16020347	command	· /iet/hom	ne/hpeng1/ev	an/ge_7 1/b	in/cn x –nh 4	4 –inn (en in	
Load Balance	codoname	-		wn state:	/qe-7.1/bin/cp.x -nb 4 -inp cp.in state: unknown			
Communication BalanceMessage Buffer Sizes	username							
<u>Communication</u> <u>Topology</u>	usemame	r087.ib.bridges (x86_64_Linux)				512 on 4 hosts		
Switch Traffic Memmory Usage	host:			′Imni task	(s: 5			
Executable InfoHost List	start:	05/01/23/23:10:18		:18 wallclock	k: 1.0	05267e+02 sec		
• <u>Environment</u>	stop:	05/01/23/23:12:03		03 %comm:	: 1.1	1.1813106419272		
• <u>Developer Info</u> powered by IPM	total men	295.337984000001 gbytes		I total offic	Itotal atlon/sec:		0	
	switch(se	nd):	d): 0 gbytes switch(recv):		ecv):	v): 0 gbytes		
Computation			Con	nmunicatio	on .			
Event Count F	op	%	of MPI Time	,				
				MPI_All MPI_Ise				
				MPI_Com MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Tes MPI_Sen	tall nd m_free tall d			
HPM Counter Statistic				MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen	m_dup tall nd m_free tall d drecv		())	
Event N	tasks	Avg	1	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen	m_dup tall nd m_free tall d drecv	Ma	ax(rank)	
Event N Communication Event	tasks : Statistics (100.00%	detail, 4.9931	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MPI_Sen	m_dup tall nd m_free tall d drecv			
Event N Communication Event	tasks Statistics (Buffer Size	100.00% (Ncalls	detail, 4.9931 Total Time	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MIN(rank) Min(rank) Min Time	m_dup tall nd m_free tall d drecv	%MPI	%Wall	
Event N Communication Event EMPI_Reduce	Statistics (Buffer Size	100.00% (Ncalls 145200	detail, 4.993 Total Time 93.579	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MIN(rank) MIN(rank) MIN(rank) MIN(rank) MIN(rank)	m_dup tall nd m_free tall d drecv Max Time 9.077e-02	%MPI 14.70	%Wall 0.17	
Event N Communication Event E MPI_Reduce MPI_Recv	tasks Statistics (Buffer Size 24576	100.00% (Ncalls 145200 96800	detail, 4.993 Total Time 93.579 40.953	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MPI_Sen 06 error) Min Time 6.509e-05 0.000e+00	m_dup tall nd m_free tall d drecv Max Time 9.077e-02 1.410e-01	%MPI 14.70 6.43	0.17 0.08	
Event N Communication Event EMPI_Reduce MPI_Recv MPI_Recv	Statistics (Buffer Size	100.00% (Ncalls 145200 96800	detail, 4.9937 Total Time 93.579 40.953 35.801	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MIn(rank) Me-06 error) Min Time 6.509e-05 0.000e+00 0.000e+00	m_dup tal1 nd m_free tal1 d drecv Max Time 9.077e-02 1.410e-01 1.250e-01	%MPI 14.70 6.43 5.62	%Wall 0.17 0.08 0.07	
Event N Communication Event EMPI_Reduce MPI_Recv MPI_Recv	tasks Statistics (Buffer Size 24576 0 8192	100.00% (Ncalls 145200 96800 79640 572704	detail, 4.993 Total Time 93.579 40.953 35.801 31.916	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MIn(rank) Me-06 error) Min Time 6.509e-05 0.000e+00 0.000e+00	m_dup tall nd m_free tall d drecv Max Time 9.077e-02 1.410e-01 1.250e-01 1.119e-02	%MPI 14.70 6.43 5.62 5.01	%Wall 0.17 0.08 0.07 0.06	
Event N Communication Event MPI_Reduce MPI_Recv MPI_Recv MPI_Bcast MPI_Reduce	Statistics (Buffer Size 24576 0 8192 8192	100.00% (Ncalls 145200 96800 79640 572704 4840	Total Time 93.579 40.953 35.801 31.916 27.371	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MPI_Sen MOI (rank) MOI	Max Time 9.077e-02 1.410e-01 1.119e-02 6.210e-02	%MPI 14.70 6.43 5.62 5.01 4.30	%Wall 0.17 0.08 0.07 0.06 0.05	
