3276787	0	3276787	182043.7222
LLC_LOOKUP_WRITE	STAT	CBOX11C3	3280252	0	3280252	182236.2222
LLC_LOOKUP_WRITE	STAT	CBOX12C3	3284199	0	3284199	182455.5000
LLC_LOOKUP_WRITE	STAT	CBOX13C3	3276320	0	3276320	182017.7778
LLC_LOOKUP_WRITE	STAT	CBOX14C3	3282424	0	3282424	182356.8889
LLC_LOOKUP_WRITE	STAT	CBOX15C3	3305300	0	3305300	183627.7778
LLC_LOOKUP_WRITE	STAT	CBOX16C3	2869950	0	2869950	159441.6667
LLC_LOOKUP_WRITE	STAT	CBOX17C3	2865269	0	2865269	159181.6111
CAS_COUNT_RD	STAT	MBOX0C0	33073862	0	33073862	1.837437e+06
CAS_COUNT_WR	STAT	MBOX0C1	13899752	0	13899752	772208.4444
CAS_COUNT_RD	STAT	MBOX1C0	33095117	0	33095117	1.838618e+06
CAS_COUNT_WR	STAT	MBOX1C1	13923502	0	13923502	773527.8889
CAS_COUNT_RD	STAT	MBOX4C0	33045373	0	33045373	1.835854e+06
CAS_COUNT_WR	STAT	MBOX4C1	13891006	0	13891006	771722.5556
CAS_COUNT_RD	STAT	MBOX5C0	33100654	0	33100654	1.838925e+06
CAS_COUNT_WR	STAT	MBOX5C1	13932640	0	13932640	774035.5556
UNCORE_CLOCK	STAT	UBOXFIX	3821149552	0	3821149552	2.122861e+08
PWR_PKG_ENERGY	STAT	PWR0	64.1208	0	64.1208	3.5623
PWR_DRAM_ENERGY	STAT	PWR3	11.7880	0	11.7880	0.6549

Metric	Sum	Min	Max	Avg
Time: Runtime (RDTSC) [s] STAT	23.8644	1.3258	1.3258	1.3258
Time: Runtime unhaltd [s] STAT	1.2563	0.0002	1.1831	0.0698
inverseClock STAT	7.844170e-09	4.357872e-10	4.357872e-10	4.357872e-10
Clock [MHz] STAT	24579.9529	1197.2253	3531.8458	1365.5529
Uncore Clock [MHz] STAT	2882.2429	0	2882.2429	160.1246
Time: Core total stall STAT	0.3588	0.0001	0.3077	0.0199
Time: Core l2 stall STAT	0.1403	0.0001	0.1128	0.0078
Time: Core ldm stall STAT	0.2583	0.0001	0.2110	0.0143
CPI STAT	32.7173	0.6489	4.1853	1.8176
Power PKG [W] STAT	48.3655	0	48.3655	2.6870
Power DRAM [W] STAT	8.8915	0	8.8915	0.4940
Energy PKG [J] STAT	64.1208	0	64.1208	3.5623
Energy DRAM [J] STAT	11.7880	0	11.7880	0.6549
L2M Pending[%] STAT	625.5108	9.5343	49.8005	34.7506
LD Pending[%] STAT	1049.7773	17.8359	78.0207	58.3210
LLC Any bandwidth [Bytes/s] STAT	12440750000	0	12440750000	6.911528e+08
LLC data read bandwidth [Bytes/s] STAT	4008486000	0	4008486000	2.226937e+08
LLC read bandwidth [Bytes/s] STAT	6801286000	0	6801286000	3.778492e+08
LLC write bandwidth [Bytes/s] STAT	2809157000	0	2809157000	1.560643e+08
LLC Any volume [Bytes] STAT	16493391296	0	16493391296	9.162995e+08
LLC data read volume [Bytes] STAT	5314273024	0	5314273024	2.952374e+08
LLC read volume [Bytes] STAT	9016843008	0	9016843008	5.009357e+08
LLC write volume [Bytes] STAT	3724256128	0	3724256128	2.069031e+08
DRAM read bandwidth [Bytes/s] STAT	6387422000	0	6387422000	3.548568e+08
DRAM write bandwidth [Bytes/s] STAT	2686318000	0	2686318000	1.492399e+08
DRAM read volume [Bytes] STAT	8468160384	0	8468160384	4.704534e+08
DRAM write volume [Bytes] STAT	3561401600	0	3561401600	1.978556e+08
Time: MEM busy STAT	0.2022	0	0.2022	0.0112
Time: L3 busy STAT	0.0329	0	0.0329	0.0018
Ins [] STAT	6496000609	69495	6439635040	3.608889e+08
Cycle [] STAT	4268013526	243407	4178508179	2.371119e+08
Stall_l2M [] STAT	432080244	121218	398391881	24004458
Stall_mem [] STAT	803593429	121305	745276231	4.464408e+07
L3_Latency [] STAT	1.6767	0.0005	1.5459	0.0931
DRAM_Latency [] STAT	4.2752	0.0006	3.9650	0.2375

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Event	Counter	Sum	Min	Max	Avg
INSTR_RETIRED_ANY STAT	FIXC0	6472346257	0	6439710123	3.595748e+08
CPU_CLK_UNHALTED_CORE STAT	FIXC1	4247172449	0	4184668988	2.359540e+08
CPU_CLK_UNHALTED_REF STAT	FIXC2	2830755084	0	2713118157	1.572642e+08
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT	PMC0	420905975	0	393994744	2.338367e+07
CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT	PMC1	688925634	0	646569229	3.827365e+07
CYCLE_ACTIVITY_STALLS_TOTAL STAT	PMC2	1136515795	0	1090273405	6.313977e+07
LLC_LOOKUP_ANY STAT	CBOX0C0	14419586	0	14419586	801088.1111
LLC_LOOKUP_ANY STAT	CBOX1C0	14549856	0	14549856	808325.3333
LLC_LOOKUP_ANY STAT	CBOX2C0	14539332	0	14539332	807740.6667
LLC_LOOKUP_ANY STAT	CBOX3C0	14505651	0	14505651	805869.5000
LLC_LOOKUP_ANY STAT	CBOX4C0	14506209	0	14506209	805900.5000
LLC_LOOKUP_ANY STAT	CBOX5C0	14512435	0	14512435	806246.3889
LLC_LOOKUP_ANY STAT	CBOX6C0	14599518	0	14599518	811084.3333
LLC_LOOKUP_ANY STAT	CBOX7C0	14533482	0	14533482	807415.6667
LLC_LOOKUP_ANY STAT	CBOX8C0	14509834	0	14509834	806101.8889
LLC_LOOKUP_ANY STAT	CBOX9C0	14450257	0	14450257	802792.0556
LLC_LOOKUP_ANY STAT	CBOX10C0	14547327	0	14547327	808184.8333
LLC_LOOKUP_ANY STAT	CBOX11C0	14443141	0	14443141	802396.7222
LLC_LOOKUP_ANY STAT	CBOX12C0	14553642	0	14553642	808535.6667
LLC_LOOKUP_ANY STAT	CBOX13C0	14443577	0	14443577	802420.9444
LLC_LOOKUP_ANY STAT	CBOX14C0	14569166	0	14569166	809398.1111
LLC_LOOKUP_ANY STAT	CBOX15C0	14484738	0	14484738	804707.6667
LLC_LOOKUP_ANY STAT	CBOX16C0	12231152	0	12231152	679508.4444
LLC_LOOKUP_ANY STAT	CBOX17C0	12281288	0	12281288	682293.7778
LLC_LOOKUP_DATA_READ STAT	CBOX0C1	4662596	0	4662596	259033.1111
LLC_LOOKUP_DATA_READ STAT	CBOX1C1	4680306	0	4680306	260017
LLC_LOOKUP_DATA_READ STAT	CBOX2C1	4694033	0	4694033	260779.6111
LLC_LOOKUP_DATA_READ STAT	CBOX3C1	4666235	0	4666235	259235.2778
LLC_LOOKUP_DATA_READ STAT	CBOX4C1	4686140	0	4686140	260341.1111
LLC_LOOKUP_DATA_READ STAT	CBOX5C1	4688196	0	4688196	260455.3333
LLC_LOOKUP_DATA_READ STAT	CBOX6C1	4703508	0	4703508	261306
LLC_LOOKUP_DATA_READ STAT	CBOX7C1	4688190	0	4688190	260455
LLC_LOOKUP_DATA_READ STAT	CBOX8C1	4685233	0	4685233	260290.7222
LLC_LOOKUP_DATA_READ STAT	CBOX9C1	4670704	0	4670704	259483.5556
LLC_LOOKUP_DATA_READ STAT	CBOX10C1	4699194	0	4699194	261066.3333
LLC_LOOKUP_DATA_READ STAT	CBOX11C1	4664841	0	4664841	259157.8333
LLC_LOOKUP_DATA_READ STAT	CBOX12C1	4703807	0	4703807	261322.6111
LLC_LOOKUP_DATA_READ STAT	CBOX13C1	4677006	0	4677006	259833.6667
LLC_LOOKUP_DATA_READ STAT	CBOX14C1	4674062	0	4674062	259670.1111
LLC_LOOKUP_DATA_READ STAT	CBOX15C1	4689310	0	4689310	260517.2222
LLC_LOOKUP_DATA_READ STAT	CBOX16C1	3887936	0	3887936	215996.4444
LLC_LOOKUP_DATA_READ STAT	CBOX17C1	3928557	0	3928557	218253.1667



LLC_LOOKUP_READ STAT	CBOX0C2	7918346	0	7918346	439908.1111
LLC_LOOKUP_READ STAT	CBOX1C2	7942594	0	7942594	441255.2222
LLC_LOOKUP_READ STAT	CBOX2C2	7966809	0	7966809	442600.5000
LLC_LOOKUP_READ STAT	CBOX3C2	7926598	0	7926598	440366.5556
LLC_LOOKUP_READ STAT	CBOX4C2	7947138	0	7947138	441507.6667
LLC_LOOKUP_READ STAT	CBOX5C2	7949026	0	7949026	441612.5556
LLC_LOOKUP_READ STAT	CBOX6C2	7983483	0	7983483	443526.8333
LLC_LOOKUP_READ STAT	CBOX7C2	7966899	0	7966899	442605.5000
LLC_LOOKUP_READ STAT	CBOX8C2	7951653	0	7951653	441758.5000
LLC_LOOKUP_READ STAT	CBOX9C2	7927784	0	7927784	440432.4444
LLC_LOOKUP_READ STAT	CBOX10C2	7962885	0	7962885	442382.5000
LLC_LOOKUP_READ STAT	CBOX11C2	7922493	0	7922493	440138.5000
LLC_LOOKUP_READ STAT	CBOX12C2	7973892	0	7973892	442994
LLC_LOOKUP_READ STAT	CBOX13C2	7933865	0	7933865	440770.2778
LLC_LOOKUP_READ STAT	CBOX14C2	7942410	0	7942410	441245
LLC_LOOKUP_READ STAT	CBOX15C2	7965113	0	7965113	442506.2778
LLC_LOOKUP_READ STAT	CBOX16C2	6612737	0	6612737	367374.2778
LLC_LOOKUP_READ STAT	CBOX17C2	6674462	0	6674462	370803.4444
LLC_LOOKUP_WRITE STAT	CBOX0C3	3210480	0	3210480	178360
LLC_LOOKUP_WRITE STAT	CBOX1C3	3279952	0	3279952	182219.5556
LLC_LOOKUP_WRITE STAT	CBOX2C3	3294214	0	3294214	183011.8889
LLC_LOOKUP_WRITE STAT	CBOX3C3	3279527	0	3279527	182195.9444
LLC_LOOKUP_WRITE STAT	CBOX4C3	3284742	0	3284742	182485.6667
LLC_LOOKUP_WRITE STAT	CBOX5C3	3287663	0	3287663	182647.9444
LLC_LOOKUP_WRITE STAT	CBOX6C3	3288364	0	3288364	182686.8889
LLC_LOOKUP_WRITE STAT	CBOX7C3	3288535	0	3288535	182696.3889
LLC_LOOKUP_WRITE STAT	CBOX8C3	3280734	0	3280734	182263
LLC_LOOKUP_WRITE STAT	CBOX9C3	3277746	0	3277746	182097
LLC_LOOKUP_WRITE STAT	CBOX10C3	3293927	0	3293927	182995.9444
LLC_LOOKUP_WRITE STAT	CBOX11C3	3279356	0	3279356	182186.4444
LLC_LOOKUP_WRITE STAT	CBOX12C3	3294448	0	3294448	183024.8889
LLC_LOOKUP_WRITE STAT	CBOX13C3	3280166	0	3280166	182231.4444
LLC_LOOKUP_WRITE STAT	CBOX14C3	3282446	0	3282446	182358.1111
LLC_LOOKUP_WRITE STAT	CBOX15C3	3277639	0	3277639	182091.0556
LLC_LOOKUP_WRITE STAT	CBOX16C3	2867305	0	2867305	159294.7222
LLC_LOOKUP_WRITE STAT	CBOX17C3	2886067	0	2886067	160337.0556
CAS_COUNT_RD STAT	MBOX0C0	33045209	0	33045209	1.835845e+06
CAS_COUNT_WR STAT	MBOX0C1	13909000	0	13909000	772722.2222
CAS_COUNT_RD STAT	MBOX1C0	33076549	0	33076549	1.837586e+06
CAS_COUNT_WR STAT	MBOX1C1	13937639	0	13937639	774313.2778
CAS_COUNT_RD STAT	MBOX4C0	33030853	0	33030853	1.835047e+06
CAS_COUNT_WR STAT	MBOX4C1	13903753	0	13903753	772430.7222
CAS_COUNT_RD STAT	MBOX5C0	33080372	0	33080372	1.837798e+06
CAS_COUNT_WR STAT	MBOX5C1	13944178	0	13944178	774676.5556
UNCORE_CLOCK STAT	UBOXFIX	3840208140	0	3840208140	2.133449e+08
PWR_PKG_ENERGY STAT	PWR0	63.7859	0	63.7859	3.5437
PWR_DRAM_ENERGY STAT	PWR3	11.8838	0	11.8838	0.6602

Metric	Sum	Min	Max	Avg
Time: Runtime [RDTSC] [s] STAT	23.8266	1.3237	1.3237	1.3237
Time: Runtime unhaltd [s] STAT	1.2337	0	1.1824	0.0685
inverseClock STAT	7.844299e-09	4.357944e-10	4.357944e-10	4.357944e-10
Clock [MHz] STAT	23309.6126	1197.2013	3539.2459	1294.9785
Uncore Clock [MHz] STAT	2901.1444	0	2901.1444	161.1747
Time: Core total stall STAT	0.3460	3.603996e-05	0.3081	0.0192
Time: Core l2 stall STAT	0.1335	2.362601e-05	0.1113	0.0074
Time: Core ldm stall STAT	0.2174	2.241995e-05	0.1827	0.0121
CPI STAT	43.7693	0.6498	7.8228	2.4316
Power PKG [W] STAT	48.1881	0	48.1881	2.6771
Power DRAM [W] STAT	8.9778	0	8.9778	0.4988
Energy PKG [J] STAT	63.7859	0	63.7859	3.5437
Energy DRAM [J] STAT	11.8838	0	11.8838	0.6602
L2M Pending[%] STAT	721.7831	9.4152	69.8215	40.0991
LD Pending[%] STAT	982.0639	15.4509	78.1850	54.5591
LLC Any bandwidth [Bytes/s] STAT	12410430000	0	12410430000	6.894683e+08
LLC data read bandwidth [Bytes/s] STAT	4000938000	0	4000938000	2.222743e+08
LLC read bandwidth [Bytes/s] STAT	6791607000	0	6791607000	377311500
LLC write bandwidth [Bytes/s] STAT	2815568000	0	2815568000	1.564204e+08
LLC Any volume [Bytes] STAT	16427532224	0	16427532224	9.126407e+08
LLC data read volume [Bytes] STAT	5295990656	0	5295990656	2.942217e+08
LLC read volume [Bytes] STAT	8989963968	0	8989963968	4.994424e+08
LLC write volume [Bytes] STAT	3726931904	0	3726931904	2.070518e+08
DRAM read bandwidth [Bytes/s] STAT	6393436000	0	6393436000	3.551909e+08
DRAM write bandwidth [Bytes/s] STAT	2692821000	0	2692821000	1.496012e+08
DRAM read volume [Bytes] STAT	8462910912	0	8462910912	4.701617e+08
DRAM write volume [Bytes] STAT	3564452480	0	3564452480	1.980251e+08
Time: MEM busy STAT	0.2021	0	0.2021	0.0112
Time: L3 busy STAT	0.0329	0	0.0329	0.0018
Ins [] STAT	6472346257	0	6439710123	3.595748e+08
Cycle [] STAT	4247172449	0	4184668988	2.359540e+08
Stall_l2m [] STAT	420905975	0	393994744	2.338367e+07
Stall_mem [] STAT	688925634	0	646569229	3.827365e+07
L3_latency [] STAT	1.6399	0	1.5350	0.0911
DRAM_latency [] STAT	3.6660	0	3.4405	0.2037



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Event	Counter	Sum	Min	Max	Avg
INSTR_RETIRED_ANY STAT	FIXC0	6480883383	2793	6439628568	3.600491e+08
CPU_CLK_UNHALTED_CORE STAT	FIXC1	4235735503	32999	4182261652	2.353186e+08
CPU_CLK_UNHALTED_REF STAT	FIXC2	2845361556	63273	2742872958	158075642
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT	PMC0	407739408	17437	387411474	2.265219e+07
CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT	PMC1	671532972	13776	641920376	3.730739e+07
CYCLE_ACTIVITY_STALLS_TOTAL STAT	PMC2	1122398283	30561	1088513291	6.235546e+07
LLC_LOOKUP_ANY STAT	CBOX0C0	14380238	0	14380238	798902.1111
LLC_LOOKUP_ANY STAT	CBOX1C0	14558685	0	14558685	808815.8333
LLC_LOOKUP_ANY STAT	CBOX2C0	14500508	0	14500508	805583.7778
LLC_LOOKUP_ANY STAT	CBOX3C0	14487822	0	14487822	804879
LLC_LOOKUP_ANY STAT	CBOX4C0	14509163	0	14509163	806064.6111
LLC_LOOKUP_ANY STAT	CBOX5C0	14549387	0	14549387	808299.2778
LLC_LOOKUP_ANY STAT	CBOX6C0	14551888	0	14551888	808438.2222
LLC_LOOKUP_ANY STAT	CBOX7C0	14531521	0	14531521	807306.7222
LLC_LOOKUP_ANY STAT	CBOX8C0	14490415	0	14490415	805023.0556
LLC_LOOKUP_ANY STAT	CBOX9C0	14402542	0	14402542	800141.2222
LLC_LOOKUP_ANY STAT	CBOX10C0	14454883	0	14454883	803049.0556
LLC_LOOKUP_ANY STAT	CBOX11C0	14400946	0	14400946	800052.5556
LLC_LOOKUP_ANY STAT	CBOX12C0	14465528	0	14465528	803640.4444
LLC_LOOKUP_ANY STAT	CBOX13C0	14408776	0	14408776	800487.5556
LLC_LOOKUP_ANY STAT	CBOX14C0	14597736	0	14597736	810985.3333
LLC_LOOKUP_ANY STAT	CBOX15C0	14446605	0	14446605	802589.1667
LLC_LOOKUP_ANY STAT	CBOX16C0	12217100	0	12217100	678727.7778
LLC_LOOKUP_ANY STAT	CBOX17C0	12179791	0	12179791	676655.0556
LLC_LOOKUP_DATA_READ STAT	CBOX0C1	4662373	0	4662373	259020.7222
LLC_LOOKUP_DATA_READ STAT	CBOX1C1	4714807	0	4714807	261933.7222
LLC_LOOKUP_DATA_READ STAT	CBOX2C1	4691400	0	4691400	260633.3333
LLC_LOOKUP_DATA_READ STAT	CBOX3C1	4666806	0	4666806	259267
LLC_LOOKUP_DATA_READ STAT	CBOX4C1	4692237	0	4692237	260679.8333
LLC_LOOKUP_DATA_READ STAT	CBOX5C1	4718406	0	4718406	262133.6667
LLC_LOOKUP_DATA_READ STAT	CBOX6C1	4688044	0	4688044	260446.8889
LLC_LOOKUP_DATA_READ STAT	CBOX7C1	4678229	0	4678229	259901.6111
LLC_LOOKUP_DATA_READ STAT	CBOX8C1	4683099	0	4683099	260172.1667
LLC_LOOKUP_DATA_READ STAT	CBOX9C1	4661117	0	4661117	258950.9444
LLC_LOOKUP_DATA_READ STAT	CBOX10C1	4663355	0	4663355	259075.2778
LLC_LOOKUP_DATA_READ STAT	CBOX11C1	4660901	0	4660901	258938.9444
LLC_LOOKUP_DATA_READ STAT	CBOX12C1	4669099	0	4669099	259394.3889
LLC_LOOKUP_DATA_READ STAT	CBOX13C1	4666970	0	4666970	259276.1111
LLC_LOOKUP_DATA_READ STAT	CBOX14C1	4698063	0	4698063	261003.5000
LLC_LOOKUP_DATA_READ STAT	CBOX15C1	4681935	0	4681935	260107.5000
LLC_LOOKUP_DATA_READ STAT	CBOX16C1	3884638	0	3884638	215813.2222
LLC_LOOKUP_DATA_READ STAT	CBOX17C1	3875770	0	3875770	215320.5556

LLC_LOOKUP_READ	STAT	CBOX0C2	7921457	0	7921457	440080.9444
LLC_LOOKUP_READ	STAT	CBOX1C2	7998621	0	7998621	444367.8333
LLC_LOOKUP_READ	STAT	CBOX2C2	7964638	0	7964638	442479.8889
LLC_LOOKUP_READ	STAT	CBOX3C2	7933708	0	7933708	440761.5556
LLC_LOOKUP_READ	STAT	CBOX4C2	7961910	0	7961910	442328.3333
LLC_LOOKUP_READ	STAT	CBOX5C2	7998149	0	7998149	444341.6111
LLC_LOOKUP_READ	STAT	CBOX6C2	7964286	0	7964286	442460.3333
LLC_LOOKUP_READ	STAT	CBOX7C2	7954253	0	7954253	441902.9444
LLC_LOOKUP_READ	STAT	CBOX8C2	7948694	0	7948694	441594.1111
LLC_LOOKUP_READ	STAT	CBOX9C2	7915073	0	7915073	439726.2778
LLC_LOOKUP_READ	STAT	CBOX10C2	7917387	0	7917387	439854.8333
LLC_LOOKUP_READ	STAT	CBOX11C2	7919950	0	7919950	439997.2222
LLC_LOOKUP_READ	STAT	CBOX12C2	7925867	0	7925867	440325.9444
LLC_LOOKUP_READ	STAT	CBOX13C2	7922441	0	7922441	440135.6111
LLC_LOOKUP_READ	STAT	CBOX14C2	7981942	0	7981942	443441.2222
LLC_LOOKUP_READ	STAT	CBOX15C2	7957537	0	7957537	442085.3889
LLC_LOOKUP_READ	STAT	CBOX16C2	6615030	0	6615030	367501.6667
LLC_LOOKUP_READ	STAT	CBOX17C2	6602230	0	6602230	366790.5556
LLC_LOOKUP_WRITE	STAT	CBOX0C3	3214151	0	3214151	178563.9444
LLC_LOOKUP_WRITE	STAT	CBOX1C3	3302162	0	3302162	183453.4444
LLC_LOOKUP_WRITE	STAT	CBOX2C3	3297818	0	3297818	183212.1111
LLC_LOOKUP_WRITE	STAT	CBOX3C3	3285812	0	3285812	182545.1111
LLC_LOOKUP_WRITE	STAT	CBOX4C3	3293063	0	3293063	182947.9444
LLC_LOOKUP_WRITE	STAT	CBOX5C3	3307805	0	3307805	183766.9444
LLC_LOOKUP_WRITE	STAT	CBOX6C3	3288767	0	3288767	182709.2778
LLC_LOOKUP_WRITE	STAT	CBOX7C3	3287747	0	3287747	182652.6111
LLC_LOOKUP_WRITE	STAT	CBOX8C3	3283532	0	3283532	182418.4444
LLC_LOOKUP_WRITE	STAT	CBOX9C3	3277340	0	3277340	182074.4444
LLC_LOOKUP_WRITE	STAT	CBOX10C3	3280874	0	3280874	182270.7778
LLC_LOOKUP_WRITE	STAT	CBOX11C3	3281482	0	3281482	182304.5556
LLC_LOOKUP_WRITE	STAT	CBOX12C3	3281183	0	3281183	182287.9444
LLC_LOOKUP_WRITE	STAT	CBOX13C3	3277814	0	3277814	182100.7778
LLC_LOOKUP_WRITE	STAT	CBOX14C3	3300111	0	3300111	183339.5000
LLC_LOOKUP_WRITE	STAT	CBOX15C3	3281581	0	3281581	182310.0556
LLC_LOOKUP_WRITE	STAT	CBOX16C3	2871782	0	2871782	159543.4444
LLC_LOOKUP_WRITE	STAT	CBOX17C3	2865800	0	2865800	159211.1111
CAS_COUNT_RD	STAT	MBOX0C0	33117206	0	33117206	1.839845e+06
CAS_COUNT_WR	STAT	MBOX0C1	13946973	0	13946973	774831.8333
CAS_COUNT_RD	STAT	MBOX1C0	33143824	0	33143824	1.841324e+06
CAS_COUNT_WR	STAT	MBOX1C1	13973039	0	13973039	776279.9444
CAS_COUNT_RD	STAT	MBOX4C0	33095361	0	33095361	1.838631e+06
CAS_COUNT_WR	STAT	MBOX4C1	13939113	0	13939113	774395.1667
CAS_COUNT_RD	STAT	MBOX5C0	33153484	0	33153484	1.841860e+06
CAS_COUNT_WR	STAT	MBOX5C1	13983616	0	13983616	776867.5556
UNCORE_CLOCK	STAT	UBOXFIX	3844527500	0	3844527500	2.135849e+08
PWR_PKG_ENERGY	STAT	PWR0	63.4553	0	63.4553	3.5253
PWR_DRAM_ENERGY	STAT	PWR3	11.5924	0	11.5924	0.6440

