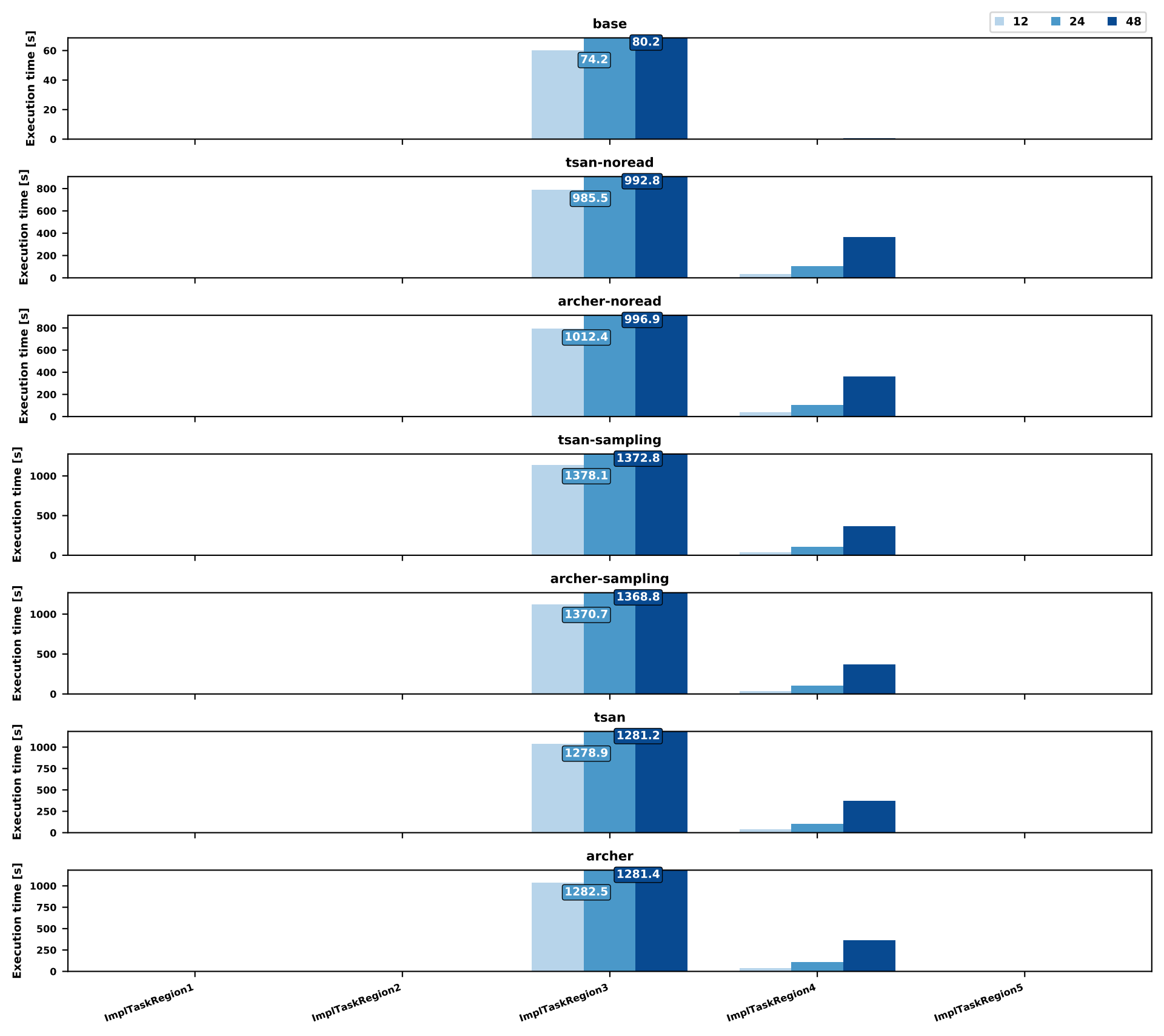
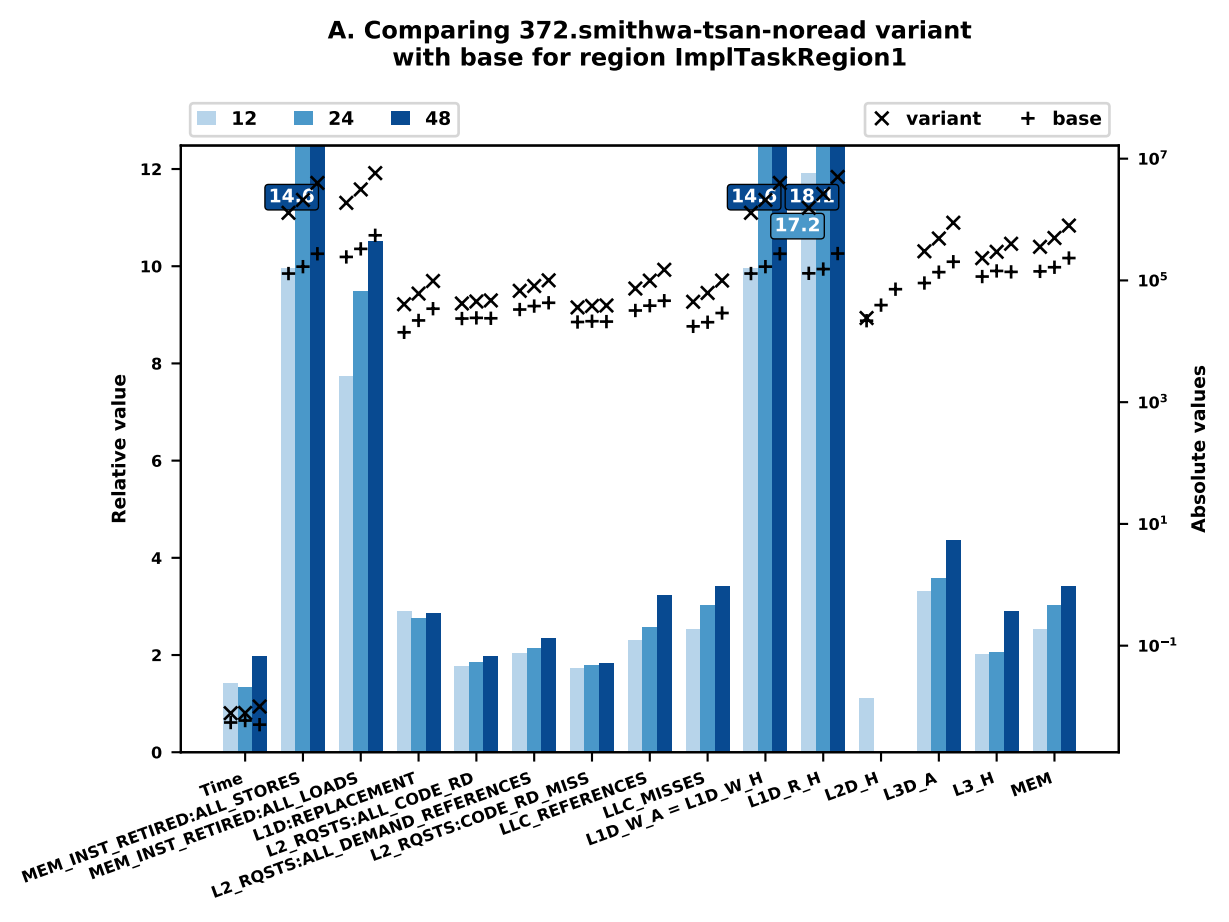
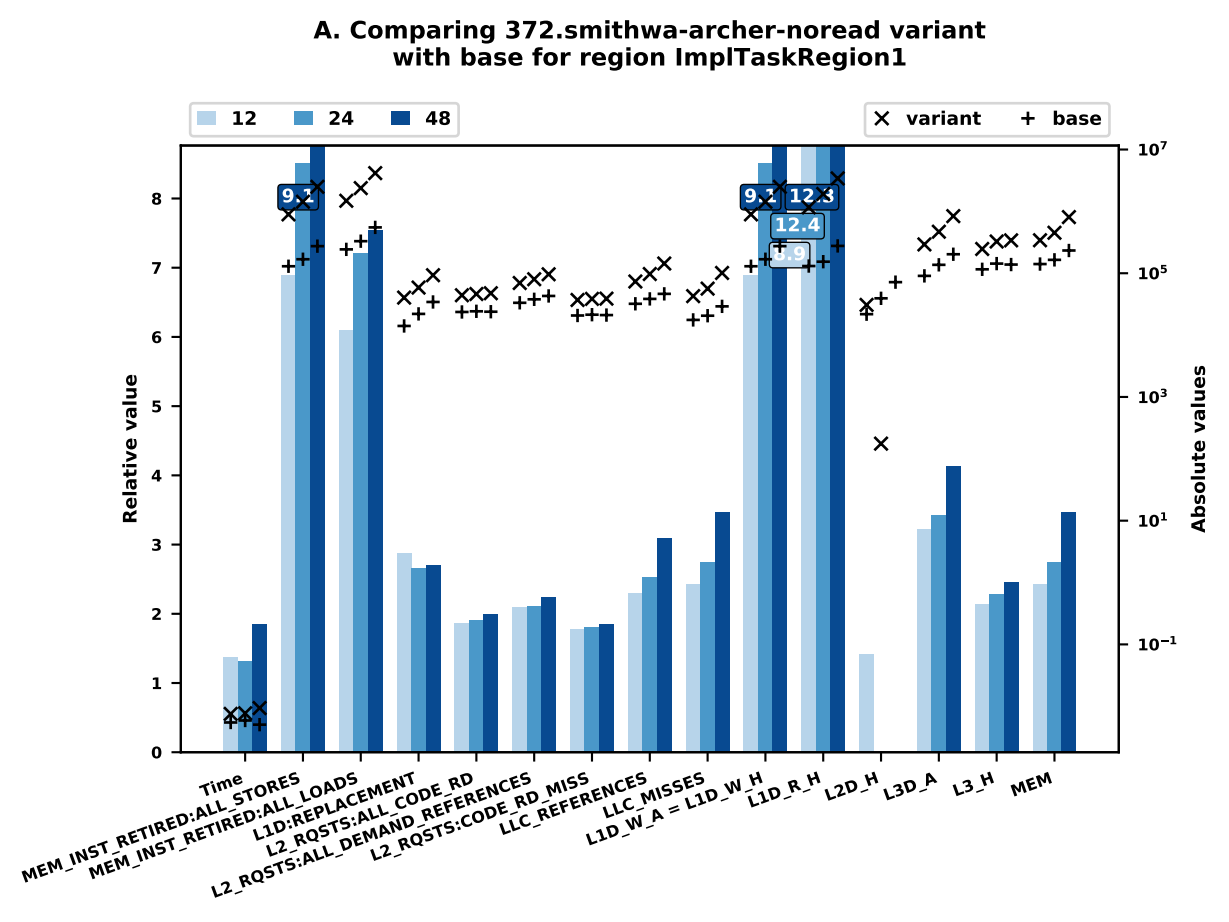