Event N Communication Event EMPI_Reduce MPI_Recv MPI_Recv MPI_Bcast	tasks Statistics (Buffer Size 24576 0 8192 8192 20480	100.00% (Ncalls 145200 96800 79640 572704 4840 47960	detail, 4.9937 Total Time 93.579 40.953 35.801 31.916 27.371 24.870	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MIN(rank) de-06 error) Min Time 6.509e-05 0.000e+00 0.000e+00 5.960e-06 2.260e-04	m_dup tal1 nd m_free tal1 d drecv Max Time 9.077e-02 1.410e-01 1.250e-01 1.119e-02 6.210e-02 1.251e-01	%MPI 14.70 6.43 5.62 5.01 4.30 3.91	%Wall 0.17 0.08 0.07 0.06 0.05	
Event N Communication Event MPI_Reduce MPI_Recv MPI_Recv MPI_Bcast MPI_Reduce MPI_Reduce MPI_Reduce MPI_Reduce MPI_Recv	tasks Statistics (Buffer Size 24576 0 8192 8192 20480 16384 1024 0	100.00% (Ncalls 145200 96800 79640 572704 4840 47960 1074040 59048	detail, 4.993 Total Time 93.579 40.953 35.801 31.916 27.371 24.870 23.915 23.857	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Sen MPI_Com MPI_Rsen MPI_Com MPI_Rsen MPI_Com MPI_Rsen MPI_Com MPI_Rsen MPI_Com MPI_Com MPI_Com MPI_Com MPI_Com MPI_NOM MPI_Rsen MPI_Com MPI_Nom MPI_Rsen MPI_Com MPI_Nom MPI_Rsen MPI_Com MPI_Nom MPI_Rsen MPI_Com MPI_Nom MPI_No	Max Time 9.077e-02 1.410e-01 1.250e-01 1.119e-02 1.251e-01 2.124e-03 1.361e-02	%MPI 14.70 6.43 5.62 5.01 4.30 3.91 3.76 3.75	%Wall 0.17 0.08 0.07 0.06 0.05 0.04 0.04	
Event N Communication Event MPI_Reduce MPI_Recv MPI_Recv MPI_Bcast MPI_Reduce MPI_Recv MPI_Reduce MPI_Recv	tasks Statistics (Buffer Size 24576 0 8192 8192 20480 16384 1024	100.00% (Ncalls 145200 96800 79640 572704 4840 47960 1074040 59048 280236	detail, 4.9937 Total Time 93.579 40.953 35.801 31.916 27.371 24.870 23.915 23.857 23.801	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MPI_Sen 0.000e+00 0.000e+00 0.000e+00 2.260e-04 6.294e-05 0.000e+00 3.481e-05 1.502e-05	Max Time 9.077e-02 1.410e-01 1.250e-01 1.119e-02 1.251e-01 2.124e-03 1.361e-02 8.443e-02	%MPI 14.70 6.43 5.62 5.01 4.30 3.91 3.76 3.75 3.74	%Wall 0.17 0.08 0.07 0.06 0.05 0.04 0.04	
Event N Communication Event MPI_Reduce MPI_Recv MPI_Recv MPI_Bcast MPI_Recv MPI_Reduce MPI_Recv MPI_Recv MPI_Recv MPI_Recv MPI_Recv MPI_Bcast MPI_Bcast MPI_Bcast MPI_Bcast MPI_Bcast MPI_Bcast	tasks Statistics (Buffer Size 24576 0 8192 8192 20480 16384 1024 0 24576 4	100.00% (Nealls 145200 96800 79640 47960 1074040 59048 280236 69212	detail, 4.993 Total Time 93.579 40.953 35.801 31.916 27.371 24.870 23.915 23.857 23.801 21.814	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MPI_Sen MODO e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 0.000e+00 1.502e-05 0.000e+00	Max Time 9.077e-02 1.410e-01 1.119e-02 6.210e-02 1.361e-02 8.443e-02 3.774e-02	%MPI 14.70 6.43 5.62 5.01 4.30 3.91 3.76 3.75 3.74 3.43	%Wall 0.17 0.08 0.07 0.06 0.05 0.04 0.04 0.04 0.04	
Event N Communication Event MPI_Reduce MPI_Recv MPI_Recv MPI_Bcast MPI_Reduce MPI_Recv MPI_Reduce MPI_Recv	tasks Statistics (Buffer Size 24576 0 8192 8192 20480 16384 1024 0 24576	100.00% (Ncalls 145200 96800 79640 4840 47960 1074040 59048 280236 69212 571340	detail, 4.993 Total Time 93.579 40.953 35.801 31.916 27.371 24.870 23.915 23.857 23.801 21.814 13.541	MPI_Com MPI_Wai MPI_Rse MPI_Com MPI_Rse MPI_Com MPI_Tes MPI_Sen MPI_Sen MPI_Sen MPI_Sen 0.000e+00 0.000e+00 0.000e+00 2.260e-04 6.294e-05 0.000e+00 3.481e-05 1.502e-05	Max Time 9.077e-02 1.410e-01 1.250e-01 1.119e-02 6.210e-02 1.361e-02 8.443e-02 3.774e-02 3.919e-02	%MPI 14.70 6.43 5.62 5.01 4.30 3.91 3.76 3.75 3.74 3.43 2.13	%Wall 0.17 0.08 0.07 0.06 0.05 0.04 0.04 0.04 0.04 0.04	