Metric	Sum	Min	Max	Avg
Time: Runtime (RDTSC) [s] STAT	24.3612	1.3534	1.3534	1.3534
Time: Runtime unhaltd [s] STAT	1.2401	2.757415e-05	1.1953	0.0689
inverseClock STAT	7.844337e-09	4.357965e-10	4.357965e-10	4.357965e-10
Clock [MHz] STAT	23851.5132	1196.7368	3498.8217	1325.0841
Uncore Clock [MHz] STAT	2840.5742	0	2840.5742	157.8097
Time: Core total stall STAT	0.3392	2.553694e-05	0.3111	0.0188
Time: Core l2 stall STAT	0.1275	1.457045e-05	0.1107	0.0071
Time: Core ldm stall STAT	0.2083	1.151130e-05	0.1835	0.0116
CPI STAT	53.3068	0.5668	16.2041	2.9615
Power PKG [W] STAT	46.8847	0	46.8847	2.6047
Power DRAM [W] STAT	8.5652	0	8.5652	0.4758
Energy PKG [J] STAT	63.4553	0	63.4553	3.5253
Energy DRAM [J] STAT	11.5924	0	11.5924	0.6440
L2M Pending[%] STAT	689.4171	9.2632	52.8410	38.3010
LD Pending[%] STAT	922.0930	15.3486	71.9581	51.2274
LLC Any bandwidth [Bytes/s] STAT	12111820000	0	12111820000	6.728789e+08
LLC data read bandwidth [Bytes/s] STAT	3908626000	0	3908626000	2.171459e+08
LLC read bandwidth [Bytes/s] STAT	6639266000	0	6639266000	3.688481e+08
LLC write bandwidth [Bytes/s] STAT	2755839000	0	2755839000	1.531022e+08
LLC Any volume [Bytes] STAT	16392546176	0	16392546176	9.106970e+08
LLC data read volume [Bytes] STAT	5290063936	0	5290063936	2.938924e+08
LLC read volume [Bytes] STAT	8985803072	0	8985803072	4.992113e+08
LLC write volume [Bytes] STAT	3729844736	0	3729844736	2.072136e+08
DRAM read bandwidth [Bytes/s] STAT	6266014000	0	6266014000	3.481119e+08
DRAM write bandwidth [Bytes/s] STAT	2640644000	0	2640644000	1.467024e+08
DRAM read volume [Bytes] STAT	8480632000	0	8480632000	4.711462e+08
DRAM write volume [Bytes] STAT	3573935424	0	3573935424	198551968
Time: MEM busy STAT	0.2026	0	0.2026	0.0113
Time: L3 busy STAT	0.0329	0	0.0329	0.0018
Ins [] STAT	6480883383	2793	6439628568	3.600491e+08
Cycle [] STAT	4235735503	32999	4182261652	2.353186e+08
Stall_l2m [] STAT	407739408	17437	387411474	2.265219e+07
Stall_mem [] STAT	671532972	13776	641920376	3.730739e+07
L3_Latency [] STAT	1.5917	0.0001	1.5125	0.0884
DRAM_latency [] STAT	3.5654	0.0001	3.4081	0.1981

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Event	Counter	Sum	Min	Max	Avg
INSTR_RETIRED_ANY STAT	FIXC0	6486447601	12246	6439720066	3.603582e+08
CPU_CLK_UNHALTED_CORE STAT	FIXC1	4244846509	106761	4156424607	2.358248e+08
CPU_CLK_UNHALTED_REF STAT	FIXC2	2890045059	204562	2722091147	1.605581e+08
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT	PMC0	421967408	51169	385805404	2.344263e+07
CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT	PMC1	689388701	46133	627000275	3.829937e+07
CYCLE_ACTIVITY_STALLS_TOTAL STAT	PMC2	1127219491	90311	1061080221	6.262331e+07
LLC_LOOKUP_ANY STAT	CB0X0C0	14436749	0	14436749	802041.6111
LLC_LOOKUP_ANY STAT	CB0X1C0	14570746	0	14570746	809485.8889
LLC_LOOKUP_ANY STAT	CB0X2C0	14567861	0	14567861	809325.6111
LLC_LOOKUP_ANY STAT	CB0X3C0	14579740	0	14579740	809985.5556
LLC_LOOKUP_ANY STAT	CB0X4C0	14536227	0	14536227	807568.1667
LLC_LOOKUP_ANY STAT	CB0X5C0	14516073	0	14516073	806448.5000
LLC_LOOKUP_ANY STAT	CB0X6C0	14627532	0	14627532	812640.6667
LLC_LOOKUP_ANY STAT	CB0X7C0	14646259	0	14646259	813681.0556
LLC_LOOKUP_ANY STAT	CB0X8C0	14533975	0	14533975	807443.0556
LLC_LOOKUP_ANY STAT	CB0X9C0	14514242	0	14514242	806346.7778
LLC_LOOKUP_ANY STAT	CB0X10C0	14640972	0	14640972	813387.3333
LLC_LOOKUP_ANY STAT	CB0X11C0	14481308	0	14481308	804517.1111
LLC_LOOKUP_ANY STAT	CB0X12C0	14517835	0	14517835	806546.3889
LLC_LOOKUP_ANY STAT	CB0X13C0	14477014	0	14477014	804278.5556
LLC_LOOKUP_ANY STAT	CB0X14C0	14647527	0	14647527	813751.5000
LLC_LOOKUP_ANY STAT	CB0X15C0	14591301	0	14591301	810627.8333
LLC_LOOKUP_ANY STAT	CB0X16C0	12240795	0	12240795	680044.1667
LLC_LOOKUP_ANY STAT	CB0X17C0	12199259	0	12199259	677736.6111
LLC_LOOKUP_DATA_READ STAT	CB0X0C1	4668086	0	4668086	259338.1111
LLC_LOOKUP_DATA_READ STAT	CB0X1C1	4696709	0	4696709	260928.2778
LLC_LOOKUP_DATA_READ STAT	CB0X2C1	4697677	0	4697677	260982.0556
LLC_LOOKUP_DATA_READ STAT	CB0X3C1	4677454	0	4677454	259858.5556
LLC_LOOKUP_DATA_READ STAT	CB0X4C1	4684627	0	4684627	260257.0556
LLC_LOOKUP_DATA_READ STAT	CB0X5C1	4678207	0	4678207	259900.3889
LLC_LOOKUP_DATA_READ STAT	CB0X6C1	4701893	0	4701893	261216.2778
LLC_LOOKUP_DATA_READ STAT	CB0X7C1	4729322	0	4729322	262740.1111
LLC_LOOKUP_DATA_READ STAT	CB0X8C1	4685250	0	4685250	260291.6667
LLC_LOOKUP_DATA_READ STAT	CB0X9C1	4682947	0	4682947	260163.7222
LLC_LOOKUP_DATA_READ STAT	CB0X10C1	4711718	0	4711718	261762.1111
LLC_LOOKUP_DATA_READ STAT	CB0X11C1	4666463	0	4666463	259247.9444
LLC_LOOKUP_DATA_READ STAT	CB0X12C1	4676057	0	4676057	259780.9444
LLC_LOOKUP_DATA_READ STAT	CB0X13C1	4677467	0	4677467	259859.2778
LLC_LOOKUP_DATA_READ STAT	CB0X14C1	4704236	0	4704236	261346.4444
LLC_LOOKUP_DATA_READ STAT	CB0X15C1	4725788	0	4725788	262543.7778
LLC_LOOKUP_DATA_READ STAT	CB0X16C1	3881581	0	3881581	215643.3889
LLC_LOOKUP_DATA_READ STAT	CB0X17C1	3871370	0	3871370	215076.1111

LLC_LOOKUP_READ	STAT	CBOX0C2	7933103	0	7933103	440727.9444
LLC_LOOKUP_READ	STAT	CBOX1C2	7971103	0	7971103	442839.0556
LLC_LOOKUP_READ	STAT	CBOX2C2	7975393	0	7975393	443077.3889
LLC_LOOKUP_READ	STAT	CBOX3C2	7954432	0	7954432	441912.8889
LLC_LOOKUP_READ	STAT	CBOX4C2	7949579	0	7949579	441643.2778
LLC_LOOKUP_READ	STAT	CBOX5C2	7938444	0	7938444	441024.6667
LLC_LOOKUP_READ	STAT	CBOX6C2	7992003	0	7992003	444000.1667
LLC_LOOKUP_READ	STAT	CBOX7C2	8033532	0	8033532	446307.3333
LLC_LOOKUP_READ	STAT	CBOX8C2	7955776	0	7955776	441987.5556
LLC_LOOKUP_READ	STAT	CBOX9C2	7951381	0	7951381	441743.3889
LLC_LOOKUP_READ	STAT	CBOX10C2	7992182	0	7992182	444010.1111
LLC_LOOKUP_READ	STAT	CBOX11C2	7929546	0	7929546	440530.3333
LLC_LOOKUP_READ	STAT	CBOX12C2	7938885	0	7938885	441049.1667
LLC_LOOKUP_READ	STAT	CBOX13C2	7939747	0	7939747	441097.0556
LLC_LOOKUP_READ	STAT	CBOX14C2	7993817	0	7993817	444100.9444
LLC_LOOKUP_READ	STAT	CBOX15C2	8032316	0	8032316	446239.7778
LLC_LOOKUP_READ	STAT	CBOX16C2	6614364	0	6614364	367464.6667
LLC_LOOKUP_READ	STAT	CBOX17C2	6598864	0	6598864	366603.5556
LLC_LOOKUP_WRITE	STAT	CBOX0C3	3209125	0	3209125	178284.7222
LLC_LOOKUP_WRITE	STAT	CBOX1C3	3284625	0	3284625	182479.1667
LLC_LOOKUP_WRITE	STAT	CBOX2C3	3291730	0	3291730	182873.8889
LLC_LOOKUP_WRITE	STAT	CBOX3C3	3282291	0	3282291	182349.5000
LLC_LOOKUP_WRITE	STAT	CBOX4C3	3280861	0	3280861	182270.0556
LLC_LOOKUP_WRITE	STAT	CBOX5C3	3279675	0	3279675	182204.1667
LLC_LOOKUP_WRITE	STAT	CBOX6C3	3282195	0	3282195	182344.1667
LLC_LOOKUP_WRITE	STAT	CBOX7C3	3304067	0	3304067	183559.2778
LLC_LOOKUP_WRITE	STAT	CBOX8C3	3278026	0	3278026	182112.5556
LLC_LOOKUP_WRITE	STAT	CBOX9C3	3283482	0	3283482	182415.6667
LLC_LOOKUP_WRITE	STAT	CBOX10C3	3298415	0	3298415	183245.2778
LLC_LOOKUP_WRITE	STAT	CBOX11C3	3277606	0	3277606	182089.2222
LLC_LOOKUP_WRITE	STAT	CBOX12C3	3278108	0	3278108	182117.1111
LLC_LOOKUP_WRITE	STAT	CBOX13C3	3276510	0	3276510	182028.3333
LLC_LOOKUP_WRITE	STAT	CBOX14C3	3293387	0	3293387	182965.9444
LLC_LOOKUP_WRITE	STAT	CBOX15C3	3289110	0	3289110	182728.3333
LLC_LOOKUP_WRITE	STAT	CBOX16C3	2864514	0	2864514	159139.6667
LLC_LOOKUP_WRITE	STAT	CBOX17C3	2859332	0	2859332	158851.7778
CAS_COUNT_RD	STAT	MBOX0C0	33075534	0	33075534	1.837530e+06
CAS_COUNT_WR	STAT	MBOX0C1	13917524	0	13917524	773195.7778
CAS_COUNT_RD	STAT	MBOX1C0	33101899	0	33101899	1.838994e+06
CAS_COUNT_WR	STAT	MBOX1C1	13940711	0	13940711	774483.9444
CAS_COUNT_RD	STAT	MBOX4C0	33044263	0	33044263	1.835792e+06
CAS_COUNT_WR	STAT	MBOX4C1	13905548	0	13905548	772530.4444
CAS_COUNT_RD	STAT	MBOX5C0	33111914	0	33111914	1.839551e+06
CAS_COUNT_WR	STAT	MBOX5C1	13952342	0	13952342	775130.1111
UNCORE_CLOCK	STAT	UBOXFIX	3834737564	0	3834737564	2.130410e+08
PWR_PKG_ENERGY	STAT	PWR0	63.8023	0	63.8023	3.5446
PWR_DRAM_ENERGY	STAT	PWR3	11.9607	0	11.9607	0.6645

Metric	Sum	Min	Max	Avg
Time: Runtime (RDTSC) [s] STAT	24.1020	1.3390	1.3390	1.3390
Time: Runtime unhalsted [s] STAT	1.2593	0.0001	1.1863	0.0700
inverseClock STAT	7.844368e-09	4.357982e-10	4.357982e-10	4.357982e-10
Clock [MHz] STAT	23963.9540	1197.1338	3503.7397	1331.3308
Uncore Clock [MHz] STAT	2863.8001	0	2863.8001	159.1000
Time: Core total stall STAT	0.3575	0.0001	0.3028	0.0199
Time: Core l2 stall STAT	0.1399	4.272722e-05	0.1101	0.0078
Time: Core ldm stall STAT	0.2305	3.852205e-05	0.1790	0.0128
CPI STAT	40.5702	0.6454	8.7180	2.2539
Power PKG [W] STAT	47.6479	0	47.6479	2.6471
Power DRAM [W] STAT	8.9323	0	8.9323	0.4962
Energy PKG [J] STAT	63.8023	0	63.8023	3.5446
Energy DRAM [J] STAT	11.9607	0	11.9607	0.6645
L2M Pending[%] STAT	722.7989	9.2821	53.4199	40.1555
LD Pending[%] STAT	1078.8561	15.0851	76.0679	59.9364
LLC Any bandwidth [Bytes/s] STAT	12299000000	0	12299000000	6.832778e+08
LLC data read bandwidth [Bytes/s] STAT	3958273000	0	3958273000	2.199041e+08
LLC read bandwidth [Bytes/s] STAT	6724563000	0	6724563000	3.735868e+08
LLC write bandwidth [Bytes/s] STAT	2782322000	0	2782322000	1.545734e+08
LLC Any volume [Bytes] STAT	16468826560	0	16468826560	9.149348e+08
LLC data read volume [Bytes] STAT	5300278528	0	5300278528	2.944599e+08
LLC read volume [Bytes] STAT	9004445888	0	9004445888	5.002470e+08
LLC write volume [Bytes] STAT	3725635776	0	3725635776	2.069798e+08
DRAM read bandwidth [Bytes/s] STAT	6324951000	0	6324951000	3.513862e+08
DRAM write bandwidth [Bytes/s] STAT	2662980000	0	2662980000	1.479433e+08
DRAM read volume [Bytes] STAT	8469351040	0	8469351040	4.705195e+08
DRAM write volume [Bytes] STAT	3565832000	0	3565832000	1.981018e+08
Time: MEM busy STAT	0.2023	0	0.2023	0.0112
Time: L3 busy STAT	0.0329	0	0.0329	0.0018
Ins [] STAT	6486447601	12246	6439720066	3.603582e+08
Cycle [] STAT	4244846509	106761	4156424607	2.358248e+08
Stall_l2m [] STAT	421967408	51169	385805404	2.344263e+07
Stall_mem [] STAT	689388701	46133	627000275	3.829937e+07
L3_Latency [] STAT	1.6399	0.0002	1.4993	0.0911
DRAM_latency [] STAT	3.6660	0.0002	3.3342	0.2037



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Event	Counter	Sum	Min	Max	Avg
INSTR_RETIRED_ANY STAT	FIXC0	6460623667	0	6439682028	3.589235e+08
CPU_CLK_UNHALTED_CORE STAT	FIXC1	4214768007	0	4172338749	2.341538e+08
CPU_CLK_UNHALTED_REF STAT	FIXC2	2793112341	0	2715149356	1.551729e+08
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT	PMC0	401928679	0	383606355	2.232937e+07
CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT	PMC1	664969926	0	635940572	3.694277e+07
CYCLE_ACTIVITY_STALLS_TOTAL STAT	PMC2	1105466629	0	1073873184	6.141481e+07
LLC_LOOKUP_ANY STAT	CBOX0C0	14372615	0	14372615	798478.6111
LLC_LOOKUP_ANY STAT	CBOX1C0	14503595	0	14503595	805755.2778
LLC_LOOKUP_ANY STAT	CBOX2C0	14480628	0	14480628	804479.3333
LLC_LOOKUP_ANY STAT	CBOX3C0	14479399	0	14479399	804411.0556
LLC_LOOKUP_ANY STAT	CBOX4C0	14494768	0	14494768	805264.8889
LLC_LOOKUP_ANY STAT	CBOX5C0	14473761	0	14473761	804097.8333
LLC_LOOKUP_ANY STAT	CBOX6C0	14580098	0	14580098	810005.4444
LLC_LOOKUP_ANY STAT	CBOX7C0	14533743	0	14533743	807430.1667
LLC_LOOKUP_ANY STAT	CBOX8C0	14482263	0	14482263	804570.1667
LLC_LOOKUP_ANY STAT	CBOX9C0	14588000	0	14588000	810444.4444
LLC_LOOKUP_ANY STAT	CBOX10C0	14460402	0	14460402	803355.6667
LLC_LOOKUP_ANY STAT	CBOX11C0	14412560	0	14412560	800697.7778
LLC_LOOKUP_ANY STAT	CBOX12C0	14459204	0	14459204	803289.1111
LLC_LOOKUP_ANY STAT	CBOX13C0	14417413	0	14417413	800967.3889
LLC_LOOKUP_ANY STAT	CBOX14C0	14522387	0	14522387	806799.2778
LLC_LOOKUP_ANY STAT	CBOX15C0	14476515	0	14476515	804250.8333
LLC_LOOKUP_ANY STAT	CBOX16C0	12144933	0	12144933	674718.5000
LLC_LOOKUP_ANY STAT	CBOX17C0	12128190	0	12128190	673788.3333
LLC_LOOKUP_DATA_READ STAT	CBOX0C1	4669527	0	4669527	259418.1667
LLC_LOOKUP_DATA_READ STAT	CBOX1C1	4688062	0	4688062	260447.8889
LLC_LOOKUP_DATA_READ STAT	CBOX2C1	4686216	0	4686216	260345.3333
LLC_LOOKUP_DATA_READ STAT	CBOX3C1	4665946	0	4665946	259219.2222
LLC_LOOKUP_DATA_READ STAT	CBOX4C1	4691122	0	4691122	260617.8889
LLC_LOOKUP_DATA_READ STAT	CBOX5C1	4682002	0	4682002	260111.2222
LLC_LOOKUP_DATA_READ STAT	CBOX6C1	4712009	0	4712009	261778.2778
LLC_LOOKUP_DATA_READ STAT	CBOX7C1	4684756	0	4684756	260264.2222
LLC_LOOKUP_DATA_READ STAT	CBOX8C1	4685041	0	4685041	260280.0556
LLC_LOOKUP_DATA_READ STAT	CBOX9C1	4731308	0	4731308	262850.4444
LLC_LOOKUP_DATA_READ STAT	CBOX10C1	4670548	0	4670548	259474.8889
LLC_LOOKUP_DATA_READ STAT	CBOX11C1	4663712	0	4663712	259095.1111
LLC_LOOKUP_DATA_READ STAT	CBOX12C1	4674144	0	4674144	259674.6667
LLC_LOOKUP_DATA_READ STAT	CBOX13C1	4678916	0	4678916	259939.7778
LLC_LOOKUP_DATA_READ STAT	CBOX14C1	4674641	0	4674641	259702.2778
LLC_LOOKUP_DATA_READ STAT	CBOX15C1	4700455	0	4700455	261136.3889
LLC_LOOKUP_DATA_READ STAT	CBOX16C1	3870614	0	3870614	215034.1111
LLC_LOOKUP_DATA_READ STAT	CBOX17C1	3868804	0	3868804	214933.5556

LLC_LOOKUP_READ STAT	CBOX0C2	7917293	0	7917293	439849.6111
LLC_LOOKUP_READ STAT	CBOX1C2	7941744	0	7941744	441208
LLC_LOOKUP_READ STAT	CBOX2C2	7942039	0	7942039	441224.3889
LLC_LOOKUP_READ STAT	CBOX3C2	7914076	0	7914076	439670.8889
LLC_LOOKUP_READ STAT	CBOX4C2	7943634	0	7943634	441313
LLC_LOOKUP_READ STAT	CBOX5C2	7928370	0	7928370	440465
LLC_LOOKUP_READ STAT	CBOX6C2	7988144	0	7988144	443785.7778
LLC_LOOKUP_READ STAT	CBOX7C2	7951823	0	7951823	441767.9444
LLC_LOOKUP_READ STAT	CBOX8C2	7939595	0	7939595	441088.6111
LLC_LOOKUP_READ STAT	CBOX9C2	8006963	0	8006963	444831.2778
LLC_LOOKUP_READ STAT	CBOX10C2	7911640	0	7911640	439535.5556
LLC_LOOKUP_READ STAT	CBOX11C2	7910741	0	7910741	439485.6111
LLC_LOOKUP_READ STAT	CBOX12C2	7918884	0	7918884	439938
LLC_LOOKUP_READ STAT	CBOX13C2	7927764	0	7927764	440431.3333
LLC_LOOKUP_READ STAT	CBOX14C2	7933262	0	7933262	440736.7778
LLC_LOOKUP_READ STAT	CBOX15C2	7974506	0	7974506	443028.1111
LLC_LOOKUP_READ STAT	CBOX16C2	6578311	0	6578311	365461.7222
LLC_LOOKUP_READ STAT	CBOX17C2	6576624	0	6576624	365368
LLC_LOOKUP_WRITE STAT	CBOX0C3	3211902	0	3211902	178439
LLC_LOOKUP_WRITE STAT	CBOX1C3	3283357	0	3283357	182408.7222
LLC_LOOKUP_WRITE STAT	CBOX2C3	3288786	0	3288786	182710.3333
LLC_LOOKUP_WRITE STAT	CBOX3C3	3277978	0	3277978	182109.8889
LLC_LOOKUP_WRITE STAT	CBOX4C3	3287790	0	3287790	182655
LLC_LOOKUP_WRITE STAT	CBOX5C3	3282457	0	3282457	182358.7222
LLC_LOOKUP_WRITE STAT	CBOX6C3	3286682	0	3286682	182593.4444
LLC_LOOKUP_WRITE STAT	CBOX7C3	3281369	0	3281369	182298.2778
LLC_LOOKUP_WRITE STAT	CBOX8C3	3281667	0	3281667	182314.8333
LLC_LOOKUP_WRITE STAT	CBOX9C3	3308323	0	3308323	183795.7222
LLC_LOOKUP_WRITE STAT	CBOX10C3	3279091	0	3279091	182171.7222
LLC_LOOKUP_WRITE STAT	CBOX11C3	3277398	0	3277398	182077.6667
LLC_LOOKUP_WRITE STAT	CBOX12C3	3279984	0	3279984	182221.3333
LLC_LOOKUP_WRITE STAT	CBOX13C3	3280296	0	3280296	182238.6667
LLC_LOOKUP_WRITE STAT	CBOX14C3	3280356	0	3280356	182242
LLC_LOOKUP_WRITE STAT	CBOX15C3	3276755	0	3276755	182041.9444
LLC_LOOKUP_WRITE STAT	CBOX16C3	2857527	0	2857527	158751.5000
LLC_LOOKUP_WRITE STAT	CBOX17C3	2855715	0	2855715	158650.8333
CAS_COUNT_RD STAT	MBOX0C0	33071887	0	33071887	1.837327e+06
CAS_COUNT_WR STAT	MBOX0C1	13918526	0	13918526	773251.4444
CAS_COUNT_RD STAT	MBOX1C0	33098676	0	33098676	1.838815e+06
CAS_COUNT_WR STAT	MBOX1C1	13943344	0	13943344	774630.2222
CAS_COUNT_RD STAT	MBOX4C0	33040588	0	33040588	1.835588e+06
CAS_COUNT_WR STAT	MBOX4C1	13905812	0	13905812	772545.1111
CAS_COUNT_RD STAT	MBOX5C0	33099003	0	33099003	1.838834e+06
CAS_COUNT_WR STAT	MBOX5C1	13948957	0	13948957	774942.0556
UNCORE_CLOCK STAT	UBOXFIX	3832965370	0	3832965370	2.129425e+08
PWR_PKG_ENERGY STAT	PWR0	63.9039	0	63.9039	3.5502
PWR_DRAM_ENERGY STAT	PWR3	12.0224	0	12.0224	0.6679

Metric	Sum	Min	Max	Avg
Time: Runtime (RDTSC) [s] STAT	23.9094	1.3283	1.3283	1.3283
Time: Runtime unhaltd [s] STAT	1.2172	0	1.1833	0.0676
inverseClock STAT	7.844486e-09	4.358048e-10	4.358048e-10	4.358048e-10
Clock [MHz] STAT	23421.8415	1196.7770	3526.0938	1301.2134
Uncore Clock [MHz] STAT	2885.5788	0	2885.5788	160.3099
Time: Core total stall STAT	0.3298	1.463013e-05	0.3046	0.0183
Time: Core l2 stall STAT	0.1231	9.591594e-06	0.1088	0.0068
Time: Core ldm stall STAT	0.2034	1.171313e-05	0.1804	0.0113
CPI STAT	66.1768	0.6479	16.5311	3.6765
Power PKG [W] STAT	48.1089	0	48.1089	2.6727
Power DRAM [W] STAT	9.0508	0	9.0508	0.5028
Energy PKG [J] STAT	63.9039	0	63.9039	3.5502
Energy DRAM [J] STAT	12.0224	0	12.0224	0.6679
L2M Pending[%] STAT	715.2844	9.1940	65.5649	39.7380
LD Pending[%] STAT	858.9171	15.2418	80.6345	47.7176
LLC Any bandwidth [Bytes/s] STAT	12334900000	0	12334900000	6.852722e+08
LLC data read bandwidth [Bytes/s] STAT	3984484000	0	3984484000	2.213602e+08
LLC read bandwidth [Bytes/s] STAT	6755271000	0	6755271000	3.752928e+08
LLC write bandwidth [Bytes/s] STAT	2803061000	0	2803061000	1.557256e+08
LLC Any volume [Bytes] STAT	16384670336	0	16384670336	9.102595e+08
LLC data read volume [Bytes] STAT	5292660672	0	5292660672	294036704
LLC read volume [Bytes] STAT	8973146432	0	8973146432	4.985081e+08
LLC write volume [Bytes] STAT	3723355712	0	3723355712	2.068531e+08
DRAM read bandwidth [Bytes/s] STAT	6374868000	0	6374868000	3.541593e+08
DRAM write bandwidth [Bytes/s] STAT	2684497000	0	2684497000	1.491387e+08
DRAM read volume [Bytes] STAT	8467849856	0	8467849856	4.704361e+08
DRAM write volume [Bytes] STAT	3565864896	0	3565864896	1.981036e+08
Time: MEM busy STAT	0.2022	0	0.2022	0.0112
Time: L3 busy STAT	0.0328	0	0.0328	0.0018
Ins [] STAT	6460623667	0	6439682028	3.589235e+08
Cycle [] STAT	4214768007	0	4172338749	2.341538e+08
Stall_l2m [] STAT	401928679	0	383606355	2.232937e+07
Stall_mem [] STAT	664969926	0	635940572	3.694277e+07
L3_Latency [] STAT	1.5699	0	1.4984	0.0872
DRAM_latency [] STAT	3.5366	0	3.3822	0.1965

