

Memory OC																					IMLC Latency(mlc --loaded_latency -W5 -t15) ns															IMLC Bandwidth(mlc --loaded_latency -W5 -t15) MB/sec																							
Freq	ICL	IRCD	IRP	IRAS	ICMD	IWR	IRFC	IRRD_L	IRRD_S	IWTR_L	IWTR_S	IRTP	IFAW	ICWL	IREFI	ICKE	IRDRD	IRDWR	IWRRD	IWRWR	RTL/IOL	0	2	8	15	50	100	200	300	400	500	700	1000	1300	1700	2500	3500	5000	9000	20000	0	2	8	15	50	100	200	300	400	500	700	1000	1300	1700	2500	3500	5000	9000	20000
4400	18	22	22	42	2	26	789	12	9	18	12	12	55	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	578.74	581.18	578.31	577.56	583.67	583	579.17	575.13	568.87	560.71	77.34	56.04	51.58	48.74	46.14	44.66	43.58	42.39	41.45	26835.7	26843.5	26837.8	26823.5	26853.4	26889.9	26920.1	26939	26960	27038.4	32098.8	23345	18461.7	14558.6	10451	7930.4	6030.1	4051.2	2690
4400	18	22	22	42	2	26	789	12	9	18	12	12	48	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	513.16	513.4	511.42	508.92	516.07	514.82	510.63	506.55	500.41	489.37	68.66	55.2	50.89	48.12	45.53	44.04	42.94	41.75	40.82	30463.5	30450.8	30462.1	30429.3	30481.4	30503.8	30531	30562.1	30645.7	30751.8	32263.9	23384.7	18496.3	14588.1	10477.6	7957.5	6056.5	4072.7	2715.1
4400	18	22	22	42	2	26	789	11	9	18	12	12	44	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	511.26	512.51	510.88	509.1	515.04	514.12	510.32	506.33	499.52	488.9	68.47	55.11	50.88	48.03	45.49	43.99	42.89	41.72	40.76	30499.2	30498.1	30497.1	30478.8	30517.5	30551.1	30570.6	30625.1	30681.5	30788.1	32291.8	23410.5	18506.1	14606.7	10489.3	7964.8	6063	4080.6	2718.4
4400	18	22	22	42	2	26	789	11	9	18	12	12	44	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	479.39	478.02	478.28	476.44	482.03	481.02	477.31	472.64	466.12	451.45	67.64	55.18	50.87	48.04	45.5	44.02	42.93	41.76	40.82	32723.8	32707.6	32727.9	32702.9	32741.2	32771.7	32819.9	32847	32919.3	33096.1	32275.1	23387.7	18499.6	14588.9	10478.9	7957	6056.9	4076.8	2715.1
4400	18	22	22	42	2	26	789	10	9	18	12	12	44	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	477.31	477.08	474.97	474.14	481.02	480.3	476.39	472.03	464.2	451.03	67.54	55.08	50.79	48.02	45.45	44.02	42.89	41.7	40.78	32782.1	32760.8	32793.3	32761.2	32794.8	32829.9	32854.9	32919.3	32983.1	33146.9	32297.5	23402.8	18515.4	14604	10488.3	7965.3	6061.9	4078.1	2717.8
4400	18	22	22	42	2	26	789	10	9	18	12	12	40	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	454.32	453.89	452.81	452.84	457.72	456.74	453.31	448.59	441.15	413.77	67.41	55.39	51.16	48.39	45.98	44.52	43.5	42.34	41.42	34816.5	34601	34624.3	34605.3	34637.5	34668.7	34715.7	34750.5	34833.9	35077.9	32283.4	23380.8	18491	14583.8	10465.9	7941.3	6037.4	4055.8	2692.5
4400	18	22	22	42	2	26	789	9	9	18	12	12	40	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	452.15	451.78	451.87	450.63	455.83	455.58	451.94	447.25	440.06	413.02	67.07	54.87	50.65	47.84	45.35	43.85	42.8	41.62	40.68	34710.3	34707.4	34712.5	34706.7	34708	34772.6	34819.7	34873.7	34940.5	35140.9	32362.6	23460.1	18549.9	14633.8	10510	7982	6074.8	4089.1	2723.7