20480

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MPI_Bcast

MPI_Allreduce

48092

181016

2.599e-05

3.815e-06

12.807

10.390

4.117e-02

1.892e-03

2.01

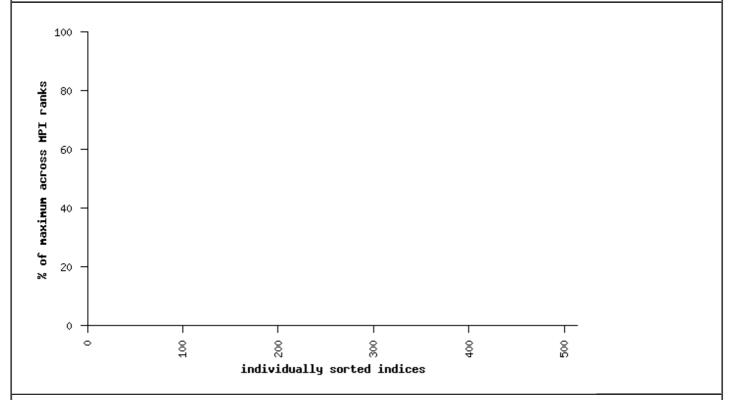
1.63

0.02

0.02

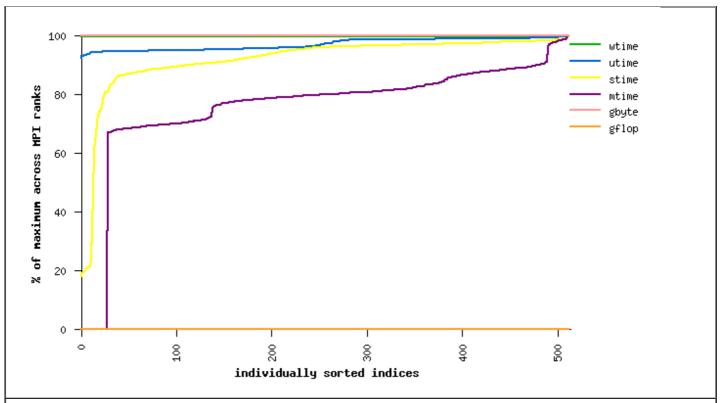
MPI_Recv	24576	15840	10.216	7.915e-05	1.862e-02	1.60	0.02
MPI_Comm_split	0	118096	8.848	3.886e-05	3.466e-03	1.39	0.02
MPI_Reduce	512	937024	7.919	2.980e-05	1.828e-03	1.24	0.01
MPI_Reduce	640	793276	7.771	3.004e-05	1.956e-03	1.22	0.01
MPI_Bcast	768	609664	7.568	0.000e+00	1.796e-03	1.19	0.01
MPI_Bcast	16384	180796	7.280	1.597e-05	5.430e-03	1.14	0.01
MPI_Bcast	2048	101728	7.005	0.000e+00	3.879e-03	1.10	0.01
MPI_Reduce	256	468512	6.854	3.004e-05	3.932e-02	1.08	0.01
MPI_Reduce	8	63888	5.970	3.004e-05	1.467e-02	0.94	0.01
MPI_Recv	7168	16052	5.820	0.000e+00	1.013e-01	0.91	0.01
MPI_Bcast	3584	30492	5.743	1.562e-04	2.825e-02	0.90	0.01
MPI_Bcast	640	469304	5.395	0.000e+00	1.840e-03	0.85	0.01