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-----+-----+ | Event | Counter | Sum | Min | Max | Avg | +-----+-----+
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
INSTR_RETIRED_ANY STAT | FIXC0 | 624467775756 | 760691739 | 604579066113 | 3.469265e+10 |
| CPU_CLK_UNHALTED_CORE STAT | FIXC1 | 1393831656583 | 1113610332 | 1365036163506 |
7.743509e+10 || CPU_CLK_UNHALTED_REF STAT | FIXC2 | 928759747455 | 1850098909 |
878618947952 | 5.159776e+10 || CYCLE_ACTIVITY_STALLS_L2_PENDING STAT | PMC0 |
1019013023011 | 451645048 | 1007632347549 | 5.661183e+10 ||
CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT | PMC1 | 1024703667242 | 624578058 |
1007911662549 | 5.692798e+10 || CYCLE_ACTIVITY_STALLS_TOTAL STAT | PMC2 |
1030004532808 | 728807048 | 1011063993140 | 5.722247e+10 || LLC_LOOKUP_ANY STAT |
CBOX0C0 | 4489063243 | 0 | 4489063243 | 2.493924e+08 || LLC_LOOKUP_ANY STAT | CBOX1C0 |
4517365280 | 0 | 4517365280 | 2.509647e+08 || LLC_LOOKUP_ANY STAT | CBOX2C0 |
4594346196 | 0 | 4594346196 | 2.552415e+08 || LLC_LOOKUP_ANY STAT | CBOX3C0 |
4602469001 | 0 | 4602469001 | 2.556927e+08 || LLC_LOOKUP_ANY STAT | CBOX4C0 |
4499614789 | 0 | 4499614789 | 2.499786e+08 || LLC_LOOKUP_ANY STAT | CBOX5C0 |
4473644206 | 0 | 4473644206 | 2.485358e+08 || LLC_LOOKUP_ANY STAT | CBOX6C0 |
4629715559 | 0 | 4629715559 | 2.572064e+08 || LLC_LOOKUP_ANY STAT | CBOX7C0 | 4605117182
| 0 | 4605117182 | 2.558398e+08 || LLC_LOOKUP_ANY STAT | CBOX8C0 | 4479597969 | 0 |
4479597969 | 2.488666e+08 || LLC_LOOKUP_ANY STAT | CBOX9C0 | 4455988315 | 0 |
4455988315 | 2.475549e+08 || LLC_LOOKUP_ANY STAT | CBOX10C0 | 4587182546 | 0 |
4587182546 | 2.548435e+08 || LLC_LOOKUP_ANY STAT | CBOX11C0 | 4596402665 | 0 |
4596402665 | 2.553557e+08 || LLC_LOOKUP_ANY STAT | CBOX12C0 | 4460953735 | 0 |
4460953735 | 2.478308e+08 || LLC_LOOKUP_ANY STAT | CBOX13C0 | 4491137933 | 0 |
4491137933 | 2.495077e+08 || LLC_LOOKUP_ANY STAT | CBOX14C0 | 4589960664 | 0 |
4589960664 | 2.549978e+08 || LLC_LOOKUP_ANY STAT | CBOX15C0 | 4621840813 | 0 |
4621840813 | 2.567689e+08 || LLC_LOOKUP_ANY STAT | CBOX16C0 | 3968702141 | 0 |
3968702141 | 2.204835e+08 || LLC_LOOKUP_ANY STAT | CBOX17C0 | 3987896610 | 0 |
3987896610 | 2.215498e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX0C1 | 4387197476 | 0 |
4387197476 | 2.437332e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX1C1 | 4409806345 | 0 |
4409806345 | 2.449892e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX2C1 | 4482987747 | 0 |
4482987747 | 2.490549e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX3C1 | 4497032637 | 0 |
4497032637 | 2.498351e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX4C1 | 4396674601 | 0 |
4396674601 | 2.442597e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX5C1 | 4370538878 | 0 |
4370538878 | 2.428077e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX6C1 | 4513835810 | 0 |
4513835810 | 2.507687e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX7C1 | 4494302589 | 0 |
4494302589 | 2.496835e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX8C1 | 4374493779 | 0 |
4374493779 | 2.430274e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX9C1 | 4349371826 | 0 |
4349371826 | 2.416318e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX10C1 | 4484763976 | 0 |
4484763976 | 2.491536e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX11C1 | 4489038381 | 0 |
4489038381 | 2.493910e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX12C1 | 4355040850 | 0 |
4355040850 | 2.419467e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX13C1 | 4383854665 | 0 |
4383854665 | 2.435475e+08 || LLC_LOOKUP_DATA_READ STAT | CBOX14C1 | 4478854404 | 0 |
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4478854404 | 2.488252e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 4506339577 | 0 |  
4506339577 | 2.503522e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 3870465477 | 0 |  
3870465477 | 2.150259e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 3889391013 | 0 |  
3889391013 | 2.160773e+08 || LLC\_LOOKUP\_READ STAT | CBOX0C2 | 4426759972 | 0 |  
4426759972 | 2.459311e+08 || LLC\_LOOKUP\_READ STAT | CBOX1C2 | 4450787994 | 0 |  
4450787994 | 2.472660e+08 || LLC\_LOOKUP\_READ STAT | CBOX2C2 | 4525390580 | 0 |  
4525390580 | 2.514106e+08 || LLC\_LOOKUP\_READ STAT | CBOX3C2 | 4536860493 | 0 |  
4536860493 | 2.520478e+08 || LLC\_LOOKUP\_READ STAT | CBOX4C2 | 4434540743 | 0 |  
4434540743 | 2.463634e+08 || LLC\_LOOKUP\_READ STAT | CBOX5C2 | 4409047390 | 0 |  
4409047390 | 2.449471e+08 || LLC\_LOOKUP\_READ STAT | CBOX6C2 | 4561145351 | 0 |  
4561145351 | 2.533970e+08 || LLC\_LOOKUP\_READ STAT | CBOX7C2 | 4539109583 | 0 |  
4539109583 | 2.521728e+08 || LLC\_LOOKUP\_READ STAT | CBOX8C2 | 4414209072 | 0 |  
4414209072 | 2.452338e+08 || LLC\_LOOKUP\_READ STAT | CBOX9C2 | 4390330914 | 0 |  
4390330914 | 243907273 || LLC\_LOOKUP\_READ STAT | CBOX10C2 | 4522353822 | 0 |  
4522353822 | 251241879 || LLC\_LOOKUP\_READ STAT | CBOX11C2 | 4530627437 | 0 | 4530627437 |  
2.517015e+08 || LLC\_LOOKUP\_READ STAT | CBOX12C2 | 4394776052 | 0 | 4394776052 |  
2.441542e+08 || LLC\_LOOKUP\_READ STAT | CBOX13C2 | 4424039156 | 0 | 4424039156 |  
2.457800e+08 || LLC\_LOOKUP\_READ STAT | CBOX14C2 | 4523698574 | 0 | 4523698574 |  
2.513166e+08 || LLC\_LOOKUP\_READ STAT | CBOX15C2 | 4555710528 | 0 | 4555710528 |  
2.530950e+08 || LLC\_LOOKUP\_READ STAT | CBOX16C2 | 3908998408 | 0 | 3908998408 |  
2.171666e+08 || LLC\_LOOKUP\_READ STAT | CBOX17C2 | 3928746398 | 0 | 3928746398 |  
2.182637e+08 || LLC\_LOOKUP\_WRITE STAT | CBOX0C3 | 18532798 | 0 | 18532798 | 1.029600e+06 |  
| LLC\_LOOKUP\_WRITE STAT | CBOX1C3 | 22422741 | 0 | 22422741 | 1.245708e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX2C3 | 23958118 | 0 | 23958118 | 1.331007e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX3C3 | 21206385 | 0 | 21206385 | 1.178132e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX4C3 | 21231845 | 0 | 21231845 | 1.179547e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX5C3 | 22015599 | 0 | 22015599 | 1.223089e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX6C3 | 22238905 | 0 | 22238905 | 1.235495e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX7C3 | 21809964 | 0 | 21809964 | 1.211665e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX8C3 | 21096129 | 0 | 21096129 | 1.172007e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX9C3 | 23597493 | 0 | 23597493 | 1.310972e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX10C3 | 20930834 | 0 | 20930834 | 1.162824e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX11C3 | 22078347 | 0 | 22078347 | 1.226575e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX12C3 | 22273439 | 0 | 22273439 | 1.237413e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX13C3 | 22982254 | 0 | 22982254 | 1.276792e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX14C3 | 22537860 | 0 | 22537860 | 1.252103e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX15C3 | 21598078 | 0 | 21598078 | 1.199893e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX16C3 | 21522010 | 0 | 21522010 | 1.195667e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX17C3 | 22036205 | 0 | 22036205 | 1.224234e+06 ||  
CAS\_COUNT\_RD STAT | MBOX0C0 | 3560060829 | 0 | 3560060829 | 1.977812e+08 ||  
CAS\_COUNT\_WR STAT | MBOX0C1 | 66497793 | 0 | 66497793 | 3.694322e+06 || CAS\_COUNT\_RD  
STAT | MBOX1C0 | 3568695737 | 0 | 3568695737 | 1.982609e+08 || CAS\_COUNT\_WR STAT |  
MBOX1C1 | 74937377 | 0 | 74937377 | 4.163188e+06 || CAS\_COUNT\_RD STAT | MBOX4C0 |  
3555327820 | 0 | 3555327820 | 1.975182e+08 || CAS\_COUNT\_WR STAT | MBOX4C1 | 64625215 | 0 |  
64625215 | 3.590290e+06 || CAS\_COUNT\_RD STAT | MBOX5C0 | 3569811570 | 0 | 3569811570 |  
198322865 || CAS\_COUNT\_WR STAT | MBOX5C1 | 76368358 | 0 | 76368358 | 4.242687e+06 ||

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UNCORE_CLOCK STAT | UBOXFIX | 1168588575250 | 0 | 1168588575250 | 6.492159e+10 ||
PWR_PKG_ENERGY STAT | PWR0 | 18576.2888 | 0 | 18576.2888 | 1032.0160 ||
PWR_DRAM_ENERGY STAT | PWR3 | 2545.4294 | 0 | 2545.4294 | 141.4127 | +-----+
+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+ |
Metric | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+
+-----+-----+-----+ | Time: Runtime (RDTSC) [s] STAT | 7027.4502 | 390.4139 | 390.4139 |
390.4139 || Time: Runtime unhalted [s] STAT | 404.7430 | 0.8063 | 382.8921 | 22.4857 || inverseClock
STAT | 7.844195e-09 | 4.357886e-10 | 4.357886e-10 | 4.357886e-10 || Clock [MHz] STAT | 25988.7408 |
1273.8580 | 3565.0672 | 1443.8189 || Uncore Clock [MHz] STAT | 2993.2045 | 0 | 2993.2045 | 166.2891 ||
Time: Core total stall STAT | 297.9742 | 0.5277 | 283.6031 | 16.5541 || Time: Core l2 stall STAT | 291.2718 |
0.3313 | 282.6405 | 16.1818 || Time: Core ldm stall STAT | 295.4629 | 0.4522 | 282.7188 | 16.4146 || CPI
STAT | 26.9972 | 1.1914 | 2.2578 | 1.4998 || Power PKG [W] STAT | 47.5810 | 0 | 47.5810 | 2.6434 || Power
DRAM [W] STAT | 6.5198 | 0 | 6.5198 | 0.3622 || Energy PKG [J] STAT | 18576.2888 | 0 | 18576.2888 |
1032.0160 || Energy DRAM [J] STAT | 2545.4294 | 0 | 2545.4294 | 141.4127 || L2M Pending[%] STAT |
745.4624 | 35.1673 | 73.8173 | 41.4146 || LD Pending[%] STAT | 1063.5710 | 55.1153 | 73.8377 | 59.0873 ||
LLC Any bandwidth [Bytes/s] STAT | 13221010000 | 0 | 13221010000 | 7.345006e+08 || LLC data read
bandwidth [Bytes/s] STAT | 12906750000 | 0 | 12906750000 | 7.170417e+08 || LLC read bandwidth
[Bytes/s] STAT | 13028580000 | 0 | 13028580000 | 723810000 || LLC write bandwidth [Bytes/s] STAT |
64599180 | 0 | 64599180 | 3.588843e+06 || LLC Any volume [Bytes] STAT | 5161663926208 | 0 |
5161663926208 | 2.867591e+11 || LLC data read volume [Bytes] STAT | 5038975361984 | 0 |
5038975361984 | 2.799431e+11 || LLC read volume [Bytes] STAT | 5086536477888 | 0 | 5086536477888
| 2.825854e+11 || LLC write volume [Bytes] STAT | 25220416256 | 0 | 25220416256 | 1.401134e+09 ||
DRAM read bandwidth [Bytes/s] STAT | 2336621000 | 0 | 2336621000 | 1.298123e+08 || DRAM write
bandwidth [Bytes/s] STAT | 46298150 | 0 | 46298150 | 2.572119e+06 || DRAM read volume [Bytes] STAT |
912249341184 | 0 | 912249341184 | 5.068052e+10 || DRAM write volume [Bytes] STAT | 18075439552 | 0 |
18075439552 | 1.004191e+09 || Time: MEM busy STAT | 15.6357 | 0 | 15.6357 | 0.8687 || Time: L3 busy
STAT | 13.2087 | 0 | 13.2087 | 0.7338 || Ins [] STAT | 624467775756 | 760691739 | 604579066113 |
3.469265e+10 || Cycle [] STAT | 1393831656583 | 1113610332 | 1365036163506 | 7.743509e+10 ||
Stall_l2m [] STAT | 1019013023011 | 451645048 | 1007632347549 | 5.661183e+10 || Stall_mem [] STAT |
1024703667242 | 624578058 | 1007911662549 | 5.692798e+10 || L3_Latency [] STAT | 12.6349 | 0.0056 |
12.4937 | 0.7019 || DRAM_latency [] STAT | 70.4927 | 0.0430 | 69.3374 | 3.9163 | +-----+
+-----+-----+-----+-----+-----+

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+-----+-----+-----+-----+-----+-----+ |
+-----+ | Event | Counter | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+ | INSTR_RETIRED_ANY STAT | FIXC0 |
625762967503 | 836976028 | 604577660078 | 3.476461e+10 || CPU_CLK_UNHALTED_CORE STAT |
FIXC1 | 1398738300930 | 1107269495 | 1364175891258 | 77707683385 || CPU_CLK_UNHALTED_REF
STAT | FIXC2 | 939268071267 | 1902018994 | 878470878713 | 5.218156e+10 ||
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT | PMC0 | 1021011644870 | 426003405 | 1006812992590 |
5.672287e+10 || CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT | PMC1 | 1028979628288 | 631722425 |
1007121745267 | 5.716553e+10 || CYCLE_ACTIVITY_STALLS_TOTAL STAT | PMC2 | 1034398178143 |
703571656 | 1010230104581 | 5.746657e+10 || LLC_LOOKUP_ANY STAT | CBOX0C0 | 4503128873 | 0 |

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4503128873 | 2.501738e+08 || LLC\_LOOKUP\_ANY STAT | CBOX1C0 | 4526582757 | 0 | 4526582757 |  
2.514768e+08 || LLC\_LOOKUP\_ANY STAT | CBOX2C0 | 4602699959 | 0 | 4602699959 | 2.557056e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX3C0 | 4545446393 | 0 | 4545446393 | 2.525248e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX4C0 | 4522417504 | 0 | 4522417504 | 2.512454e+08 || LLC\_LOOKUP\_ANY  
STAT | CBOX5C0 | 4492408469 | 0 | 4492408469 | 2.495782e+08 || LLC\_LOOKUP\_ANY STAT | CBOX6C0  
| 4566797019 | 0 | 4566797019 | 2.537109e+08 || LLC\_LOOKUP\_ANY STAT | CBOX7C0 | 4580200309 | 0 |  
4580200309 | 2.544556e+08 || LLC\_LOOKUP\_ANY STAT | CBOX8C0 | 4517350515 | 0 | 4517350515 |  
2.509639e+08 || LLC\_LOOKUP\_ANY STAT | CBOX9C0 | 4476246851 | 0 | 4476246851 | 2.486804e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX10C0 | 4582600392 | 0 | 4582600392 | 2.545889e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX11C0 | 4613349337 | 0 | 4613349337 | 2.562972e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX12C0 | 4492322272 | 0 | 4492322272 | 2.495735e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX13C0 | 4523127471 | 0 | 4523127471 | 2.512849e+08 || LLC\_LOOKUP\_ANY  
STAT | CBOX14C0 | 4615876371 | 0 | 4615876371 | 2.564376e+08 || LLC\_LOOKUP\_ANY STAT | CBOX15C0  
| 4598126504 | 0 | 4598126504 | 2.554515e+08 || LLC\_LOOKUP\_ANY STAT | CBOX16C0 | 3942141979 | 0 |  
3942141979 | 2.190079e+08 || LLC\_LOOKUP\_ANY STAT | CBOX17C0 | 3955771760 | 0 | 3955771760 |  
2.197651e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX0C1 | 4401229156 | 0 | 4401229156 |  
2.445127e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX1C1 | 4419855407 | 0 | 4419855407 |  
2.455475e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX2C1 | 4488795362 | 0 | 4488795362 |  
2.493775e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX3C1 | 4439911425 | 0 | 4439911425 |  
2.466617e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX4C1 | 4417540579 | 0 | 4417540579 |  
2.454189e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX5C1 | 4388611343 | 0 | 4388611343 |  
2.438117e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX6C1 | 4448085081 | 0 | 4448085081 |  
2.471158e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX7C1 | 4468006814 | 0 | 4468006814 |  
2.482226e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX8C1 | 4409827929 | 0 | 4409827929 |  
2.449904e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX9C1 | 4372178173 | 0 | 4372178173 |  
2.428988e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX10C1 | 4477957248 | 0 | 4477957248 |  
2.487754e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX11C1 | 4506627440 | 0 | 4506627440 |  
2.503682e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX12C1 | 4388065304 | 0 | 4388065304 |  
2.437814e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX13C1 | 4415797222 | 0 | 4415797222 |  
2.453221e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX14C1 | 4503938492 | 0 | 4503938492 |  
2.502188e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 4483228677 | 0 | 4483228677 |  
2.490683e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 3841620566 | 0 | 3841620566 |  
2.134234e+08 || LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 3855914969 | 0 | 3855914969 |  
2.142175e+08 || LLC\_LOOKUP\_READ STAT | CBOX0C2 | 4441295959 | 0 | 4441295959 | 2.467387e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX1C2 | 4460697424 | 0 | 4460697424 | 2.478165e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX2C2 | 4532618511 | 0 | 4532618511 | 2.518121e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX3C2 | 4480134907 | 0 | 4480134907 | 2.488964e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX4C2 | 4456541958 | 0 | 4456541958 | 2.475857e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX5C2 | 4427795304 | 0 | 4427795304 | 2.45988628 ||  
LLC\_LOOKUP\_READ STAT | CBOX6C2 | 4496827191 | 0 | 4496827191 | 2.498237e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX7C2 | 4513498833 | 0 | 4513498833 | 2.507499e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX8C2 | 4451176519 | 0 | 4451176519 | 2.472876e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX9C2 | 4412233869 | 0 | 4412233869 | 2.451241e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX10C2 | 4516665918 | 0 | 4516665918 | 2.509259e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX11C2 | 4547855750 | 0 | 4547855750 | 2.526587e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX12C2 | 4427463018 | 0 | 4427463018 | 2.459702e+08 ||

