Results of the OSU benchmark

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In the following pages there are reported the exhaustive list of all the results obtained by running the OSU benchmark in the different configurations. All the technical details are reported in the third chapter of the thesis this document is related to.

1 Latency

Size	Mean	Std	Min	Max
1	0.4373	0.0517	0.38	0.51
2	0.4393	0.0536	0.38	0.51
4	0.434	0.0502	0.38	0.50
8	0.434	0.0515	0.38	0.50
16	0.455	0.052	0.39	0.52
32	0.4527	0.0521	0.39	0.52
64	0.473	0.0571	0.41	0.54
128	0.5263	0.0631	0.44	0.60
256	0.5823	0.0562	0.51	0.65
512	0.739	0.0535	0.63	0.84
1024	0.8307	0.0564	0.74	0.92
2048	0.9273	0.0597	0.85	1.02
4096	2.169	0.0483	2.07	2.25
8192	2.4423	0.0374	2.36	2.51
16384	3.1477	0.0445	3.07	3.29
32768	4.2313	0.0585	4.11	4.34
65536	6.4917	0.069	6.37	6.64
131072	11.0653	0.1395	10.87	11.34
262144	20.2417	0.3006	19.48	20.78
524288	41.1763	0.2466	40.72	41.66
1048576	94.9737	1.1335	92.27	97.12
2097152	226.0127	1.1078	223.34	227.85
4194304	517.981	6.1941	506.13	532.54

Table 1: `osu_latency` results – baremetal – 1 node.

Size	Mean	Std	Min	Max
1	20.5387	0.1541	20.30	21.03
2	20.6273	0.1385	20.47	21.09
4	20.5563	0.1448	20.42	21.10
8	20.437	0.2683	19.74	20.96
16	20.347	0.547	18.69	20.97
32	20.3353	0.5839	18.71	21.02
64	20.553	0.5453	18.84	21.14
128	20.932	0.5548	19.22	21.56
256	20.9353	0.7237	19.16	21.66
512	21.1077	0.8519	18.35	21.91
1024	22.741	0.9673	19.62	23.57
2048	42.7193	0.7889	38.62	43.03
4096	43.985	0.093	43.75	44.18
8192	45.653	0.0773	45.51	45.82
16384	48.635	0.3677	46.87	49.07
32768	70.698	1.0478	65.81	72.74
65536	106.508	21.0762	76.48	169.35
131072	139.2237	5.892	129.24	152.70
262144	182.705	14.1849	162.59	225.93
524288	299.2757	29.8496	248.58	365.07
1048576	571.0977	56.272	465.09	633.49
2097152	1050.9927	118.9488	809.07	1157.86
4194304	1954.9737	147.122	1679.66	2138.60

Table 2: `osu_latency` results – baremetal – 2 nodes.

Size	Mean	Std	Min	Max
1	27.121	0.1465	26.91	27.73
2	27.0847	0.1014	26.90	27.33
4	27.1067	0.0882	26.92	27.27
8	27.135	0.1753	26.94	27.71
16	27.1213	0.1284	26.89	27.59
32	27.135	0.137	26.91	27.62
64	27.1203	0.0829	26.90	27.27
128	27.1433	0.1513	26.92	27.81
256	27.1307	0.079	26.95	27.26
512	27.177	0.078	26.98	27.30
1024	27.2967	0.0657	27.13	27.41
2048	25.1077	0.0841	24.93	25.26
4096	25.775	0.0673	25.67	25.88
8192	26.4933	0.0744	26.34	26.59
16384	28.9913	2.0236	28.43	39.69
32768	52.0427	9.4234	38.31	61.24
65536	141.7617	4.2812	136.97	149.96
131072	158.0957	9.4765	149.88	177.91
262144	215.3497	1.9051	209.80	220.09
524288	307.327	3.1582	300.58	314.34
1048576	510.865	2.844	508.80	525.31
2097152	923.7493	5.142	917.47	938.82
4194304	1953.9853	4.7309	1945.48	1964.80

Table 3: osu_latency results – calico – 1 node.

Size	Mean	Std	Min	Max
1	38.083	2.5212	29.54	39.41
2	37.2253	3.1664	30.59	39.26
4	37.0997	3.2047	30.31	39.35
8	37.3323	2.8182	29.74	39.22
16	37.6527	2.6758	29.58	39.24
32	37.1817	3.1025	29.65	39.30
64	36.977	3.4806	29.68	39.39
128	37.161	3.4714	29.90	39.57
256	36.9183	3.8234	30.06	39.77
512	36.909	4.0297	30.29	40.07
1024	38.162	4.2461	31.54	41.78
2048	67.1343	1.2949	63.07	68.43
4096	70.3003	0.941	68.10	71.30
8192	75.3723	1.1218	72.52	76.58
16384	84.33	4.0929	67.02	87.72
32768	113.5223	3.8135	100.14	119.26
65536	273.1957	6.3257	247.12	281.82
131072	348.394	2.6927	339.49	356.83
262144	459.4453	9.2397	431.94	474.31
524288	660.698	25.0942	591.40	696.12
1048576	1246.7003	48.9624	996.91	1263.04
2097152	2257.9417	119.3328	1641.59	2302.51
4194304	3576.043	167.2865	2700.72	3638.37

Table 4: osu_latency results – calico – 2 nodes.

Size	Mean	Std	Min	Max
1	22.9817	0.1042	22.69	23.18
2	22.9607	0.1114	22.65	23.14
4	22.991	0.1068	22.68	23.17
8	22.9697	0.1007	22.70	23.15
16	22.99	0.1268	22.68	23.38
32	22.972	0.1003	22.68	23.14
64	22.9967	0.106	22.66	23.19
128	23.0113	0.1596	22.66	23.64
256	23.051	0.1029	22.75	23.21
512	23.0813	0.1022	22.82	23.26
1024	23.2123	0.0997	22.94	23.38
2048	22.2323	0.1159	22.05	22.63
4096	22.808	0.1741	22.59	23.34
8192	23.524	0.2052	23.17	24.08
16384	29.0837	4.3195	25.04	34.19
32768	48.0823	10.2882	36.22	64.42
65536	119.2897	3.6924	115.91	125.90
131072	135.1943	3.0589	133.42	144.56
262144	178.27	0.7407	176.99	180.12
524288	266.8857	1.791	263.10	270.90
1048576	447.1313	3.2457	442.72	455.61
2097152	800.685	3.4169	795.68	811.75
4194304	1731.398	3.9701	1722.24	1742.77

Table 5: osu_latency results – flannel – 1 node.

Size	Mean	Std	Min	Max
1	37.3103	2.217	31.61	39.10
2	36.9243	2.6264	31.51	39.09
4	35.868	3.1786	29.31	39.04
8	35.4163	4.013	26.03	39.03
16	35.5143	3.9599	26.02	39.00
32	35.5903	3.757	26.07	39.04
64	36.2863	3.7606	26.31	39.80
128	36.942	3.647	26.36	39.81
256	37.061	3.5778	26.47	39.87
512	37.3483	3.622	26.74	40.13
1024	39.4937	3.5895	27.89	42.06
2048	74.7393	8.3257	56.05	79.78
4096	70.978	5.5391	55.93	75.15
8192	75.5923	5.5471	59.66	80.70
16384	83.2837	5.1339	66.73	86.53
32768	118.8087	8.4048	94.21	124.35
65536	275.5323	17.252	223.33	288.05
131072	384.3677	30.8951	291.69	400.20
262144	578.277	56.0489	389.30	604.38
524288	926.608	90.9893	591.55	962.48
1048576	1696.1013	125.2043	1325.06	1752.25
2097152	3210.4527	250.5546	2466.33	3308.94
4194304	6299.8217	468.2247	4908.56	6484.20

Table 6: osu_latency results – flannel – 2 nodes.

Size	Mean	Std	Min	Max
1	17.093	0.1522	16.89	17.47
2	17.0733	0.1472	16.84	17.43
4	17.0753	0.1484	16.83	17.44
8	17.1377	0.1453	16.94	17.50
16	17.1	0.1392	16.95	17.44
32	17.0983	0.145	16.91	17.45
64	17.1087	0.1428	16.91	17.45
128	17.101	0.1424	16.86	17.46
256	17.138	0.1396	16.95	17.49
512	17.1963	0.1497	17.00	17.58
1024	17.3497	0.1441	17.17	17.76
2048	17.4653	0.1392	17.18	17.79
4096	18.3657	0.1665	18.09	18.99
8192	19.054	0.1514	18.81	19.62
16384	22.9217	2.6032	20.51	26.36
32768	42.9213	2.3196	41.44	49.41
65536	83.342	0.7311	82.25	85.49
131072	99.887	1.0299	97.05	101.54
262144	139.7623	0.8677	137.71	141.24
524288	207.2227	1.8302	205.19	215.46
1048576	363.7193	4.1336	360.06	379.85
2097152	666.077	8.2997	659.18	698.10
4194304	1482.2003	18.172	1468.27	1558.83

Table 7: `osu_latency` results – cilium – 1 node.

Size	Mean	Std	Min	Max
1	36.8617	2.6538	30.53	39.40
2	36.5407	2.8415	29.87	39.33
4	36.0107	2.8725	29.78	39.35
8	35.6787	3.0394	29.89	39.38
16	35.658	3.0604	29.88	39.34
32	35.668	3.0545	29.91	39.15
64	36.208	3.0712	30.35	39.39
128	36.179	3.2948	29.14	39.49
256	36.1903	3.465	27.10	39.56
512	36.3897	3.4451	27.29	39.90
1024	37.8947	3.6715	28.49	41.83
2048	70.5323	10.8675	50.18	80.43
4096	72.0653	11.6014	51.28	83.32
8192	75.8367	12.5182	53.67	89.78
16384	78.0193	9.0607	58.43	87.55
32768	104.7107	7.9871	81.20	123.58
65536	247.3237	23.2226	195.99	294.89
131072	359.4107	37.3445	266.11	398.28
262144	536.6273	81.1005	327.24	617.84
524288	834.2827	130.866	513.74	978.47
1048576	1469.4673	280.7076	865.02	1768.85
2097152	2686.4507	599.4045	1475.31	3339.06
4194304	4774.436	1104.8711	2991.44	6193.59

Table 8: `osu_latency` results – cilium – 2 nodes.

