Katana – Measurements November, 2021

## Katana - Measurements

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## **The Test Bench**

Those test benchs have been run with:

Tool	Git Commit Hash
Coriolis	ca499e024c20b50ea48a8e21f30225b60efb4527
alliance-check-toolkit	afb3d074279f8dd417a4d7c63f9fad481bba4014

All the designs have been placed with the «golden industrial placer». except for the Libre-SOC. So the runtime are only thoses of the P&R, load time, global and detailed router.

Be aware that the all the curves uses logarithmic scale on both axis.

The figures shows that:

- 1. The runtime is quasi-linear.
- 2. The memory footprint is getting better as the design size increase...

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design	#gates	LoadT	LoadS	AssignT	AlgoT	AlgoS	FinT	#segments	#events			
		(s)	(Mb)	(s)	(s)	(Mb)	(s)					
SoC benchmark												
operator_lvl3	6065.00	2.71	489	0.20	7.19	545	0.19	44246	123736			
operator_lvl2	7221.00	3.31	509	0.23	9.58	580	0.28	54543	156869			
operator_lvl1	7256.00	2.61	489	0.10	5.30	535	0.21	41468	86832			
operator_lv10	8926.00	2.86	500	0.06	5.29	549	0.22	45307	88261			
matrix_4_4	10909.00	4.20	531	0.29	10.16	614	0.36	69680	161390			
dct_lvl1	16803.00	6.95	626	0.30	16.46	750	0.61	106011	258152			
dct_lv10	19958.00	6.71	621	0.13	12.13	727	0.52	97739	190554			
matrix_4_8	20933.00	8.21	653	0.55	21.17	812	0.75	133852	312033			
dct_lvl3	22603.00	13.66	819	1.40	46.55	1102	1.25	209892	683126			
dct_lvl2	24011.00	14.63	851	1.37	50.16	1155	1.30	225257	736835			
ieee_division	34870.00	14.47	814	0.95	42.50	1041	1.30	200840	443572			
matrix_8_8	39973.00	16.37	898	1.24	42.76	1205	1.53	256077	603617			
vld	53614.00	33.86	1204	7.27	294.07	1874	3.05	432612	1693758			
matrix_8_16	78101.00	33.63	1374	2.70	89.58	1977	3.49	501136	1183305			
Libre-SOC	135664.00	87.52	4312	12.56	351.91	5534	16.83	950984	2204528			
matrix_16_16	152341.00	108.01	2398	7.52	216.86	3549	8.03	978567	2334437			

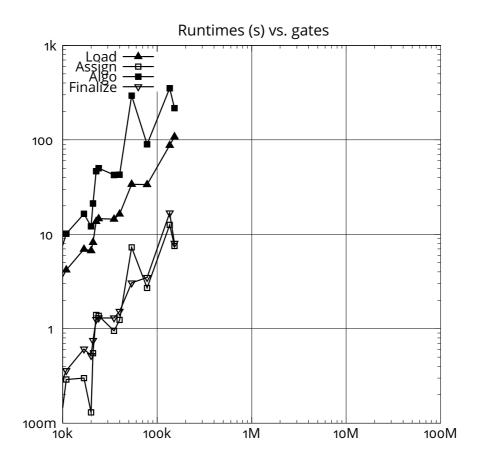
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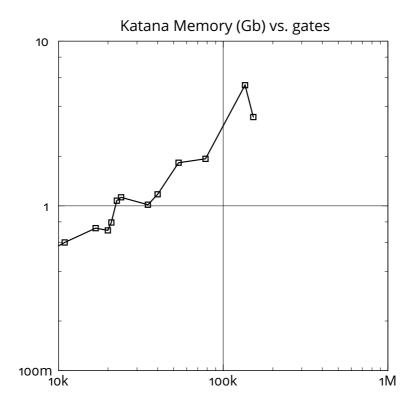
design	#gates	#gcells	#globals	#segments	Detailed	#events	#unique			
					WL		events			
SoC benchmark										
operator_lvl3	6065	5328	18790	44246	2358982+0	123736	44246			
operator_lvl2	7221	6399	23252	54543	2905308+57	156869	54543			
operator_lvl1	7256	5402	17933	41468	1996269+0	86832	41468			
operator_lv10	8926	6160	19480	45307	2113569+0	88261	45307			
matrix_4_4	10909	7656	30904	69680	3603849+0	161390	69680			
dct_lvl1	16803	12768	44847	106011	5027615+0	258152	106011			
dct_lv10	19958	12995	41011	97739	4367356+57	190554	97739			
matrix_4_8	20933	14696	59544	133852	7017462+0	312033	133852			
dct_lv13	22603	22648	86257	209892	11387979+57	683126	209892			
dct_lv12	24011	24335	93617	225257	12132523+47	736835	225257			
ieee_division	34870	21608	84333	200840	9757088+27	443572	200840			
matrix_8_8	39973	28056	113961	256077	13555832+0	603617	256077			
vld	53614	53130	181215	432612	36198106+4265	1693758	432612			
matrix_8_16	78101	54936	223208	501136	26681520+0	1183305	501136			
Libre-SOC	135664	141087	420613	950984	9364437+0	2204528	994683			
matrix_16_16	152341	107256	435976	978567	52378464+0	2334437	978567			

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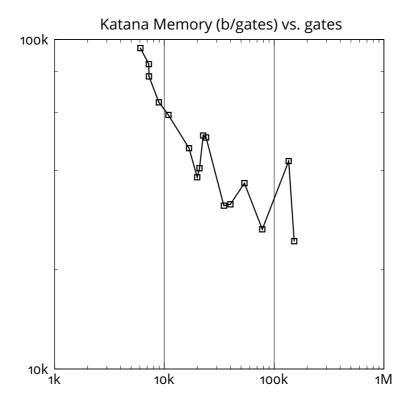
## **Times & Speeds**





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