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LLC_LOOKUP_READ STAT | CBOX13C2 | 4456321146 | 0 | 4456321146 | 247573397 ||
LLC_LOOKUP_READ STAT | CBOX14C2 | 4549053212 | 0 | 4549053212 | 2.527252e+08 ||
LLC_LOOKUP_READ STAT | CBOX15C2 | 4532057305 | 0 | 4532057305 | 2.517810e+08 ||
LLC_LOOKUP_READ STAT | CBOX16C2 | 3880799747 | 0 | 3880799747 | 2.156000e+08 ||
LLC_LOOKUP_READ STAT | CBOX17C2 | 3895485584 | 0 | 3895485584 | 2.164159e+08 ||
LLC_LOOKUP_WRITE STAT | CBOX0C3 | 18200408 | 0 | 18200408 | 1.011134e+06 || LLC_LOOKUP_WRITE
STAT | CBOX1C3 | 21670989 | 0 | 21670989 | 1.203944e+06 || LLC_LOOKUP_WRITE STAT | CBOX2C3 |
24847154 | 0 | 24847154 | 1.380397e+06 || LLC_LOOKUP_WRITE STAT | CBOX3C3 | 21032157 | 0 |
21032157 | 1.168453e+06 || LLC_LOOKUP_WRITE STAT | CBOX4C3 | 21769325 | 0 | 21769325 |
1.209407e+06 || LLC_LOOKUP_WRITE STAT | CBOX5C3 | 21946518 | 0 | 21946518 | 1219251 ||
LLC_LOOKUP_WRITE STAT | CBOX6C3 | 23475318 | 0 | 23475318 | 1.304184e+06 || LLC_LOOKUP_WRITE
STAT | CBOX7C3 | 22291669 | 0 | 22291669 | 1.238426e+06 || LLC_LOOKUP_WRITE STAT | CBOX8C3 |
22110264 | 0 | 22110264 | 1228348 || LLC_LOOKUP_WRITE STAT | CBOX9C3 | 21784356 | 0 | 21784356 |
1210242 || LLC_LOOKUP_WRITE STAT | CBOX10C3 | 21628972 | 0 | 21628972 | 1.201610e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX11C3 | 21391741 | 0 | 21391741 | 1.188430e+06 || LLC_LOOKUP_WRITE
STAT | CBOX12C3 | 21001243 | 0 | 21001243 | 1.166736e+06 || LLC_LOOKUP_WRITE STAT | CBOX13C3 |
22581406 | 0 | 22581406 | 1.254523e+06 || LLC_LOOKUP_WRITE STAT | CBOX14C3 | 22489655 | 0 |
22489655 | 1.249425e+06 || LLC_LOOKUP_WRITE STAT | CBOX15C3 | 21327782 | 0 | 21327782 |
1.184877e+06 || LLC_LOOKUP_WRITE STAT | CBOX16C3 | 22169157 | 0 | 22169157 | 1.231620e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX17C3 | 22213438 | 0 | 22213438 | 1.234080e+06 || CAS_COUNT_RD
STAT | MBOX0C0 | 3568056169 | 0 | 3568056169 | 1.982253e+08 || CAS_COUNT_WR STAT | MBOX0C1 |
68352235 | 0 | 68352235 | 3.797346e+06 || CAS_COUNT_RD STAT | MBOX1C0 | 3575228606 | 0 |
3575228606 | 1.986238e+08 || CAS_COUNT_WR STAT | MBOX1C1 | 75742311 | 0 | 75742311 |
4.207906e+06 || CAS_COUNT_RD STAT | MBOX4C0 | 3560178733 | 0 | 3560178733 | 1.977877e+08 ||
CAS_COUNT_WR STAT | MBOX4C1 | 65167802 | 0 | 65167802 | 3.620433e+06 || CAS_COUNT_RD STAT |
MBOX5C0 | 3576533434 | 0 | 3576533434 | 1.986963e+08 || CAS_COUNT_WR STAT | MBOX5C1 |
77506953 | 0 | 77506953 | 4.305942e+06 || UNCORE_CLOCK STAT | UBOXFIX | 1168602777656 | 0 |
1168602777656 | 6.492238e+10 || PWR_PKG_ENERGY STAT | PWR0 | 18596.6826 | 0 | 18596.6826 |
1033.1490 || PWR_DRAM_ENERGY STAT | PWR3 | 2559.0425 | 0 | 2559.0425 | 142.1690 | +-----
-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+
Metric | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+-----+
-----+-----+-----+ | Time: Runtime (RDTSC) [s] STAT | 7027.4322 | 390.4129 | 390.4129 |
390.4129 || Time: Runtime unhalted [s] STAT | 409.3230 | 0.8289 | 382.8282 | 22.7402 || inverseClock
STAT | 7.844207e-09 | 4.357893e-10 | 4.357893e-10 | 4.357893e-10 || Clock [MHz] STAT | 25796.2410 |
1243.2742 | 3563.4154 | 1433.1245 || Uncore Clock [MHz] STAT | 2993.2481 | 0 | 2993.2481 | 166.2916 ||
Time: Core total stall STAT | 302.0304 | 0.5267 | 283.5005 | 16.7795 || Time: Core l2 stall STAT | 293.4280 |
0.3189 | 282.5416 | 16.3016 || Time: Core ldm stall STAT | 299.3941 | 0.4729 | 282.6282 | 16.6330 || CPI
STAT | 29.9198 | 1.3229 | 2.2564 | 1.6622 || Power PKG [W] STAT | 47.6334 | 0 | 47.6334 | 2.6463 || Power
DRAM [W] STAT | 6.5547 | 0 | 6.5547 | 0.3642 || Energy PKG [J] STAT | 18596.6826 | 0 | 18596.6826 |
1033.1490 || Energy DRAM [J] STAT | 2559.0425 | 0 | 2559.0425 | 142.1690 || L2M Pending[%] STAT |
770.5310 | 38.2988 | 73.8038 | 42.8073 || LD Pending[%] STAT | 1145.1909 | 57.0523 | 73.8264 | 63.6217 ||
LLC Any bandwidth [Bytes/s] STAT | 13221950000 | 0 | 13221950000 | 7.345528e+08 || LLC data read
bandwidth [Bytes/s] STAT | 12905670000 | 0 | 12905670000 | 7.169817e+08 || LLC read bandwidth
[Bytes/s] STAT | 13028830000 | 0 | 13028830000 | 7.238239e+08 || LLC write bandwidth [Bytes/s] STAT |
64576800 | 0 | 64576800 | 3587600 || LLC Any volume [Bytes] STAT | 5162022063040 | 0 |
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5162022063040 | 2.867790e+11 || LLC data read volume [Bytes] STAT | 5038540235968 | 0 |
5038540235968 | 2.799189e+11 || LLC read volume [Bytes] STAT | 5086625417920 | 0 | 5086625417920 |
2.825903e+11 || LLC write volume [Bytes] STAT | 25211619328 | 0 | 25211619328 | 1.400646e+09 || DRAM
read bandwidth [Bytes/s] STAT | 2340906000 | 0 | 2340906000 | 1.300503e+08 || DRAM write bandwidth
[Bytes/s] STAT | 47009800 | 0 | 47009800 | 2.611656e+06 || DRAM read volume [Bytes] STAT |
913919804288 | 0 | 913919804288 | 5.077332e+10 || DRAM write volume [Bytes] STAT | 18353235264 | 0 |
18353235264 | 1.019624e+09 || Time: MEM busy STAT | 15.6685 | 0 | 15.6685 | 0.8705 || Time: L3 busy
STAT | 13.2089 | 0 | 13.2089 | 0.7338 || Ins [] STAT | 625762967503 | 836976028 | 604577660078 |
3.476461e+10 || Cycle [] STAT | 1398738300930 | 1107269495 | 1364175891258 | 77707683385 ||
Stall_I2M [] STAT | 1021011644870 | 426003405 | 1006812992590 | 5.672287e+10 || Stall_mem [] STAT |
1028979628288 | 631722425 | 1007121745267 | 5.716553e+10 || L3_Latency [] STAT | 12.6588 | 0.0053 |
12.4827 | 0.7033 || DRAM_latency [] STAT | 70.6388 | 0.0434 | 69.1383 | 3.9244 | +-----+
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-----+ | Event | Counter | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+ | INSTR_RETIRED_ANY STAT | FIXC0 |
619628809273 | 519063615 | 604581748097 | 3.442382e+10 || CPU_CLK_UNHALTED_CORE STAT | FIXC1
| 1389648824320 | 1110270362 | 1363080514438 | 7.720271e+10 || CPU_CLK_UNHALTED_REF STAT |
FIXC2 | 923883506668 | 1776617244 | 878352023039 | 5.132686e+10 ||
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT | PMC0 | 1017457847409 | 513626511 | 1005937367665 |
5.652544e+10 || CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT | PMC1 | 1023303845879 | 736043896 |
1006208791509 | 5.685021e+10 || CYCLE_ACTIVITY_STALLS_TOTAL STAT | PMC2 | 1028471149793 |
829818092 | 1009393794002 | 5.713729e+10 || LLC_LOOKUP_ANY STAT | CBOX0C0 | 4633923702 | 0 |
4633923702 | 2.574402e+08 || LLC_LOOKUP_ANY STAT | CBOX1C0 | 4693099489 | 0 | 4693099489 |
2.607277e+08 || LLC_LOOKUP_ANY STAT | CBOX2C0 | 4482305400 | 0 | 4482305400 | 2.490170e+08 ||
LLC_LOOKUP_ANY STAT | CBOX3C0 | 4498690703 | 0 | 4498690703 | 2.499273e+08 ||
LLC_LOOKUP_ANY STAT | CBOX4C0 | 4680123410 | 0 | 4680123410 | 2.600069e+08 ||
LLC_LOOKUP_ANY STAT | CBOX5C0 | 4642979223 | 0 | 4642979223 | 2.579433e+08 ||
LLC_LOOKUP_ANY STAT | CBOX6C0 | 4521263826 | 0 | 4521263826 | 2.511813e+08 || LLC_LOOKUP_ANY
STAT | CBOX7C0 | 4442148274 | 0 | 4442148274 | 2.467860e+08 || LLC_LOOKUP_ANY STAT | CBOX8C0 |
4772887782 | 0 | 4772887782 | 2.651604e+08 || LLC_LOOKUP_ANY STAT | CBOX9C0 | 4735305664 | 0 |
4735305664 | 2.630725e+08 || LLC_LOOKUP_ANY STAT | CBOX10C0 | 4560173286 | 0 | 4560173286 |
2.533430e+08 || LLC_LOOKUP_ANY STAT | CBOX11C0 | 4544961456 | 0 | 4544961456 | 2.524979e+08 ||
LLC_LOOKUP_ANY STAT | CBOX12C0 | 4752116998 | 0 | 4752116998 | 2.640065e+08 ||
LLC_LOOKUP_ANY STAT | CBOX13C0 | 4776208369 | 0 | 4776208369 | 2.653449e+08 ||
LLC_LOOKUP_ANY STAT | CBOX14C0 | 4521934894 | 0 | 4521934894 | 2.512186e+08 ||
LLC_LOOKUP_ANY STAT | CBOX15C0 | 4578844740 | 0 | 4578844740 | 2.543803e+08 ||
LLC_LOOKUP_ANY STAT | CBOX16C0 | 3350778864 | 0 | 3350778864 | 1.861544e+08 ||
LLC_LOOKUP_ANY STAT | CBOX17C0 | 3354868269 | 0 | 3354868269 | 1.863816e+08 ||
LLC_LOOKUP_DATA_READ STAT | CBOX0C1 | 4534102617 | 0 | 4534102617 | 2.518946e+08 ||
LLC_LOOKUP_DATA_READ STAT | CBOX1C1 | 4589447314 | 0 | 4589447314 | 2.549693e+08 ||
LLC_LOOKUP_DATA_READ STAT | CBOX2C1 | 4374411174 | 0 | 4374411174 | 243022843 ||
LLC_LOOKUP_DATA_READ STAT | CBOX3C1 | 4394635788 | 0 | 4394635788 | 2.441464e+08 ||
LLC_LOOKUP_DATA_READ STAT | CBOX4C1 | 4577265556 | 0 | 4577265556 | 2.542925e+08 ||

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LLC\_LOOKUP\_DATA\_READ STAT | CBOX5C1 | 4540958322 | 0 | 4540958322 | 2.522755e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX6C1 | 4410875228 | 0 | 4410875228 | 2.450486e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX7C1 | 4335896463 | 0 | 4335896463 | 2.408831e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX8C1 | 4669296507 | 0 | 4669296507 | 2.594054e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX9C1 | 4632307447 | 0 | 4632307447 | 2.573504e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX10C1 | 4459833643 | 0 | 4459833643 | 2.477685e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX11C1 | 4441062827 | 0 | 4441062827 | 2.467257e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX12C1 | 4648512406 | 0 | 4648512406 | 2.582507e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX13C1 | 4669924932 | 0 | 4669924932 | 259440274 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX14C1 | 4416467911 | 0 | 4416467911 | 2.453593e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 4466624067 | 0 | 4466624067 | 2.481458e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 3256160478 | 0 | 3256160478 | 1.808978e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 3262944758 | 0 | 3262944758 | 1.812747e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX0C2 | 4572640747 | 0 | 4572640747 | 2.540356e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX1C2 | 4628332708 | 0 | 4628332708 | 2.571296e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX2C2 | 4415370874 | 0 | 4415370874 | 2.452984e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX3C2 | 4434458116 | 0 | 4434458116 | 2.463588e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX4C2 | 4614908279 | 0 | 4614908279 | 2.563838e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX5C2 | 4578715913 | 0 | 4578715913 | 2.543731e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX6C2 | 4455274609 | 0 | 4455274609 | 2.475153e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX7C2 | 4378488324 | 0 | 4378488324 | 2.432494e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX8C2 | 4707768257 | 0 | 4707768257 | 2.615427e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX9C2 | 4671307960 | 0 | 4671307960 | 2.595171e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX10C2 | 4496781874 | 0 | 4496781874 | 2.498212e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX11C2 | 4480920482 | 0 | 4480920482 | 2.489400e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX12C2 | 4686620957 | 0 | 4686620957 | 2.603678e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX13C2 | 4709085337 | 0 | 4709085337 | 2.616159e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX14C2 | 4458302798 | 0 | 4458302798 | 2.476835e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX15C2 | 4513488450 | 0 | 4513488450 | 2.507494e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX16C2 | 3294347415 | 0 | 3294347415 | 1.830193e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX17C2 | 3300436470 | 0 | 3300436470 | 1.833576e+08 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX0C3 | 18028756 | 0 | 18028756 | 1.001598e+06 || LLC\_LOOKUP\_WRITE  
STAT | CBOX1C3 | 21083087 | 0 | 21083087 | 1.171283e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX2C3 |  
23255316 | 0 | 23255316 | 1291962 || LLC\_LOOKUP\_WRITE STAT | CBOX3C3 | 21610817 | 0 | 21610817 |  
1.200601e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX4C3 | 21841023 | 0 | 21841023 | 1.213390e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX5C3 | 21928992 | 0 | 21928992 | 1.218277e+06 || LLC\_LOOKUP\_WRITE  
STAT | CBOX6C3 | 21699990 | 0 | 21699990 | 1205555 || LLC\_LOOKUP\_WRITE STAT | CBOX7C3 |  
21636625 | 0 | 21636625 | 1.202035e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX8C3 | 20697579 | 0 |  
20697579 | 1.149866e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX9C3 | 22098190 | 0 | 22098190 |  
1.227677e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX10C3 | 20902568 | 0 | 20902568 | 1.161254e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX11C3 | 21771379 | 0 | 21771379 | 1.209521e+06 || LLC\_LOOKUP\_WRITE  
STAT | CBOX12C3 | 21327635 | 0 | 21327635 | 1.184869e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX13C3 |  
22840404 | 0 | 22840404 | 1.268911e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX14C3 | 21257230 | 0 |  
21257230 | 1.180957e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX15C3 | 22240880 | 0 | 22240880 |  
1.235604e+06 || LLC\_LOOKUP\_WRITE STAT | CBOX16C3 | 21878754 | 0 | 21878754 | 1.215486e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX17C3 | 20985469 | 0 | 20985469 | 1.165859e+06 || CAS\_COUNT\_RD

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STAT | MBOX0C0 | 3564006574 | 0 | 3564006574 | 1.980004e+08 || CAS_COUNT_WR STAT | MBOX0C1 |
67511889 | 0 | 67511889 | 3.750660e+06 || CAS_COUNT_RD STAT | MBOX1C0 | 3572437660 | 0 |
3572437660 | 1.984688e+08 || CAS_COUNT_WR STAT | MBOX1C1 | 74852154 | 0 | 74852154 | 4158453 ||
CAS_COUNT_RD STAT | MBOX4C0 | 3556101029 | 0 | 3556101029 | 1.975612e+08 || CAS_COUNT_WR
STAT | MBOX4C1 | 64176352 | 0 | 64176352 | 3.565353e+06 || CAS_COUNT_RD STAT | MBOX5C0 |
3573255401 | 0 | 3573255401 | 1.985142e+08 || CAS_COUNT_WR STAT | MBOX5C1 | 76813032 | 0 |
76813032 | 4.267391e+06 || UNCORE_CLOCK STAT | UBOXFIX | 1168918923796 | 0 | 1168918923796 |
6.493994e+10 || PWR_PKG_ENERGY STAT | PWR0 | 18604.7984 | 0 | 18604.7984 | 1033.5999 ||
PWR_DRAM_ENERGY STAT | PWR3 | 2512.1775 | 0 | 2512.1775 | 139.5654 | +-----+
+-----+

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Metric | Sum | Min | Max | Avg | +-----+
+-----+
Time: Runtime (RDTSC) [s] STAT | 7029.3366 | 390.5187 | 390.5187 |
390.5187 || Time: Runtime unhalted [s] STAT | 402.6187 | 0.7742 | 382.7765 | 22.3677 || inverseClock STAT
| 7.844209e-09 | 4.357894e-10 | 4.357894e-10 | 4.357894e-10 || Clock [MHz] STAT | 26383.7570 |
1287.1978 | 3561.0354 | 1465.7643 || Uncore Clock [MHz] STAT | 2993.2473 | 0 | 2993.2473 | 166.2915 ||
Time: Core total stall STAT | 297.7046 | 0.5787 | 283.4551 | 16.5391 || Time: Core l2 stall STAT | 291.0895 |
0.3699 | 282.4845 | 16.1716 || Time: Core ldm stall STAT | 295.3336 | 0.5133 | 282.5607 | 16.4074 || CPI
STAT | 32.7390 | 1.4377 | 2.2546 | 1.8188 || Power PKG [W] STAT | 47.6413 | 0 | 47.6413 | 2.6467 || Power
DRAM [W] STAT | 6.4329 | 0 | 6.4329 | 0.3574 || Energy PKG [J] STAT | 18604.7984 | 0 | 18604.7984 |
1033.5999 || Energy DRAM [J] STAT | 2512.1775 | 0 | 2512.1775 | 139.5654 || L2M Pending[%] STAT |
811.7862 | 39.4526 | 73.7988 | 45.0992 || LD Pending[%] STAT | 1166.9038 | 60.0729 | 73.8187 | 64.8280 ||
LLC Any bandwidth [Bytes/s] STAT | 13199700000 | 0 | 13199700000 | 7.333167e+08 || LLC data read
bandwidth [Bytes/s] STAT | 12894560000 | 0 | 12894560000 | 7.163644e+08 || LLC read bandwidth
[Bytes/s] STAT | 13011990000 | 0 | 13011990000 | 7.228883e+08 || LLC write bandwidth [Bytes/s] STAT |
63437230 | 0 | 63437230 | 3.524291e+06 || LLC Any volume [Bytes] STAT | 5154727318336 | 0 |
5154727318336 | 2.863737e+11 || LLC data read volume [Bytes] STAT | 5035566556032 | 0 |
5035566556032 | 2.797537e+11 || LLC read volume [Bytes] STAT | 5081423972480 | 0 | 5081423972480 |
2.823013e+11 || LLC write volume [Bytes] STAT | 24773420416 | 0 | 24773420416 | 1.376301e+09 || DRAM
read bandwidth [Bytes/s] STAT | 2337945000 | 0 | 2337945000 | 1.298858e+08 || DRAM write bandwidth
[Bytes/s] STAT | 46437270 | 0 | 46437270 | 2.579848e+06 || DRAM read volume [Bytes] STAT |
913011242496 | 0 | 913011242496 | 5.072285e+10 || DRAM write volume [Bytes] STAT | 18134619328 | 0 |
18134619328 | 1.007479e+09 || Time: MEM busy STAT | 15.6495 | 0 | 15.6495 | 0.8694 || Time: L3 busy
STAT | 13.1943 | 0 | 13.1943 | 0.7330 || Ins [] STAT | 619628809273 | 519063615 | 604581748097 |
3.442382e+10 || Cycle [] STAT | 1389648824320 | 1110270362 | 1363080514438 | 7.720271e+10 ||
Stall_l2M [] STAT | 1017457847409 | 513626511 | 1005937367665 | 5.652544e+10 || Stall_mem [] STAT |
1023303845879 | 736043896 | 1006208791509 | 5.685021e+10 || L3_Latency [] STAT | 12.6325 | 0.0064 |
12.4895 | 0.7018 || DRAM_latency [] STAT | 70.3342 | 0.0506 | 69.1593 | 3.9075 | +-----+
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Event | Counter | Sum | Min | Max | Avg | +-----+
+-----+
INSTR_RETIRED_ANY STAT | FIXC0 | 619239795629 | 367970548 | 604574558707 | 3.440221e+10 |
| CPU_CLK_UNHALTED_CORE STAT | FIXC1 | 1391081638866 | 669382544 | 1364804027400 |
7.728231e+10 || CPU_CLK_UNHALTED_REF STAT | FIXC2 | 922719123434 | 1010051095 |

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877924789391 | 5.126217e+10 || CYCLE\_ACTIVITY\_STALLS\_L2\_PENDING STAT | PMC0 |  
1019484121405 | 294290056 | 1007775704850 | 5.663801e+10 ||  
CYCLE\_ACTIVITY\_STALLS\_LDM\_PENDING STAT | PMC1 | 1025176756788 | 433764242 |  
1008052345067 | 56954264266 || CYCLE\_ACTIVITY\_STALLS\_TOTAL STAT | PMC2 |  
1030205000569 | 471713448 | 1011205757420 | 5.723361e+10 || LLC\_LOOKUP\_ANY STAT |  
CBOX0C0 | 4520638325 | 0 | 4520638325 | 2.511466e+08 || LLC\_LOOKUP\_ANY STAT | CBOX1C0 |  
4535387521 | 0 | 4535387521 | 2.519660e+08 || LLC\_LOOKUP\_ANY STAT | CBOX2C0 |  
4602773569 | 0 | 4602773569 | 2.557096e+08 || LLC\_LOOKUP\_ANY STAT | CBOX3C0 |  
4629049523 | 0 | 4629049523 | 2.571694e+08 || LLC\_LOOKUP\_ANY STAT | CBOX4C0 |  
4546373485 | 0 | 4546373485 | 2.525763e+08 || LLC\_LOOKUP\_ANY STAT | CBOX5C0 |  
4518213977 | 0 | 4518213977 | 2.510119e+08 || LLC\_LOOKUP\_ANY STAT | CBOX6C0 | 4637684214 |  
0 | 4637684214 | 257649123 || LLC\_LOOKUP\_ANY STAT | CBOX7C0 | 4615495016 | 0 | 4615495016  
| 2.564164e+08 || LLC\_LOOKUP\_ANY STAT | CBOX8C0 | 4533951803 | 0 | 4533951803 |  
2.518862e+08 || LLC\_LOOKUP\_ANY STAT | CBOX9C0 | 4507815252 | 0 | 4507815252 |  
2.504342e+08 || LLC\_LOOKUP\_ANY STAT | CBOX10C0 | 4551982553 | 0 | 4551982553 |  
2.528879e+08 || LLC\_LOOKUP\_ANY STAT | CBOX11C0 | 4519829218 | 0 | 4519829218 |  
2.511016e+08 || LLC\_LOOKUP\_ANY STAT | CBOX12C0 | 4500172792 | 0 | 4500172792 |  
2.500096e+08 || LLC\_LOOKUP\_ANY STAT | CBOX13C0 | 4534549613 | 0 | 4534549613 |  
2.519194e+08 || LLC\_LOOKUP\_ANY STAT | CBOX14C0 | 4517741592 | 0 | 4517741592 | 250985644 |  
| LLC\_LOOKUP\_ANY STAT | CBOX15C0 | 4542579269 | 0 | 4542579269 | 2.523655e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX16C0 | 3825938230 | 0 | 3825938230 | 2.125521e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX17C0 | 3820194646 | 0 | 3820194646 | 2.122330e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX0C1 | 4425125831 | 0 | 4425125831 | 2.458403e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX1C1 | 4435959772 | 0 | 4435959772 | 2.464422e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX2C1 | 4497982684 | 0 | 4497982684 | 2.498879e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX3C1 | 4530261501 | 0 | 4530261501 | 2.516812e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX4C1 | 4449930562 | 0 | 4449930562 | 2.472184e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX5C1 | 4419376930 | 0 | 4419376930 | 2.455209e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX6C1 | 4530659162 | 0 | 4530659162 | 2.517033e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX7C1 | 4509236239 | 0 | 4509236239 | 2.505131e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX8C1 | 4435035354 | 0 | 4435035354 | 246390853 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX9C1 | 4408090515 | 0 | 4408090515 | 2.448939e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX10C1 | 4454937093 | 0 | 4454937093 | 2.474965e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX11C1 | 4417317583 | 0 | 4417317583 | 2.454065e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX12C1 | 4401015575 | 0 | 4401015575 | 2.445009e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX13C1 | 4435066654 | 0 | 4435066654 | 2.463926e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX14C1 | 4416766036 | 0 | 4416766036 | 2.453759e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 4437945154 | 0 | 4437945154 | 2.465525e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 3735294023 | 0 | 3735294023 | 2.075163e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 3727771135 | 0 | 3727771135 | 2.070984e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX0C2 | 4462072614 | 0 | 4462072614 | 247892923 ||  
LLC\_LOOKUP\_READ STAT | CBOX1C2 | 4473389671 | 0 | 4473389671 | 2.485216e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX2C2 | 4537377933 | 0 | 4537377933 | 2.520766e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX3C2 | 4567519191 | 0 | 4567519191 | 2.537511e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX4C2 | 4485182436 | 0 | 4485182436 | 249176802 ||  
LLC\_LOOKUP\_READ STAT | CBOX5C2 | 4456355041 | 0 | 4456355041 | 2.475753e+08 ||

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LLC_LOOKUP_READ STAT | CBOX6C2 | 4573292702 | 0 | 4573292702 | 2.540718e+08 ||
LLC_LOOKUP_READ STAT | CBOX7C2 | 4551602018 | 0 | 4551602018 | 2.528668e+08 ||
LLC_LOOKUP_READ STAT | CBOX8C2 | 4472286396 | 0 | 4472286396 | 2.484604e+08 ||
LLC_LOOKUP_READ STAT | CBOX9C2 | 4446224147 | 0 | 4446224147 | 2.470125e+08 ||
LLC_LOOKUP_READ STAT | CBOX10C2 | 4490448626 | 0 | 4490448626 | 2.494694e+08 ||
LLC_LOOKUP_READ STAT | CBOX11C2 | 4456734793 | 0 | 4456734793 | 2.475964e+08 ||
LLC_LOOKUP_READ STAT | CBOX12C2 | 4438145452 | 0 | 4438145452 | 2.465636e+08 ||
LLC_LOOKUP_READ STAT | CBOX13C2 | 4471994779 | 0 | 4471994779 | 2.484442e+08 ||
LLC_LOOKUP_READ STAT | CBOX14C2 | 4456491497 | 0 | 4456491497 | 2.475829e+08 ||
LLC_LOOKUP_READ STAT | CBOX15C2 | 4481186547 | 0 | 4481186547 | 2.489548e+08 ||
LLC_LOOKUP_READ STAT | CBOX16C2 | 3770530434 | 0 | 3770530434 | 209473913 ||
LLC_LOOKUP_READ STAT | CBOX17C2 | 3764500975 | 0 | 3764500975 | 2.091389e+08 ||
LLC_LOOKUP_WRITE STAT | CBOX0C3 | 17563292 | 0 | 17563292 | 975738.4444 ||
LLC_LOOKUP_WRITE STAT | CBOX1C3 | 20506030 | 0 | 20506030 | 1.139224e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX2C3 | 22673351 | 0 | 22673351 | 1.259631e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX3C3 | 20059025 | 0 | 20059025 | 1.114390e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX4C3 | 20059839 | 0 | 20059839 | 1.114436e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX5C3 | 21871299 | 0 | 21871299 | 1.215072e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX6C3 | 21313673 | 0 | 21313673 | 1.184093e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX7C3 | 22564119 | 0 | 22564119 | 1.253562e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX8C3 | 20185027 | 0 | 20185027 | 1.121390e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX9C3 | 22014008 | 0 | 22014008 | 1.223000e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX10C3 | 20440403 | 0 | 20440403 | 1.135578e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX11C3 | 22501416 | 0 | 22501416 | 1.250079e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX12C3 | 20883995 | 0 | 20883995 | 1.160222e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX13C3 | 21056830 | 0 | 21056830 | 1.169824e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX14C3 | 20331743 | 0 | 20331743 | 1.129541e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX15C3 | 20245018 | 0 | 20245018 | 1.124723e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX16C3 | 20090851 | 0 | 20090851 | 1.116158e+06 ||
LLC_LOOKUP_WRITE STAT | CBOX17C3 | 21388151 | 0 | 21388151 | 1.188231e+06 || CAS_COUNT_RD
STAT | MBOX0C0 | 3565918343 | 0 | 3565918343 | 1.981066e+08 || CAS_COUNT_WR STAT |
MBOX0C1 | 67043654 | 0 | 67043654 | 3.724647e+06 || CAS_COUNT_RD STAT | MBOX1C0 |
3574982920 | 0 | 3574982920 | 1.986102e+08 || CAS_COUNT_WR STAT | MBOX1C1 | 74661638 | 0 |
74661638 | 4.147869e+06 || CAS_COUNT_RD STAT | MBOX4C0 | 3558876404 | 0 | 3558876404 |
1.977154e+08 || CAS_COUNT_WR STAT | MBOX4C1 | 64166818 | 0 | 64166818 | 3.564823e+06 ||
CAS_COUNT_RD STAT | MBOX5C0 | 3575842161 | 0 | 3575842161 | 1.986579e+08 ||
CAS_COUNT_WR STAT | MBOX5C1 | 76848917 | 0 | 76848917 | 4.269384e+06 || UNCORE_CLOCK
STAT | UBOXFIX | 1167779125115 | 0 | 1167779125115 | 6.487662e+10 || PWR_PKG_ENERGY STAT |
PWR0 | 18537.3763 | 0 | 18537.3763 | 1029.8542 || PWR_DRAM_ENERGY STAT | PWR3 | 2519.0036 |
0 | 2519.0036 | 139.9446 | +-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Metric | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+-----+-----+
+ | Time: Runtime (RDTSC) [s] STAT | 7022.5146 | 390.1397 | 390.1397 |
390.1397 | | Time: Runtime unhalted [s] STAT | 402.1161 | 0.4402 | 382.5952 | 22.3398 | | inverseClock STAT
| 7.844308e-09 | 4.357949e-10 | 4.357949e-10 | 4.357949e-10 | | Clock [MHz] STAT | 26776.2510 |
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1277.4792 | 3567.2274 | 1487.5695 | | Uncore Clock [MHz] STAT | 2993.2336 | 0 | 2993.2336 | 166.2908 | |
Time: Core total stall STAT | 297.5801 | 0.3102 | 283.4711 | 16.5322 | | Time: Core I2 stall STAT | 291.2037 |
0.1935 | 282.5095 | 16.1780 | | Time: Core Idm stall STAT | 295.3224 | 0.2852 | 282.5871 | 16.4068 | | CPI
STAT | 33.4671 | 1.5679 | 2.2575 | 1.8593 | | Power PKG [W] STAT | 47.5147 | 0 | 47.5147 | 2.6397 | | Power
DRAM [W] STAT | 6.4567 | 0 | 6.4567 | 0.3587 | | Energy PKG [J] STAT | 18537.3763 | 0 | 18537.3763 |
1029.8542 | | Energy DRAM [J] STAT | 2519.0036 | 0 | 2519.0036 | 139.9446 | | L2M Pending[%] STAT |
833.5050 | 42.5083 | 73.8403 | 46.3058 | | LD Pending[%] STAT | 1178.4003 | 58.6687 | 73.8606 | 65.4667 |
| LLC Any bandwidth [Bytes/s] STAT | 13199030000 | 0 | 13199030000 | 7.332794e+08 | | LLC data read
bandwidth [Bytes/s] STAT | 12904960000 | 0 | 12904960000 | 7.169422e+08 | | LLC read bandwidth
[Bytes/s] STAT | 13017750000 | 0 | 13017750000 | 7.232083e+08 | | LLC write bandwidth [Bytes/s] STAT |
61639150 | 0 | 61639150 | 3.424397e+06 | | LLC Any volume [Bytes] STAT | 5149463718272 | 0 |
5149463718272 | 2.860813e+11 | | LLC data read volume [Bytes] STAT | 5034737395392 | 0 |
5034737395392 | 2.797076e+11 | | LLC read volume [Bytes] STAT | 5078741456128 | 0 | 5078741456128 |
2.821523e+11 | | LLC write volume [Bytes] STAT | 24047876480 | 0 | 24047876480 | 1.335993e+09 | |
DRAM read bandwidth [Bytes/s] STAT | 2341827000 | 0 | 2341827000 | 130101500 | | DRAM write
bandwidth [Bytes/s] STAT | 46378640 | 0 | 46378640 | 2.576591e+06 | | DRAM read volume [Bytes] STAT |
913639668992 | 0 | 913639668992 | 5.075776e+10 | | DRAM write volume [Bytes] STAT | 18094145728 | 0 |
18094145728 | 1.005230e+09 | | Time: MEM busy STAT | 15.6594 | 0 | 15.6594 | 0.8700 | | Time: L3 busy
STAT | 13.1855 | 0 | 13.1855 | 0.7325 | | Ins [] STAT | 619239795629 | 367970548 | 604574558707 |
3.440221e+10 | | Cycle [] STAT | 1391081638866 | 669382544 | 1364804027400 | 7.728231e+10 | |
Stall_I2M [] STAT | 1019484121405 | 294290056 | 1007775704850 | 5.663801e+10 | | Stall_mem [] STAT |
1025176756788 | 433764242 | 1008052345067 | 56954264266 | | L3_Latency [] STAT | 12.6707 | 0.0037 |
12.5251 | 0.7039 | | DRAM_latency [] STAT | 70.4187 | 0.0298 | 69.2423 | 3.9122 | +-----
-----+-----+-----+-----+-----+-----+