Size	Mean	Std	Min	Max
1	0.5087	0.0466	0.44	0.58
2	0.5017	0.0455	0.43	0.57
4	0.502	0.0466	0.43	0.58
8	0.5007	0.0443	0.43	0.56
16	0.515	0.0456	0.44	0.58
32	0.5163	0.0477	0.44	0.58
64	0.531	0.0507	0.45	0.59
128	0.5837	0.0576	0.48	0.67
256	0.643	0.0564	0.54	0.72
512	0.7337	0.0477	0.64	0.79
1024	0.8477	0.0535	0.76	0.92
2048	0.9457	0.0503	0.87	1.01
4096	2.1687	0.0398	2.10	2.24
8192	2.443	0.0284	2.38	2.51
16384	3.138	0.0287	3.08	3.20
32768	4.23	0.0441	4.17	4.34
65536	6.523	0.06	6.43	6.69
131072	11.095	0.1276	10.91	11.39
262144	20.2343	0.1251	19.98	20.50
524288	41.1723	0.4043	40.41	41.99
1048576	95.058	1.3035	91.72	97.79
2097152	224.365	1.2736	222.35	227.46
4194304	517.7463	7.9984	499.14	532.90

Table 9: `osu_latency_mp` results – baremetal – 1 node.

Size	Mean	Std	Min	Max
1	32.7463	2.7331	21.17	35.92
2	32.003	2.5194	21.03	35.09
4	33.5787	2.8468	21.56	36.63
8	33.203	3.3032	21.11	37.22
16	33.446	3.137	21.02	36.19
32	33.0373	3.0582	19.25	35.91
64	33.4147	3.3948	21.24	36.29
128	33.56	2.7406	20.93	36.21
256	33.763	2.6154	21.80	36.30
512	33.8887	2.8249	21.93	36.19
1024	33.621	2.7972	23.02	36.33
2048	42.802	0.7185	39.14	43.21
4096	43.1403	0.8112	39.54	43.84
8192	45.0303	0.9579	40.76	45.94
16384	49.464	0.8546	48.37	51.70
32768	72.4727	0.9632	70.99	75.22
65536	107.5597	15.5598	81.43	159.78
131072	145.641	3.4254	139.01	158.19
262144	189.557	16.5951	168.80	238.51
524288	299.3783	27.1002	255.50	357.00
1048576	579.5987	55.1844	449.72	683.71
2097152	1083.1527	89.2276	820.53	1199.08
4194304	1998.003	129.5687	1642.01	2127.63

Table 10: `osu_latency_mp` results – baremetal – 2 nodes.

Size	Mean	Std	Min	Max
1	35.3013	0.1034	35.09	35.47
2	35.4257	0.1537	35.15	35.92
4	35.2987	0.1108	35.09	35.58
8	35.3263	0.0993	35.15	35.53
16	35.3497	0.1046	35.13	35.50
32	35.3277	0.105	35.08	35.47
64	35.301	0.0926	35.13	35.45
128	35.2953	0.0945	35.11	35.44
256	35.3197	0.0949	35.16	35.49
512	25.4187	0.1087	25.31	25.89
1024	25.4743	0.0636	25.38	25.68
2048	25.463	0.0754	25.34	25.67
4096	27.502	0.1307	27.26	27.79
8192	31.7337	4.4987	27.91	37.63
16384	39.0657	0.1212	38.89	39.39
32768	48.5043	4.0903	46.52	59.01
65536	156.4387	0.4492	155.65	157.37
131072	175.0507	4.7036	168.35	182.40
262144	249.8287	6.3234	216.77	252.97
524288	316.7657	18.4618	308.32	385.18
1048576	522.532	4.6236	517.35	529.53
2097152	932.4817	4.6128	921.71	942.81
4194304	1969.4787	3.4364	1961.44	1975.98

Table 11: `osu_latency_mp` results – calico – 1 node.

Size	Mean	Std	Min	Max
1	67.1457	0.3223	66.50	67.69
2	67.1117	0.5162	66.05	67.72
4	67.023	0.6225	65.18	67.61
8	67.0977	0.4319	66.17	67.79
16	66.9273	0.631	65.34	67.75
32	67.134	0.509	65.26	67.82
64	67.234	0.5229	65.71	67.94
128	67.5313	0.4401	65.84	68.00
256	67.5067	0.4334	66.53	68.04
512	54.8843	13.5441	38.17	68.70
1024	54.255	14.0638	38.78	68.92
2048	68.8643	1.1143	66.06	71.35
4096	70.891	0.7971	67.59	72.12
8192	80.8393	3.2215	72.66	84.18
16384	90.5947	4.9216	70.36	96.68
32768	114.8553	6.4627	106.18	124.13
65536	293.762	2.3742	288.27	299.65
131072	371.228	8.3332	353.29	382.50
262144	466.2597	15.8872	418.30	497.60
524288	694.6717	28.6908	583.84	724.12
1048576	1290.6333	79.7791	1023.97	1402.03
2097152	2332.1693	170.245	1817.24	2570.41
4194304	3586.947	224.4339	2713.68	3982.70

Table 12: `osu_latency_mp` results – calico – 2 nodes.

Size	Mean	Std	Min	Max
1	29.234	0.1196	29.01	29.57
2	29.254	0.12	29.01	29.55
4	29.3383	0.1547	29.13	29.72
8	29.2637	0.1719	29.03	29.80
16	29.2897	0.1692	29.07	29.81
32	29.2733	0.1265	29.08	29.61
64	29.173	0.1069	29.02	29.49
128	29.154	0.1061	28.98	29.42
256	29.2127	0.1503	29.03	29.77
512	21.665	0.1004	21.50	21.96
1024	21.7123	0.072	21.57	21.91
2048	21.9977	0.1124	21.72	22.21
4096	24.2163	1.2687	23.64	30.91
8192	24.6027	0.1076	24.36	24.84
16384	33.7757	0.1122	33.55	34.04
32768	43.586	3.1709	41.88	51.63
65536	134.4137	1.7335	126.69	136.19
131072	149.9193	3.2509	138.32	152.33
262144	189.7223	10.9661	182.59	211.81
524288	272.3247	2.5438	266.98	276.53
1048576	453.6763	3.4083	450.43	464.83
2097152	813.8083	3.7633	809.07	821.79
4194304	1751.7387	4.2662	1744.32	1763.27

Table 13: `osu_latency_mp` results – flannel – 1 node.

Size	Mean	Std	Min	Max
1	70.3877	20.9417	46.24	178.89
2	69.9543	18.7174	46.31	166.42
4	70.8703	23.5867	46.21	193.65
8	70.8647	23.95	46.22	195.61
16	70.874	23.9119	46.22	195.40
32	71.0357	23.7688	46.27	194.77
64	71.6257	23.7814	46.58	195.37
128	71.654	23.5685	46.57	194.24
256	71.7367	23.8285	46.54	195.61
512	44.7233	18.6934	35.03	143.47
1024	45.7417	17.9921	41.41	140.37
2048	82.3223	25.2362	44.75	209.84
4096	81.9653	25.3537	48.55	211.51
8192	85.2663	28.7858	51.02	233.59
16384	95.9207	33.0875	56.73	267.24
32768	131.8007	44.0901	77.82	358.43
65536	309.184	104.6208	175.74	848.60
131072	441.409	150.9904	212.78	1208.54
262144	664.191	222.5683	295.07	1772.17
524288	1057.6783	336.8767	494.79	2709.56
1048576	1907.409	500.9674	834.91	4301.02
2097152	3349.241	597.302	1571.40	5836.73
4194304	6485.112	1163.8326	3328.86	11660.36

Table 14: `osu_latency_mp` results – flannel – 2 nodes.

Size	Mean	Std	Min	Max
1	21.0763	0.09	20.85	21.19
2	21.0693	0.0986	20.81	21.18
4	21.063	0.0935	20.83	21.22
8	21.1763	0.1147	20.97	21.36
16	21.078	0.0919	20.86	21.20
32	21.1187	0.0969	20.85	21.22
64	21.0747	0.0922	20.87	21.18
128	21.0673	0.0918	20.84	21.19
256	21.097	0.0988	20.84	21.25
512	16.6493	0.1059	16.35	16.91
1024	16.7013	0.0859	16.46	16.86
2048	16.3673	0.0558	16.25	16.51
4096	18.9733	1.6694	18.21	23.89
8192	24.146	1.8084	18.69	25.04
16384	26.85	0.1462	26.58	27.16
32768	39.812	0.7852	38.66	41.27
65536	90.401	3.8172	85.26	94.91
131072	109.2327	1.2601	106.74	111.98
262144	159.765	5.8557	145.76	164.94
524288	209.93	1.1278	207.45	212.14
1048576	369.1877	2.0649	366.16	374.00
2097152	672.439	3.3954	663.58	679.65
4194304	1509.1053	4.1043	1498.72	1516.41

Table 15: osu_latency_mp results – cilium – 1 node.

Size	Mean	Std	Min	Max
1	44.373	3.4689	38.67	53.68
2	43.2893	5.1238	33.65	60.81
4	41.895	4.2057	31.16	45.93
8	41.756	4.221	31.64	45.86
16	41.793	4.3311	31.62	47.78
32	41.8087	4.2854	31.95	47.37
64	41.7377	4.4459	30.90	46.98
128	41.7583	4.4696	31.08	47.51
256	41.7753	4.2497	32.71	46.77
512	39.4563	3.3909	33.86	50.43
1024	39.755	3.4104	34.48	50.64
2048	63.4287	6.8263	45.01	70.81
4096	66.4273	8.0102	45.69	75.51
8192	71.0493	7.3249	56.18	80.78
16384	83.741	10.9704	66.15	100.08
32768	110.404	13.0052	83.14	137.36
65536	270.7673	33.3402	192.76	311.40
131072	362.7353	49.0898	250.38	416.08
262144	520.8217	94.6865	335.99	631.32
524288	801.3127	163.7533	500.81	989.52
1048576	1407.401	318.0896	825.86	1770.39
2097152	2577.543	646.7756	1500.17	3346.58
4194304	4588.2707	1220.203	2967.99	6215.00

Table 16: osu_latency_mp results – cilium – 2 nodes.