4400	18	22	22	42	2	26	789	9	9	18	12	12	36	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	434.25	435.74	433.79	434.69	438.35	437.68	434.58	430.02	421.95	392.44	67.14	55.13	50.77	48	45.45	43.98	42.9	41.75	40.81	36318.2	36316.3	36335.7	36317.3	36345.7	36366.4	36420.4	36462.4	36538	36784.3	32282.5	23376.6	18500.7	14589.6	10480.6	7959	6057.4	4076.8	2715.4
4400	18	22	22	42	2	26	789	9	8	18	12	12	36	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	422.28	422.63	421.59	421.27	425.44	424.59	421.2	416.97	408.51	367.37	66.18	55.05	50.89	48.21	45.8	44.41	43.38	42.28	41.36	37697.9	37699.9	37707.4	37693.1	37718	37748.6	37799.6	37853.5	37961.9	38363.6	32326	23415.9	18513.4	14599	10479.3	7951.2	6046.1	4060.3	2695.8
4400	18	22	22	42	2	26	789	9	7	18	12	12	36	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	422.88	424.07	421.45	421.71	425.4	425.09	421.71	417.23	408.79	364.58	66.35	54.93	50.67	47.91	45.42	43.97	42.91	41.78	40.85	37652.1	37657.7	37666.9	37845.3	37655.1	37690.8	37761.6	37817.4	37916.4	38341.6	32231.5	23371.4	18486.4	14581.3	10472.9	7951.9	6052.6	4073.2	2712.7
4400	18	22	22	42	2	26	789	9	6	18	12	12	36	18	17181	8	8/4/9/9	16/16/16/16	42/36/9/9	8/4/9/9	72/14	420.82	419.53	420.63	418.57	423.43	422.56	419.47	414.92	406.39	359.59	66.24	55.02	50.85	48.14	45.75	44.39	43.37	42.28	41.37	37936.8	37924.3	37947.4	37928.8	37956.9	37980	38035.8	38087.5	38191.3	38629.5	32324.1	23406.8	18509.7	14601.7	10480.4	7951.3	6046.4	4060.4	2696

4400	16	16	16	28	2	12	300	4	4	14	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	34/24/9/9	8/4/9/9	68/14	337.62	336.68	336.45	336.29	339.58	338.98	335.8	330.95	305.61	63.12	47.68	42.55	40.5	39.2	37.9	37.12	36.53	35.9	35.36	48187.8	48189.3	48194.7	48188.4	48188.3	48195.6	48224.1	48251.7	48383.5	44086.8	32629	23711.7	18800.3	14877.8	10751.1	8221.4	6312.8	4324.1	2956
4400	16	16	16	28	2	12	300	4	4	13	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	33/24/9/9	8/4/9/9	68/14	335.96	335.16	334.16	334.57	338.19	337.29	334.73	329.76	305.62	62.86	47.42	42.36	40.29	39.03	37.74	36.97	36.4	35.76	35.22	48386.4	48387.5	48394.1	48386.2	48385.4	48391	48419.6	48445.4	48572.7	44244	32764.8	23805.9	18877.3	14932.1	10795.5	8253.5	6337.4	4341.2	2967.9
4400	16	16	16	28	2	12	300	4	4	12	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	32/24/9/9	8/4/9/9	68/14	336.67	336.15	335.67	335.98	338.94	338.35	335.51	329.93	305.58	62.65	47.46	42.46	40.4	39.14	37.85	37.1	36.53	35.89	35.36	48292.5	48290.5	48300.5	48288.5	48289.8	48297.1	48324.3	48359.9	48485.1	44069	32646.2	23716.8	18804.5	14879.1	10753.8	8221.1	6312.8	4324.4	2956
4400	16	16	16	28	2	12	300	4	4	11	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	31/24/9/9	8/4/9/9	68/14	335.66	336.18	334.58	334.83	338.66	338.1	335.13	330.56	304.43	62.67	47.48	42.52	40.52	39.3	38.05	37.3	36.74	36.12	35.58	48294.8	48294.7	48301	48294.2	48293.2	48301.7	48328.9	48359.3	48489.6	44084.4	32629.5	23714.7	18799.7	14870.2	10744.8	8211.9	6302.8	4313.4	2944.7