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- The fifth take

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+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+ | Event | Counter | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+
-----+-----+-----+-----+-----+-----+-----+ | INSTR_RETIRED_ANY STAT | FIXC0 |
629585623045 | 1120558061 | 604582921082 | 3.497698e+10 | | CPU_CLK_UNHALTED_CORE STAT |
FIXC1 | 1389426933091 | 1361637027 | 1359820508348 | 7.719039e+10 | | CPU_CLK_UNHALTED_REF
STAT | FIXC2 | 928210073905 | 2363075016 | 876562708415 | 5.156723e+10 | |
CYCLE_ACTIVITY_STALLS_L2_PENDING STAT | PMC0 | 1012910869216 | 477895202 | 1002628194316 |
5.627283e+10 | | CYCLE_ACTIVITY_STALLS_LDM_PENDING STAT | PMC1 | 1017872165627 | 712106049 |
1002943660207 | 5.654845e+10 | | CYCLE_ACTIVITY_STALLS_TOTAL STAT | PMC2 | 1023354217438 |
788934490 | 1006103326358 | 5.685301e+10 | | LLC_LOOKUP_ANY STAT | CBOX0C0 | 4648197887 | 0 |
4648197887 | 2.582332e+08 | | LLC_LOOKUP_ANY STAT | CBOX1C0 | 4723007765 | 0 | 4723007765 |
2.623893e+08 | | LLC_LOOKUP_ANY STAT | CBOX2C0 | 4482376666 | 0 | 4482376666 | 2.490209e+08 | |
LLC_LOOKUP_ANY STAT | CBOX3C0 | 4532596267 | 0 | 4532596267 | 2.518109e+08 | |
LLC_LOOKUP_ANY STAT | CBOX4C0 | 4726761761 | 0 | 4726761761 | 2.625979e+08 | | LLC_LOOKUP_ANY
STAT | CBOX5C0 | 4669653878 | 0 | 4669653878 | 2.594252e+08 | | LLC_LOOKUP_ANY STAT | CBOX6C0
| 4544001875 | 0 | 4544001875 | 2.524445e+08 | | LLC_LOOKUP_ANY STAT | CBOX7C0 | 4497895904 | 0 |
4497895904 | 2.498831e+08 | | LLC_LOOKUP_ANY STAT | CBOX8C0 | 4787510303 | 0 | 4787510303 |
2.659728e+08 | | LLC_LOOKUP_ANY STAT | CBOX9C0 | 4724909199 | 0 | 4724909199 | 2.624950e+08 | |
LLC_LOOKUP_ANY STAT | CBOX10C0 | 4561550205 | 0 | 4561550205 | 2.534195e+08 | |
LLC_LOOKUP_ANY STAT | CBOX11C0 | 4498936370 | 0 | 4498936370 | 2.499409e+08 | |

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LLC\_LOOKUP\_ANY STAT | CBOX12C0 | 4712846302 | 0 | 4712846302 | 2.618248e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX13C0 | 4788372211 | 0 | 4788372211 | 2.660207e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX14C0 | 4492970339 | 0 | 4492970339 | 2.496095e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX15C0 | 4578628887 | 0 | 4578628887 | 2.543683e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX16C0 | 3441427067 | 0 | 3441427067 | 1.911904e+08 ||  
LLC\_LOOKUP\_ANY STAT | CBOX17C0 | 3437767811 | 0 | 3437767811 | 1.909871e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX0C1 | 4539981421 | 0 | 4539981421 | 2.522212e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX1C1 | 4609467952 | 0 | 4609467952 | 2.560816e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX2C1 | 4366604116 | 0 | 4366604116 | 2.425891e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX3C1 | 4421489800 | 0 | 4421489800 | 2.456383e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX4C1 | 4615776535 | 0 | 4615776535 | 2.564320e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX5C1 | 4560708581 | 0 | 4560708581 | 2.533727e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX6C1 | 4421510110 | 0 | 4421510110 | 2.456395e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX7C1 | 4378347243 | 0 | 4378347243 | 2.432415e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX8C1 | 4673671577 | 0 | 4673671577 | 2.596484e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX9C1 | 4613194403 | 0 | 4613194403 | 2.562886e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX10C1 | 4448687228 | 0 | 4448687228 | 2.471493e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX11C1 | 4384039987 | 0 | 4384039987 | 2.435578e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX12C1 | 4600541230 | 0 | 4600541230 | 2.555856e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX13C1 | 4675681035 | 0 | 4675681035 | 2.597601e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX14C1 | 4375609226 | 0 | 4375609226 | 2.430894e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX15C1 | 4453409223 | 0 | 4453409223 | 2.474116e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX16C1 | 3339590536 | 0 | 3339590536 | 1.855328e+08 ||  
LLC\_LOOKUP\_DATA\_READ STAT | CBOX17C1 | 3334190844 | 0 | 3334190844 | 1.852328e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX0C2 | 4583043804 | 0 | 4583043804 | 2.546135e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX1C2 | 4653475653 | 0 | 4653475653 | 2.585264e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX2C2 | 4411954430 | 0 | 4411954430 | 2.451086e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX3C2 | 4464654974 | 0 | 4464654974 | 2.480364e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX4C2 | 4657375011 | 0 | 4657375011 | 2.587431e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX5C2 | 4602012661 | 0 | 4602012661 | 2.556674e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX6C2 | 4473394261 | 0 | 4473394261 | 2.485219e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX7C2 | 4428658079 | 0 | 4428658079 | 2.460366e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX8C2 | 4717429314 | 0 | 4717429314 | 2.620794e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX9C2 | 4656477925 | 0 | 4656477925 | 2.586932e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX10C2 | 4491936339 | 0 | 4491936339 | 2.495520e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX11C2 | 4430560974 | 0 | 4430560974 | 2.461423e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX12C2 | 4643191354 | 0 | 4643191354 | 2.579551e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX13C2 | 4718033444 | 0 | 4718033444 | 2.621130e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX14C2 | 4424904971 | 0 | 4424904971 | 2.458281e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX15C2 | 4509479452 | 0 | 4509479452 | 2.505266e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX16C2 | 3381630918 | 0 | 3381630918 | 1.878684e+08 ||  
LLC\_LOOKUP\_READ STAT | CBOX17C2 | 3378126660 | 0 | 3378126660 | 1.876737e+08 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX0C3 | 18898535 | 0 | 18898535 | 1.049919e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX1C3 | 22619697 | 0 | 22619697 | 1.256650e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX2C3 | 24085814 | 0 | 24085814 | 1.338101e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX3C3 | 21645019 | 0 | 21645019 | 1.202501e+06 ||  
LLC\_LOOKUP\_WRITE STAT | CBOX4C3 | 22207789 | 0 | 22207789 |

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+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Metric | Sum | Min | Max | Avg | +-----+-----+-----+-----+-----+-----+-----+
-----+-----+-----+ | Time: Runtime (RDTSC) [s] STAT | 7014.6360 | 389.7020 | 389.7020 |
389.7020 || Time: Runtime unhalted [s] STAT | 404.5054 | 1.0298 | 381.9981 | 22.4725 || inverseClock STAT
| 7.844238e-09 | 4.357910e-10 | 4.357910e-10 | 4.357910e-10 || Clock [MHz] STAT | 25934.1842 |
1287.6770 | 3559.7573 | 1440.7880 || Uncore Clock [MHz] STAT | 2993.2148 | 0 | 2993.2148 | 166.2897 ||
Time: Core total stall STAT | 295.7447 | 0.5967 | 282.6326 | 16.4303 || Time: Core l2 stall STAT | 289.4703 |
0.3614 | 281.6563 | 16.0817 || Time: Core ldm stall STAT | 293.0938 | 0.5386 | 281.7450 | 16.2830 || CPI
STAT | 22.4421 | 1.0868 | 2.2492 | 1.2468 || Power PKG [W] STAT | 47.6664 | 0 | 47.6664 | 2.6481 || Power
DRAM [W] STAT | 6.5517 | 0 | 6.5517 | 0.3640 || Energy PKG [J] STAT | 18575.6747 | 0 | 18575.6747 |
1031.9819 || Energy DRAM [J] STAT | 2553.2222 | 0 | 2553.2222 | 141.8457 || L2M Pending[%] STAT |
665.2358 | 32.1270 | 73.7324 | 36.9575 || LD Pending[%] STAT | 932.5680 | 46.5312 | 73.7556 | 51.8093 ||
LLC Any bandwidth [Bytes/s] STAT | 13277740000 | 0 | 13277740000 | 7.376522e+08 || LLC data read
bandwidth [Bytes/s] STAT | 12943220000 | 0 | 12943220000 | 7.190678e+08 || LLC read bandwidth
[Bytes/s] STAT | 13076880000 | 0 | 13076880000 | 7.264933e+08 || LLC write bandwidth [Bytes/s] STAT |
66511410 | 0 | 66511410 | 3.695078e+06 || LLC Any volume [Bytes] STAT | 5174362284608 | 0 |
5174362284608 | 2.874646e+11 || LLC data read volume [Bytes] STAT | 5044000067008 | 0 |
5044000067008 | 2.802222e+11 || LLC read volume [Bytes] STAT | 5096085774336 | 0 | 5096085774336
| 283115876352 || LLC write volume [Bytes] STAT | 25919630784 | 0 | 25919630784 | 1439979488 ||
DRAM read bandwidth [Bytes/s] STAT | 2337693000 | 0 | 2337693000 | 1.298718e+08 || DRAM write
bandwidth [Bytes/s] STAT | 45868510 | 0 | 45868510 | 2.548251e+06 || DRAM read volume [Bytes] STAT |
911003666240 | 0 | 911003666240 | 5.061131e+10 || DRAM write volume [Bytes] STAT | 17875048384 | 0 |
17875048384 | 9.930582e+08 || Time: MEM busy STAT | 15.6114 | 0 | 15.6114 | 0.8673 || Time: L3 busy
STAT | 13.2352 | 0 | 13.2352 | 0.7353 || Ins [] STAT | 629585623045 | 1120558061 | 604582921082 |

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3.497698e+10 || Cycle [] STAT | 1389426933091 | 1361637027 | 1359820508348 | 7.719039e+10 ||  
Stall\_L2M [] STAT | 1012910869216 | 477895202 | 1002628194316 | 5.627283e+10 || Stall\_mem [] STAT |  
1017872165627 | 712106049 | 1002943660207 | 5.654845e+10 || L3\_Latency [] STAT | 12.5283 | 0.0059 |  
12.4012 | 0.6960 || DRAM\_latency [] STAT | 70.1318 | 0.0491 | 69.1031 | 3.8962 | +-----  
-----+-----+-----+-----+-----+

- Run sampling doing nothing

init freeze 700 80000000 init unfreeze 700 20000000 Node object is created registered sampling event  
overflow 0.456825 Socket : 1 socket 1 1206932466 359190 Uncorefreq: 2.6412e+09 18  
1120499840.000000 1215273600.000000 1046257920.000000 19 2207371776.000000  
2391887360.000000 2085359360.000000 20 3300416512.000000 3577006336.000000  
3133085696.000000 21 4377470976.000000 4742683136.000000 4180729600.000000 22  
5454765056.000000 5911332864.000000 5228430336.000000 23 6536303616.000000  
7085095936.000000 6276311040.000000 24 7618963456.000000 8259426304.000000  
7322400256.000000 25 8702027776.000000 9433816064.000000 8369659904.000000 26  
9788922880.000000 10612282368.000000 9416792064.000000 27 10873216000.000000  
11788219392.000000 10463815680.000000 28 11958189056.000000 12964647936.000000  
11510726656.000000 29 13047425024.000000 14145566720.000000 12556689408.000000 30  
14135267328.000000 15325296640.000000 13603433472.000000 31 15218341888.000000  
16499978240.000000 14650078208.000000 32 16306813952.000000 17680670720.000000  
15696628736.000000 33 17404833792.000000 18872272896.000000 16743104512.000000 34  
18526425088.000000 20088692736.000000 17789579264.000000 35 19634333696.000000  
21271805952.000000 18820263936.000000 coreFreq : 2.4866e+09 clockTime : 4.7526e-01 wallTime :  
4.5682e-01 insPerSec : 4.1313e+10 cycles : 21271805952.000000 L2 stallId : 1952944512.000000 L2 stall  
rate : 0.091809 Ldm stallId : 4733447168.000000 LDM stall rate : 0.222522 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0918 stallLDMRate : 0.2225  
stallL2Cycles : 1952944512.0000 stallLDMCycles : 4733447168.0000 idealInsPerSecL2 : 4.5489e+10  
idealInsPerSecLDM : 5.3137e+10 L3 volum: 5.6021e+07 RAM volum: 1.2676e+07 lowerBound : 14  
upperBound : 15 full L3 BW : 3.8230e+11 fullRAMBW: 5.9089e+10 Latency L3 : 34.8607 DRAM : 373.4152  
Bandwidth Usage L3 : 0.0003 , Bandwidth usage DRAM : 0.0005 realIntensityL3 : 350.4789 roofIntensityL3  
: 0.1190 realIntensityRAM : 1548.9259 roofIntensityRAM : 0.8993 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----0 overflow 0.359078 Socket : 1 socket 1 2292619700 1206932466 Uncorefreq: 3.0235e+09  
18 938878016.000000 1013429504.000000 832460096.000000 19 1877902848.000000  
2026856576.000000 1664918016.000000 20 2817007616.000000 3040281088.000000  
2497373952.000000 21 3755520000.000000 4053704704.000000 3329829120.000000 22  
4694150144.000000 5067129344.000000 4162285056.000000 23 5632905216.000000  
6080552448.000000 4994739712.000000 24 6571808768.000000 7093974016.000000  
5827193344.000000 25 7510900736.000000 8107395584.000000 6659646464.000000 26  
8450067968.000000 9120813056.000000 7492097024.000000 27 9388662784.000000  
10134231040.000000 8324547584.000000 28 10327730176.000000 11147648000.000000  
9156997120.000000 29 11266587648.000000 12161064960.000000 9989446656.000000 30  
12205687808.000000 13174479872.000000 10821894144.000000 31 13144529920.000000  
14187892736.000000 11654340608.000000 32 14083381248.000000 15201305600.000000  
12486787072.000000 33 15022371840.000000 16214718464.000000 13319233536.000000 34

15961266176.000000 17228132352.000000 14151680000.000000 35 16900695040.000000  
18241546240.000000 14984126464.000000 coreFreq : 2.6783e+09 clockTime : 3.7839e-01 wallTime :  
3.5908e-01 insPerSec : 4.4665e+10 cycles : 18241546240.000000 L2 stallId : 1538145280.000000 L2 stall  
rate : 0.084321 Ldm stallId : 4057480704.000000 LDM stall rate : 0.222431 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0843 stallLDMRate : 0.2224  
stallL2Cycles : 1538145280.0000 stallLDMCycles : 4057480704.0000 idealInsPerSecL2 : 4.8778e+10  
idealInsPerSecLDM : 5.7442e+10 L3 volum: 2.5909e+07 RAM volum: 6.0962e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.2665e+11 fullRAMBW: 1.4005e+10 Latency L3 : 59.3668 DRAM : 665.5763  
Bandwidth Usage L3 : 0.0006 , Bandwidth usage DRAM : 0.0012 realIntensityL3 : 652.3052 roofIntensityL3  
: 0.3852 realIntensityRAM : 2772.3364 roofIntensityRAM : 4.1016 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----1 overflow 0.359949 Socket : 1 socket 1 3380002710 2292619700 Uncorefreq: 3.0209e+09  
18 939963840.000000 1014922944.000000 833686720.000000 19 1879850240.000000  
2029845248.000000 1667372928.000000 20 2819922432.000000 3044767232.000000  
2501058816.000000 21 3759595264.000000 4059688192.000000 3334744064.000000 22  
4699498496.000000 5074607104.000000 4168427264.000000 23 5639383040.000000  
6089524736.000000 5002109952.000000 24 6579368448.000000 7104442880.000000  
5835792896.000000 25 7519593472.000000 8119360000.000000 6669474816.000000 26  
8459678720.000000 9134277632.000000 7503157248.000000 27 9399775232.000000  
10149193728.000000 8336838144.000000 28 10339902464.000000 11164109824.000000  
9170519040.000000 29 11280059392.000000 12179022848.000000 10004197376.000000 30  
12220178432.000000 13193936896.000000 10837876736.000000 31 13160320000.000000  
14208849920.000000 11671555072.000000 32 14100438016.000000 15223760896.000000  
12505231360.000000 33 15040487424.000000 16238670848.000000 13338907648.000000 34  
15980654592.000000 17253578752.000000 14172581888.000000 35 16921125888.000000  
18268485632.000000 15006256128.000000 coreFreq : 2.6783e+09 clockTime : 3.7894e-01 wallTime :  
3.5995e-01 insPerSec : 4.4653e+10 cycles : 18268485632.000000 L2 stallId : 1750702336.000000 L2 stall  
rate : 0.095832 Ldm stallId : 4064355072.000000 LDM stall rate : 0.222479 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0958 stallLDMRate : 0.2225  
stallL2Cycles : 1750702336.0000 stallLDMCycles : 4064355072.0000 idealInsPerSecL2 : 4.9386e+10  
idealInsPerSecLDM : 5.7430e+10 L3 volum: 2.4508e+07 RAM volum: 5.7945e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1778e+11 fullRAMBW: 1.2456e+10 Latency L3 : 71.4336 DRAM : 701.4165  
Bandwidth Usage L3 : 0.0006 , Bandwidth usage DRAM : 0.0013 realIntensityL3 : 690.4301 roofIntensityL3  
: 0.4193 realIntensityRAM : 2920.2068 roofIntensityRAM : 4.6107 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----2 overflow 0.359227 Socket : 1 socket 1 4464848626 3380002710 Uncorefreq: 3.0199e+09  
18 937946752.000000 1012527424.000000 831718848.000000 19 1876163840.000000  
2025055744.000000 1663438592.000000 20 2814524928.000000 3037584896.000000  
2495159296.000000 21 3752352768.000000 4050113280.000000 3326878976.000000 22  
4690348544.000000 5062642688.000000 4158599424.000000 23 5628205056.000000  
6075171840.000000 4990320128.000000 24 6566194176.000000 7087700480.000000  
5822040064.000000 25 7504347136.000000 8100228096.000000 6653759488.000000 26  
8442464256.000000 9112754176.000000 7485477888.000000 27 9380544512.000000



10125282304.000000 8317197312.000000 28 10318640128.000000 11137809408.000000  
9148915712.000000 29 11256810496.000000 12150335488.000000 9980634112.000000 30  
12194977792.000000 13162862592.000000 10812352512.000000 31 13132553216.000000  
14175389696.000000 11644070912.000000 32 14070702080.000000 15187915776.000000  
12475789312.000000 33 15008841728.000000 16200441856.000000 13307506688.000000 34  
15946700800.000000 17212968960.000000 14139225088.000000 35 16885334016.000000  
18225494016.000000 14970941440.000000 coreFreq : 2.6783e+09 clockTime : 3.7805e-01 wallTime :  
3.5923e-01 insPerSec : 4.4664e+10 cycles : 18225494016.000000 L2 stalld : 1527777792.000000 L2 stall  
rate : 0.083826 Ldm stalld : 4054459392.000000 LDM stall rate : 0.222461 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0838 stallLDMRate : 0.2225  
stallL2Cycles : 1527777792.0000 stallLDMCycles : 4054459392.0000 idealInsPerSecL2 : 4.8750e+10  
idealInsPerSecLDM : 5.7443e+10 L3 volum: 2.2787e+07 RAM volum: 5.3354e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1443e+11 fullRAMBW: 1.1870e+10 Latency L3 : 67.0456 DRAM : 759.9133  
Bandwidth Usage L3 : 0.0006 , Bandwidth usage DRAM : 0.0013 realIntensityL3 : 741.0029 roofIntensityL3 :  
0.4260 realIntensityRAM : 3164.7595 roofIntensityRAM : 4.8395 conclusion: compute bound 1 l3boundness  
1 ramboundness 1

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-----3 overflow 0.359289 Socket : 1 socket 1 5549757698 4464848626 Uncorefreq: 3.0196e+09  
18 937969408.000000 1012601664.000000 831779776.000000 19 1875984640.000000  
2025202176.000000 1663558784.000000 20 2814284032.000000 3037801472.000000  
2495336704.000000 21 3753397504.000000 4050401280.000000 3327115264.000000 22  
4691237888.000000 5063001088.000000 4158893824.000000 23 5629149184.000000  
6075601408.000000 4990672384.000000 24 6567012864.000000 7088201216.000000  
5822450688.000000 25 7505252352.000000 8100802560.000000 6654230016.000000 26  
8443440128.000000 9113403392.000000 7486009856.000000 27 9381317632.000000  
10126004224.000000 8317789184.000000 28 10319537152.000000 11138605056.000000  
9149568000.000000 29 11257739264.000000 12151205888.000000 9981346816.000000 30  
12195954688.000000 13163806720.000000 10813125632.000000 31 13134191616.000000  
14176405504.000000 11644903424.000000 32 14072432640.000000 15189007360.000000  
12476683264.000000 33 15010592768.000000 16201609216.000000 13308463104.000000 34  
15948854272.000000 17214208000.000000 14140240896.000000 35 16887533568.000000  
18226808832.000000 14972019712.000000 coreFreq : 2.6783e+09 clockTime : 3.7808e-01 wallTime :  
3.5929e-01 insPerSec : 4.4667e+10 cycles : 18226808832.000000 L2 stalld : 1657099008.000000 L2 stall  
rate : 0.090915 Ldm stalld : 4054774272.000000 LDM stall rate : 0.222462 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0909 stallLDMRate : 0.2225  
stallL2Cycles : 1657099008.0000 stallLDMCycles : 4054774272.0000 idealInsPerSecL2 : 4.9134e+10  
idealInsPerSecLDM : 5.7446e+10 L3 volum: 3.0818e+07 RAM volum: 7.0103e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1323e+11 fullRAMBW: 1.1660e+10 Latency L3 : 53.7704 DRAM : 578.4020  
Bandwidth Usage L3 : 0.0008 , Bandwidth usage DRAM : 0.0017 realIntensityL3 : 547.9755 roofIntensityL3 :  
0.4339 realIntensityRAM : 2408.9587 roofIntensityRAM : 4.9269 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----4 overflow 0.359476 Socket : 1 socket 1 6635274694 5549757698 Uncorefreq: 3.0197e+09  
18 938378944.000000 1013133440.000000 832216704.000000 19 1877875712.000000  
2026268544.000000 1664434816.000000 20 2816574720.000000 3039404032.000000