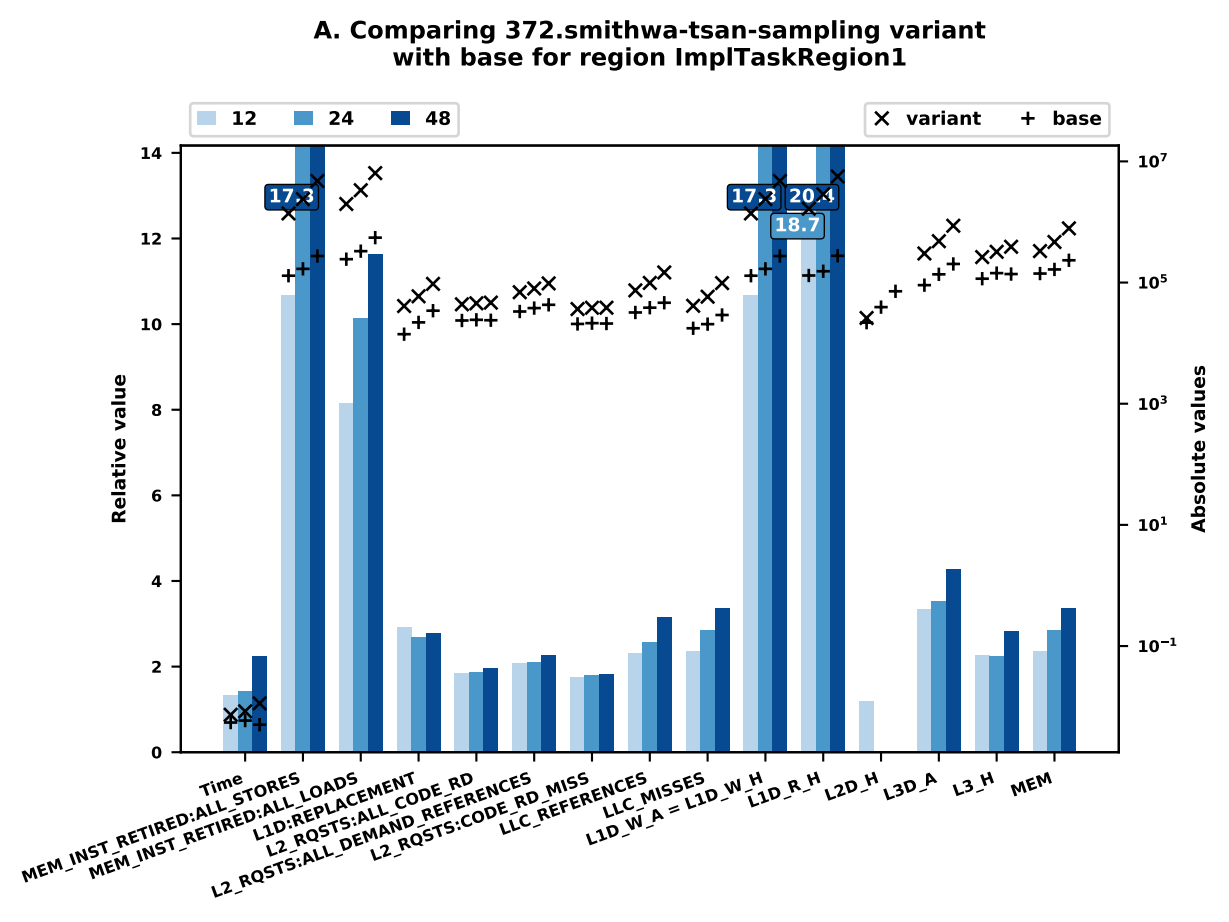
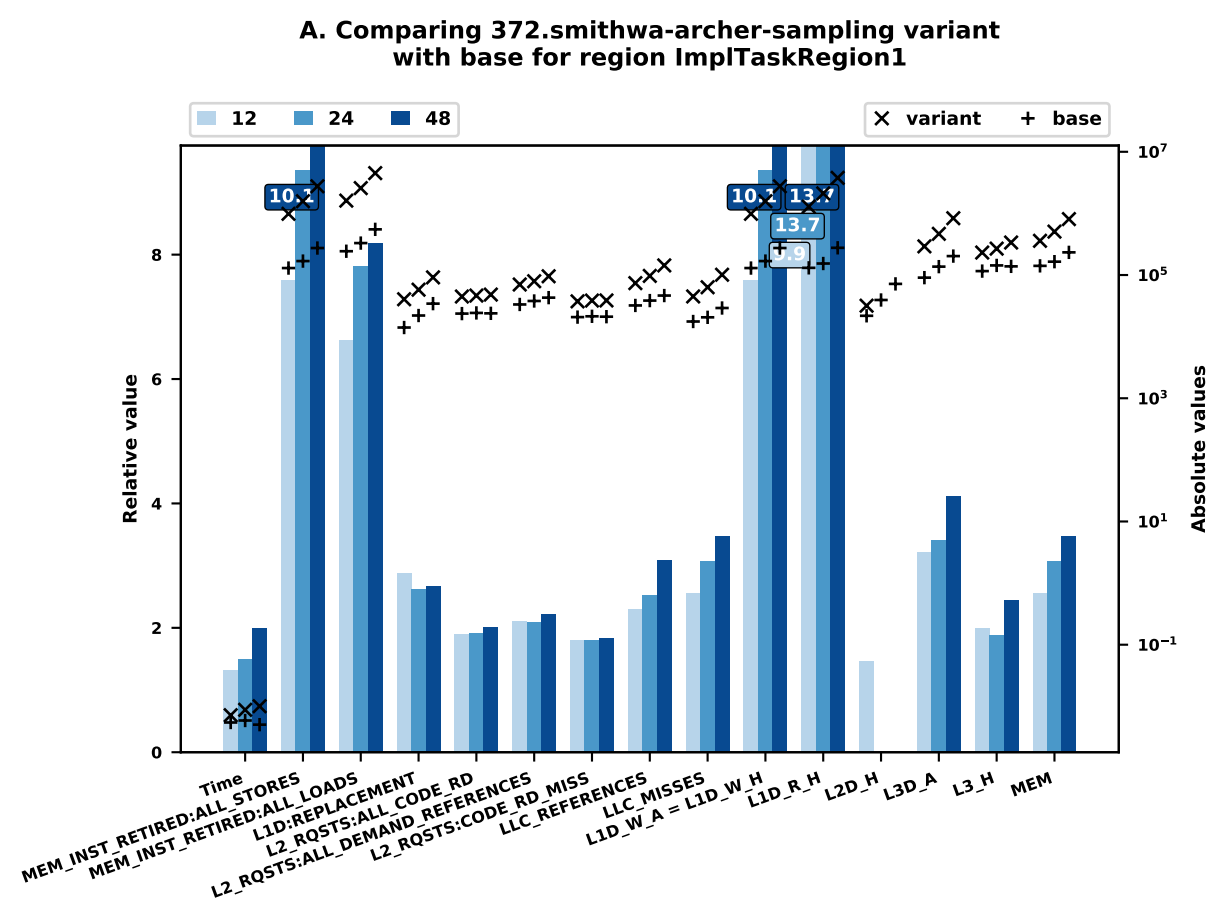
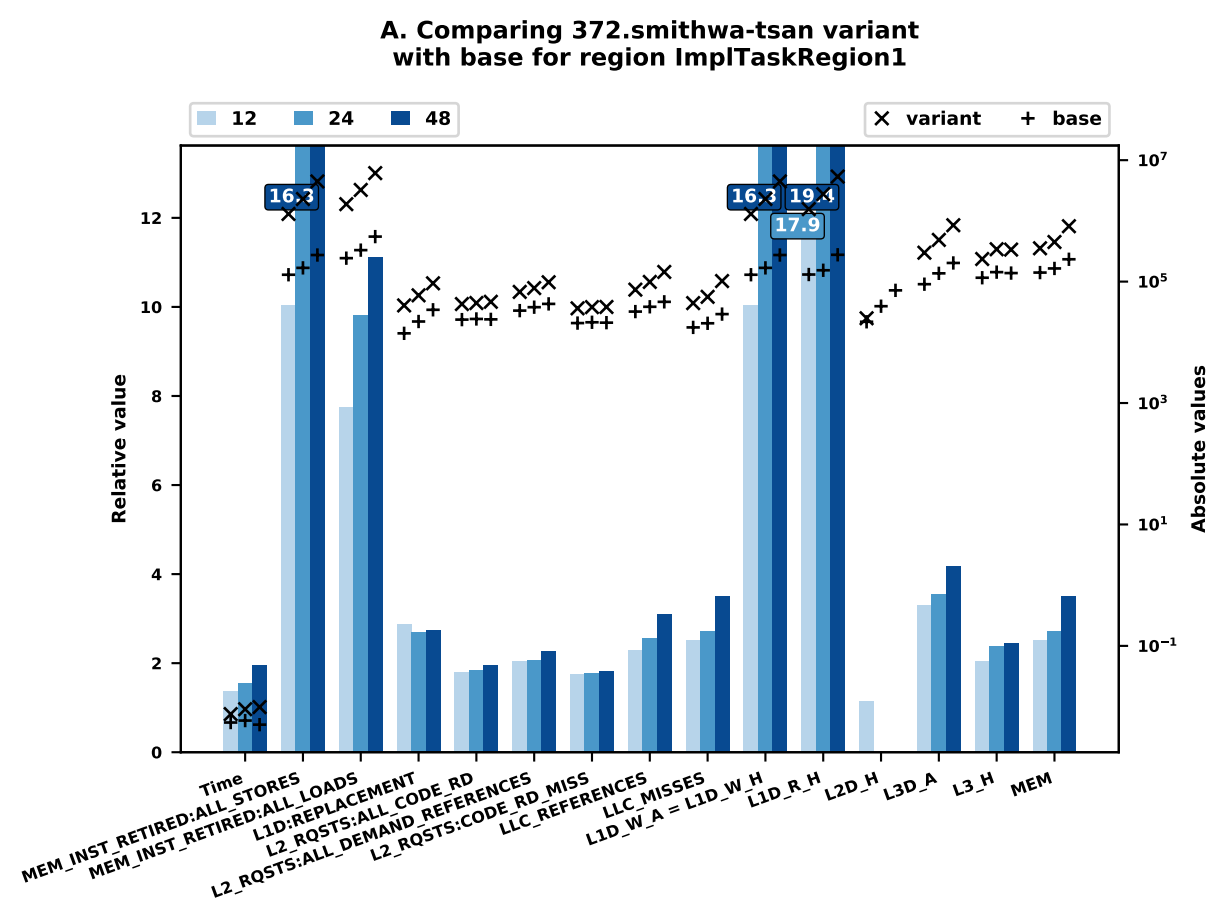

