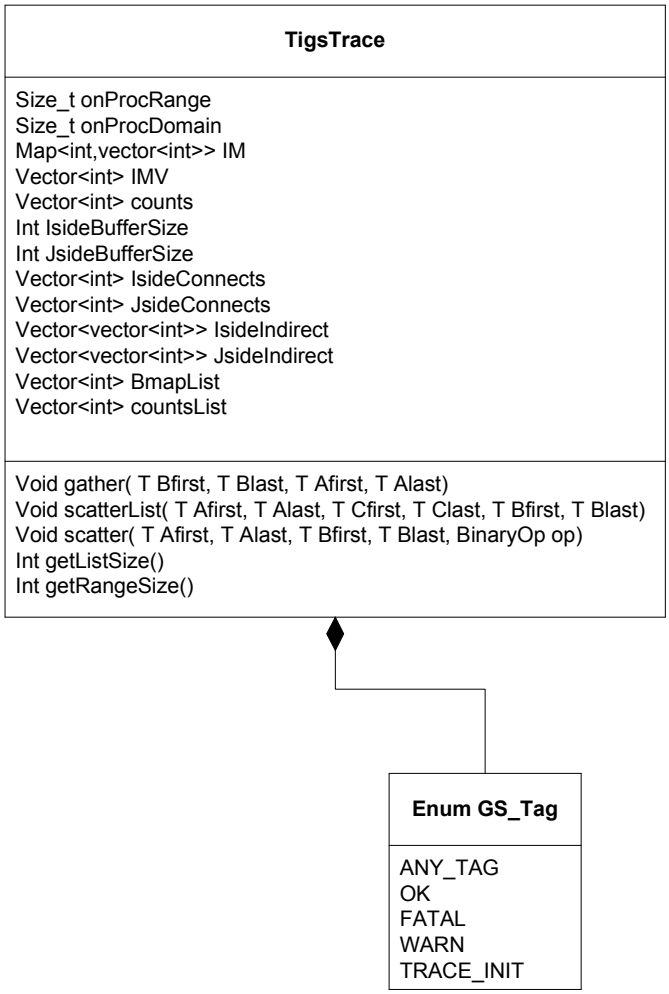
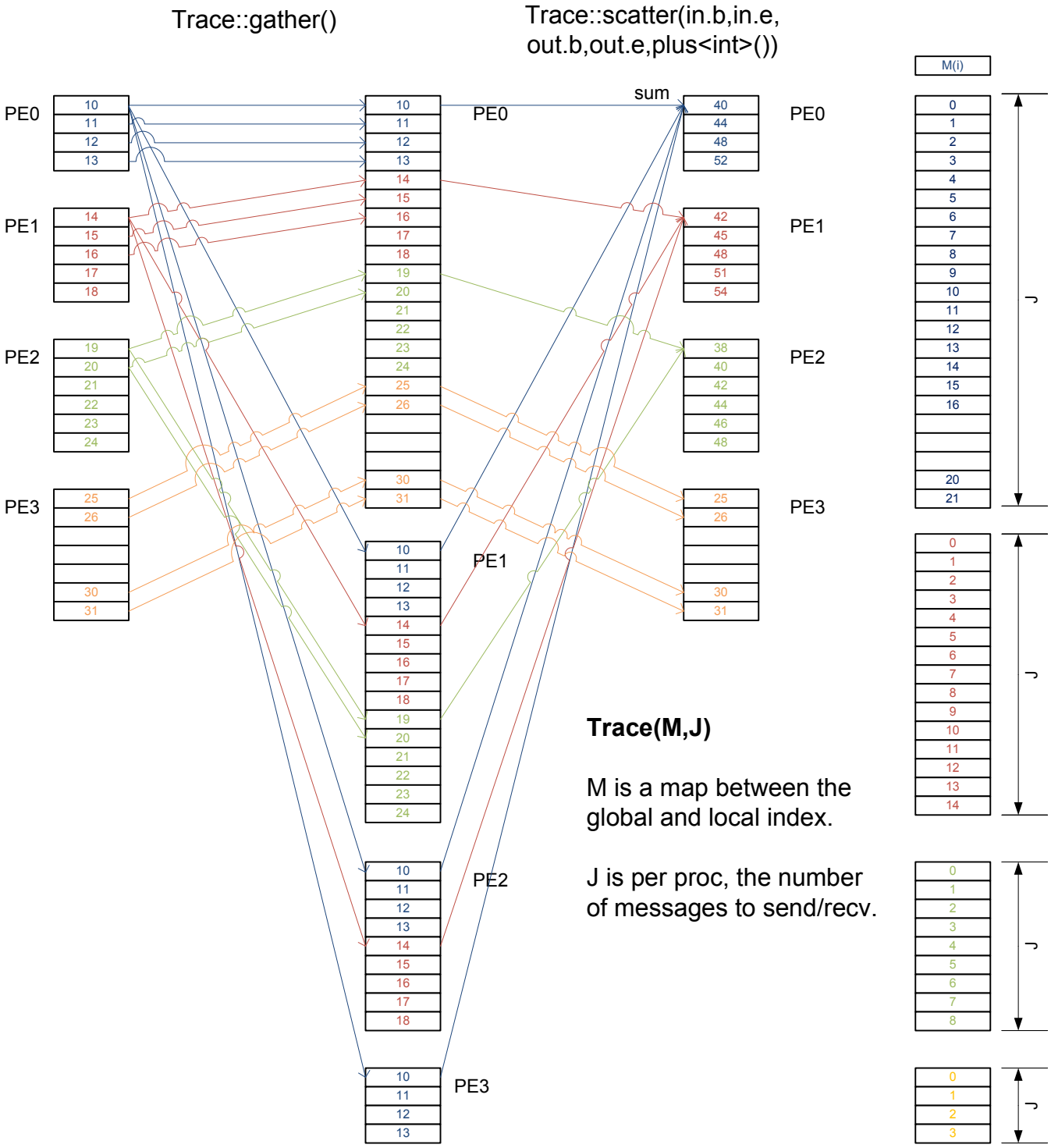