2496653312.000000 21 3755030016.000000 4052540672.000000 3328872704.000000 22  
4693457408.000000 5065675776.000000 4161090816.000000 23 5631686144.000000  
6078812160.000000 4993310208.000000 24 6570076672.000000 7091949056.000000  
5825529856.000000 25 7508642304.000000 8105086464.000000 6657750016.000000 26  
8447223808.000000 9118224384.000000 7489970176.000000 27 9385234432.000000  
10131361792.000000 8322190336.000000 28 10323805184.000000 11144500224.000000  
9154411520.000000 29 11262233600.000000 12157638656.000000 9986632704.000000 30  
12200797184.000000 13170777088.000000 10818852864.000000 31 13139292160.000000  
14183915520.000000 11651074048.000000 32 14077921280.000000 15197051904.000000  
12483293184.000000 33 15016441856.000000 16210190336.000000 13315514368.000000 34  
15955035136.000000 17223329792.000000 14147735552.000000 35 16893974528.000000  
18236471296.000000 14979958784.000000 coreFreq : 2.6783e+09 clockTime : 3.7828e-01 wallTime :  
3.5948e-01 insPerSec : 4.4660e+10 cycles : 18236471296.000000 L2 stallId : 1664077696.000000 L2 stall  
rate : 0.091250 Ldm stallId : 4057335040.000000 LDM stall rate : 0.222485 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0912 stallLDMRate : 0.2225  
stallL2Cycles : 1664077696.0000 stallLDMCycles : 4057335040.0000 idealInsPerSecL2 : 4.9144e+10  
idealInsPerSecLDM : 5.7439e+10 L3 volum: 3.1115e+07 RAM volum: 7.7284e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1365e+11 fullRAMBW: 1.1733e+10 Latency L3 : 53.4815 DRAM : 524.9871  
Bandwidth Usage L3 : 0.0008 , Bandwidth usage DRAM : 0.0018 realIntensityL3 : 542.9526 roofIntensityL3  
: 0.4324 realIntensityRAM : 2185.9465 roofIntensityRAM : 4.8954 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----5 overflow 0.359383 Socket : 1 socket 1 7720090458 6635274694 Uncorefreq: 3.0185e+09  
18 937987392.000000 1012513024.000000 831707392.000000 19 1876166016.000000  
2025024256.000000 1663412992.000000 20 2814451200.000000 3037534208.000000  
2495117568.000000 21 3752642048.000000 4050043392.000000 3326821632.000000 22  
4690555392.000000 5062553088.000000 4158525952.000000 23 5628361216.000000  
6075060736.000000 4990228480.000000 24 6566309376.000000 7087568384.000000  
5821931008.000000 25 7504532992.000000 8100074496.000000 6653632512.000000 26  
8442746368.000000 9112581120.000000 7485334528.000000 27 9380829184.000000  
10125086720.000000 8317036032.000000 28 10318976000.000000 11137593344.000000  
9148738560.000000 29 11257116672.000000 12150099968.000000 9980439552.000000 30  
12195315712.000000 13162606592.000000 10812141568.000000 31 13133218816.000000  
14175114240.000000 11643843584.000000 32 14071392256.000000 15187620864.000000  
12475545600.000000 33 15009510400.000000 16200125440.000000 13307245568.000000 34  
15947614208.000000 17212628992.000000 14138945536.000000 35 16886184960.000000  
18225131520.000000 14970644480.000000 coreFreq : 2.6783e+09 clockTime : 3.7805e-01 wallTime :  
3.5938e-01 insPerSec : 4.4667e+10 cycles : 18225131520.000000 L2 stallId : 1646577664.000000 L2 stall  
rate : 0.090347 Ldm stallId : 4054213120.000000 LDM stall rate : 0.222452 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0903 stallLDMRate : 0.2225  
stallL2Cycles : 1646577664.0000 stallLDMCycles : 4054213120.0000 idealInsPerSecL2 : 4.9103e+10  
idealInsPerSecLDM : 5.7446e+10 L3 volum: 2.0893e+07 RAM volum: 4.7539e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.0966e+11 fullRAMBW: 1.1037e+10 Latency L3 : 78.8086 DRAM : 852.8148  
Bandwidth Usage L3 : 0.0005 , Bandwidth usage DRAM : 0.0012 realIntensityL3 : 808.2076 roofIntensityL3  
: 0.4478 realIntensityRAM : 3552.0549 roofIntensityRAM : 5.2048 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----6 overflow 0.359303 Socket : 1 socket 1 8804932676 7720090458 Uncorefreq: 3.0193e+09  
18 937951552.000000 1012511936.000000 831705984.000000 19 1876049152.000000  
2025024000.000000 1663412224.000000 20 2814275328.000000 3037536512.000000  
2495118848.000000 21 3752247808.000000 4050049024.000000 3326825472.000000 22  
4689602560.000000 5062563328.000000 4158533632.000000 23 5627376128.000000  
6075077632.000000 4990241792.000000 24 6565374976.000000 7087592448.000000  
5821950464.000000 25 7503587328.000000 8100106240.000000 6653658112.000000 26  
8441636864.000000 9112620032.000000 7485365760.000000 27 9379441664.000000  
10125135872.000000 8317075456.000000 28 10317540352.000000 11137650688.000000  
9148784640.000000 29 11255734272.000000 12150166528.000000 9980493824.000000 30  
12193895424.000000 13162683392.000000 10812204032.000000 31 13132038144.000000  
14175199232.000000 11643913216.000000 32 14070192128.000000 15187718144.000000  
12475624448.000000 33 15008336896.000000 16200236032.000000 13307335680.000000 34  
15946577920.000000 17212755968.000000 14139048960.000000 35 16885193728.000000  
18225276928.000000 14970762240.000000 coreFreq : 2.6783e+09 clockTime : 3.7805e-01 wallTime :  
3.5930e-01 insPerSec : 4.4664e+10 cycles : 18225276928.000000 L2 stalld : 1830650240.000000 L2  
stall rate : 0.100446 Ldm stalld : 4054491392.000000 LDM stall rate : 0.222465 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1004 stallLDMRate :  
0.2225 stallL2Cycles : 1830650240.0000 stallLDMCycles : 4054491392.0000 idealInsPerSecL2 :  
4.9651e+10 idealInsPerSecLDM : 5.7443e+10 L3 volum: 2.3727e+07 RAM volum: 5.3703e+06 lowerBound :  
18 upperBound : 15 full L3 BW : 1.1220e+11 fullRAMBW: 1.1481e+10 Latency L3 : 77.1550 DRAM : 754.9836  
Bandwidth Usage L3 : 0.0006 , Bandwidth usage DRAM : 0.0013 realIntensityL3 : 711.6473 roofIntensityL3 :  
0.4425 realIntensityRAM : 3144.1785 roofIntensityRAM : 5.0035 conclusion: compute bound 1 l3boundness  
1 ramboundness 1

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-----7 overflow 0.359451 Socket : 1 socket 1 9890791586 8804932676 Uncorefreq: 3.0209e+09  
18 938755968.000000 1013437184.000000 832466560.000000 19 1877465600.000000  
2026926848.000000 1664975872.000000 20 2816456704.000000 3040415488.000000  
2497484288.000000 21 3756130048.000000 4053902336.000000 3329991168.000000 22  
4694882304.000000 5067386368.000000 4162495744.000000 23 5633516544.000000  
6080869376.000000 4994999808.000000 24 6572370432.000000 7094350848.000000  
5827502080.000000 25 7511312384.000000 8107831296.000000 6660003840.000000 26  
8450078208.000000 9121310720.000000 7492505088.000000 27 9389047808.000000  
10134787072.000000 8325003264.000000 28 10327992320.000000 11148261376.000000  
9157500928.000000 29 11333477376.000000 12161703936.000000 9989971968.000000 30  
12272394240.000000 13175170048.000000 10822462464.000000 31 13211260928.000000  
14188635136.000000 11654951936.000000 32 14150224896.000000 15202097152.000000  
12487438336.000000 33 15089117184.000000 16215557120.000000 13319922688.000000 34  
16028090368.000000 17229012992.000000 14152404992.000000 35 16967519232.000000  
18242467840.000000 14984885248.000000 coreFreq : 2.6783e+09 clockTime : 3.7841e-01 wallTime :  
3.5945e-01 insPerSec : 4.4840e+10 cycles : 18242467840.000000 L2 stalld : 2325691904.000000 L2  
stall rate : 0.127488 Ldm stalld : 4027630080.000000 LDM stall rate : 0.220783 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1275 stallLDMRate :  
0.2208 stallL2Cycles : 2325691904.0000 stallLDMCycles : 4027630080.0000 idealInsPerSecL2 :  
5.1391e+10 idealInsPerSecLDM : 5.7544e+10 L3 volum: 3.0737e+07 RAM volum: 7.7402e+06 lowerBound :

18 upperBound : 15 full L3 BW : 1.1759e+11 fullRAMBW: 1.2423e+10 Latency L3 : 75.6650 DRAM : 520.3549  
Bandwidth Usage L3 : 0.0007 , Bandwidth usage DRAM : 0.0017 realIntensityL3 : 552.0280 roofIntensityL3 :  
0.4370 realIntensityRAM : 2192.1406 roofIntensityRAM : 4.6321 conclusion: compute bound 1 l3boundness  
1 ramboundness 1

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-----8 overflow 0.359331 Socket : 1 socket 1 10974305790 9890791586 Uncorefreq: 3.0154e+09  
18 937091200.000000 1011514304.000000 830886464.000000 19 1874307584.000000  
2022972928.000000 1661727616.000000 20 2811568384.000000 3034429184.000000  
2492566528.000000 21 3748805888.000000 4045882368.000000 3323403008.000000 22  
4685746688.000000 5057333248.000000 4154237696.000000 23 5622460416.000000  
6068782080.000000 4985070592.000000 24 6559467520.000000 7080228352.000000  
5815901696.000000 25 7496591872.000000 8091672064.000000 6646730240.000000 26  
8433809408.000000 9103111168.000000 747755200.000000 27 9370985472.000000  
10114548736.000000 8308378624.000000 28 10308052992.000000 11125983232.000000  
9139200000.000000 29 11313527808.000000 12137259008.000000 9969891328.000000 30  
12250630144.000000 13148689408.000000 10800708608.000000 31 13187616768.000000  
14160116736.000000 11631523840.000000 32 14124817408.000000 15171542016.000000  
12462337024.000000 33 15061921792.000000 16182964224.000000 13293148160.000000 34  
15999112192.000000 17194385408.000000 14123958272.000000 35 16937505792.000000  
18205804544.000000 14954767360.000000 coreFreq : 2.6783e+09 clockTime : 3.7764e-01 wallTime :  
3.5933e-01 insPerSec : 4.4850e+10 cycles : 18205804544.000000 L2 stalld : 2137187968.000000 L2 stall  
rate : 0.117390 Ldm stalld : 4018631168.000000 LDM stall rate : 0.220734 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1174 stallLDMRate : 0.2207  
stallL2Cycles : 2137187968.0000 stallLDMCycles : 4018631168.0000 ideallnsPerSecL2 : 5.0816e+10  
ideallnsPerSecLDM : 5.7555e+10 L3 volum: 3.9000e+07 RAM volum: 8.1688e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 9.8822e+10 fullRAMBW: 9.1429e+09 Latency L3 : 54.7992 DRAM : 491.9468  
Bandwidth Usage L3 : 0.0011 , Bandwidth usage DRAM : 0.0025 realIntensityL3 : 434.2907 roofIntensityL3 :  
0.5142 realIntensityRAM : 2073.4307 roofIntensityRAM : 6.2950 conclusion: compute bound 1 l3boundness  
1 ramboundness 1

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-----9 overflow 0.359404 Socket : 1 socket 1 12058927544 10974305790 Uncorefreq:  
3.0178e+09 18 937883072.000000 1012319040.000000 831547776.000000 19 1875956736.000000  
2024637440.000000 1663095040.000000 20 2814010368.000000 3036955648.000000  
2494642176.000000 21 3752128512.000000 4049273088.000000 3326188800.000000 22  
4689758720.000000 5061590528.000000 4157735168.000000 23 5627472384.000000  
6073907200.000000 4989281280.000000 24 6565303808.000000 7086224384.000000  
5820827136.000000 25 7503398400.000000 8098540544.000000 6652372992.000000 26  
8441445888.000000 9110856704.000000 7483918336.000000 27 9379300352.000000  
10123172864.000000 8315464192.000000 28 10317330432.000000 11135489024.000000  
9147010048.000000 29 11323555840.000000 12147615744.000000 9978400768.000000 30  
12261627904.000000 13159931904.000000 10809946112.000000 31 13199480832.000000  
14172248064.000000 11641491456.000000 32 14137503744.000000 15184563200.000000  
12473036800.000000 33 15075442688.000000 16196879360.000000 13304582144.000000 34  
16013471744.000000 17209194496.000000 14136126464.000000 35 16952445952.000000  
18221508608.000000 14967670784.000000 coreFreq : 2.6783e+09 clockTime : 3.7797e-01 wallTime :

3.5940e-01 insPerSec : 4.4851e+10 cycles : 18221508608.000000 L2 stall : 2300731392.000000 L2 stall rate : 0.126265 Ldm stall : 4021766400.000000 LDM stall rate : 0.220715 PKG Energy: 0.000000 PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1263 stallLDMRate : 0.2207 stallL2Cycles : 2300731392.0000 stallLDMCycles : 4021766400.0000 ideallnsPerSecL2 : 5.1333e+10 ideallnsPerSecLDM : 5.7554e+10 L3 volum: 3.5952e+07 RAM volum: 6.7503e+06 lowerBound : 18 upperBound : 15 full L3 BW : 1.0721e+11 fullRAMBW: 1.0609e+10 Latency L3 : 63.9951 DRAM : 595.7932 Bandwidth Usage L3 : 0.0009 , Bandwidth usage DRAM : 0.0018 realIntensityL3 : 471.5342 roofIntensityL3 : 0.4788 realIntensityRAM : 2511.3723 roofIntensityRAM : 5.4250 conclusion: compute bound 1 l3boundness 1 ramboundness 1

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-----10 overflow 0.359522 Socket : 1 socket 1 13143929982 12058927544 Uncorefreq: 3.0179e+09 18 938113984.000000 1012662720.000000 831830080.000000 19 1876410880.000000 2025326336.000000 1663660800.000000 20 2814725888.000000 3037989888.000000 2495491584.000000 21 3752945920.000000 4050654464.000000 3327323136.000000 22 4690956800.000000 5063319040.000000 4159154688.000000 23 5628866048.000000 6075983360.000000 4990986240.000000 24 6566927872.000000 7088648192.000000 5822818304.000000 25 7505195520.000000 8101313536.000000 6654650880.000000 26 8443435520.000000 9113979904.000000 7486483968.000000 27 9381695488.000000 10126646272.000000 8318316544.000000 28 10319912960.000000 11139312640.000000 9150149632.000000 29 11326162944.000000 12151793664.000000 9981831168.000000 30 12264411136.000000 13164460032.000000 10813664256.000000 31 13202617344.000000 14177126400.000000 11645497344.000000 32 14140896256.000000 15189792768.000000 12477330432.000000 33 15079047168.000000 16202459136.000000 13309163520.000000 34 16017334272.000000 17215125504.000000 14140996608.000000 35 16955866112.000000 18227789824.000000 14972828672.000000 coreFreq : 2.6783e+09 clockTime : 3.7810e-01 wallTime : 3.5952e-01 insPerSec : 4.4845e+10 cycles : 18227789824.000000 L2 stall : 1928754048.000000 L2 stall rate : 0.105814 Ldm stall : 4024926464.000000 LDM stall rate : 0.220813 PKG Energy: 0.000000 PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1058 stallLDMRate : 0.2208 stallL2Cycles : 1928754048.0000 stallLDMCycles : 4024926464.0000 ideallnsPerSecL2 : 5.0152e+10 ideallnsPerSecLDM : 5.7553e+10 L3 volum: 3.0825e+07 RAM volum: 5.6391e+06 lowerBound : 18 upperBound : 15 full L3 BW : 1.0747e+11 fullRAMBW: 1.0654e+10 Latency L3 : 62.5716 DRAM : 713.7528 Bandwidth Usage L3 : 0.0008 , Bandwidth usage DRAM : 0.0015 realIntensityL3 : 550.0728 roofIntensityL3 : 0.4667 realIntensityRAM : 3006.8369 roofIntensityRAM : 5.4020 conclusion: compute bound 1 l3boundness 1 ramboundness 1

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-----11 overflow 0.359380 Socket : 1 socket 1 14228575164 13143929982 Uncorefreq: 3.0181e+09 18 937952256.000000 1012336640.000000 831562240.000000 19 1876038144.000000 2024672512.000000 1663123968.000000 20 2814147072.000000 3037008640.000000 2494685696.000000 21 3752231936.000000 4049344768.000000 3326247424.000000 22 4689883136.000000 5061681152.000000 4157809408.000000 23 5627484160.000000 6074017792.000000 4989371392.000000 24 6565334016.000000 7086353920.000000 5820933120.000000 25 7503406080.000000 8098690048.000000 6652494848.000000 26 8441511936.000000 911026688.000000 7484056576.000000 27 9379620864.000000 10123362304.000000 8315618304.000000 28 10317652992.000000 11135697920.000000 9147180032.000000 29 11323942912.000000 12147844096.000000 9978585088.000000 30

12261962752.000000 13160179712.000000 10810146816.000000 31 13199844352.000000  
14172515328.000000 11641708544.000000 32 14137850880.000000 15184851968.000000  
12473270272.000000 33 15075818496.000000 16197188608.000000 13304833024.000000 34  
16013840384.000000 17209526272.000000 14136395776.000000 35 16952259584.000000  
18221864960.000000 14967959552.000000 coreFreq : 2.6783e+09 clockTime : 3.7798e-01 wallTime :  
3.5938e-01 insPerSec : 4.4850e+10 cycles : 18221864960.000000 L2 stalld : 1923795200.000000 L2 stall  
rate : 0.105576 Ldm stalld : 4021813248.000000 LDM stall rate : 0.220714 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1056 stallLDMRate : 0.2207  
stallL2Cycles : 1923795200.0000 stallLDMCycles : 4021813248.0000 idealInsPerSecL2 : 5.0144e+10  
idealInsPerSecLDM : 5.7552e+10 L3 volum: 3.0251e+07 RAM volum: 4.9530e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.0812e+11 fullIRAMBW: 1.0768e+10 Latency L3 : 63.5946 DRAM : 811.9915  
Bandwidth Usage L3 : 0.0008 , Bandwidth usage DRAM : 0.0013 realIntensityL3 : 560.3878 roofIntensityL3  
: 0.4638 realIntensityRAM : 3422.6079 roofIntensityRAM : 5.3447 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----12

pi is approximately = 662.51701500969465996604 Error = 659.37542240969469276024 Energy of  
socket 1 : PKG: 0.000000 DRAM 0.000000

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- Depoly stream benchmark to 18 cores and run sampling

init freeze 700 80000000 init unfreeze 700 20000000 Node object is created registered sampling event  
overflow 0.411982 Socket : 1 socket 1 1064646636 362446 Uncorefreq: 2.5833e+09 18  
967922880.000000 1050256512.000000 944892544.000000 19 1938344960.000000  
2103086464.000000 1889699328.000000 20 2906357760.000000 3153253120.000000  
2834394624.000000 21 3869777920.000000 4198586880.000000 3779105536.000000 22  
4839990272.000000 5249119232.000000 4715609088.000000 23 5881013760.000000  
6301851648.000000 5660178432.000000 24 6843840512.000000 7346643456.000000  
6603807232.000000 25 7807650304.000000 8391823872.000000 7548179456.000000 26  
8772841472.000000 9438437376.000000 8492425216.000000 27 9776381952.000000  
10527353856.000000 9436036096.000000 28 10747983872.000000 11581377536.000000  
10380203008.000000 29 11718199296.000000 12632558592.000000 11324567552.000000 30  
12692153344.000000 13689478144.000000 12268617728.000000 31 13659225088.000000  
14738557952.000000 13211802624.000000 32 14626827264.000000 15788311552.000000  
14155555840.000000 33 15595493376.000000 16839176192.000000 15099261952.000000 34  
16560523264.000000 17885978624.000000 16042577920.000000 35 17537447936.000000  
18944274432.000000 16979020800.000000 coreFreq : 2.4546e+09 clockTime : 4.2876e-01 wallTime :  
4.1198e-01 insPerSec : 4.0903e+10 cycles : 18944274432.000000 L2 stalld : 1699803008.000000 L2 stall  
rate : 0.089726 Ldm stalld : 4185313792.000000 LDM stall rate : 0.220928 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0897 stallLDMRate : 0.2209  
stallL2Cycles : 1699803008.0000 stallLDMCycles : 4185313792.0000 idealInsPerSecL2 : 4.4934e+10  
idealInsPerSecLDM : 5.2502e+10 L3 volum: 5.5596e+07 RAM volum: 1.2283e+07 lowerBound : 13  
upperBound : 14 full L3 BW : 3.7750e+11 fullIRAMBW: 5.8783e+10 Latency L3 : 30.5744 DRAM : 340.7401  
Bandwidth Usage L3 : 0.0004 , Bandwidth usage DRAM : 0.0005 realIntensityL3 : 315.4464 roofIntensityL3



: 0.1190 realIntensityRAM : 1427.7812 roofIntensityRAM : 0.8931 conclusion: compute bound 1 l3boundness  
1 ramboundness 1

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-----0 overflow 0.360304 Socket : 1 socket 1 2153621918 1064646636 Uncorefreq: 3.0224e+09  
18 941714688.000000 1016513280.000000 834992960.000000 19 1883650176.000000  
2033024128.000000 1669984000.000000 20 2825589760.000000 3049533440.000000  
2504973824.000000 21 3767282944.000000 4066041856.000000 3339962880.000000 22  
4708824064.000000 5082549760.000000 4174951680.000000 23 5720809984.000000  
6099057664.000000 5009939968.000000 24 6662507008.000000 7115564544.000000  
5844927488.000000 25 7604361216.000000 8132070400.000000 6679913984.000000 26  
8546290688.000000 9148574720.000000 7514899968.000000 27 9488207872.000000  
10165079040.000000 8349885440.000000 28 10430170112.000000 11181581312.000000  
9184869376.000000 29 11372116992.000000 12198081536.000000 10019852288.000000 30  
12313827328.000000 13214580736.000000 10854834176.000000 31 13255716864.000000  
14231078912.000000 11689815040.000000 32 14197682176.000000 15247575040.000000  
12524793856.000000 33 15139584000.000000 16264069120.000000 13359771648.000000 34  
16080916480.000000 17280563200.000000 14194748416.000000 35 17024630784.000000  
18297057280.000000 15029725184.000000 coreFreq : 2.6783e+09 clockTime : 3.7954e-01 wallTime :  
3.6030e-01 insPerSec : 4.4856e+10 cycles : 18297057280.000000 L2 stalld : 2279505408.000000 L2  
stall rate : 0.124583 Ldm stalld : 4039034624.000000 LDM stall rate : 0.220748 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1246 stallLDMRate :  
0.2207 stallL2Cycles : 2279505408.0000 stallLDMCycles : 4039034624.0000 idealInsPerSecL2 :  
5.1240e+10 idealInsPerSecLDM : 5.7563e+10 L3 volum: 3.8064e+07 RAM volum: 7.0941e+06 lowerBound :  
18 upperBound : 15 full L3 BW : 1.2269e+11 fullRAMBW: 1.3314e+10 Latency L3 : 59.8862 DRAM :  
569.3528 Bandwidth Usage L3 : 0.0009 , Bandwidth usage DRAM : 0.0015 realIntensityL3 : 447.2641  
roofIntensityL3 : 0.4176 realIntensityRAM : 2399.8364 roofIntensityRAM : 4.3236 conclusion: compute  
bound 1 l3boundness 1 ramboundness 1

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-----1 overflow 0.361246 Socket : 1 socket 1 3244461142 2153621918 Uncorefreq: 3.0197e+09 18  
942968960.000000 1018110272.000000 836304896.000000 19 1886110848.000000  
2036221056.000000 1672610304.000000 20 2829245440.000000 3054332672.000000  
2508916224.000000 21 3772345856.000000 4072444416.000000 3345222144.000000 22  
4715447296.000000 5090554880.000000 4181527296.000000 23 5728770560.000000  
6108665856.000000 5017832448.000000 24 6671674880.000000 7126776832.000000  
5854137856.000000 25 7614816768.000000 8144888320.000000 6690443776.000000 26  
8558011904.000000 9162999808.000000 7526749184.000000 27 9501103104.000000  
10181110784.000000 8363055104.000000 28 10444253184.000000 11199222784.000000  
9199361024.000000 29 11387454464.000000 12217334784.000000 10035666944.000000 30  
12330443776.000000 13235446784.000000 10871972864.000000 31 13273567232.000000  
14253558784.000000 11708278784.000000 32 14216711168.000000 15271671808.000000  
12544585728.000000 33 15159856128.000000 16289784832.000000 13380892672.000000 34  
16102377472.000000 17307897856.000000 14217199616.000000 35 17045734400.000000  
18326009856.000000 15053505536.000000 coreFreq : 2.6783e+09 clockTime : 3.8014e-01 wallTime :  
3.6125e-01 insPerSec : 4.4841e+10 cycles : 18326009856.000000 L2 stalld : 2326879744.000000 L2 stall  
rate : 0.126971 Ldm stalld : 4046722048.000000 LDM stall rate : 0.220819 PKG Energy: 0.000000 PKG

Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1270 stallLDMRate : 0.2208  
stallL2Cycles : 2326879744.0000 stallLDMCycles : 4046722048.0000 idealInsPerSecL2 : 5.1362e+10  
idealInsPerSecLDM : 5.7549e+10 L3 volum: 3.4953e+07 RAM volum: 6.5496e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1343e+11 fullRAMBW: 1.1696e+10 Latency L3 : 66.5713 DRAM : 617.8549  
Bandwidth Usage L3 : 0.0009 , Bandwidth usage DRAM : 0.0016 realIntensityL3 : 487.6729 roofIntensityL3 :  
0.4528 realIntensityRAM : 2602.5483 roofIntensityRAM : 4.9204 conclusion: compute bound 1  
l3boundness 1 ramboundness 1

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-----2 overflow 0.360600 Socket : 1 socket 1 4333207582 3244461142 Uncorefreq: 3.0193e+09  
18 941475520.000000 1016173952.000000 834714304.000000 19 1883122688.000000  
2032347520.000000 1669428224.000000 20 2824803840.000000 3048519936.000000  
2504141312.000000 21 3766433280.000000 4064691968.000000 3338853888.000000 22  
4708047360.000000 5080863232.000000 4173565952.000000 23 5720133632.000000  
6097034240.000000 5008278016.000000 24 6661588992.000000 7113204736.000000  
5842989568.000000 25 7603089408.000000 8129374720.000000 6677700608.000000 26  
8544751616.000000 9145544704.000000 7512411648.000000 27 9486325760.000000  
10161714176.000000 8347121664.000000 28 10427994112.000000 11177882624.000000  
9181831168.000000 29 11369383936.000000 12194051072.000000 10016540672.000000 30  
12310825984.000000 13210219520.000000 10851250176.000000 31 13252442112.000000  
14226386944.000000 11685959680.000000 32 14194038784.000000 15242555392.000000  
12520669184.000000 33 15135669248.000000 16258721792.000000 13355377664.000000 34  
16076851200.000000 17274888192.000000 14190086144.000000 35 17018882048.000000  
18291056640.000000 15024795648.000000 coreFreq : 2.6783e+09 clockTime : 3.7941e-01 wallTime :  
3.6060e-01 insPerSec : 4.4856e+10 cycles : 18291056640.000000 L2 stalld : 2155913728.000000 L2 stall  
rate : 0.117867 Ldm stalld : 4037798912.000000 LDM stall rate : 0.220753 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1179 stallLDMRate : 0.2208  
stallL2Cycles : 2155913728.0000 stallLDMCycles : 4037798912.0000 idealInsPerSecL2 : 5.0849e+10  
idealInsPerSecLDM : 5.7563e+10 L3 volum: 2.9767e+07 RAM volum: 5.5249e+06 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1209e+11 fullRAMBW: 1.1462e+10 Latency L3 : 72.4273 DRAM : 730.8413  
Bandwidth Usage L3 : 0.0007 , Bandwidth usage DRAM : 0.0013 realIntensityL3 : 571.7444 roofIntensityL3 :  
0.4536 realIntensityRAM : 3080.4165 roofIntensityRAM : 5.0220 conclusion: compute bound 1 l3boundness  
1 ramboundness 1