12
24
48
base
Execution time [s]
0
20
40
60
74.2
80.2
tsan-noread
Execution time [s]
0
200
400
600
800
985.5
992.8
archer-noread
Execution time [s]
0
200
400
600
800
1012.4
996.9
tsan-sampling
Execution time [s]
0
500
1000
1378.1
1372.8
archer-sampling
Execution time [s]
0
500
1000
1370.7
1368.8
tsan
Execution time [s]
0
250
500
750
1000
1278.9
1281.2
archer
Execution time [s]
0
250
500
750
1000
1282.5
1281.4
ImplTaskRegion1
ImplTaskRegion2
ImplTaskRegion3
ImplTaskRegion4
ImplTaskRegion5

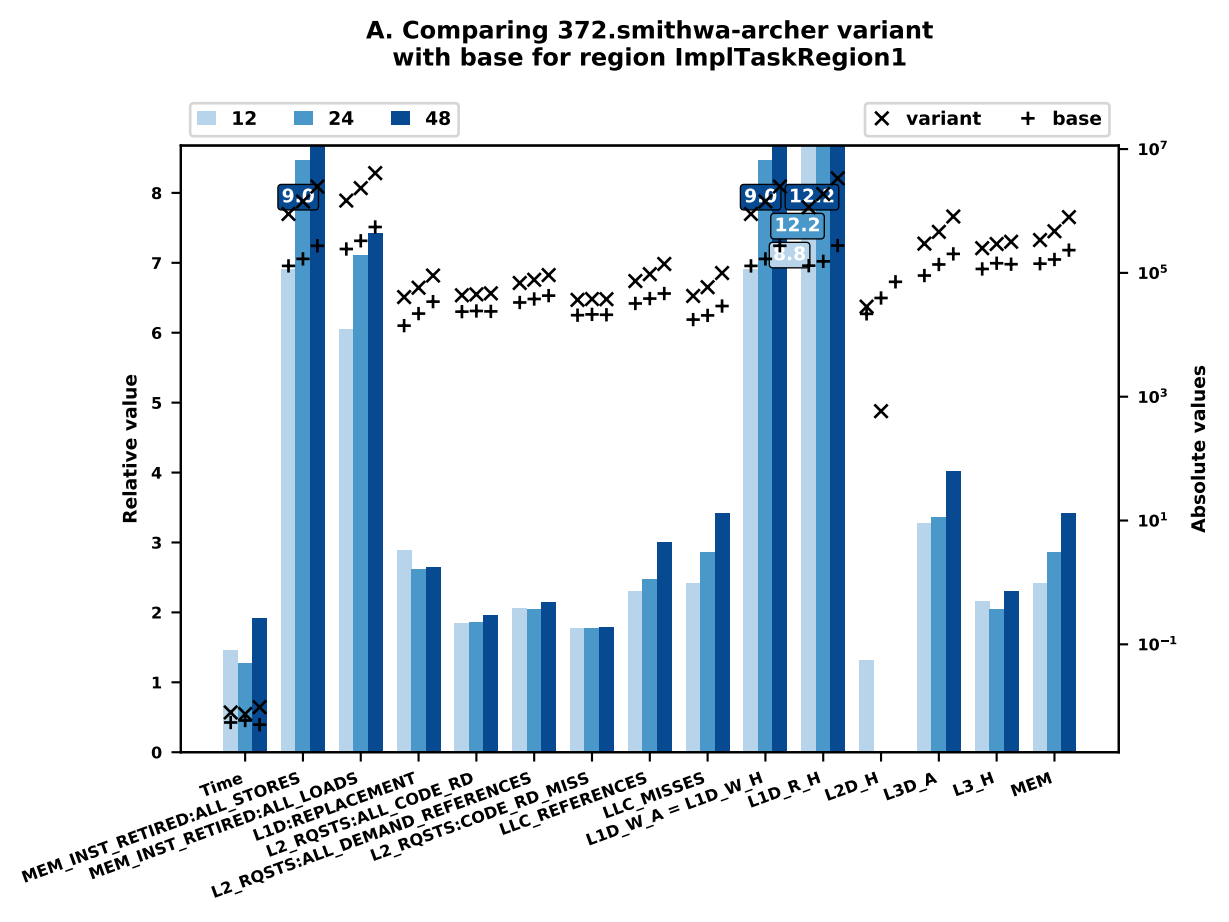

A. Comparing 372.smithwa-tsan-noread variant
with base for region ImplTaskRegion1
12
24
48
variant
base
Relative value
Absolute values
14.6
14.6
18.1
17.2
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