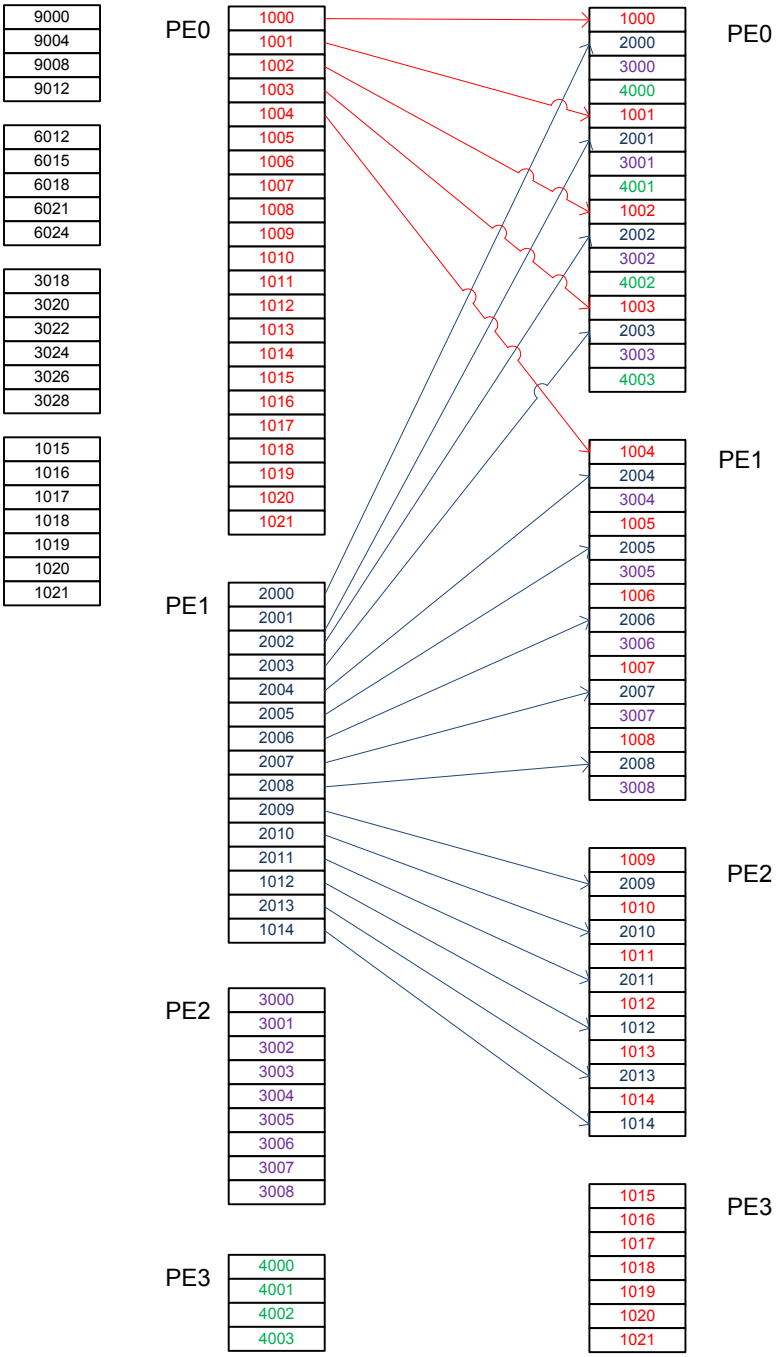
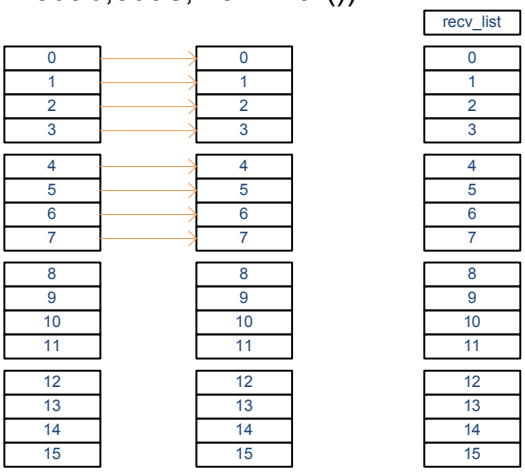