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-----3 overflow 0.361232 Socket : 1 socket 1 5424170926 4333207582 Uncorefreq: 3.0201e+09  
18 943074688.000000 1018098688.000000 836295488.000000 19 1812025600.000000  
2036204800.000000 1672597248.000000 20 2755444480.000000 3054316800.000000  
2508903680.000000 21 3698548224.000000 4072433664.000000 3345213952.000000 22  
4641487872.000000 5090555392.000000 4181528576.000000 23 5655238656.000000  
6108681728.000000 5017846784.000000 24 6598555136.000000 7126812160.000000  
5854168064.000000 25 7541864960.000000 8144946688.000000 6690492928.000000 26  
8484932096.000000 9163087872.000000 7526822912.000000 27 9428260864.000000  
10181232640.000000 8363156480.000000 28 10371526656.000000 11199383552.000000  
9199494144.000000 29 11314226176.000000 12217538560.000000 10035835904.000000 30  
12257466368.000000 13235697664.000000 10872181760.000000 31 13200817152.000000  
14253860864.000000 11708530688.000000 32 14144220160.000000 15272028160.000000

12544882688.000000 33 15087571968.000000 16290200576.000000 13381238784.000000 34  
16030527488.000000 17308377088.000000 14217597952.000000 35 16974319616.000000  
18326558720.000000 15053961216.000000 coreFreq : 2.6783e+09 clockTime : 3.8015e-01 wallTime :  
3.6123e-01 insPerSec : 4.4652e+10 cycles : 18326558720.000000 L2 stallId : 1784112768.000000 L2 stall  
rate : 0.097351 Ldm stallId : 4008678144.000000 LDM stall rate : 0.218736 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0974 stallLDMRate : 0.2187  
stallL2Cycles : 1784112768.0000 stallLDMCycles : 4008678144.0000 idealInsPerSecL2 : 4.9467e+10  
idealInsPerSecLDM : 5.7153e+10 L3 volum: 3.2264e+08 RAM volum: 8.7162e+07 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1499e+11 fullRAMBW: 1.1969e+10 Latency L3 : 5.5297 DRAM : 45.9910  
Bandwidth Usage L3 : 0.0078 , Bandwidth usage DRAM : 0.0202 realIntensityL3 : 52.6107 roofIntensityL3 :  
0.4302 realIntensityRAM : 194.7441 roofIntensityRAM : 4.7751 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----4 overflow 0.362927 Socket : 1 socket 1 6520371406 5424170926 Uncorefreq: 3.0204e+09  
18 947553664.000000 1023118592.000000 840418880.000000 19 1986835712.000000  
2046236416.000000 1680837120.000000 20 2934633472.000000 3069354240.000000  
2521255424.000000 21 3882524672.000000 4092471808.000000 3361673472.000000 22  
4830293504.000000 5115589120.000000 4202091264.000000 23 5847349760.000000  
6138705920.000000 5042508800.000000 24 6795021312.000000 7161823232.000000  
5882926592.000000 25 7742742016.000000 8184941568.000000 6723344896.000000 26  
8690240512.000000 9208058880.000000 7563762688.000000 27 9638051840.000000  
1023117216.000000 8404180992.000000 28 10585869312.000000 11254295552.000000  
9244599296.000000 29 11533016064.000000 12277413888.000000 10085018624.000000 30  
12480702464.000000 13300534272.000000 10925438976.000000 31 13431835648.000000  
14323654656.000000 11765859328.000000 32 14379695104.000000 15346776064.000000  
12606279680.000000 33 15327663104.000000 16369898496.000000 13446701056.000000 34  
16275002368.000000 17393020928.000000 14287123456.000000 35 17223012352.000000  
18416144384.000000 15127545856.000000 coreFreq : 2.6783e+09 clockTime : 3.8201e-01 wallTime :  
3.6293e-01 insPerSec : 4.5085e+10 cycles : 18416144384.000000 L2 stallId : 975567936.000000 L2 stall  
rate : 0.052974 Ldm stallId : 3977848320.000000 LDM stall rate : 0.215998 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0530 stallLDMRate : 0.2160  
stallL2Cycles : 975567936.0000 stallLDMCycles : 3977848320.0000 idealInsPerSecL2 : 4.7607e+10  
idealInsPerSecLDM : 5.7507e+10 L3 volum: 1.3253e+09 RAM volum: 8.5448e+08 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1612e+11 fullRAMBW: 1.2165e+10 Latency L3 : 0.7361 DRAM : 4.6553  
Bandwidth Usage L3 : 0.0314 , Bandwidth usage DRAM : 0.1935 realIntensityL3 : 12.9958 roofIntensityL3 :  
0.4100 realIntensityRAM : 20.1561 roofIntensityRAM : 4.7272 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----5 overflow 0.362080 Socket : 1 socket 1 7613859964 6520371406 Uncorefreq: 3.0200e+09  
18 944616192.000000 1020579392.000000 838333056.000000 19 1916440576.000000  
2041158400.000000 1676665728.000000 20 2866184960.000000 3061739008.000000  
2514999808.000000 21 3811631104.000000 4082320128.000000 3353334272.000000 22  
4755247616.000000 5102902272.000000 4191669504.000000 23 5768078848.000000  
6123485184.000000 5030005248.000000 24 6713314816.000000 7144068096.000000  
5868341248.000000 25 7658954240.000000 8164651008.000000 6706677248.000000 26

8604564480.000000 9185234944.000000 7545013760.000000 27 9550033920.000000  
10205817856.000000 8383349760.000000 28 10495780864.000000 11226399744.000000  
9221685248.000000 29 11595324416.000000 12246983680.000000 10060021760.000000 30  
12540750848.000000 13267567616.000000 10898358272.000000 31 13486373888.000000  
14288151552.000000 11736694784.000000 32 14433549312.000000 15308736512.000000  
12575032320.000000 33 15379223552.000000 16329320448.000000 13413369856.000000 34  
16324973568.000000 17349904384.000000 14251706368.000000 35 17270566912.000000  
18370488320.000000 15090042880.000000 coreFreq : 2.6783e+09 clockTime : 3.8106e-01 wallTime :  
3.6208e-01 insPerSec : 4.5322e+10 cycles : 18370488320.000000 L2 stalld : 1495533056.000000 L2 stall  
rate : 0.081410 Ldm stalld : 3992033792.000000 LDM stall rate : 0.217307 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0814 stallLDMRate : 0.2173  
stallL2Cycles : 1495533056.0000 stallLDMCycles : 3992033792.0000 idealInsPerSecL2 : 4.9339e+10  
idealInsPerSecLDM : 5.7906e+10 L3 volum: 1.3467e+09 RAM volum: 9.5655e+08 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1465e+11 fullRAMBW: 1.1909e+10 Latency L3 : 1.1105 DRAM : 4.1733  
Bandwidth Usage L3 : 0.0324 , Bandwidth usage DRAM : 0.2218 realIntensityL3 : 12.8239 roofIntensityL3 :  
0.4303 realIntensityRAM : 18.0550 roofIntensityRAM : 4.8622 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----6 overflow 0.362625 Socket : 1 socket 1 8708895690 7613859964 Uncorefreq: 3.0198e+09  
18 946417600.000000 1022026176.000000 839521536.000000 19 1893223424.000000  
2044052480.000000 1679043072.000000 20 2840009984.000000 3066078208.000000  
2518564352.000000 21 3786765312.000000 4088103936.000000 3358085376.000000 22  
4733029376.000000 5110129664.000000 4197606400.000000 23 5746742784.000000  
6132155392.000000 5037127680.000000 24 6693151232.000000 7154181120.000000  
5876648960.000000 25 7639850496.000000 8176206848.000000 6716170240.000000 26  
8586689024.000000 9198231552.000000 7555690496.000000 27 9532965888.000000  
10220257280.000000 8395211264.000000 28 10479816704.000000 11242284032.000000  
9234733056.000000 29 11741779968.000000 12264311808.000000 10074256384.000000 30  
12688437248.000000 13286338560.000000 10913778688.000000 31 13635147776.000000  
14308365312.000000 11753300992.000000 32 14582389760.000000 15330393088.000000  
12592823296.000000 33 15529175040.000000 16352421888.000000 13432346624.000000 34  
16475321344.000000 17374451712.000000 14271870976.000000 35 17421991936.000000  
18396481536.000000 15111395328.000000 coreFreq : 2.6783e+09 clockTime : 3.8160e-01 wallTime :  
3.6262e-01 insPerSec : 4.5655e+10 cycles : 18396481536.000000 L2 stalld : 1206748416.000000 L2 stall  
rate : 0.065597 Ldm stalld : 3959198208.000000 LDM stall rate : 0.215215 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0656 stallLDMRate : 0.2152  
stallL2Cycles : 1206748416.0000 stallLDMCycles : 3959198208.0000 idealInsPerSecL2 : 4.8860e+10  
idealInsPerSecLDM : 5.8175e+10 L3 volum: 1.9988e+09 RAM volum: 1.4745e+09 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1375e+11 fullRAMBW: 1.1751e+10 Latency L3 : 0.6037 DRAM : 2.6851  
Bandwidth Usage L3 : 0.0485 , Bandwidth usage DRAM : 0.3460 realIntensityL3 : 8.7164 roofIntensityL3 :  
0.4295 realIntensityRAM : 11.8156 roofIntensityRAM : 4.9505 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----7 overflow 0.363801 Socket : 1 socket 1 9807751568 8708895690 Uncorefreq: 3.0205e+09  
18 949477888.000000 1025590336.000000 842449216.000000 19 1899197952.000000

2051185664.000000 1684902656.000000 20 2849194752.000000 3076780800.000000  
2527355904.000000 21 3799232512.000000 4102376960.000000 3369809920.000000 22  
4748933632.000000 5127971840.000000 4212262912.000000 23 5766458368.000000  
6153566720.000000 5054715904.000000 24 6716136960.000000 7179163136.000000  
5897169920.000000 25 7666028544.000000 8204760064.000000 6739624960.000000 26  
8616089600.000000 9230358528.000000 7582080512.000000 27 9566141440.000000  
10255956992.000000 8424536576.000000 28 10516140032.000000 11281555456.000000  
9266992128.000000 29 11784474624.000000 12307153920.000000 10109448192.000000 30  
12734242816.000000 13332752384.000000 10951904256.000000 31 13684288512.000000  
14358350848.000000 11794360320.000000 32 14634268672.000000 15383949312.000000  
12636816384.000000 33 15584413696.000000 16409547776.000000 13479272448.000000 34  
16533970944.000000 17435146240.000000 14321727488.000000 35 17483915264.000000  
18460743680.000000 15164182528.000000 coreFreq : 2.6783e+09 clockTime : 3.8293e-01 wallTime :  
3.6380e-01 insPerSec : 4.5658e+10 cycles : 18460743680.000000 L2 stallId : 1045256384.000000 L2  
stall rate : 0.056620 Ldm stallId : 3974684416.000000 LDM stall rate : 0.215305 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0566 stallLDMRate :  
0.2153 stallL2Cycles : 1045256384.0000 stallLDMCycles : 3974684416.0000 idealInsPerSecL2 :  
4.8398e+10 idealInsPerSecLDM : 5.8186e+10 L3 volum: 2.0126e+09 RAM volum: 1.4783e+09 lowerBound :  
18 upperBound : 15 full L3 BW : 1.1625e+11 fullIRAMBW: 1.2188e+10 Latency L3 : 0.5194 DRAM : 2.6886  
Bandwidth Usage L3 : 0.0476 , Bandwidth usage DRAM : 0.3334 realIntensityL3 : 8.6872 roofIntensityL3 :  
0.4163 realIntensityRAM : 11.8267 roofIntensityRAM : 4.7738 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----8 overflow 0.362455 Socket : 1 socket 1 10902393308 9807751568 Uncorefreq: 3.0201e+09  
18 946258240.000000 1021669952.000000 839228928.000000 19 1892718848.000000  
2043336448.000000 1678455040.000000 20 2839147008.000000 3065002496.000000  
2517680896.000000 21 3785113088.000000 4086668288.000000 3356906240.000000 22  
4731213824.000000 5108336128.000000 4196133376.000000 23 5744876544.000000  
6130003968.000000 5035360768.000000 24 6690938368.000000 7151671296.000000  
5874587648.000000 25 7637266944.000000 8173338624.000000 6713814528.000000 26  
8583690752.000000 9195005952.000000 7553041408.000000 27 9530013696.000000  
10216673280.000000 8392267776.000000 28 10476435456.000000 11238340608.000000  
9231494144.000000 29 11730206720.000000 12260007936.000000 10070720512.000000 30  
12676398080.000000 13281676288.000000 10909947904.000000 31 13622887424.000000  
14303345664.000000 11749176320.000000 32 14569305088.000000 15325012992.000000  
12588403712.000000 33 15515816960.000000 16346681344.000000 13427631104.000000 34  
16461840384.000000 17368348672.000000 14266858496.000000 35 17408210944.000000  
18390016000.000000 15106084864.000000 coreFreq : 2.6783e+09 clockTime : 3.8147e-01 wallTime :  
3.6245e-01 insPerSec : 4.5635e+10 cycles : 18390016000.000000 L2 stallId : 1249763328.000000 L2 stall  
rate : 0.067959 Ldm stallId : 3960219904.000000 LDM stall rate : 0.215346 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0680 stallLDMRate : 0.2153  
stallL2Cycles : 1249763328.0000 stallLDMCycles : 3960219904.0000 idealInsPerSecL2 : 4.8962e+10  
idealInsPerSecLDM : 5.8159e+10 L3 volum: 1.9780e+09 RAM volum: 1.4502e+09 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1487e+11 fullIRAMBW: 1.1947e+10 Latency L3 : 0.6318 DRAM : 2.7308  
Bandwidth Usage L3 : 0.0475 , Bandwidth usage DRAM : 0.3349 realIntensityL3 : 8.8008 roofIntensityL3 :

0.4263 realIntensityRAM : 12.0040 roofIntensityRAM : 4.8683 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----9 overflow 0.362195 Socket : 1 socket 1 11996245776 10902393308 Uncorefreq:  
3.0201e+09 18 945447744.000000 1020954112.000000 838640832.000000 19 1891099136.000000  
2041905664.000000 1677279744.000000 20 2836812800.000000 3062857472.000000  
2515918848.000000 21 3782464000.000000 4083807744.000000 3354556672.000000 22  
4727895040.000000 5104756224.000000 4193192960.000000 23 5742430208.000000  
6125703168.000000 5031827968.000000 24 6687666176.000000 7146649600.000000  
5870462464.000000 25 7633010688.000000 8167595520.000000 6709096448.000000 26  
8578586624.000000 9188541440.000000 7547730432.000000 27 9524205568.000000  
10209486848.000000 8386363904.000000 28 10469936128.000000 11230431232.000000  
9224996864.000000 29 11789795328.000000 12251035648.000000 10063350784.000000 30  
12735247360.000000 13271975936.000000 10901980160.000000 31 13680805888.000000  
14292914176.000000 11740608512.000000 32 14626533376.000000 15313853440.000000  
12579236864.000000 33 15572154368.000000 16334790656.000000 13417863168.000000 34  
16517180416.000000 17355726848.000000 14256489472.000000 35 17462925312.000000  
18376665088.000000 15095116800.000000 coreFreq : 2.6783e+09 clockTime : 3.8119e-01 wallTime :  
3.6220e-01 insPerSec : 4.5812e+10 cycles : 18376665088.000000 L2 stall : 1277001600.000000 L2 stall  
rate : 0.069490 Ldm stall : 3973335040.000000 LDM stall rate : 0.216216 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0695 stallLDMRate : 0.2162  
stallL2Cycles : 1277001600.0000 stallLDMCycles : 3973335040.0000 idealInsPerSecL2 : 4.9233e+10  
idealInsPerSecLDM : 5.8449e+10 L3 volum: 1.0843e+09 RAM volum: 7.5455e+08 lowerBound : 18  
upperBound : 15 full L3 BW : 1.1482e+11 fullIRAMBW: 1.1938e+10 Latency L3 : 1.1777 DRAM : 5.2659  
Bandwidth Usage L3 : 0.0261 , Bandwidth usage DRAM : 0.1745 realIntensityL3 : 16.1056 roofIntensityL3 :  
0.4288 realIntensityRAM : 23.1436 roofIntensityRAM : 4.8961 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----10 overflow 0.361563 Socket : 1 socket 1 13087744130 11996245776 Uncorefreq:  
3.0188e+09 18 943925632.000000 1018863104.000000 836923072.000000 19 1888055424.000000  
2037720832.000000 1673841664.000000 20 2832092160.000000 3056572160.000000  
2510755072.000000 21 3776151552.000000 4075419904.000000 3347665664.000000 22  
4720120832.000000 5094263296.000000 4184572416.000000 23 5734819840.000000  
6113103360.000000 5021476352.000000 24 6678754816.000000 7131938816.000000  
5858376704.000000 25 7622787584.000000 8150768128.000000 6695271936.000000 26  
8566832640.000000 9169591296.000000 7532162560.000000 27 9510884352.000000  
10188409856.000000 8369049088.000000 28 10454961152.000000 11207223296.000000  
9205932032.000000 29 11398910976.000000 12226031616.000000 10042810368.000000 30  
12342835200.000000 13244834816.000000 10879684608.000000 31 13286842368.000000  
14263633920.000000 11716555776.000000 32 14230878208.000000 15282428928.000000  
12553422848.000000 33 15175042048.000000 16301219840.000000 13390286848.000000 34  
16118233088.000000 17320007680.000000 14227148800.000000 35 17062660096.000000  
18338791424.000000 15064006656.000000 coreFreq : 2.6783e+09 clockTime : 3.8040e-01 wallTime :  
3.6156e-01 insPerSec : 4.4854e+10 cycles : 18338791424.000000 L2 stall : 2356969984.000000 L2 stall  
rate : 0.128524 Ldm stall : 4047917056.000000 LDM stall rate : 0.220730 PKG Energy: 0.000000 PKG



Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1285 stallLDMRate : 0.2207  
 stallL2Cycles : 2356969984.0000 stallLDMCycles : 4047917056.0000 idealInsPerSecL2 : 5.1469e+10  
 idealInsPerSecLDM : 5.7559e+10 L3 volum: 3.5889e+07 RAM volum: 7.5297e+06 lowerBound : 18  
 upperBound : 15 full L3 BW : 1.1063e+11 fullRAMBW: 1.1207e+10 Latency L3 : 65.6748 DRAM : 537.5914  
 Bandwidth Usage L3 : 0.0009 , Bandwidth usage DRAM : 0.0019 realIntensityL3 : 475.4352 roofIntensityL3  
 : 0.4652 realIntensityRAM : 2266.0393 roofIntensityRAM : 5.1361 conclusion: compute bound 1  
 l3boundness 1 ramboundness 1

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-----11 overflow 0.360432 Socket : 1 socket 1 14175966406 13087744130 Uncorefreq:  
 3.0192e+09 18 940780160.000000 1015671296.000000 834301440.000000 19 1882758016.000000  
 2031343616.000000 1668603904.000000 20 2823880192.000000 3047016448.000000  
 2502906368.000000 21 3764374016.000000 4062689792.000000 3337209344.000000 22  
 4705172480.000000 5078363136.000000 4171512576.000000 23 5716396544.000000  
 6094036480.000000 5005815808.000000 24 6657316864.000000 7109710336.000000  
 5840119296.000000 25 7598265856.000000 8125384704.000000 6674423296.000000 26  
 8539303936.000000 9141059584.000000 7508727808.000000 27 9480355840.000000  
 10156735488.000000 8343032832.000000 28 10421451776.000000 11172411392.000000  
 9177337856.000000 29 11362550784.000000 12188086272.000000 10011642880.000000 30  
 12303501312.000000 13203762176.000000 10845947904.000000 31 13244565504.000000  
 14219438080.000000 11680252928.000000 32 14185703424.000000 15235112960.000000  
 12514557952.000000 33 15126800384.000000 16250787840.000000 13348861952.000000 34  
 16066747392.000000 17266462720.000000 14183165952.000000 35 17008175104.000000  
 18282135552.000000 15017468928.000000 coreFreq : 2.6783e+09 clockTime : 3.7923e-01 wallTime :  
 3.6043e-01 insPerSec : 4.4849e+10 cycles : 18282135552.000000 L2 stalld : 2312541440.000000 L2 stall  
 rate : 0.126492 Ldm stalld : 4036280832.000000 LDM stall rate : 0.220777 PKG Energy: 0.000000 PKG  
 Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1265 stallLDMRate : 0.2208  
 stallL2Cycles : 2312541440.0000 stallLDMCycles : 4036280832.0000 idealInsPerSecL2 : 5.1344e+10  
 idealInsPerSecLDM : 5.7557e+10 L3 volum: 4.4252e+07 RAM volum: 1.0759e+07 lowerBound : 18  
 upperBound : 15 full L3 BW : 1.1193e+11 fullRAMBW: 1.1433e+10 Latency L3 : 52.2590 DRAM : 375.1570  
 Bandwidth Usage L3 : 0.0011 , Bandwidth usage DRAM : 0.0026 realIntensityL3 : 384.3523 roofIntensityL3 :  
 0.4587 realIntensityRAM : 1580.8452 roofIntensityRAM : 5.0341 conclusion: compute bound 1 l3boundness  
 1 ramboundness 1

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-----12

pi is approximately = 662.51701500969465996604 Error = 659.37542240969469276024 Energy of  
 socket 1 : PKG: 0.000000 DRAM 0.000000

- Run CG and Sampling

init freeze 700 80000000 init unfreeze 700 20000000 Node object is created registered sampling event  
 overflow 0.427531 Socket : 1 socket 1 1457169624 526202 Uncorefreq: 3.4071e+09 18  
 660634752.000000 1345200896.000000 1078374528.000000 19 1670101632.000000  
 2438103040.000000 2059625984.000000 20 2676316672.000000 3529387264.000000  
 3040587776.000000 21 3685545472.000000 4619376640.000000 4004641280.000000 22  
 4711781888.000000 5732038656.000000 4985256448.000000 23 5717576192.000000

6822460928.000000 5965847552.000000 24 6743488000.000000 7935158272.000000  
6946485248.000000 25 7791449088.000000 9071851520.000000 7926789120.000000 26  
8812073984.000000 10179332096.000000 8907379712.000000 27 9821946880.000000  
11272715264.000000 9880803328.000000 28 10835031040.000000 12371563520.000000  
10861112320.000000 29 11848884224.000000 13470629888.000000 11839591424.000000 30  
12863011840.000000 14570380288.000000 12819357696.000000 31 13915624448.000000  
15711669248.000000 13798851584.000000 32 14925005824.000000 16806650880.000000  
14778771456.000000 33 15935399936.000000 17902018560.000000 15758649344.000000 34  
16966190080.000000 19020267520.000000 16738657280.000000 35 17991424000.000000  
20124669952.000000 17711904768.000000 coreFreq : 2.4997e+09 clockTime : 4.4727e-01 wallTime :  
4.2753e-01 insPerSec : 4.0225e+10 cycles : 20124669952.000000 L2 stalld : 1910394880.000000 L2 stall  
rate : 0.094928 Ldm stalld : 4858889216.000000 LDM stall rate : 0.241439 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0949 stallLDMRate : 0.2414  
stallL2Cycles : 1910394880.0000 stallLDMCycles : 4858889216.0000 idealInsPerSecL2 : 4.4444e+10  
idealInsPerSecLDM : 5.3028e+10 L3 volum: 3.9565e+09 RAM volum: 8.2576e+08 lowerBound : 22  
upperBound : 15 full L3 BW : 7.6645e+10 fullRAMBW: 4.2287e+09 Latency L3 : 0.4829 DRAM : 5.8841  
Bandwidth Usage L3 : 0.1207 , Bandwidth usage DRAM : 0.4568 realIntensityL3 : 4.5474 roofIntensityL3 :  
0.5799 realIntensityRAM : 21.7876 roofIntensityRAM : 12.5400 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----0 overflow 0.455198 Socket : 1 socket 1 2870397026 1457169624 Uncorefreq: 3.1046e+09  
18 652751808.000000 1363840128.000000 1120297216.000000 19 1917805824.000000  
2727676416.000000 2240591360.000000 20 3181638656.000000 4091506688.000000  
3360880640.000000 21 4444673024.000000 5455332352.000000 4481166336.000000 22  
5708408832.000000 6819154944.000000 5601449472.000000 23 6972600320.000000  
8182972928.000000 6721728512.000000 24 8236643328.000000 9546784768.000000  
7842002944.000000 25 9500565504.000000 10910593024.000000 8962273280.000000 26  
10764239872.000000 12274396160.000000 10082540544.000000 27 12028240896.000000  
13638195200.000000 11202803712.000000 28 13292065792.000000 15001991168.000000  
12323064832.000000 29 14555904000.000000 16365783040.000000 13443321856.000000 30  
15819905024.000000 17729572864.000000 14563576832.000000 31 17083094016.000000  
19093356544.000000 15683827712.000000 32 18346991616.000000 20457136128.000000  
16804075520.000000 33 19610994688.000000 21820909568.000000 17924317184.000000 34  
20874657792.000000 23184676864.000000 19044554752.000000 35 22138556416.000000  
24548438016.000000 20164788224.000000 coreFreq : 2.6783e+09 clockTime : 5.0921e-01 wallTime :  
4.5520e-01 insPerSec : 4.3476e+10 cycles : 24548438016.000000 L2 stalld : 1963738880.000000 L2  
stall rate : 0.079994 Ldm stalld : 5812492800.000000 LDM stall rate : 0.236776 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0800 stallLDMRate :  
0.2368 stallL2Cycles : 1963738880.0000 stallLDMCycles : 5812492800.0000 idealInsPerSecL2 :  
4.7256e+10 idealInsPerSecLDM : 5.6964e+10 L3 volum: 4.2976e+09 RAM volum: 9.4324e+08 lowerBound  
: 19 upperBound : 15 full L3 BW : 6.4405e+10 fullRAMBW: 2.7622e+09 Latency L3 : 0.4569 DRAM : 6.1623  
Bandwidth Usage L3 : 0.1466 , Bandwidth usage DRAM : 0.7502 realIntensityL3 : 5.1514 roofIntensityL3 :  
0.7337 realIntensityRAM : 23.4709 roofIntensityRAM : 20.6229 conclusion: balanced 0 l3boundness 1  
ramboundness 0