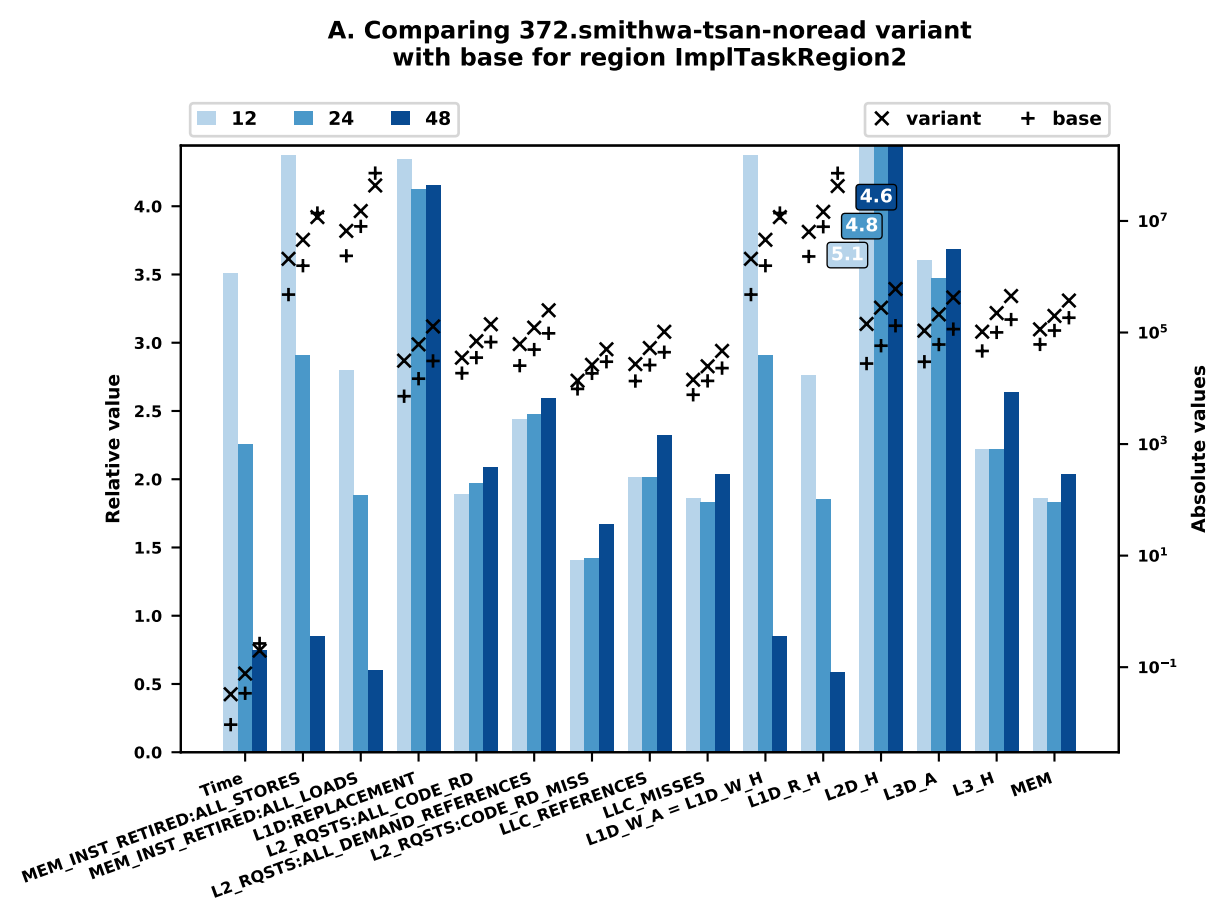

A. Comparing 372.smithwa-archer-noread variant
with base for region ImplTaskRegion1
12
24
48
variant
base
Relative value
Absolute values
9.2
9.2
12.3
12.4
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

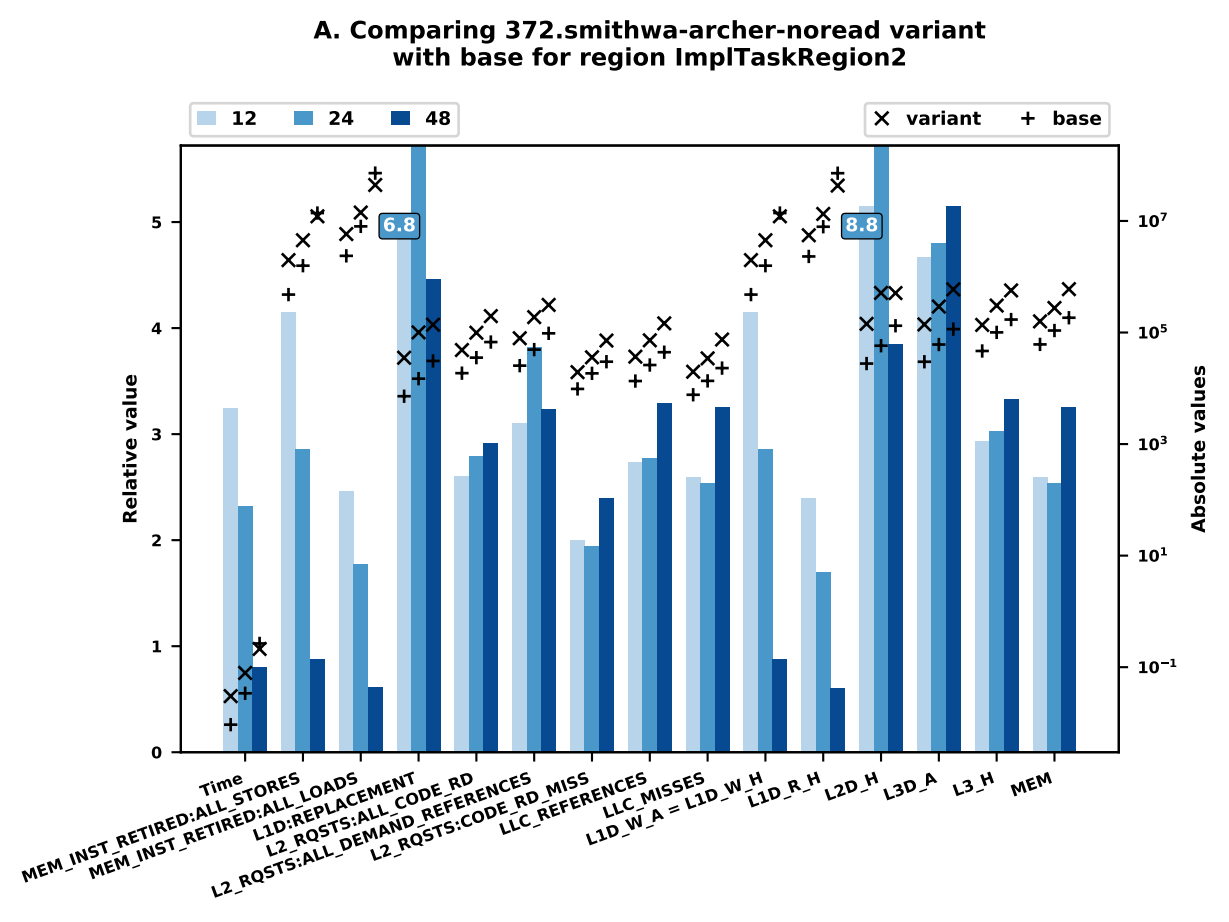

A. Comparing 372.smithwa-tsan-sampling variant
with base for region ImplTaskRegion1
12
24
48
variant
base
Relative value
Absolute values
17.3
17.3
20.4
18.7
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