TigsTrace
Size_t onProcRange
Size_t onProcDomain
Map<int,vector<int>> IM
Vector<int> IMV
Vector<int> counts
Int IsideBufferSize
Int JsideBufferSize
Vector<int> IsideConnects
Vector<int> JsideConnects
Vector<vector<int>> IsideIndirect
Vector<vector<int>> JsideIndirect
Vector<int> BmapList
Vector<int> countsList
Void gather(T Bfirst, T Blast, T Afirst, T Alast)
Void scatterList(T Afirst, T Alast, T Cfirst, T Clast, T Bfirst, T Blast)
Void scatter(T Afirst, T Alast, T Bfirst, T Blast, BinaryOp op)
Int getListSize()
Int getRangeSize()
Enum GS_Tag
ANY_TAG
OK
FATAL
WARN
TRACE_INIT


Trace::gather()
Trace::scatter(in.b,in.e,
out.b,out.e,plus<int>())
sum
PE0
PE1
PE2
PE3
M(i)
J
Trace(M,J)
M is a map between the global and local index.
J is per proc, the number of messages to send/recv.

Trace::scatterList()

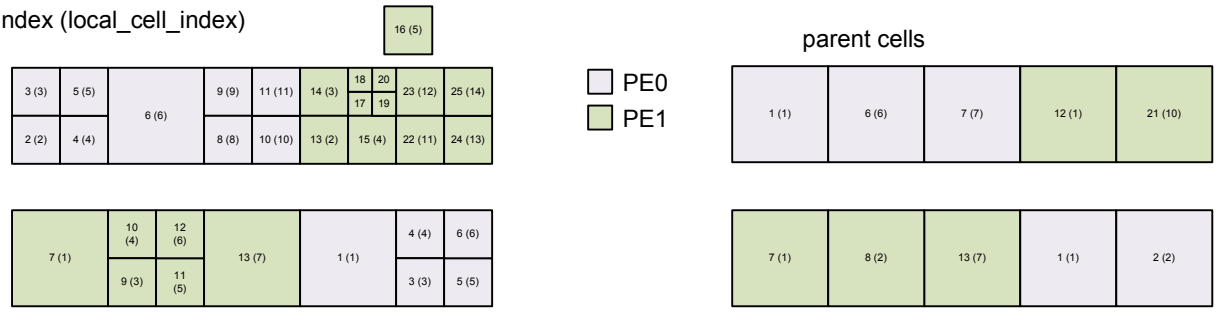


Trace::scatter(in.b,in.e, out.b,out.e,max<int>())

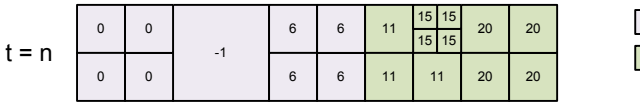


Wedgehog_dd/tstOld_to_New.cc
test_2p

gobal_cell_index (local_cell_index)



my_parent_old (used to create Trace)



reverse_map @ (n)

0	6
1	-1
2	-1
3	-1
4	-1
5	7,8,9,10,11
6	12
7	-1
8	-1
9	-1
10	-1
11	0
12	-1
13	-1
14	-1
15	-1
16	-1
17	-1
18	-1
19	-1
20	1
21	2
22	3
23	4
24	5

* Indices are off-by-one.