Size	Mean	Std	Min	Max
1	0.499	0.048	0.45	0.58
2	0.4997	0.0474	0.45	0.58
4	0.494	0.0459	0.45	0.58
8	0.4967	0.0454	0.45	0.58
16	0.509	0.0483	0.46	0.60
32	0.5107	0.049	0.46	0.61
64	0.5253	0.0482	0.47	0.62
128	0.5767	0.0481	0.52	0.68
256	0.629	0.0492	0.55	0.73
512	0.76	0.0635	0.65	0.89
1024	0.855	0.064	0.76	0.97
2048	0.9567	0.0574	0.85	1.06
4096	2.174	0.0691	1.99	2.28
8192	2.4677	0.0709	2.29	2.59
16384	3.1977	0.0816	2.95	3.32
32768	4.3083	0.0893	4.07	4.46
65536	6.8727	0.113	6.59	6.99
131072	11.7663	0.1749	11.25	11.91
262144	21.2667	0.435	20.25	22.04
524288	43.018	0.6977	40.92	44.11
1048576	98.2513	1.661	93.71	100.88
2097152	231.3513	2.6843	225.72	234.55
4194304	529.0153	7.9996	511.93	543.02

Table 17: osu_multi_lat results – baremetal – 1 node.

Size	Mean	Std	Min	Max
1	31.056	4.5492	21.08	35.70
2	30.9183	5.0106	20.00	36.30
4	31.565	5.6182	17.64	36.44
8	31.3777	5.2265	19.97	36.31
16	31.1117	5.4706	19.20	36.20
32	31.1443	5.1319	19.19	36.26
64	31.967	5.2742	21.34	36.29
128	31.7837	4.887	19.26	36.27
256	32.1997	4.963	21.41	36.23
512	31.6753	4.6343	21.39	35.92
1024	32.011	4.1937	22.08	35.80
2048	42.2233	1.4961	38.59	43.09
4096	42.655	1.4999	38.99	43.98
8192	44.3473	1.762	40.31	46.10
16384	50.616	1.1492	48.98	54.20
32768	73.1027	0.9819	71.84	75.62
65536	114.1613	20.9833	82.88	165.23
131072	148.294	4.4755	145.13	162.83
262144	188.4183	15.8976	172.66	224.12
524288	303.3927	26.9837	257.98	366.75
1048576	594.3503	53.3032	461.04	674.94
2097152	1092.5843	88.0357	822.28	1214.39
4194304	1999.299	127.1182	1653.95	2138.52

Table 18: osu_multi_lat results – baremetal – 2 nodes.

Size	Mean	Std	Min	Max
1	38.488	1.8598	34.60	39.94
2	38.4823	1.8557	34.65	39.62
4	38.523	1.8847	34.63	40.05
8	38.5097	1.8624	34.64	39.67
16	38.6577	1.7564	34.67	39.86
32	38.6643	1.7496	34.71	39.83
64	38.9267	1.5322	34.86	40.03
128	38.8463	1.6031	34.69	39.93
256	38.887	1.6077	34.73	39.91
512	27.904	1.1312	24.98	28.51
1024	27.9543	1.1485	25.05	28.80
2048	28.408	1.1818	25.38	29.02
4096	30.386	1.2598	27.12	31.07
8192	36.086	4.7522	31.24	42.00
16384	42.773	1.7756	38.27	43.83
32768	53.0357	4.0778	46.04	65.74
65536	173.124	6.9044	155.23	176.94
131072	198.315	7.0826	176.07	205.18
262144	281.066	10.061	250.92	285.68
524288	378.506	37.8409	314.98	426.88
1048576	576.6033	33.1639	516.13	722.06
2097152	1017.818	40.0848	920.51	1182.92
4194304	2136.497	74.8129	1963.73	2457.35

Table 19: `osu_multi_lat` results – calico – 1 node.

Size	Mean	Std	Min	Max
1	67.6303	0.8036	65.03	68.62
2	67.6	0.6648	66.21	68.51
4	67.5007	0.7969	65.66	68.45
8	67.712	0.6417	65.53	68.54
16	67.7207	0.5513	66.12	68.63
32	67.741	0.5664	66.06	68.54
64	67.7957	0.7418	65.18	68.74
128	68.1007	0.5468	67.34	68.90
256	67.8073	0.7715	65.67	68.87
512	53.0903	14.3799	38.50	70.51
1024	52.2627	14.2686	38.72	70.56
2048	70.127	2.922	66.08	77.97
4096	74.6247	4.7608	68.76	80.85
8192	84.1177	2.9352	77.17	87.62
16384	90.0527	3.9196	83.40	96.01
32768	118.0793	6.721	105.38	128.29
65536	300.8417	8.1949	289.08	312.36
131072	377.7063	13.3059	319.65	384.46
262144	467.152	15.1557	433.76	502.28
524288	695.4853	37.7134	608.95	730.09
1048576	1273.8223	100.615	1025.33	1447.32
2097152	2266.6313	209.6571	1682.58	2668.29
4194304	3486.589	319.16	2730.79	4107.99

Table 20: `osu_multi_lat` results – calico – 2 nodes.

Size	Mean	Std	Min	Max
1	32.9453	0.7334	29.10	33.26
2	33.1307	0.1444	32.86	33.49
4	33.0733	0.0979	32.85	33.23
8	33.1207	0.1533	32.89	33.69
16	33.1113	0.0928	32.86	33.26
32	33.103	0.1011	32.86	33.30
64	33.1157	0.1189	32.89	33.49
128	33.092	0.0899	32.91	33.26
256	33.1193	0.0919	32.93	33.30
512	24.5907	0.0933	24.41	24.77
1024	24.6237	0.0712	24.50	24.79
2048	24.946	0.1502	24.64	25.33
4096	27.2323	1.5111	26.66	35.20
8192	27.904	1.5148	27.33	35.86
16384	38.0037	0.1235	37.71	38.20
32768	49.0493	3.4559	47.26	57.91
65536	150.759	2.5975	141.34	154.23
131072	169.1723	3.4161	155.69	171.45
262144	225.364	13.3103	206.74	236.81
524288	303.5173	2.5483	297.42	308.12
1048576	499.0383	1.3681	497.49	505.74
2097152	893.3647	4.11	887.36	902.60
4194304	1895.8933	5.8644	1880.70	1905.79

Table 21: `osu_multi_lat` results – flannel – 1 node.

Size	Mean	Std	Min	Max
1	73.0943	23.545	57.64	184.55
2	72.9093	23.8093	57.79	189.05
4	72.7757	23.0737	57.72	184.54
8	73.0497	24.3679	57.64	192.38
16	72.886	23.9922	57.01	190.48
32	73.2097	24.408	58.46	194.06
64	73.944	24.7554	58.94	195.23
128	74.0023	24.4881	58.93	193.79
256	73.987	24.759	58.86	195.07
512	46.238	17.8286	35.64	131.10
1024	47.5807	18.5813	42.02	138.21
2048	80.3053	26.6761	58.54	219.74
4096	80.9197	24.6816	60.69	210.42
8192	85.7053	26.3649	71.17	224.90
16384	97.176	34.3226	80.30	278.18
32768	131.171	43.0657	99.74	357.68
65536	313.6523	104.7613	250.65	864.73
131072	447.0377	145.658	326.16	1210.73
262144	677.705	218.0843	434.24	1810.98
524288	1049.6037	362.4605	650.54	2921.52
1048576	1876.387	473.2349	1406.45	4334.70
2097152	3379.7283	503.1338	2526.89	5915.55
4194304	6589.0677	990.3631	5067.60	11655.98

Table 22: `osu_multi_lat` results – flannel – 2 nodes.

Size	Mean	Std	Min	Max
1	23.8903	0.5972	20.79	24.17
2	23.892	0.6087	20.72	24.17
4	23.9613	0.1398	23.53	24.15
8	23.983	0.1293	23.58	24.17
16	23.9953	0.1389	23.55	24.16
32	23.996	0.1394	23.52	24.17
64	23.9907	0.1328	23.56	24.16
128	23.9727	0.1363	23.58	24.19
256	23.9983	0.1351	23.58	24.18
512	18.805	0.1338	18.49	19.11
1024	18.8767	0.1063	18.62	19.08
2048	18.5957	0.0759	18.50	18.84
4096	20.9067	1.1375	20.45	26.90
8192	23.5887	3.2386	20.97	27.85
16384	30.426	0.2528	29.75	31.00
32768	44.0487	0.5642	43.18	45.63
65536	105.1137	2.5958	97.49	107.20
131072	121.2797	3.2781	113.41	124.46
262144	165.8663	5.1232	160.63	181.24
524288	231.2267	0.7768	229.66	233.27
1048576	402.9987	2.03	400.18	406.91
2097152	732.8213	3.2733	726.75	739.10
4194304	1611.482	3.8327	1605.66	1619.30

Table 23: `osu_multi_lat` results – cilium – 1 node.