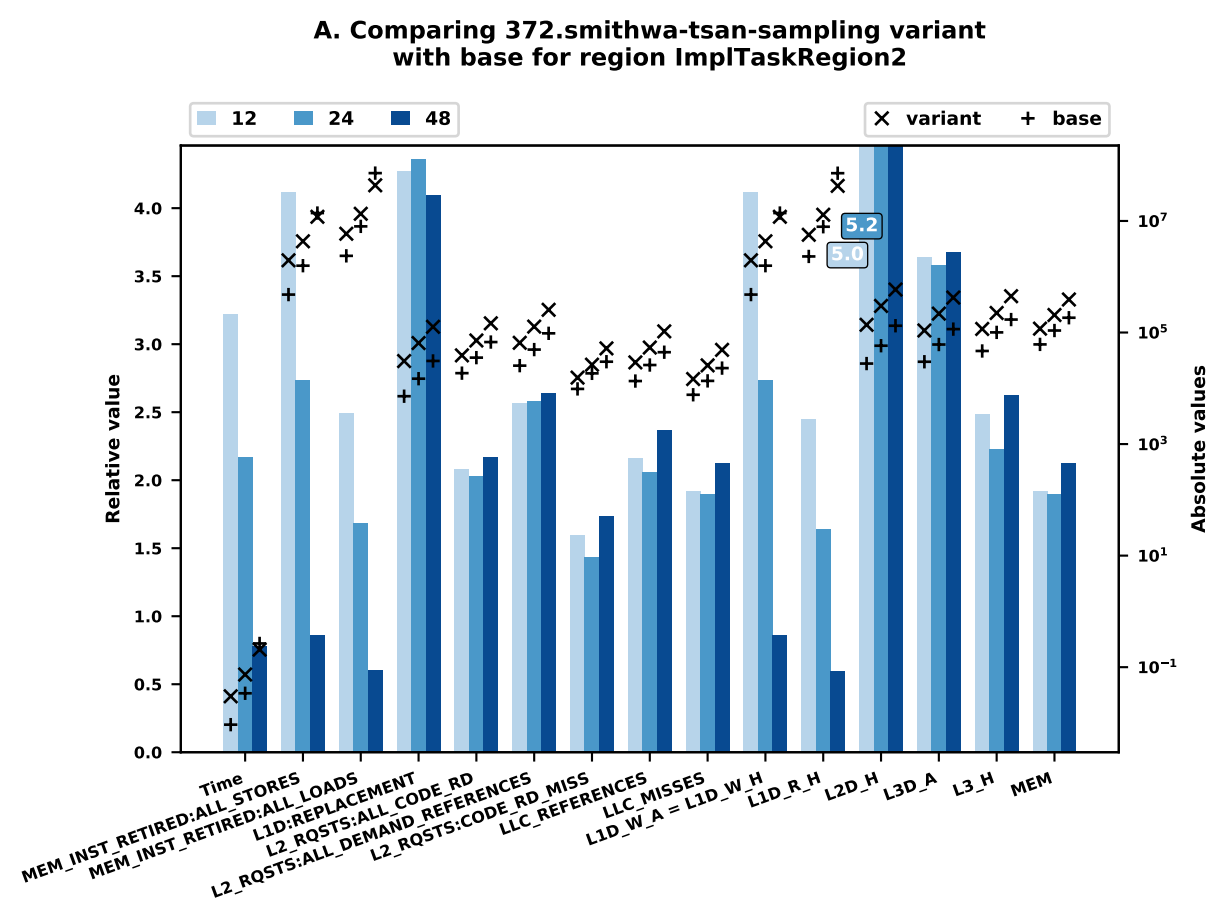

A. Comparing 372.smithwa-archer-sampling variant
with base for region ImplTaskRegion1
12
24
48
variant
base
Relative value
Absolute values
0
2
4
6
8
10^{7}
10^{5}
10^{3}
10^{1}
10^{-1}
10.2
10.2
13.7
13.7
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

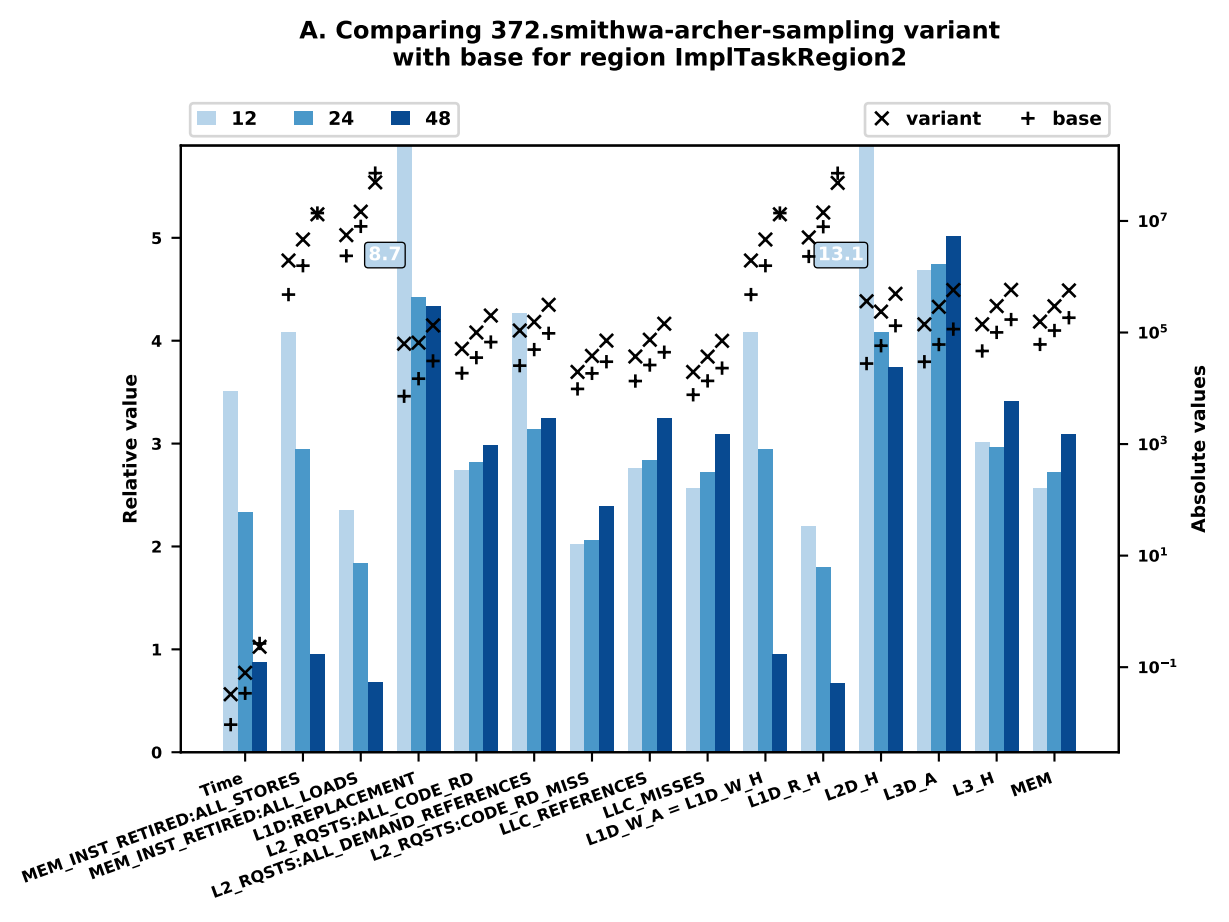

A. Comparing 372.smithwa-tsan variant
with base for region ImplTaskRegion1
12
24
48
variant
base
Relative value
Absolute values
16.3
16.3
19.4
17.9
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