1. Known data used to construct Comm::Trace

11
20
21
22
23
24

recv_list @ (n+1)

0	11
1	20
2	21
3	22
4	23
5	24
6	0
7	5
8	5
9	5
10	5
11	5
12	6

At n+1, cell 1 receives data from cell 12@n.

cell 2@(n+1) receives data from cell 21@n.

cell 7@(n+1) receives data from cell 1@n.

cell 9@(n+1) receives data from cell 6@n.

2. Deal with cells that move and refine (ignore coarsening) by using Trace::Scatter.

global_ids @ (n+1)

0
1
2
3
4
5
6
7
8
9
10
11
12

scatter(<max>) via reverse_map

old_to_new @ n

0	6
1	-1
2	-1
3	-1
4	-1
5	11
6	12
7	-1
8	-1
9	-1
10	-1
11	0
12	-1
13	-1
14	-1
15	-1
16	-1
17	-1
18	-1
19	-1
20	1
21	2
22	3
23	4
24	5

global_ids[reverse_map[0]] = 6

reverse_map[3] < 0 so = -1

global_ids[reverse_map[6]] = 12

global_ids[reverse_map[11]] = 12

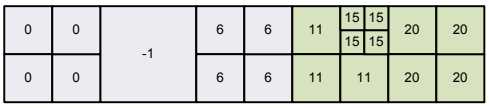
reverse_map[15] < 0 so = -1

global_ids[reverse_map[21]] = 2

Wedgehog_dd/tstOld_to_New.cc
test_2p

my_parent_old (used to create Trace)

t = n



3. Create a Trace based on my_parent_old

* Indices are off-by-one.

recv_list @ (n)

0	-1
1	0
2	0
3	0
4	0
5	-1
6	-1
7	6
8	6
9	6
10	6
11	-1
12	11
13	11
14	11
15	11
16	15
17	15
18	15
19	15
20	-1
21	20
22	20
23	20
24	20

cell 1 is omitted

cell 2 receives data from cell 1.

cell 8 receives data from cell 7.

cell 13 receives data from cell 12.

reverse_map

0	1,2,3,4
1	-1
2	-1
3	-1
4	-1
5	-1
6	7,8,9,10
7	-1
8	-1
9	-1
10	-1
11	12,13,14,15
12	-1
13	-1
14	-1
15	16,17,18,19
16	-1
17	-1
18	-1
19	-1
20	21,22,23,24
21	-1
22	-1
23	-1
24	-1

3. Loop over mesh levels, and apply Trace::gather to each level to treat coarsening of cells.

old_to_new_global

0	6
1	-1
2	-1
3	-1
4	-1
5	11
6	12
7	-1
8	-1
9	-1
10	-1
11	0
12	-1
13	-1
14	-1
15	-1
16	-1
17	-1
18	-1
19	-1
20	1
21	2
22	3
23	4
24	5

Level 1

gather via recv_list

old_to_new

0	6
1	6
2	6
3	6
4	6
5	11
6	12
7	12
8	12
9	12
10	12
11	0
12	0
13	0
14	0
15	0
16	-1
17	-1
18	-1
19	-1
20	1
21	1
22	1
23	1
24	1

recv_list[0] < 0 : no-op

old_to_new[recv_list[3]] = 6

old_to_new[recv_list[7]] = 6

recv_list[0] < 0 : no-op

old_to_new[recv_list[15]] = 0

old_to_new[recv_list[17]] = -1

old_to_new[recv_list[23]] = 1

old_to_new_global

0	6
1	6
2	6
3	6
4	6
5	11
6	12
7	12
8	12
9	12
10	12
11	0
12	0
13	0
14	0
15	0
16	-1
17	-1
18	-1
19	-1
20	1
21	2
22	3
23	4
24	5

Level 2

gather via recv_list

old_to_new

0	6
1	6
2	6
3	6
4	6
5	11
6	12
7	12
8	12
9	12
10	12
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	1
21	1
22	1
23	1
24	1

Created by taking 'Level 1' old_to_new_global and updating any '-1' values by using old_to_new from 'Level 1'

c4/tstSwap

determinate_swap(opid,odata,ipid,idata);