Size	Mean	Std	Min	Max
1	45.0	4.0355	38.40	59.36
2	43.8053	3.7019	38.59	55.00
4	43.5593	3.9711	37.04	57.10
8	43.376	3.9637	37.07	57.20
16	42.889	4.3729	34.02	57.38
32	42.736	4.5515	32.45	57.11
64	43.3827	4.7674	33.81	58.53
128	43.2813	4.8158	33.86	58.57
256	43.0517	4.8683	33.04	58.64
512	39.2107	2.9441	33.42	42.96
1024	39.847	2.9216	34.72	43.18
2048	64.1703	6.2596	50.03	71.97
4096	66.2867	7.3196	49.69	75.66
8192	71.503	6.4437	57.41	80.75
16384	82.8843	10.0843	64.77	102.51
32768	110.844	12.9428	86.65	127.77
65536	278.539	27.5098	202.24	309.26
131072	359.5187	46.7512	263.05	414.71
262144	506.44	95.6912	315.44	631.06
524288	800.8557	171.6295	469.00	990.16
1048576	1403.3687	333.7365	769.04	1770.79
2097152	2544.554	653.8993	1391.93	3344.67
4194304	4495.126	1340.3806	2681.15	6527.38

Table 24: `osu_multi_lat` results – cilium – 2 nodes.
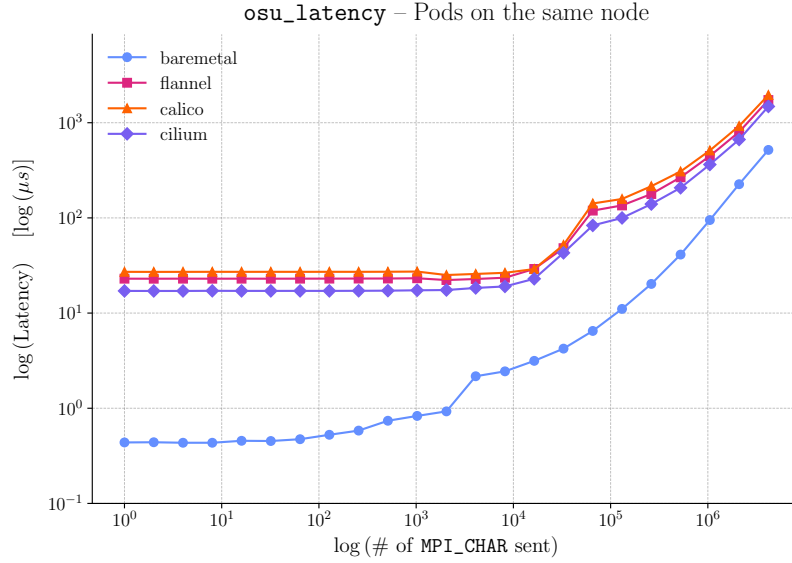

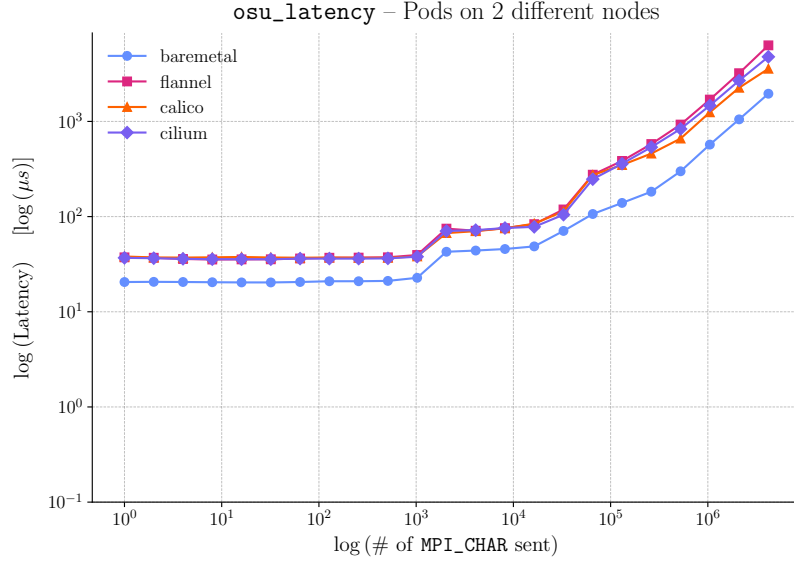Figure 1: Results of the `osu_latency` benchmark for 1 node. Refer to tables: 1, 3, 5, 7.

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Figure 2: Results of the `osu_latency` benchmark for 2 nodes. Refer to tables: 2, 4, 6, 8.
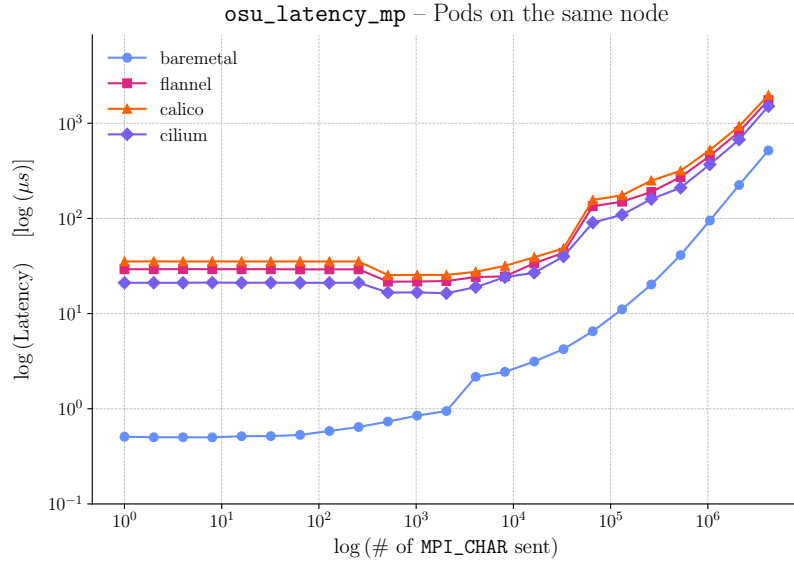

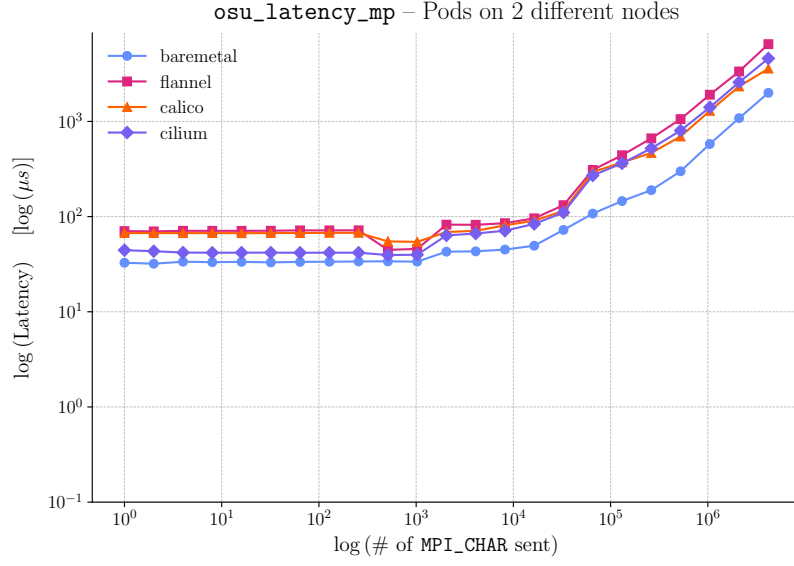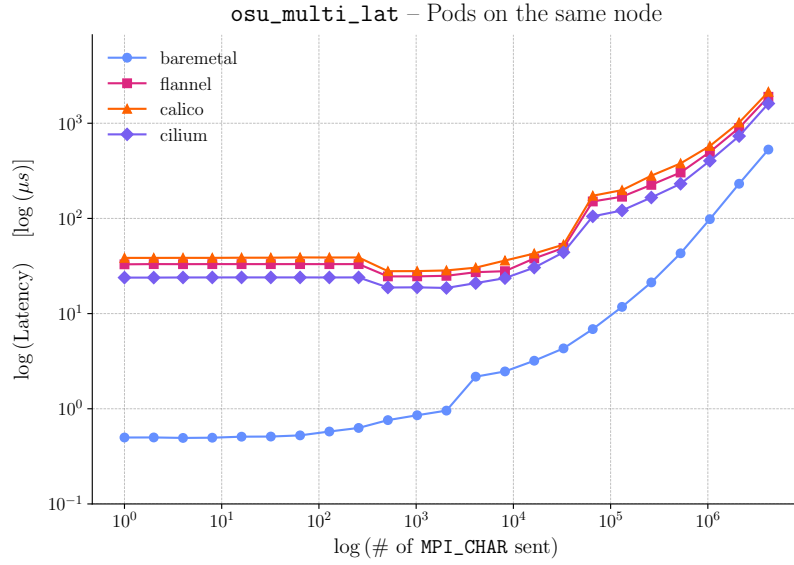Figure 3: Results of the `osu_multi_lat` benchmark for 1 node. Refer to tables: 17, 19, 21, 23.

Figure 4: Results of the `osu_multi_lat` benchmark for 2 nodes. Refer to tables: 18, 20, 22, 24.

Figure 5: Results of the `osu_multi_lat` benchmark for 1 node. Refer to tables: 17, 19, 21, 23.
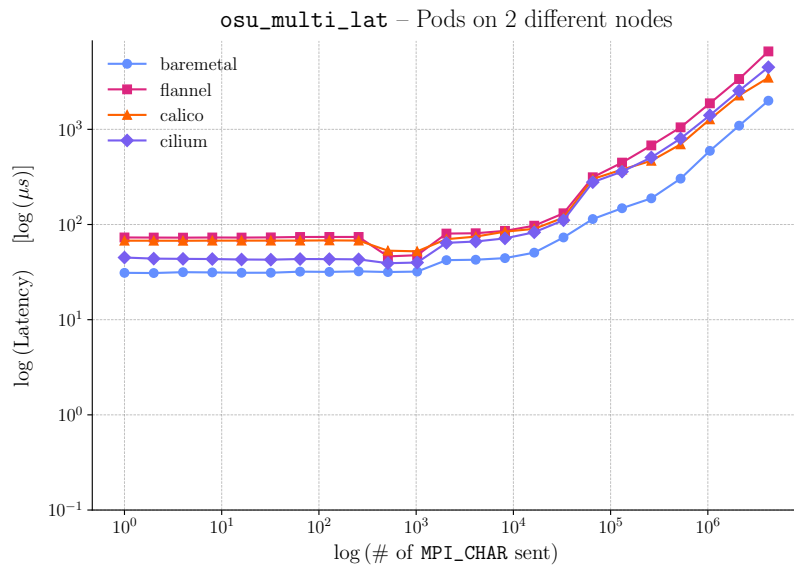
osu_multi_lat – Pods on 2 different nodes

Figure 6: Results of the osu_multi_lat benchmark for 2 nodes. Refer to tables: 18, 20, 22, 24.