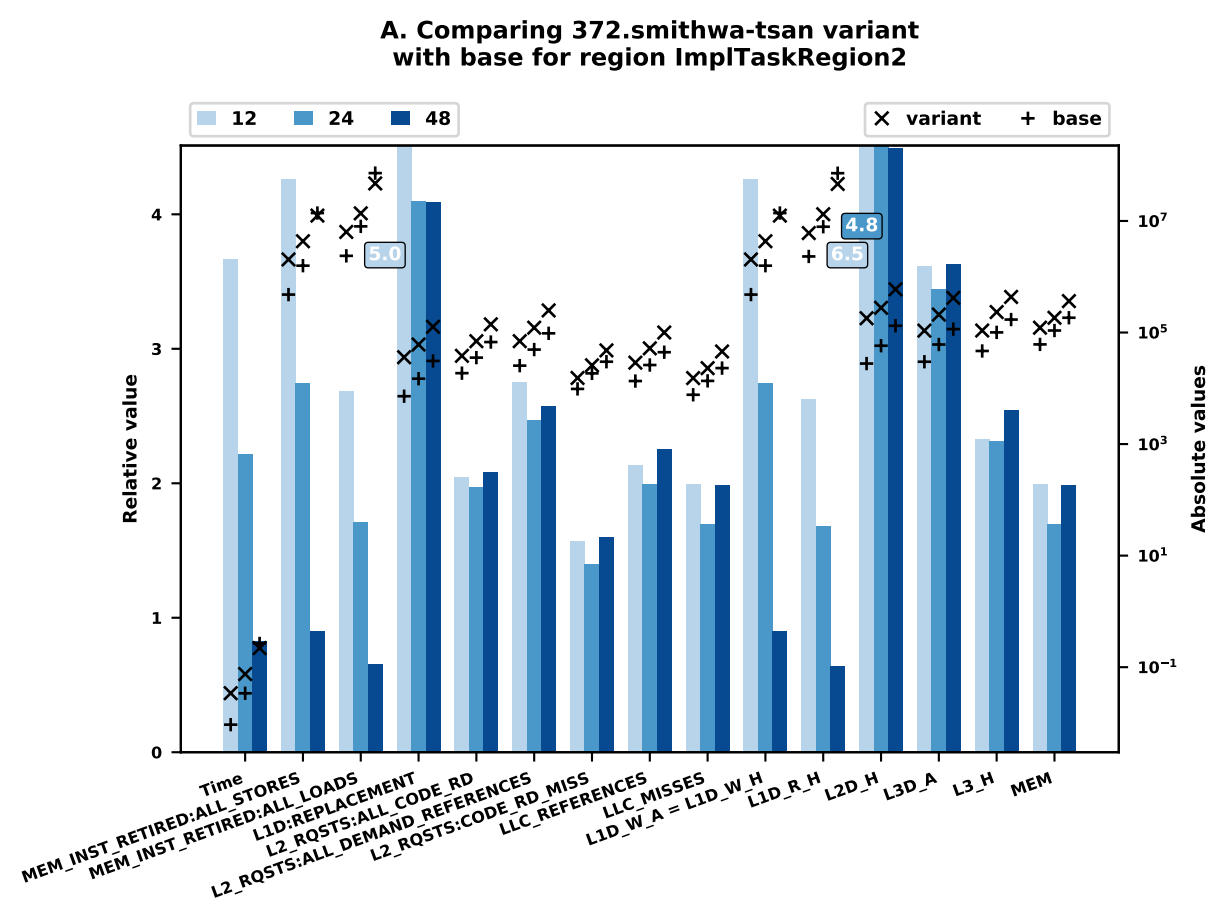

A. Comparing 372.smithwa-archer variant
with base for region ImplTaskRegion1
12
24
48
variant
base
Relative value
Absolute values
9.0
12.2
9.8
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

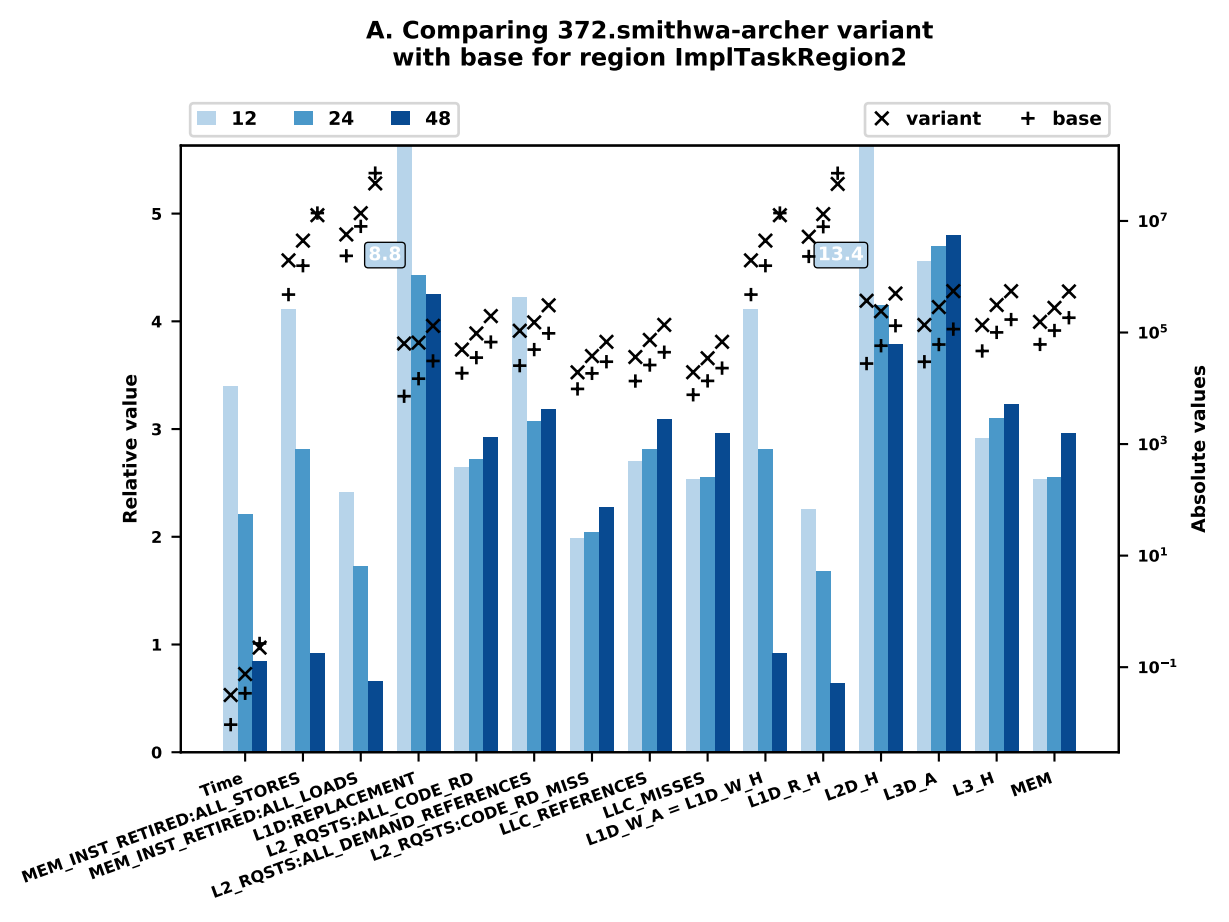

A. Comparing 372.smithwa-tsan-noread variant
with base for region ImplTaskRegion2
12
24
48
variant
base
Relative value
Absolute values
4.6
4.8
5.1
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