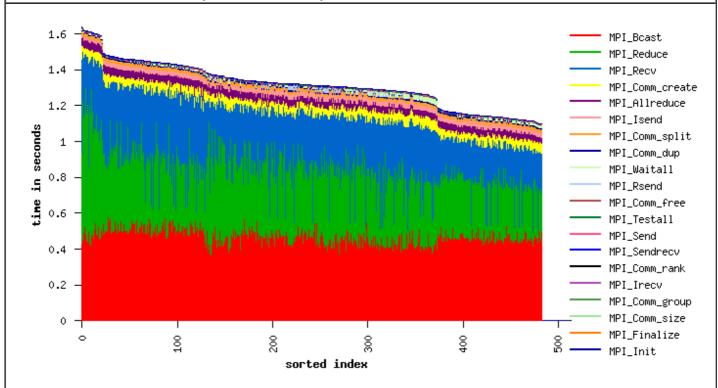
<u>by MPI rank, by MPI time</u>

Load balance by task: memory, flops, timings



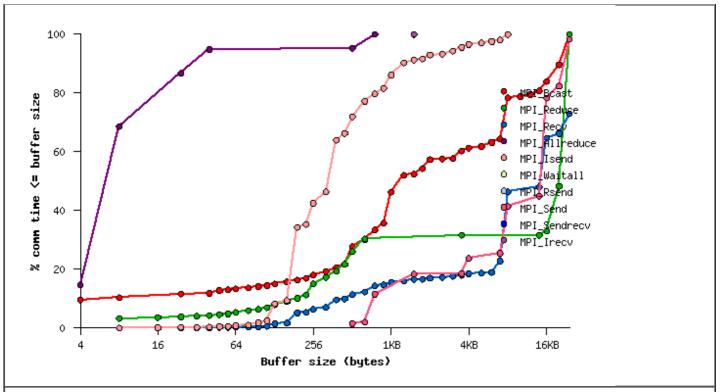
<u>by MPI rank, by MPI time</u>

Communication balance by task (sorted by MPI time)



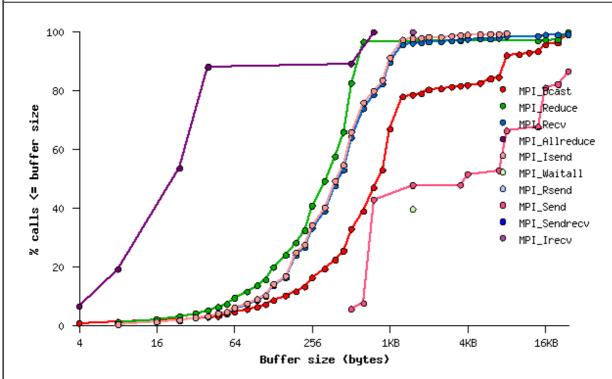
<u>by MPI rank,time detail by MPI time,time detail by rank,call list</u>

Message Buffer Size Distributions: time



cumulative values, values

Message Buffer Size Distributions: Ncalls



cumulative values, values

Communication Topology: point to point data flow

None

data sent, data recv, time spent, map data file map adjacency file

Switch Traffic (volume by node)