2 Bandwidth

Size	Mean	Std	Min	Max	Size	Mean	Std	Min	Max
1	8.7003	0.1831	8.21	8.95	1	0.3973	0.0323	0.33	0.43
2	17.6633	0.2363	17.30	18.07	2	0.8127	0.0676	0.65	0.87
4	35.2407	0.8079	31.64	36.02	4	1.6523	0.1224	1.31	1.74
8	70.0837	2.2234	63.98	71.96	8	3.178	0.2658	2.68	3.48
16	138.2723	2.69	129.65	141.13	16	5.781	0.1702	5.50	6.39
32	273.7007	8.7609	254.75	285.35	32	11.9567	0.257	11.22	12.29
64	439.8813	10.6223	409.08	454.62	64	21.6237	0.373	20.90	22.46
128	577.9763	15.3811	539.17	597.71	128	45.642	0.7318	43.23	46.42
256	979.374	19.4407	930.63	1007.39	256	89.9983	1.7633	86.45	92.41
512	2029.032	32.164	1938.62	2084.34	512	168.487	2.487	164.82	175.65
1024	3471.1337	43.8194	3336.10	3530.15	1024	322.2573	6.8794	302.15	336.17
2048	5727.0343	85.3328	5530.56	5849.73	2048	599.9877	9.829	580.07	636.43
4096	2574.7777	21.3153	2524.08	2611.84	4096	1021.7647	29.63	979.05	1128.95
8192	4548.328	45.4791	4406.45	4610.19	8192	1463.778	59.4628	1386.72	1757.27
16384	6364.4133	80.2716	6182.72	6495.64	16384	2119.323	176.0155	1737.13	2280.36
32768	8846.8357	108.0869	8621.01	9045.90	32768	2297.9537	249.0681	1928.05	2595.28
65536	10918.0893	111.7711	10720.89	11193.34	65536	1659.5727	234.6672	1340.82	2481.60
131072	12429.8963	122.8016	12233.28	12770.95	131072	2168.322	209.7256	1675.42	2741.20
262144	13612.6217	205.4899	13099.54	14069.19	262144	2778.629	394.9816	2111.64	3932.65
524288	13055.3473	153.6644	12680.77	13254.28	524288	3626.0573	649.0379	2173.26	4841.92
1048576	11320.6553	208.6073	10895.34	11766.93	1048576	4330.9033	599.6999	2806.10	5105.98
2097152	9519.0327	43.8725	9427.30	9575.33	2097152	4152.027	386.7753	3212.19	4866.60
4194304	9462.0103	72.9931	9279.51	9548.29	4194304	4082.6343	437.911	2925.67	4999.26

Table 25: `osu_bw` results – baremetal – 1 node.   Table 26: `osu_bw` results – baremetal – 2 nodes.

Size	Mean	Std	Min	Max
1	0.05	0.0	0.05	0.05
2	0.11	0.0	0.11	0.11
4	0.2173	0.0045	0.21	0.22
8	0.43	0.0	0.43	0.43
16	0.8623	0.0043	0.86	0.87
32	1.7247	0.0068	1.71	1.74
64	3.4463	0.0113	3.43	3.46
128	6.887	0.0222	6.84	6.92
256	10.9577	1.8906	9.68	13.84
512	19.595	0.4343	19.36	21.85
1024	38.947	0.1759	38.63	39.22
2048	60.0803	0.2667	59.48	60.52
4096	117.9363	0.4756	116.91	118.77
8192	234.548	1.2183	231.98	236.50
16384	477.059	61.8004	462.00	804.10
32768	1056.963	246.5175	875.86	1413.05
65536	722.6897	2.6985	716.90	730.25
131072	1399.533	9.6804	1357.92	1410.86
262144	1923.9417	23.4163	1821.51	1953.12
524288	2154.2197	5.9615	2140.58	2163.97
1048576	2315.6677	5.4906	2305.70	2326.69
2097152	2467.1387	5.8366	2443.92	2475.73
4194304	2513.95	6.627	2502.78	2529.27

Table 27: osu_bw results – calico – 1 node.

Size	Mean	Std	Min	Max
1	0.067	0.0142	0.05	0.09
2	0.156	0.0261	0.10	0.18
4	0.341	0.0241	0.26	0.36
8	0.6963	0.0267	0.59	0.72
16	1.403	0.0341	1.24	1.43
32	2.8217	0.0238	2.77	2.87
64	5.6393	0.0546	5.53	5.72
128	11.274	0.1121	11.10	11.44
256	22.218	0.4905	21.57	22.94
512	44.3103	0.8099	43.04	45.51
1024	89.5363	1.2295	86.70	91.23
2048	159.586	4.9054	142.80	164.01
4096	302.1553	5.0517	285.14	311.33
8192	537.7787	5.1667	527.04	548.31
16384	838.2517	44.8338	746.24	888.21
32768	1148.4763	119.5015	906.70	1280.34
65536	977.8153	26.1455	928.55	1054.99
131072	1236.896	42.2777	1153.91	1329.38
262144	1388.0777	90.8322	1244.32	1511.86
524288	1505.7283	64.4407	1400.32	1611.60
1048576	1569.2443	61.822	1448.85	1653.42
2097152	1608.9583	67.5555	1477.47	1686.61
4194304	1621.721	72.5776	1480.70	1700.40

Table 28: osu_bw results – calico – 2 nodes.

Size	Mean	Std	Min	Max
1	0.0697	0.0018	0.06	0.07
2	0.13	0.0	0.13	0.13
4	0.26	0.0	0.26	0.26
8	0.5267	0.0048	0.52	0.53
16	1.05	0.0053	1.04	1.06
32	2.1023	0.0101	2.08	2.12
64	4.202	0.0199	4.15	4.23
128	8.392	0.0395	8.29	8.45
256	13.3837	1.704	12.38	16.85
512	27.4347	3.4393	24.80	32.78
1024	50.0593	0.2324	49.60	50.55
2048	78.654	0.3383	78.00	79.33
4096	153.9047	0.7165	152.67	156.05
8192	305.608	1.2953	303.11	308.90
16384	617.8213	99.6089	343.97	942.04
32768	1357.452	235.5914	1120.20	1618.43
65536	905.858	2.7891	900.65	912.06
131072	1655.498	8.2285	1641.77	1674.38
262144	2248.6423	11.2258	2215.40	2263.25
524288	2453.854	9.3388	2435.08	2477.53
1048576	2611.8453	11.3179	2565.30	2625.85
2097152	2778.8057	5.5189	2767.46	2788.86
4194304	2819.6393	8.9082	2801.48	2835.76

Table 29: osu_bw results – flannel – 1 node.

Size	Mean	Std	Min	Max
1	0.0747	0.0114	0.07	0.11
2	0.1717	0.0244	0.15	0.23
4	0.3953	0.0371	0.29	0.45
8	0.8373	0.0721	0.59	0.91
16	1.7323	0.0992	1.37	1.82
32	3.5237	0.1196	3.21	3.64
64	7.0843	0.1931	6.42	7.30
128	14.1687	0.3815	12.87	14.59
256	27.744	1.0591	24.20	28.73
512	55.223	2.0249	48.08	57.56
1024	111.6783	3.9312	99.15	116.10
2048	205.013	12.9822	182.49	222.96
4096	407.7853	20.0378	360.65	438.21
8192	768.79	42.8967	679.67	824.61
16384	1119.2483	78.7987	956.16	1270.89
32768	1273.8587	157.209	889.98	1482.25
65536	1110.711	110.6445	902.27	1322.85
131072	1456.596	65.6256	1289.50	1545.46
262144	1660.3643	69.4989	1410.65	1704.47
524288	1758.8867	74.146	1477.35	1801.41
1048576	1807.8913	82.1587	1509.68	1853.42
2097152	1838.2303	74.7538	1563.81	1882.42
4194304	1847.687	90.9339	1515.87	1894.49

Table 30: osu_bw results – flannel – 2 nodes.

Size	Mean	Std	Min	Max
1	0.0943	0.005	0.09	0.10
2	0.1887	0.0035	0.18	0.19
4	0.3777	0.0063	0.36	0.39
8	0.7563	0.01	0.73	0.77
16	1.5147	0.0215	1.45	1.54
32	3.027	0.0422	2.91	3.09
64	6.0413	0.0854	5.82	6.16
128	12.0637	0.1716	11.62	12.30
256	19.5093	0.6486	19.05	22.84
512	38.692	0.2481	38.04	39.09
1024	77.303	0.4279	76.15	78.08
2048	124.6233	0.6633	122.91	125.83
4096	239.9067	1.4335	236.78	243.54
8192	476.3797	2.6409	470.53	481.93
16384	941.2977	48.3074	925.94	1196.24
32768	1951.436	199.0597	1679.98	2128.57
65536	1329.0023	5.6743	1318.93	1343.29
131072	2215.6477	12.654	2190.76	2248.21
262144	2990.7493	22.2792	2918.91	3023.81
524288	3104.1677	13.6536	3062.73	3132.24
1048576	3176.4917	7.8906	3162.73	3192.81
2097152	3357.774	8.092	3343.46	3372.94
4194304	3390.27	12.5452	3362.99	3414.37

Table 31: osu_bw results – cilium – 1 node.

Size	Mean	Std	Min	Max
1	0.272	0.0385	0.22	0.33
2	0.5697	0.0608	0.47	0.65
4	1.2457	0.0482	1.05	1.31
8	2.459	0.077	2.15	2.60
16	4.657	0.1953	4.36	5.20
32	8.697	0.3612	8.32	10.24
64	16.844	0.8969	15.64	20.05
128	32.6707	1.6022	29.88	39.54
256	61.3993	3.1368	57.84	71.99
512	111.125	6.2476	107.13	133.72
1024	192.677	18.0883	167.21	244.25
2048	303.1273	50.6712	263.93	463.30
4096	495.4327	90.0132	438.71	792.61
8192	733.312	107.3181	649.88	1092.35
16384	924.008	128.8606	786.97	1358.08
32768	944.313	167.9308	780.75	1489.69
65536	1066.5247	124.2195	974.46	1455.10
131072	1491.9007	35.2705	1425.15	1561.50
262144	1671.032	77.1115	1500.61	1753.20
524288	1711.638	104.1039	1495.04	1823.93
1048576	1738.3523	112.4187	1520.47	1858.70
2097152	1749.9147	122.1041	1500.57	1875.26
4194304	1746.145	136.1345	1460.26	1884.97

Table 32: osu_bw results – cilium – 2 nodes.