4400	16	16	16	28	2	12	300	4	4	10	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	30/24/9/9	8/4/9/9	68/14	334.75	334.72	334.9	334.21	337.25	336.3	333.59	328.54	303.32	62.1	47.11	42.16	40.19	38.91	37.69	36.93	36.37	35.75	35.21	48549.8	48548.2	48552.9	48547.3	48545.8	48552.3	48584.3	48619.9	48740.3	44266.6	32780.8	23807.7	18883.1	14943.1	10797.5	8255.3	6338.9	4341.8	2968.2
4400	16	16	16	28	2	12	300	4	4	9	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	29/24/9/9	8/4/9/9	68/14	335.33	333.94	334.75	334	336.94	336.31	333.4	328.91	303.93	62.01	47.05	42.11	40.11	38.88	37.67	36.91	36.36	35.73	35.23	48577.2	48579.1	48582	48576.6	48575.1	48583.1	48613.7	48644.6	48779.8	44264.1	32775.5	23811.4	18885.4	14946.1	10798.9	8256.7	6338.9	4343.1	2967.3
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	28/24/9/9	8/4/9/9	68/14	334.69	334.29	335.1	332.81	336.62	336.15	332.87	328.32	303.47	61.63	46.93	42.07	40.1	38.87	37.64	36.91	36.35	35.75	35.21	48609.1	48608.5	48609	48609.1	48608.4	48618.3	48640	48681.4	48818.6	44256.2	32773.4	23819.4	18884.5	14945.5	10800.1	8256.7	6340	4342	2968.1
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	17181	8	7/4/9/9	16/16/16/16	28/24/9/9	7/4/9/9	68/14	333.77	333.91	332.35	332.33	335.95	335.2	332.72	328.11	301.89	61.33	46.95	42.13	40.22	39.02	37.84	37.11	36.57	35.95	35.45	48659	48660.7	48668.2	48664.5	48657.1	48665.1	48693.8	48729.3	48868	44254.9	32790.8	23811.3	18881.8	14937.7	10789.7	8246.9	6328.8	4331.6	2956.2
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	17181	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	68/14	331.1	330.98	330.49	330.61	333.52	332.82	329.09	324.71	295.52	60.11	46.68	42.05	40.12	38.99	37.8	37.09	36.57	35.95	35.44	49057.3	49056.1	49061.4	49052.3	49058.1	49067.8	49084.9	49126.2	49288.6	44269.2	32786.6	23801.4	18880.6	14935.8	10791	8247.2	6328.9	4331.8	2956.5
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	17181	8	6/4/9/9	15/15/15/15	28/24/9/9	6/4/9/9	68/14	331.17	330.5	330.8	329.67	333.08	332.47	329.26	324.79	293.35	60.17	46.79	42.15	40.25	39.07	37.9	37.17	36.64	36.02	35.52	49144.2	49148.1	49153.4	49145.8	49149.6	49159.9	49179.2	49215.8	49384	44201	32722.4	23771.9	18845.8	14911.1	10769.2	8232.1	6316.7	4323.3	2950.2
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	17181	8	6/4/9/9	16/16/16/16	28/24/8/8	6/4/9/9	68/14	333.24	333.35	330.62	321.65	324.64	324.35	331.44	325.82	298.06	60.51	46.84	42.2	40.31	39.13	37.94	37.24	36.7	36.1	35.57	48874.1	48871.6	48880.5	48872.4	48869.4	48882.1	48905.4	48936.7	49091.8	44123.2	32640.3	23721.2	18807	14881.2	10749.7	8216	6305.1	4314.3	2945.4
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	17181	8	8/4/9/9	16/16/16/16	28/24/9/9	8/4/9/9	68/14	335.62	335.69	334.41	333.28	337.34	336.69	333.37	328.77	302.2	61.79	47	42.13	40.14	38.94	37.72	36.96	36.43	35.8	35.29	48517.5	48518.5	48521.6	48521.3	48518	48524.8	48550.1	48592.2	48720.4	44170.4	32704.2	23771	18850.8	14915.5	10776.9	8241.4	6326.9	4334.7	2961.6
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	17181	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	68/14	332.63	330.89	331.25	330.14	333.91	333.56	330.45	325.51	296.69	60.3	46.68	41.96	40.06	38.85	37.67	36.93	36.4	35.79	35.27	48961	48963.3	48962.4	48958.4	48960.1	48968.8	48997.8	49032.2	49189.8	44209.7	32722.7	23781.6	18853.2	14919.9	10780.3	8243.4	6328.3	4334.9	2962.8