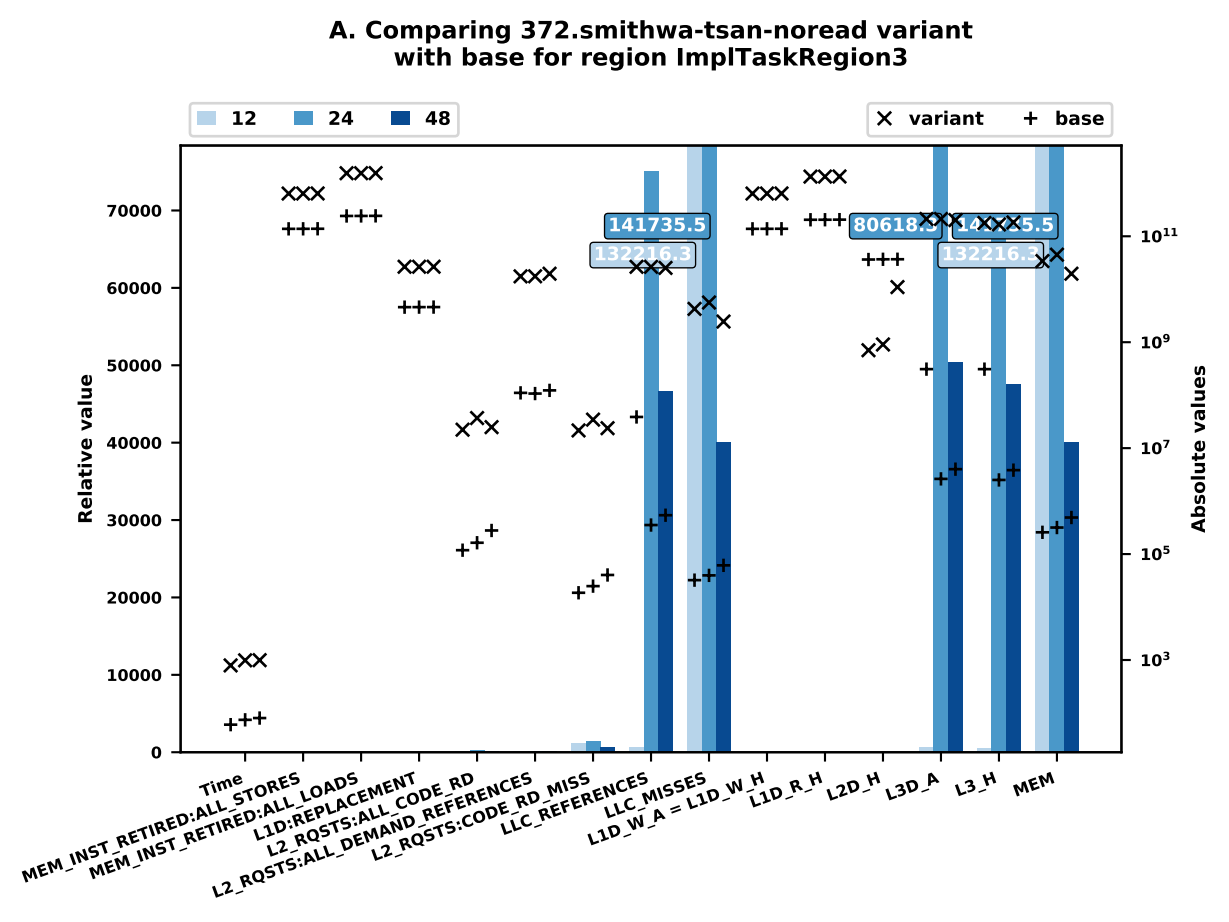

A. Comparing 372.smithwa-archer-noread variant
with base for region ImplTaskRegion2
12
24
48
variant
base
6.8
8.8
Relative value
Absolute values
0
1
2
3
4
5
10^{-1}
10^{1}
10^{3}
10^{5}
10^{7}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

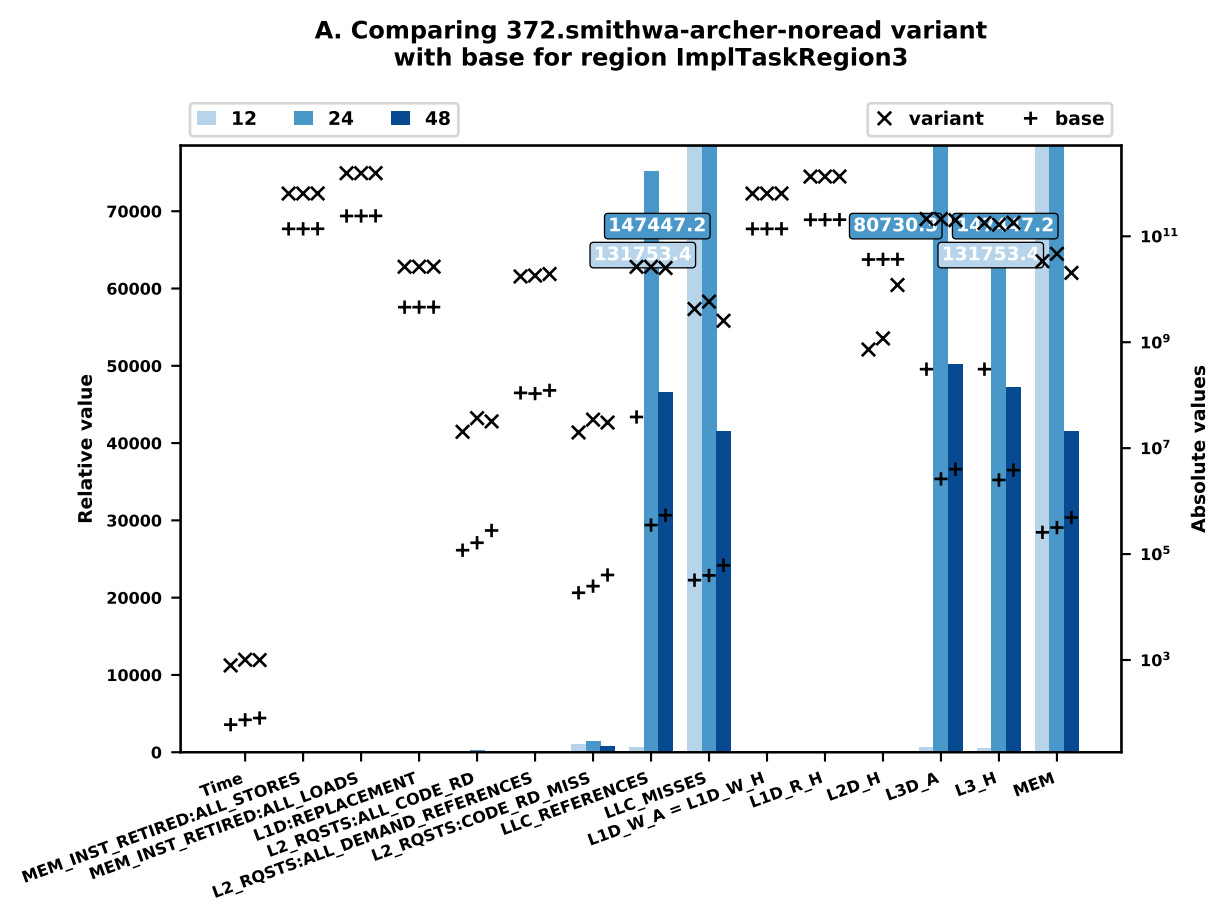

A. Comparing 372.smithwa-tsan-sampling variant
with base for region ImplTaskRegion2
12
24
48
variant
base
Relative value
Absolute values
5.2
5.0
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

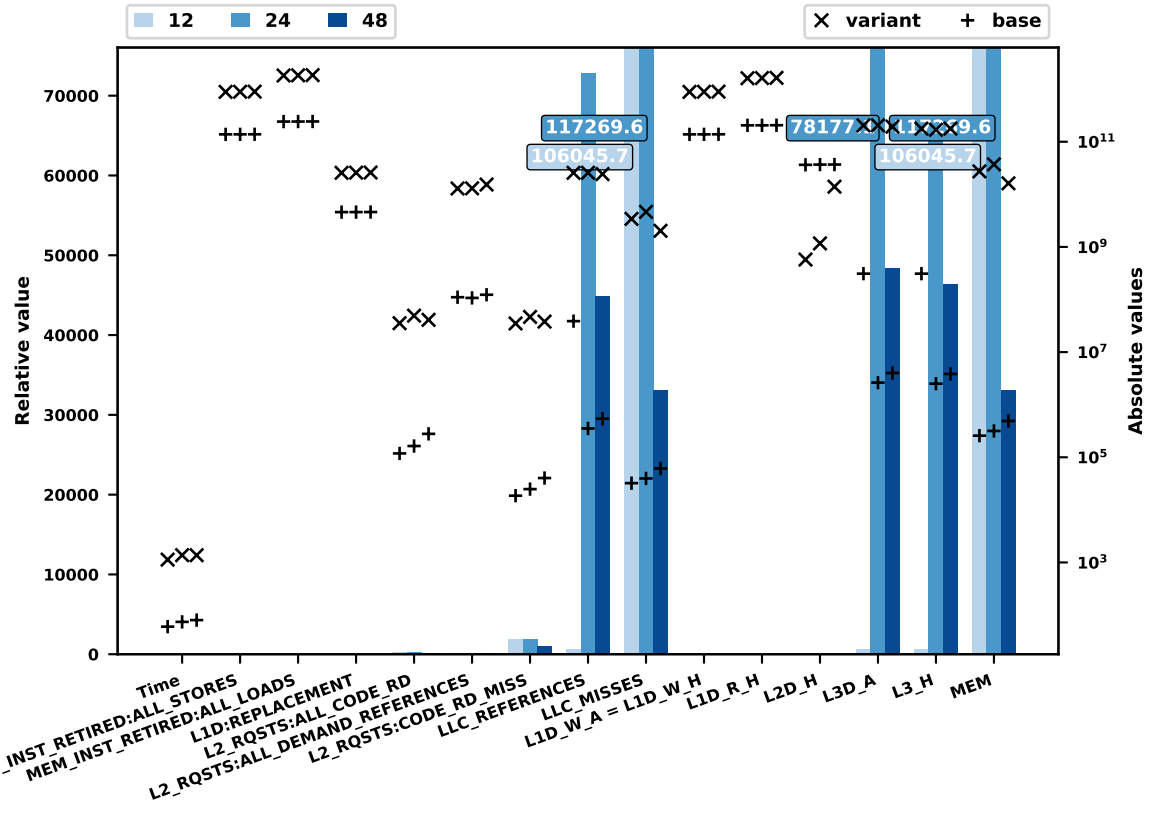

A. Comparing 372.smithwa-archer-sampling variant
with base for region ImplTaskRegion2
12
24
48
variant
base
8.7
13.1
Relative value
Absolute values
0
1
2
3
4
5
10^{-1}
10^{1}
10^{3}
10^{5}
10^{7}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