Size	Mean	Std	Min	Max
1	9.6847	0.5232	8.55	11.20
2	19.923	1.1699	17.08	22.92
4	41.012	3.8778	34.07	48.55
8	80.5707	8.1406	68.64	93.29
16	156.611	18.5798	118.64	188.69
32	314.484	36.4917	274.21	382.69
64	456.2393	9.2757	437.73	469.46
128	653.6687	11.6783	632.10	672.96
256	1154.3587	15.3643	1099.77	1178.97
512	2177.5053	30.1865	2102.07	2221.94
1024	3690.208	30.9929	3575.41	3723.95
2048	6222.1697	54.2502	6017.79	6276.49
4096	3932.7367	56.1126	3779.14	4026.42
8192	6929.2067	179.0929	6616.76	7187.78
16384	10316.311	245.4206	9784.97	10643.07
32768	15104.939	259.9044	14482.51	15478.80
65536	19667.856	288.9055	18910.22	20002.57
131072	23358.8157	375.4016	22179.79	23990.15
262144	26069.5257	362.2794	25176.19	26743.18
524288	25453.4467	316.158	24675.45	25980.42
1048576	22046.6293	383.6902	21371.64	23008.36
2097152	18757.8523	79.5217	18606.50	18918.06
4194304	15804.1443	226.0638	15260.88	16281.82

Table 33: osu_bibw results – baremetal – 1 node.

Size	Mean	Std	Min	Max
1	0.8233	0.0222	0.77	0.87
2	1.6553	0.0424	1.53	1.74
4	3.283	0.0734	3.10	3.39
8	6.5877	0.1287	6.22	6.80
16	13.1337	0.2687	12.29	13.45
32	26.0073	0.482	24.19	26.52
64	50.3047	0.7457	48.08	51.41
128	96.6583	2.1593	91.05	99.40
256	184.8413	3.8772	174.21	189.49
512	351.415	8.735	330.79	380.37
1024	661.001	14.0007	636.47	717.50
2048	1164.6227	25.2712	1134.82	1283.82
4096	1881.1867	34.8856	1813.03	1955.83
8192	2611.5973	73.7833	2399.19	2715.98
16384	2600.1143	132.4697	2439.79	3007.28
32768	2811.7797	152.219	2501.76	3061.19
65536	1774.2303	240.9437	1511.15	2504.12
131072	2112.8637	150.0064	1881.27	2596.33
262144	2119.4747	149.6993	1914.48	2458.34
524288	2314.75	206.5157	2000.88	2795.41
1048576	2676.154	232.384	2272.11	3138.59
2097152	2732.295	205.6593	2438.02	3268.16
4194304	3006.6557	167.043	2752.79	3455.91

Table 34: osu_bibw results – baremetal – 2 nodes.

Size	Mean	Std	Min	Max
1	0.11	0.0	0.11	0.11
2	0.2193	0.0037	0.20	0.22
4	0.4407	0.0045	0.43	0.45
8	0.879	0.0066	0.87	0.89
16	1.7467	0.0154	1.72	1.78
32	3.507	0.0366	3.45	3.58
64	7.0027	0.059	6.92	7.16
128	13.8817	0.1103	13.66	14.14
256	28.3963	0.3036	27.59	28.80
512	55.9753	1.1681	52.57	57.06
1024	102.61	1.5059	101.03	108.02
2048	130.8463	0.9136	128.10	132.16
4096	370.5273	45.2496	278.93	399.21
8192	709.6457	5.7372	695.65	717.09
16384	1140.477	33.2682	1038.66	1166.91
32768	1720.738	111.9055	1190.58	1785.16
65536	1189.1103	12.0899	1162.75	1207.09
131072	1690.5973	18.5205	1650.61	1716.43
262144	1929.617	21.1082	1884.90	1971.32
524288	2159.6273	6.1053	2149.67	2171.88
1048576	2277.481	4.9712	2266.59	2287.37
2097152	2400.213	4.193	2392.24	2405.90
4194304	2399.2287	9.2987	2374.96	2423.10

Table 35: osu_bibw results – calico – 1 node.

Size	Mean	Std	Min	Max
1	0.1427	0.0256	0.10	0.19
2	0.371	0.0084	0.35	0.38
4	0.7577	0.0043	0.75	0.76
8	1.5173	0.0052	1.51	1.53
16	3.0167	0.0103	3.00	3.03
32	5.963	0.0241	5.91	6.01
64	11.9107	0.0491	11.81	12.01
128	23.9273	0.0823	23.76	24.10
256	47.3367	1.585	39.02	48.05
512	90.4463	7.1253	77.64	95.34
1024	176.35	14.9651	150.01	187.70
2048	259.727	15.3234	245.32	326.35
4096	515.522	41.0866	472.06	592.51
8192	970.9657	7.433	956.95	997.72
16384	1370.9637	46.358	1264.18	1438.45
32768	1747.9347	128.9179	1516.73	1916.88
65536	1343.5317	65.2333	1187.85	1494.06
131072	1511.769	76.9849	1354.99	1684.55
262144	1601.6717	35.049	1554.81	1705.58
524288	1641.9313	28.8395	1591.55	1722.23
1048576	1645.853	40.919	1544.49	1744.07
2097152	1644.204	57.5961	1538.88	1775.19
4194304	1621.0677	44.0678	1564.84	1703.73

Table 36: osu_bibw results – calico – 2 nodes.

Size	Mean	Std	Min	Max
1	0.1347	0.0051	0.13	0.14
2	0.2703	0.0032	0.26	0.28
4	0.5413	0.0073	0.52	0.55
8	1.0803	0.0093	1.06	1.09
16	2.159	0.0152	2.13	2.19
32	4.3073	0.0386	4.21	4.37
64	8.627	0.0705	8.46	8.72
128	17.1457	0.2245	16.55	17.45
256	34.1827	0.5403	31.78	34.72
512	67.8567	0.7937	64.72	69.24
1024	126.5997	2.0449	121.20	130.88
2048	161.8527	1.7727	152.84	162.90
4096	381.6887	67.7946	302.68	469.78
8192	807.9817	10.744	787.59	829.21
16384	1264.7393	64.1911	1010.07	1310.51
32768	1899.7347	82.2345	1640.81	1982.46
65536	1359.7367	13.8633	1336.21	1383.55
131072	2002.4093	22.7548	1949.40	2043.98
262144	2204.4907	21.7972	2164.57	2251.02
524288	2456.2313	14.601	2428.72	2493.29
1048576	2589.726	9.9974	2566.11	2604.85
2097152	2695.3507	14.4312	2668.56	2715.48
4194304	2688.0303	35.4576	2574.44	2723.80

Table 37: osu_bibw results – flannel – 1 node.

Size	Mean	Std	Min	Max
1	0.1553	0.0236	0.13	0.24
2	0.4073	0.0532	0.31	0.49
4	0.888	0.1476	0.62	0.99
8	1.794	0.3071	1.23	1.98
16	3.5373	0.6122	2.42	3.91
32	7.0743	1.2272	4.84	7.81
64	14.272	2.4885	9.73	15.78
128	28.3137	5.1366	17.28	31.53
256	55.9647	9.9731	37.07	62.54
512	108.655	20.2852	67.14	124.49
1024	198.5077	35.5508	129.91	243.99
2048	348.921	80.7409	187.39	456.17
4096	718.3833	167.4676	409.09	847.02
8192	1268.4397	272.3574	648.90	1443.52
16384	1771.7403	501.3307	761.71	2207.19
32768	1755.6987	538.1475	820.48	2616.74
65536	1101.2457	210.2843	851.22	1576.59
131072	1166.8127	92.363	1031.34	1414.04
262144	1454.619	96.6507	1313.47	1760.45
524288	1744.4337	106.2849	1544.47	1886.53
1048576	1801.628	71.8455	1668.16	1862.12
2097152	1811.9227	70.521	1697.58	1880.39
4194304	1783.4163	86.4073	1645.86	1888.73

Table 38: osu_bibw results – flannel – 2 nodes.

Size	Mean	Std	Min	Max
1	0.19	0.0	0.19	0.19
2	0.3797	0.0049	0.37	0.39
4	0.7613	0.009	0.74	0.78
8	1.5253	0.0155	1.50	1.56
16	3.0387	0.0356	2.98	3.12
32	6.0357	0.0573	5.95	6.14
64	12.1737	0.1066	11.98	12.38
128	24.242	0.1677	23.87	24.59
256	47.5773	0.6217	46.07	48.43
512	91.8797	1.0482	89.18	94.48
1024	154.5307	1.617	151.46	158.22
2048	235.6637	1.4263	232.99	238.10
4096	520.0767	74.6921	438.04	633.29
8192	1064.1977	11.14	1038.99	1082.89
16384	1611.035	29.1682	1467.72	1636.76
32768	2216.6063	119.0478	1695.89	2297.69
65536	1800.3583	7.5083	1787.29	1815.30
131072	2470.9763	39.4947	2377.02	2541.64
262144	2817.3353	18.4429	2783.96	2869.64
524288	3043.233	22.1647	2987.49	3080.97
1048576	3117.1213	18.3911	3060.16	3137.81
2097152	3162.198	45.5381	3017.24	3216.02
4194304	3041.178	98.258	2847.43	3191.59

Table 39: `osu_bibw` results – cilium – 1 node.

Size	Mean	Std	Min	Max
1	0.6297	0.0529	0.52	0.72
2	1.2737	0.0907	1.11	1.45
4	2.622	0.1318	2.33	2.92
8	5.264	0.243	4.79	5.88
16	10.2847	0.352	9.53	11.09
32	19.7407	0.6428	18.91	22.36
64	37.4647	1.2271	35.20	41.59
128	70.126	2.2402	66.46	77.11
256	130.4583	5.0323	123.55	147.25
512	237.2233	12.0739	224.24	282.74
1024	435.082	29.4015	386.44	500.05
2048	756.4437	85.9339	608.90	918.80
4096	1169.1867	160.7847	868.91	1457.91
8192	1544.6153	216.5015	1224.95	1976.74
16384	1635.9617	307.3123	1163.97	2183.67
32768	1635.218	370.6278	1236.55	2280.26
65536	1239.7203	112.8196	1064.69	1458.64
131072	1279.4493	107.6797	1090.66	1496.51
262144	1429.1617	58.4582	1327.14	1595.75
524288	1683.921	75.7952	1514.05	1804.55
1048576	1712.0157	63.684	1607.08	1844.58
2097152	1715.7553	64.1499	1585.72	1853.34
4194304	1711.7263	79.422	1561.14	1865.40

Table 40: `osu_bibw` results – cilium – 2 nodes.