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-----1 overflow 0.439542 Socket : 1 socket 1 4234676932 2870397026 Uncorefreq: 3.1039e+09  
18 595092352.000000 1232708736.000000 1012582208.000000 19 1737284864.000000  
2465415424.000000 2025162752.000000 20 2879382016.000000 3698123776.000000  
3037744640.000000 21 4021007104.000000 4930833408.000000 4050327552.000000 22  
5164951552.000000 6163544064.000000 5062910976.000000 23 6307314176.000000  
7396255232.000000 6075494912.000000 24 7448836608.000000 8628969472.000000  
7088081408.000000 25 8590976000.000000 9861683200.000000 8100667904.000000 26  
9733139456.000000 11094397952.000000 9113254912.000000 27 10875037696.000000  
12327112704.000000 10125842432.000000 28 12017360896.000000 13559826432.000000  
11138428928.000000 29 13159286784.000000 14792542208.000000 12151016448.000000 30  
14301159424.000000 16025257984.000000 13163603968.000000 31 15443310592.000000  
17257973760.000000 14176191488.000000 32 16585522176.000000 18490689536.000000  
15188780032.000000 33 17727817728.000000 19723407360.000000 16201369600.000000 34  
18869665792.000000 20956127232.000000 17213960192.000000 35 20011831296.000000  
22188847104.000000 18226550784.000000 coreFreq : 2.6783e+09 clockTime : 4.6027e-01 wallTime :  
4.3954e-01 insPerSec : 4.3479e+10 cycles : 22188847104.000000 L2 stall : 1815748864.000000 L2 stall  
rate : 0.081832 Ldm stall : 5254386688.000000 LDM stall rate : 0.236803 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0818 stallLDMRate : 0.2368  
stallL2Cycles : 1815748864.0000 stallLDMCycles : 5254386688.0000 idealInsPerSecL2 : 4.7354e+10  
idealInsPerSecLDM : 5.6969e+10 L3 volum: 4.0396e+09 RAM volum: 8.4983e+08 lowerBound : 19  
upperBound : 15 full L3 BW : 6.1785e+10 fullRAMBW: 2.3014e+09 Latency L3 : 0.4495 DRAM : 6.1829  
Bandwidth Usage L3 : 0.1488 , Bandwidth usage DRAM : 0.8401 realIntensityL3 : 4.9539 roofIntensityL3 :  
0.7664 realIntensityRAM : 23.5480 roofIntensityRAM : 24.7542 conclusion: balanced 0 l3boundness 1  
ramboundness 0

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-----2 overflow 0.582386 Socket : 1 socket 1 6018557832 4234676932 Uncorefreq: 3.0631e+09  
18 802066112.000000 1672173184.000000 1373570816.000000 19 2351940096.000000  
3344347648.000000 2747142656.000000 20 3901587968.000000 5016521728.000000  
4120714240.000000 21 5451138560.000000 6688695296.000000 5494285312.000000 22  
7000784896.000000 8360868864.000000 6867856384.000000 23 8550764544.000000  
10033043456.000000 8241428480.000000 24 10098691072.000000 11705217024.000000  
9615000576.000000 25 11648319488.000000 13377392640.000000 10988572672.000000 26  
13198168064.000000 15049567232.000000 12362144768.000000 27 14747976704.000000  
16721741824.000000 13735716864.000000 28 16297868288.000000 18393915392.000000  
15109287936.000000 29 17847408640.000000 20066088960.000000 16482859008.000000 30  
19397236736.000000 21738262528.000000 17856430080.000000 31 20946677760.000000  
23410436096.000000 19230001152.000000 32 22496419840.000000 25082609664.000000  
20603572224.000000 33 24044836864.000000 26754783232.000000 21977143296.000000 34  
25594023936.000000 28426954752.000000 23350714368.000000 35 27143753728.000000  
30099128320.000000 24724285440.000000 coreFreq : 2.6783e+09 clockTime : 6.2435e-01 wallTime :  
5.8239e-01 insPerSec : 4.3475e+10 cycles : 30099128320.000000 L2 stall : 2355489792.000000 L2  
stall rate : 0.078258 Ldm stall : 7128340992.000000 LDM stall rate : 0.236829 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0783 stallLDMRate :  
0.2368 stallL2Cycles : 2355489792.0000 stallLDMCycles : 7128340992.0000 idealInsPerSecL2 :  
4.7166e+10 idealInsPerSecLDM : 5.6967e+10 L3 volum: 5.4053e+09 RAM volum: 1.1581e+09 lowerBound :  
18 upperBound : 15 full L3 BW : 2.6121e+11 fullRAMBW: 3.7520e+10 Latency L3 : 0.4358 DRAM : 6.1554

Bandwidth Usage L3 : 0.0355 , Bandwidth usage DRAM : 0.0530 realIntensityL3 : 5.0217 roofIntensityL3 : 0.1806 realIntensityRAM : 23.4390 roofIntensityRAM : 1.5183 conclusion: compute bound 1 l3boundness 1 ramboundness 1

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-----3 overflow 0.383884 Socket : 1 socket 1 7215785452 6018557832 Uncorefreq: 3.1187e+09  
18 534090560.000000 1108046848.000000 910181376.000000 19 1623261696.000000  
2216000000.000000 1820285440.000000 20 2649979392.000000 3324044800.000000  
2730465024.000000 21 3676257024.000000 4432087040.000000 3640642816.000000 22  
4702920704.000000 5540128256.000000 4550819328.000000 23 5729840128.000000  
6648167936.000000 5460995072.000000 24 6756745216.000000 7756206080.000000  
6371168768.000000 25 7783406080.000000 8864242688.000000 7281341440.000000 26  
8810456064.000000 9972279296.000000 8191514112.000000 27 9837440000.000000  
11080314880.000000 9101685760.000000 28 10864163840.000000 12188349440.000000  
10011856896.000000 29 11890757632.000000 13296382976.000000 10922027008.000000 30  
12917571584.000000 14404415488.000000 11832197120.000000 31 13944246272.000000  
15512448000.000000 12742366208.000000 32 14971032576.000000 16620479488.000000  
13652535296.000000 33 15997904896.000000 17728509952.000000 14562703360.000000 34  
17024260096.000000 18836541440.000000 15472871424.000000 35 18051049472.000000  
19944570880.000000 16383038464.000000 coreFreq : 2.6783e+09 clockTime : 4.1371e-01 wallTime :  
3.8388e-01 insPerSec : 4.3632e+10 cycles : 19944570880.000000 L2 stall : 1538726784.000000 L2 stall  
rate : 0.077150 Ldm stall : 4697342976.000000 LDM stall rate : 0.235520 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0772 stallLDMRate : 0.2355  
stallL2Cycles : 1538726784.0000 stallLDMCycles : 4697342976.0000 idealInsPerSecL2 : 4.7280e+10  
idealInsPerSecLDM : 5.7074e+10 L3 volum: 3.5329e+09 RAM volum: 7.5661e+08 lowerBound : 19  
upperBound : 15 full L3 BW : 1.1204e+11 fullIRAMBW: 1.1140e+10 Latency L3 : 0.4355 DRAM : 6.2084  
Bandwidth Usage L3 : 0.0821 , Bandwidth usage DRAM : 0.1769 realIntensityL3 : 5.1095 roofIntensityL3 :  
0.4220 realIntensityRAM : 23.8579 roofIntensityRAM : 5.1232 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----4 overflow 0.423949 Socket : 1 socket 1 8520760300 7215785452 Uncorefreq: 3.0781e+09  
18 590384320.000000 1232655872.000000 1012538688.000000 19 1799648768.000000  
2465046528.000000 2024859776.000000 20 2938637312.000000 3697699584.000000  
3037396224.000000 21 4081602048.000000 4930352128.000000 4049932032.000000 22  
5224051712.000000 6163004416.000000 5062467584.000000 23 6366571008.000000  
7395655680.000000 6075002368.000000 24 7508890112.000000 8628304896.000000  
7087535616.000000 25 8651238400.000000 9860954112.000000 8100069376.000000 26  
9793680384.000000 11093604352.000000 9112603648.000000 27 10936076288.000000  
12326254592.000000 10125137920.000000 28 12078449664.000000 13558903808.000000  
11137671168.000000 29 13220682752.000000 14791552000.000000 12150203392.000000 30  
14363061248.000000 16024200192.000000 13162735616.000000 31 15504822272.000000  
17256847360.000000 14175266816.000000 32 16647181312.000000 18489495552.000000  
15187799040.000000 33 17789612032.000000 19722141696.000000 16200329216.000000 34  
18931439616.000000 20954785792.000000 17212858368.000000 35 20073811968.000000  
22187429888.000000 18225387520.000000 coreFreq : 2.6783e+09 clockTime : 4.6024e-01 wallTime :  
4.2395e-01 insPerSec : 4.3616e+10 cycles : 22187429888.000000 L2 stall : 1653773184.000000 L2 stall

rate : 0.074536 Ldm stalld : 5226487808.000000 LDM stall rate : 0.235561 PKG Energy: 0.000000 PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0745 stallLDMRate : 0.2356 stallL2Cycles : 1653773184.0000 stallLDMCycles : 5226487808.0000 idealInsPerSecL2 : 4.7129e+10 idealInsPerSecLDM : 5.7057e+10 L3 volum: 3.9803e+09 RAM volum: 8.5789e+08 lowerBound : 18 upperBound : 15 full L3 BW : 3.1258e+11 fullIRAMBW: 4.6495e+10 Latency L3 : 0.4155 DRAM : 6.0923 Bandwidth Usage L3 : 0.0300 , Bandwidth usage DRAM : 0.0435 realIntensityL3 : 5.0433 roofIntensityL3 : 0.1508 realIntensityRAM : 23.3990 roofIntensityRAM : 1.2272 conclusion: compute bound 1 l3boundness 1 ramboundness 1

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-----5 overflow 0.391560 Socket : 1 socket 1 9715000970 8520760300 Uncorefreq: 3.0500e+09 18 597036928.000000 1142656640.000000 938610880.000000 19 1702892160.000000 2285102592.000000 1877048576.000000 20 2761863168.000000 3427799552.000000 2815692800.000000 21 3820358400.000000 4570496000.000000 3754336512.000000 22 4879442944.000000 5713193472.000000 4692980736.000000 23 5938606080.000000 6855889920.000000 5631624704.000000 24 6997565440.000000 7998587392.000000 6570269184.000000 25 8056431616.000000 9141284864.000000 7508913152.000000 26 9115096064.000000 10283982848.000000 8447557632.000000 27 10174075904.000000 11426680832.000000 9386202112.000000 28 11233922048.000000 12569378816.000000 10324847616.000000 29 12292238336.000000 13712077824.000000 11263493120.000000 30 13351330816.000000 14854776832.000000 12202138624.000000 31 14410146816.000000 15997476864.000000 13140785152.000000 32 15469086720.000000 17140175872.000000 14079430656.000000 33 16528153600.000000 18282874880.000000 15018077184.000000 34 17586819072.000000 19425574912.000000 15956724736.000000 35 18645936128.000000 20568276992.000000 16895373312.000000 coreFreq : 2.6783e+09 clockTime : 4.2665e-01 wallTime : 3.9156e-01 insPerSec : 4.3703e+10 cycles : 20568276992.000000 L2 stalld : 1612131840.000000 L2 stall rate : 0.078380 Ldm stalld : 4813774336.000000 LDM stall rate : 0.234039 PKG Energy: 0.000000 PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0784 stallLDMRate : 0.2340 stallL2Cycles : 1612131840.0000 stallLDMCycles : 4813774336.0000 idealInsPerSecL2 : 4.7420e+10 idealInsPerSecLDM : 5.7057e+10 L3 volum: 3.2562e+09 RAM volum: 7.2874e+08 lowerBound : 18 upperBound : 15 full L3 BW : 2.1660e+11 fullIRAMBW: 2.9723e+10 Latency L3 : 0.4951 DRAM : 6.6057 Bandwidth Usage L3 : 0.0384 , Bandwidth usage DRAM : 0.0626 realIntensityL3 : 5.7262 roofIntensityL3 : 0.2189 realIntensityRAM : 25.5867 roofIntensityRAM : 1.9196 conclusion: compute bound 1 l3boundness 1 ramboundness 1

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-----6 overflow 0.548295 Socket : 1 socket 1 11430029198 9715000970 Uncorefreq: 3.1279e+09 18 747937920.000000 1563565312.000000 1284357248.000000 19 2193789440.000000 3126931968.000000 2568551424.000000 20 3642685184.000000 4690502656.000000 3852913152.000000 21 5091672576.000000 6254074880.000000 5137275904.000000 22 6589130752.000000 7817464832.000000 6421488640.000000 23 8038271488.000000 9381033984.000000 7705848832.000000 24 9487229952.000000 10944603136.000000 8990210048.000000 25 10936067072.000000 12508172288.000000 10274570240.000000 26 12385244160.000000 14071740416.000000 11558930432.000000 27 13834414080.000000 15635307520.000000 12843289600.000000 28 15283473408.000000 17198874624.000000 14127648768.000000 29 16732286976.000000 18762442752.000000 15412007936.000000 30 18181318656.000000 20326010880.000000 16696367104.000000 31 19630071808.000000

21889576960.000000 17980725248.000000 32 21078992896.000000 23453145088.000000  
19265083392.000000 33 22528141312.000000 25016711168.000000 20549441536.000000 34  
23976388608.000000 26580277248.000000 21833799680.000000 35 25425461248.000000  
28143843328.000000 23118157824.000000 coreFreq : 2.6783e+09 clockTime : 5.8379e-01 wallTime :  
5.4830e-01 insPerSec : 4.3552e+10 cycles : 28143843328.000000 L2 stalld : 2060400384.000000 L2  
stall rate : 0.073210 Ldm stalld : 6629535744.000000 LDM stall rate : 0.235559 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0732 stallLDMRate :  
0.2356 stallL2Cycles : 2060400384.0000 stallLDMCycles : 6629535744.0000 ideallnsPerSecL2 :  
4.6993e+10 ideallnsPerSecLDM : 5.6973e+10 L3 volum: 5.1763e+09 RAM volum: 1.0757e+09 lowerBound :  
19 upperBound : 15 full L3 BW : 1.4318e+11 fullIRAMBW: 1.6617e+10 Latency L3 : 0.3980 DRAM : 6.1630  
Bandwidth Usage L3 : 0.0659 , Bandwidth usage DRAM : 0.1181 realIntensityL3 : 4.9119 roofIntensityL3 :  
0.3282 realIntensityRAM : 23.6364 roofIntensityRAM : 3.4286 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----7 overflow 0.403876 Socket : 1 socket 1 12661715914 11430029198 Uncorefreq: 3.0497e+09  
18 751586112.000000 1167197952.000000 958769792.000000 19 1832186112.000000  
2334393856.000000 1917537920.000000 20 2913487104.000000 3501593600.000000  
2876308992.000000 21 3993174272.000000 4668789760.000000 3835077376.000000 22  
5143663616.000000 5835894784.000000 4793771008.000000 23 6225232896.000000  
7003092480.000000 5752540672.000000 24 7309157376.000000 8170295296.000000  
6711314432.000000 25 8390468608.000000 9337493504.000000 7670084608.000000 26  
9471937536.000000 10504699904.000000 8628860928.000000 27 10553141248.000000  
11671904256.000000 9587636224.000000 28 11634534400.000000 12839109632.000000  
10546411520.000000 29 12715518976.000000 14006321152.000000 11505192960.000000 30  
13796508672.000000 15173525504.000000 12463968256.000000 31 14877875200.000000  
16340729856.000000 13422743552.000000 32 15959160832.000000 17507934208.000000  
14381518848.000000 33 17040379904.000000 18675148800.000000 15340301312.000000 34  
18121547776.000000 19842361344.000000 16299083776.000000 35 19202932736.000000  
21009569792.000000 17257861120.000000 coreFreq : 2.6783e+09 clockTime : 4.3580e-01 wallTime :  
4.0388e-01 insPerSec : 4.4063e+10 cycles : 21009569792.000000 L2 stalld : 1868807424.000000 L2 stall  
rate : 0.088950 Ldm stalld : 4835949568.000000 LDM stall rate : 0.230178 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0890 stallLDMRate : 0.2302  
stallL2Cycles : 1868807424.0000 stallLDMCycles : 4835949568.0000 ideallnsPerSecL2 : 4.8365e+10  
ideallnsPerSecLDM : 5.7238e+10 L3 volum: 2.1911e+09 RAM volum: 6.8533e+08 lowerBound : 18  
upperBound : 15 full L3 BW : 2.1560e+11 fullIRAMBW: 2.9549e+10 Latency L3 : 0.8529 DRAM : 7.0564  
Bandwidth Usage L3 : 0.0252 , Bandwidth usage DRAM : 0.0574 realIntensityL3 : 8.7642 roofIntensityL3 :  
0.2243 realIntensityRAM : 28.0200 roofIntensityRAM : 1.9370 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----8 overflow 0.475753 Socket : 1 socket 1 14071321806 12661715914 Uncorefreq: 2.9629e+09  
18 1274574592.000000 1375593344.000000 1129951488.000000 19 2549253120.000000  
2751164928.000000 2259885312.000000 20 3823893248.000000 4126749952.000000  
3389830144.000000 21 5098503680.000000 5502306816.000000 4519751680.000000 22  
6443148288.000000 6877793792.000000 5649615872.000000 23 7718346752.000000  
8253332992.000000 6779523072.000000 24 8994167808.000000 9628876800.000000



7909434368.000000 25 10268798976.000000 11004409856.000000 9039336448.000000 26  
11543498752.000000 12379949056.000000 10169243648.000000 27 12818185216.000000  
13755472896.000000 11299137536.000000 28 14092818432.000000 15131004928.000000  
12429038592.000000 29 15367322624.000000 16506545152.000000 13558945792.000000 30  
16641846272.000000 17882056704.000000 14688831488.000000 31 17915887616.000000  
19257567232.000000 15818715136.000000 32 19190458368.000000 20633071616.000000  
16948592640.000000 33 20464846848.000000 22008590336.000000 18078482432.000000 34  
21739008000.000000 23384104960.000000 19208368128.000000 35 23013627904.000000  
24759595008.000000 20338235392.000000 coreFreq : 2.6783e+09 clockTime : 5.1359e-01 wallTime :  
4.7575e-01 insPerSec : 4.4809e+10 cycles : 24759595008.000000 L2 stallId : 2290386688.000000 L2  
stall rate : 0.092505 Ldm stallId : 5473818624.000000 LDM stall rate : 0.221079 PKG Energy: 0.000000  
PKG Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.0925 stallLDMRate :  
0.2211 stallL2Cycles : 2290386688.0000 stallLDMCycles : 5473818624.0000 idealInsPerSecL2 :  
4.9377e+10 idealInsPerSecLDM : 5.7527e+10 L3 volum: 4.8648e+07 RAM volum: 4.4568e+08 lowerBound  
: 17 upperBound : 15 full L3 BW : 2.5983e+11 fullRAMBW: 3.7421e+10 Latency L3 : 47.0812 DRAM : 12.2821  
Bandwidth Usage L3 : 0.0004 , Bandwidth usage DRAM : 0.0250 realIntensityL3 : 473.0686 roofIntensityL3  
: 0.1900 realIntensityRAM : 51.6376 roofIntensityRAM : 1.5373 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----9 overflow 0.423640 Socket : 1 socket 1 15280250860 14071321806 Uncorefreq:  
2.8537e+09 18 1134730752.000000 1224618496.000000 1005936576.000000 19 2269070848.000000  
2449228032.000000 2011865856.000000 20 3403877888.000000 3673845760.000000  
3017801984.000000 21 4538502656.000000 4898450944.000000 4023727616.000000 22  
5743263744.000000 6122983424.000000 5029593600.000000 23 6878255616.000000  
7347584000.000000 6035515904.000000 24 8012777472.000000 8572197888.000000  
7041448960.000000 25 9147516928.000000 9796803584.000000 8047374848.000000 26  
10282417152.000000 11021423616.000000 9053313024.000000 27 11417868288.000000  
12246031360.000000 10059241472.000000 28 12552677376.000000 13470642176.000000  
11065171968.000000 29 13687020544.000000 14695267328.000000 12071114752.000000 30  
14821756928.000000 15919877120.000000 13077044224.000000 31 15956428800.000000  
17144485888.000000 14082972672.000000 32 17091179520.000000 18369089536.000000  
15088898048.000000 33 18225940480.000000 19593715712.000000 16094840832.000000 34  
19361273856.000000 20818339840.000000 17100781568.000000 35 20495988736.000000  
22042947584.000000 18106710016.000000 coreFreq : 2.6783e+09 clockTime : 4.5724e-01 wallTime :  
4.2364e-01 insPerSec : 4.4826e+10 cycles : 22042947584.000000 L2 stallId : 2539278336.000000 L2  
stall rate : 0.115197 Ldm stallId : 4868485120.000000 LDM stall rate : 0.220864 PKG Energy: 0.000000 PKG  
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1152 stallLDMRate : 0.2209  
stallL2Cycles : 2539278336.0000 stallLDMCycles : 4868485120.0000 idealInsPerSecL2 : 5.0662e+10  
idealInsPerSecLDM : 5.7532e+10 L3 volum: 3.7527e+07 RAM volum: 3.5634e+08 lowerBound : 16  
upperBound : 15 full L3 BW : 2.2701e+11 fullRAMBW: 3.1932e+10 Latency L3 : 67.6651 DRAM : 13.6626  
Bandwidth Usage L3 : 0.0004 , Bandwidth usage DRAM : 0.0263 realIntensityL3 : 546.1640 roofIntensityL3  
: 0.2232 realIntensityRAM : 57.5186 roofIntensityRAM : 1.8017 conclusion: compute bound 1 l3boundness 1  
ramboundness 1

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-----10 overflow 0.368504 Socket : 1 socket 1 16361391478 15280250860 Uncorefreq:
2.9339e+09 18 737565120.000000 799201088.000000 649334016.000000 19 1749173504.000000
1849536768.000000 1487910528.000000 20 2367997440.000000 2513451264.000000
2032918272.000000 21 2899178752.000000 3090160384.000000 2506643712.000000 22
3824936448.000000 4025293824.000000 3257414912.000000 23 4403651584.000000
4653561344.000000 3773517824.000000 24 5447600128.000000 5719889920.000000
4623645696.000000 25 6418412032.000000 6722913280.000000 5426846208.000000 26
7028459520.000000 7371411968.000000 5959540736.000000 27 7625971712.000000
8018135040.000000 6490825728.000000 28 8188179456.000000 8628871168.000000
6992499200.000000 29 8867743744.000000 9352233984.000000 7588240896.000000 30
9431258112.000000 9965409280.000000 8092051456.000000 31 9958293504.000000
10536581120.000000 8561223168.000000 32 10993496064.000000 11603168256.000000
9411563520.000000 33 11562781696.000000 12218278912.000000 9916832768.000000 34
12128360448.000000 12832507904.000000 10421494784.000000 35 12717068288.000000
13466863616.000000 10942586880.000000 coreFreq : 2.7075e+09 clockTime : 2.7633e-01 wallTime :
3.6850e-01 insPerSec : 4.6022e+10 cycles : 13466863616.000000 L2 stall : 1671288064.000000 L2 stall
rate : 0.124104 Ldm stall : 3716267520.000000 LDM stall rate : 0.275956 PKG Energy: 0.000000 PKG
Power : 0.000000 DRAM Energy: 0.000000 Power : 0.000000 stallL2Rate : 0.1241 stallLDMRate : 0.2760
stallL2Cycles : 1671288064.0000 stallLDMCycles : 3716267520.0000 idealInsPerSecL2 : 5.2542e+10
idealInsPerSecLDM : 6.3562e+10 L3 volum: 6.7268e+07 RAM volum: 3.4750e+08 lowerBound : 17
upperBound : 15 full L3 BW : 1.6036e+11 fullRAMBW: 2.0151e+10 Latency L3 : 24.8453 DRAM : 10.6942
Bandwidth Usage L3 : 0.0011 , Bandwidth usage DRAM : 0.0468 realIntensityL3 : 189.0516 roofIntensityL3 :
0.3276 realIntensityRAM : 36.5956 roofIntensityRAM : 3.1543 conclusion: compute bound 1 l3boundness 1
ramboundness 1

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-----11 overflow 0.284358 Socket : 1 socket 1 17214987870 16361391478 Uncorefreq:
3.0018e+09 18 116463.000000 745801.000000 565685.000000 19 633409.000000 2446607.000000
2008199.000000 20 903743.000000 3573093.000000 3032228.000000 21 1121202.000000
4637758.000000 4059339.000000 22 1650194.000000 5944222.000000 5141788.000000 23
1738476.000000 6722400.000000 6146980.000000 24 442872288.000000 438611776.000000
306759104.000000 25 442975488.000000 439150336.000000 307299296.000000 26
442988320.000000 439451008.000000 307543296.000000 27 443051808.000000 440661920.000000
308853504.000000 28 443183584.000000 441192800.000000 309460544.000000 29
1444693504.000000 1416675328.000000 958589376.000000 30 1444809984.000000
1418185472.000000 960849792.000000 31 1445400960.000000 1420572032.000000
964303936.000000 32 1549382400.000000 1524966784.000000 1040090240.000000 33
1549395712.000000 1525143424.000000 1040245056.000000 34 1549604224.000000
1526032128.000000 1041546432.000000 35 1549878400.000000 1527208704.000000
1042565312.000000 coreFreq : 3.2227e+09 clockTime : 2.6327e-02 wallTime : 2.8436e-01 insPerSec :
5.8870e+10 -----12

```

pi is approximately = 662.51701500969477365288 Error = 659.37542240969480644708 Energy of  
socket 1 : PKG: 0.000000 DRAM 0.000000

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2. take