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	34362	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	68/14	328.23	329.4	328.31	328.08	331.32	330.55	327.65	322.43	289.26	58.81	46.37	41.91	40	38.88	37.68	36.96	36.42	35.8	35.28	49389.5	49385.2	49392	49380.8	49385.4	49400.8	49425.2	49454.7	49649.7	44136.7	32675.6	23709.9	18819.1	14886	10758.7	8227.7	6317.9	4329.6	2959.9
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	51543	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	68/14	327.32	327.64	326.44	326.42	329.5	328.57	325.87	320.37	287.18	58.11	46.09	41.52	39.69	38.52	37.32	36.56	36.03	35.4	34.88	49656.6	49651.3	49659	49650.9	49654.9	49659.8	49693.1	49716.4	49901.2	44235.3	32751.5	23795.2	18863.2	14934.2	10796.3	8260.9	6346.3	4354.7	2982.9
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	65000	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	68/14	327.7	326.61	326.84	326.63	329.65	329.18	326.17	320.92	287.3	57.97	46.09	41.61	39.72	38.55	37.34	36.61	36.05	35.43	34.91	49623	49624.6	49628.8	49623.8	49621.7	49635.7	49660.5	49695	49883.5	44156.9	32681.1	23731.4	18826.1	14903.6	10776.2	8244.3	6336.4	4347.8	2979.4
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	51543	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	67/13	327.25	327.99	327.26	327.08	329.89	329.28	326.37	321.09	288.45	57.98	45.86	41.23	39.38	38.19	36.93	36.2	35.64	35.02	34.49	49537.5	49533.8	49538	49537.2	49537.8	49545.5	49570.7	49603.8	49778.2	44174.9	32700.2	23756.6	18843.6	14920.6	10794.9	8265.4	6356.3	4368.6	3001.6
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	51543	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	66/12	327.11	326.99	326.98	325.13	329.4	328.75	325.73	321.02	287.46	57.58	45.36	40.78	38.91	37.72	36.43	35.68	35.11	34.47	33.94	49637.5	49633.8	49636.9	49637.4	49636.5	49646.8	49672.5	49705.2	49886.6	44276.2	32777.8	23820.9	18897	14970.2	10838.4	8303.7	6393.6	4403	3034.1
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	51543	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	65/11	327.37	326.63	327.25	325.68	328.87	328.49	325.51	320.36	287.43	57.34	45.13	40.51	38.63	37.47	36.2	35.45	34.9	34.26	33.75	49632.4	49635.5	49638.8	49630.5	49630.5	49644.7	49671.8	49706.4	49883.1	44274.1	32784.9	23832.9	18911.2	14982	10847.8	8315.7	6404	4414.7	3044.5
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	51543	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	64/10	327.18	325.83	326.6	325.12	329.31	328.82	325.79	320.79	288.49	57.22	44.86	40.22	38.36	37.21	35.95	35.2	34.66	34.03	33.52	49557.5	49562	49563.2	49564	49562.7	49572.5	49595.7	49630	49805.5	44233.8	32736.9	23820.7	18906.6	14978.5	10852.7	8321.5	6411.7	4424.7	3056.2
4400	16	16	16	28	2	12	300	4	4	8	4	6	16	14	51543	8	6/4/9/9	16/16/16/16	28/24/9/9	6/4/9/9	63/9	326.94	326.48	325.74	325.21	328.34	327.88	324.86	319.8	285.21	56.61	4																											