Size	Mean	Std	Min	Max
1	8.5943	0.11	8.16	8.74
2	16.8633	0.771	14.83	17.35
4	34.0493	1.1253	30.26	34.82
8	65.4087	4.3785	59.49	70.19
16	133.301	1.5312	129.15	136.90
32	266.8543	7.1453	240.05	275.16
64	418.704	10.9535	386.47	431.56
128	549.1693	11.2139	525.57	577.51
256	951.1397	25.3616	892.71	1002.12
512	1899.725	45.1147	1822.07	2029.53
1024	3262.0913	65.9461	3146.38	3453.19
2048	5465.8893	100.8145	5270.48	5736.59
4096	2698.2727	32.3547	2627.44	2757.21
8192	4746.9487	50.1474	4653.70	4842.24
16384	6675.5113	85.309	6499.83	6838.26
32768	9390.653	75.969	9182.80	9548.04
65536	11797.3983	122.2104	11518.61	12104.74
131072	13227.3883	132.9773	12936.15	13529.62
262144	14243.8433	248.676	13690.93	14693.84
524288	13265.571	142.4732	13047.44	13558.74
1048576	11109.184	252.2442	10689.21	11596.80
2097152	9506.0223	39.9018	9453.57	9570.91
4194304	9480.4727	53.3889	9392.28	9580.40

Table 41: `osu_mbw_mr` results – baremetal – 1 node.

Size	Mean	Std	Min	Max
1	0.361	0.0262	0.30	0.39
2	0.6987	0.0584	0.60	0.78
4	1.399	0.1045	1.21	1.61
8	2.908	0.1276	2.76	3.19
16	5.942	0.2291	5.37	6.21
32	11.7873	0.7215	9.84	12.53
64	20.3083	1.0703	18.78	22.93
128	42.358	2.4038	38.87	46.91
256	84.875	3.93	80.31	94.68
512	162.623	4.8604	154.10	171.20
1024	307.2813	9.9422	291.92	326.91
2048	575.401	17.1266	558.28	609.63
4096	989.2377	23.4417	957.15	1034.12
8192	1428.116	27.1523	1376.00	1484.57
16384	1871.6753	223.1517	1677.90	2263.15
32768	2101.8287	293.8814	1847.11	2585.93
65536	1779.0307	291.1923	1480.31	3052.01
131072	2644.2947	294.4935	2223.34	3615.66
262144	3242.1563	324.4138	2225.69	3741.15
524288	3745.711	549.1555	2684.98	5157.47
1048576	4219.051	422.3354	2904.84	5000.93
2097152	3962.2317	260.5204	3310.22	4528.20
4194304	3981.9707	203.1097	3272.84	4407.45

Table 42: `osu_mbw_mr` results – baremetal – 2 nodes.

Size	Mean	Std	Min	Max
1	0.05	0.0	0.05	0.05
2	0.0927	0.0069	0.09	0.11
4	0.1903	0.0076	0.18	0.21
8	0.3773	0.0182	0.37	0.43
16	0.7547	0.0338	0.70	0.85
32	1.5123	0.0653	1.47	1.71
64	3.0193	0.1314	2.93	3.41
128	6.03	0.2593	5.84	6.81
256	11.08	1.3382	8.26	13.56
512	16.971	1.3734	16.00	23.17
1024	33.5107	1.4046	32.63	37.67
2048	52.4993	2.2377	49.68	59.06
4096	103.9687	4.334	101.31	116.75
8192	210.4913	21.2402	201.07	313.53
16384	409.8993	17.1729	394.14	460.87
32768	1018.9453	269.4536	750.12	1436.85
65536	626.7693	25.3489	611.79	703.55
131072	1210.773	47.0642	1189.85	1355.94
262144	1651.8153	53.4424	1621.36	1856.81
524288	1896.1657	55.605	1871.24	2100.29
1048576	2059.189	56.9492	2036.30	2270.52
2097152	2200.4597	59.8337	2174.66	2421.77
4194304	2227.274	57.6828	2200.04	2439.31

Table 43: osu_mbw_mr results – calico – 1 node.

Size	Mean	Std	Min	Max
1	0.068	0.0113	0.05	0.09
2	0.152	0.0147	0.11	0.18
4	0.3127	0.0172	0.27	0.35
8	0.634	0.0246	0.62	0.69
16	1.271	0.0552	1.23	1.39
32	2.5373	0.1085	2.47	2.78
64	5.0777	0.2172	4.93	5.57
128	10.1587	0.4263	9.86	11.17
256	20.167	0.7377	19.25	22.23
512	40.2253	1.4764	38.58	43.28
1024	81.269	3.4452	77.37	88.96
2048	135.9937	8.0396	126.24	155.19
4096	268.3233	14.6995	245.37	302.92
8192	490.5913	22.9552	451.38	541.41
16384	802.0787	28.0869	774.52	869.17
32768	1152.0113	38.4306	1081.56	1251.82
65536	918.545	36.2286	872.68	981.84
131072	1186.6313	43.6041	1120.64	1270.09
262144	1362.504	48.2608	1246.18	1463.66
524288	1474.6013	63.6801	1314.67	1555.76
1048576	1557.08	81.2595	1339.34	1637.51
2097152	1606.2527	85.9395	1339.60	1681.66
4194304	1606.1063	94.1054	1331.72	1704.04

Table 44: osu_mbw_mr results – calico – 2 nodes.

Size	Mean	Std	Min	Max
1	0.0607	0.0025	0.06	0.07
2	0.12	0.0026	0.11	0.13
4	0.2337	0.0081	0.23	0.27
8	0.4713	0.0117	0.45	0.53
16	0.9417	0.0249	0.92	1.07
32	1.883	0.0494	1.86	2.14
64	3.7617	0.0973	3.72	4.27
128	7.5177	0.1963	7.42	8.54
256	11.8737	1.5227	11.00	15.04
512	22.176	0.7025	21.71	24.94
1024	44.1053	1.1375	43.60	50.04
2048	69.6783	1.7972	66.82	78.72
4096	138.1357	3.4247	136.51	155.98
8192	277.9177	23.9447	271.29	399.60
16384	543.1663	15.0394	535.78	612.70
32768	1189.21	216.7957	998.15	1618.32
65536	805.2727	19.8629	794.93	909.08
131072	1476.227	37.7434	1458.20	1673.96
262144	2009.554	47.1738	1975.71	2255.15
524288	2235.2857	44.5279	2210.91	2467.52
1048576	2381.9653	44.3837	2367.76	2616.29
2097152	2535.8463	46.5013	2511.75	2780.53
4194304	2586.3213	47.4087	2565.26	2833.86

Table 45: osu_mbw_mr results – flannel – 1 node.

Size	Mean	Std	Min	Max
1	0.076	0.0116	0.07	0.10
2	0.1763	0.0159	0.14	0.22
4	0.3753	0.0237	0.31	0.44
8	0.7793	0.0376	0.68	0.88
16	1.5713	0.0714	1.36	1.76
32	3.1627	0.1529	2.72	3.53
64	6.3087	0.2946	5.42	7.06
128	12.5443	0.5869	10.81	14.15
256	24.099	1.1934	20.91	26.97
512	49.42	2.2368	41.87	53.21
1024	99.756	4.9409	83.84	110.14
2048	176.145	14.6956	139.05	212.63
4096	363.936	30.176	271.15	414.57
8192	665.9453	43.2321	595.58	739.27
16384	889.8997	152.2329	696.23	1101.79
32768	805.497	288.7203	559.35	1428.20
65536	1056.8663	73.1397	936.36	1286.05
131072	1456.8183	98.5231	1262.48	1533.03
262144	1607.2703	108.6334	1387.15	1679.85
524288	1711.4217	116.1321	1474.09	1789.15
1048576	1772.1787	113.2379	1538.34	1847.35
2097152	1799.6013	116.3553	1558.86	1876.65
4194304	1797.953	146.0242	1500.11	1889.43

Table 46: osu_mbw_mr results – flannel – 2 nodes.

Size	Mean	Std	Min	Max	Size	Mean	Std	Min	Max
1	0.0847	0.0082	0.08	0.10	1	0.2653	0.0208	0.23	0.31
2	0.1727	0.0069	0.17	0.19	2	0.5543	0.0506	0.47	0.66
4	0.3453	0.015	0.33	0.39	4	1.112	0.0943	0.94	1.31
8	0.69	0.0302	0.67	0.77	8	2.2277	0.1882	1.91	2.66
16	1.3763	0.0618	1.33	1.54	16	4.4713	0.2971	3.85	5.08
32	2.7543	0.1257	2.67	3.09	32	8.5757	0.6418	7.45	10.06
64	5.4993	0.2467	5.34	6.15	64	16.599	0.9881	14.87	20.02
128	10.983	0.4972	10.63	12.28	128	31.3097	1.9075	28.32	36.14
256	17.9817	1.5691	16.91	21.64	256	58.8337	4.9911	51.95	69.82
512	35.136	2.1724	33.56	39.69	512	108.2953	9.4588	99.03	132.94
1024	69.39	3.6155	67.30	79.19	1024	194.2303	21.5044	166.54	257.72
2048	111.561	5.2172	108.05	125.45	2048	315.4783	53.2168	270.62	466.98
4096	219.5303	9.6607	213.27	244.65	4096	486.8853	104.0929	392.64	778.35
8192	437.243	24.2557	421.59	511.60	8192	687.806	142.4172	572.99	1083.06
16384	842.9343	36.6802	822.20	943.88	16384	858.0647	138.5227	702.99	1186.54
32768	1807.7853	174.1301	1487.49	2125.92	32768	974.935	100.2238	837.44	1244.75
65536	1193.745	51.9614	1167.99	1326.27	65536	1354.5747	29.9988	1274.94	1416.44
131072	2003.855	88.3816	1962.68	2230.07	131072	1566.3887	81.4992	1376.35	1657.17
262144	2712.3727	118.0189	2631.69	3018.73	262144	1634.0533	93.0437	1443.19	1758.48
524288	2871.86	97.8723	2820.34	3121.29	524288	1683.366	109.032	1480.11	1827.76
1048576	2944.9067	92.433	2900.45	3181.51	1048576	1707.1467	111.1393	1525.86	1865.12
2097152	3118.9467	96.1662	3071.83	3366.02	2097152	1718.0143	121.1253	1507.01	1884.41
4194304	3155.8677	86.9809	3099.20	3414.01	4194304	1715.138	128.4911	1461.68	1891.76

Table 47: `osu_mbw_mr` results – cilium – 1 node.　　　　Table 48: `osu_mbw_mr` results – cilium – 2 nodes.
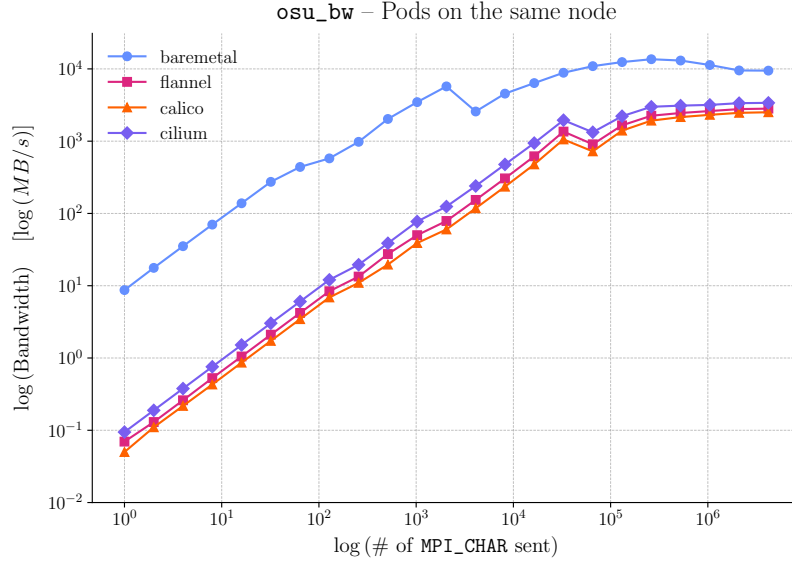

Figure 7: Results of the `osu_bw` benchmark for 1 node. Refer to tables 25, 27, 29, and 31 for the raw data.
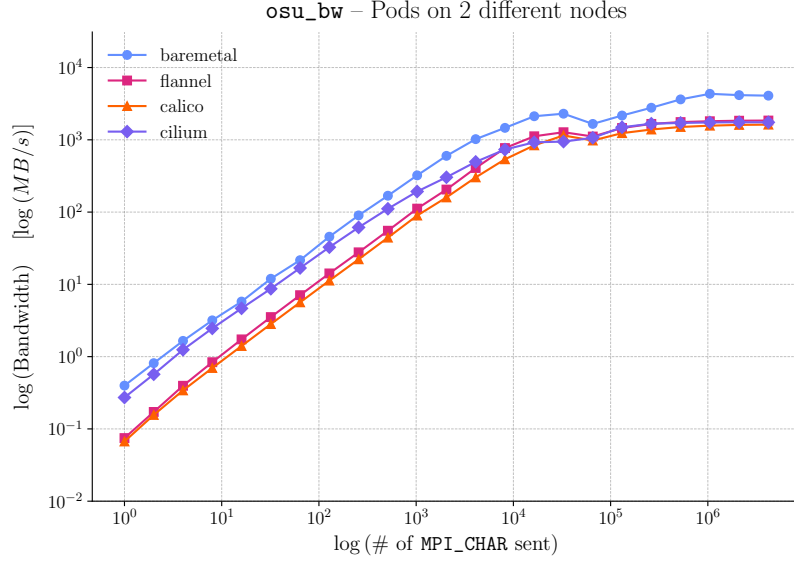
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Figure 8: Results of the `osu_bw` benchmark for 2 nodes. Refer to tables 26, 28, 30, and 32 for the raw data.
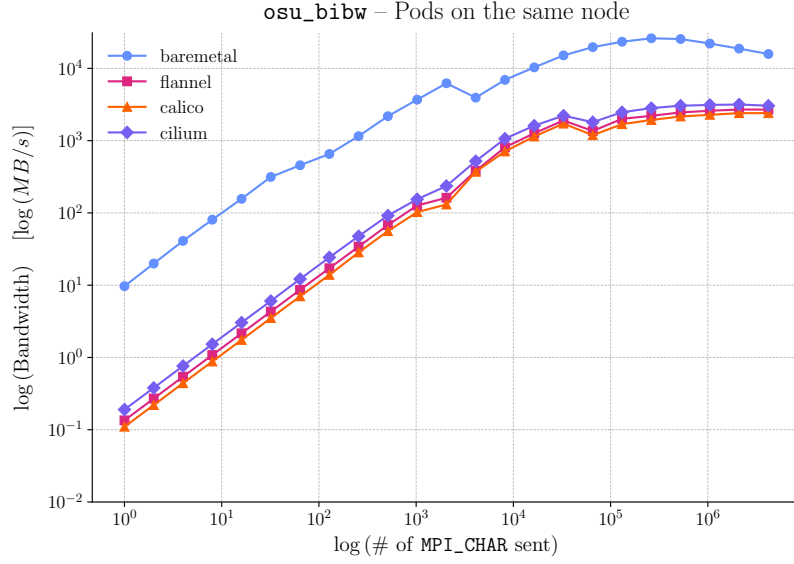

Figure 9: Results of the `osu_bibw` benchmark for 1 node. Refer to tables 33, 35, 37, and 39 for the raw data.
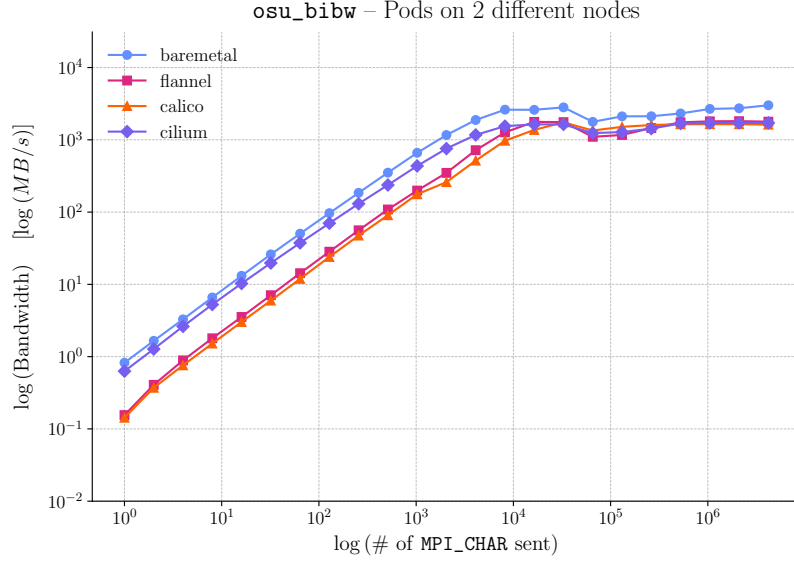
Figure 10: Results of the `osu_bibw` benchmark for 2 nodes. Refer to tables 34, 36, 38, and 40 for the raw data.
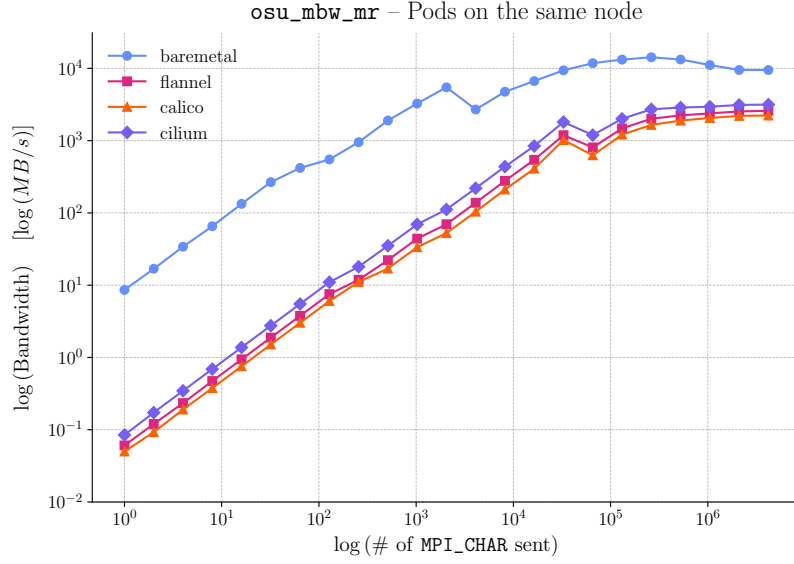

Figure 11: Results of the `osu_mbw_mr` benchmark for 1 node. Refer to tables 41, 43, 45, and 47 for the raw data.
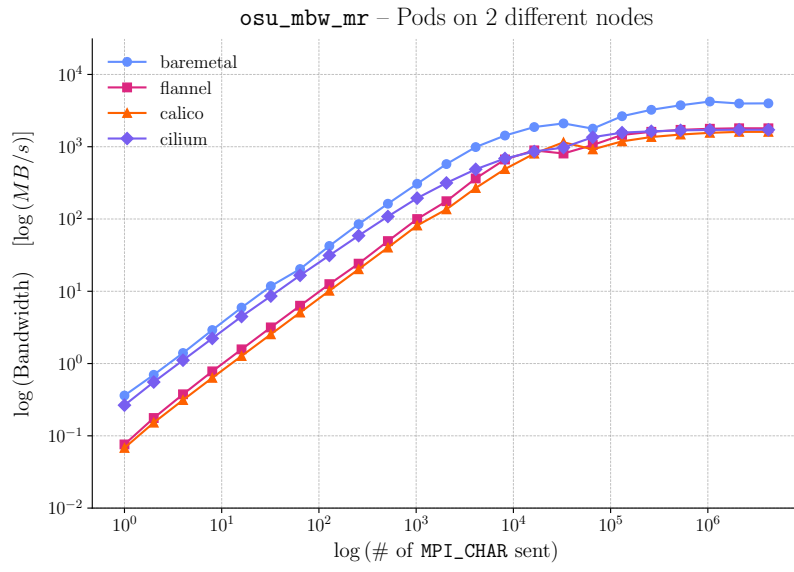
Figure 12: Results of the osu_mbw_mr benchmark for 2 nodes. Refer to tables 42, 44, 46, and 48 for the raw data.