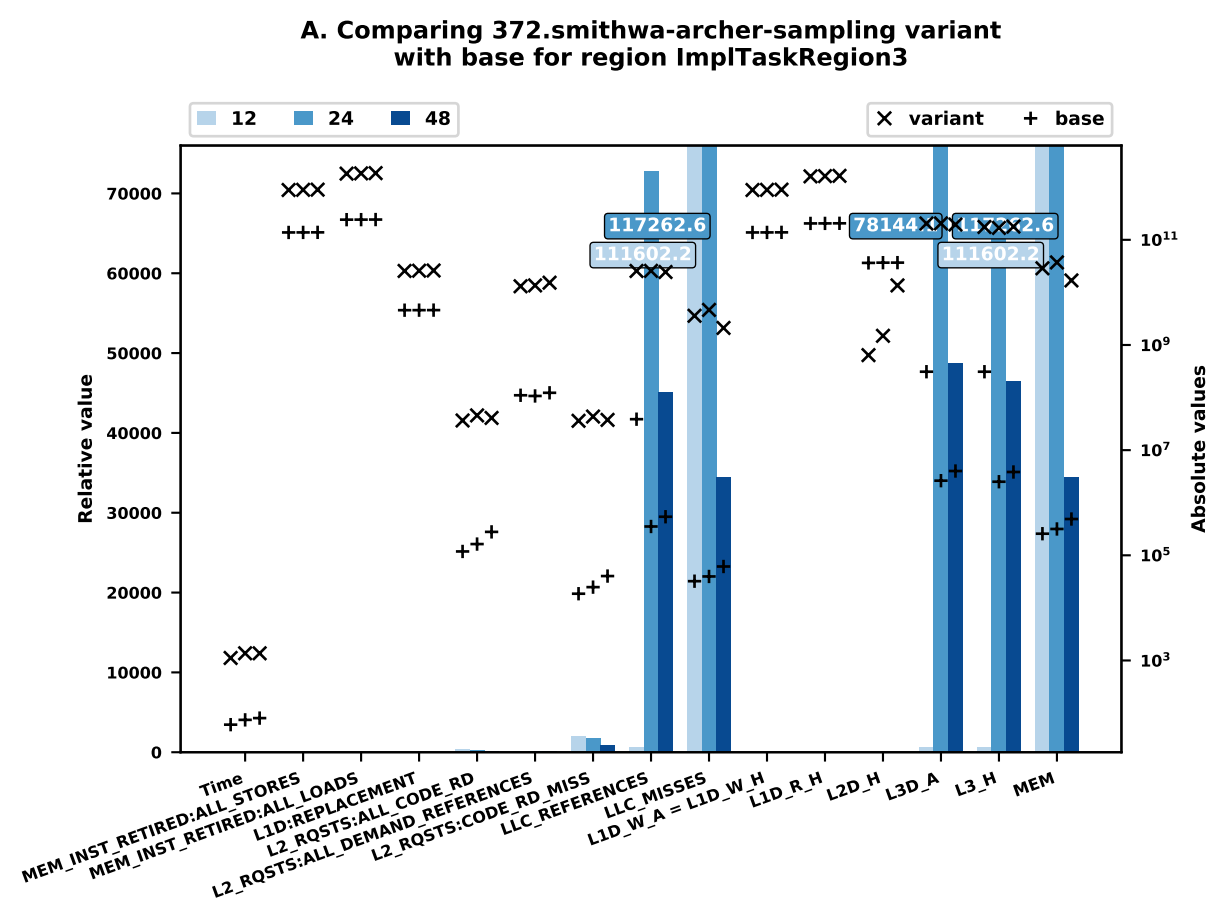

A. Comparing 372.smithwa-tsan variant
with base for region ImplTaskRegion2
12
24
48
variant
base
5.0
4.8
6.5
Relative value
Absolute values
0
1
2
3
4
10^{-1}
10^{1}
10^{3}
10^{5}
10^{7}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

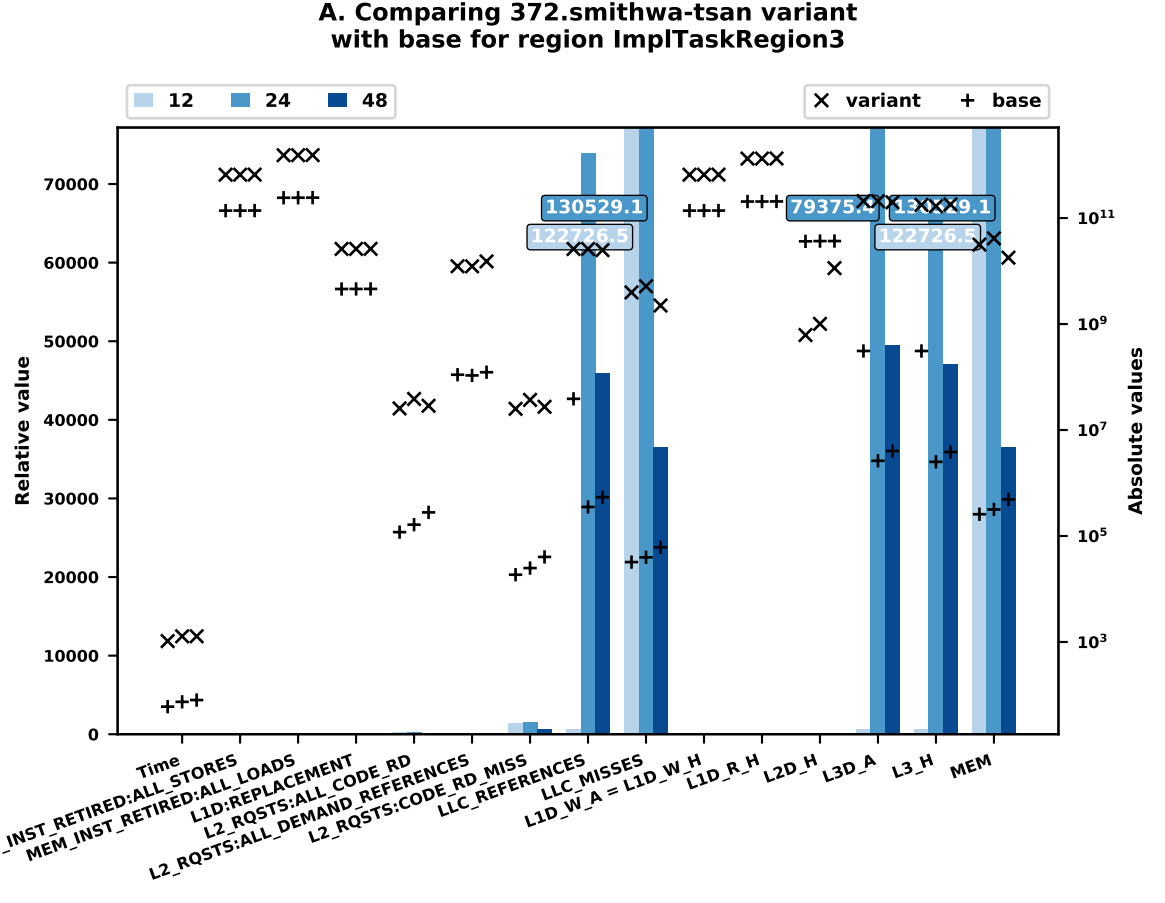

A. Comparing 372.smithwa-archer variant
with base for region ImplTaskRegion2
12
24
48
variant
base
8.8
13.4
Relative value
Absolute values
0
1
2
3
4
5
10^{-1}
10^{1}
10^{3}
10^{5}
10^{7}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

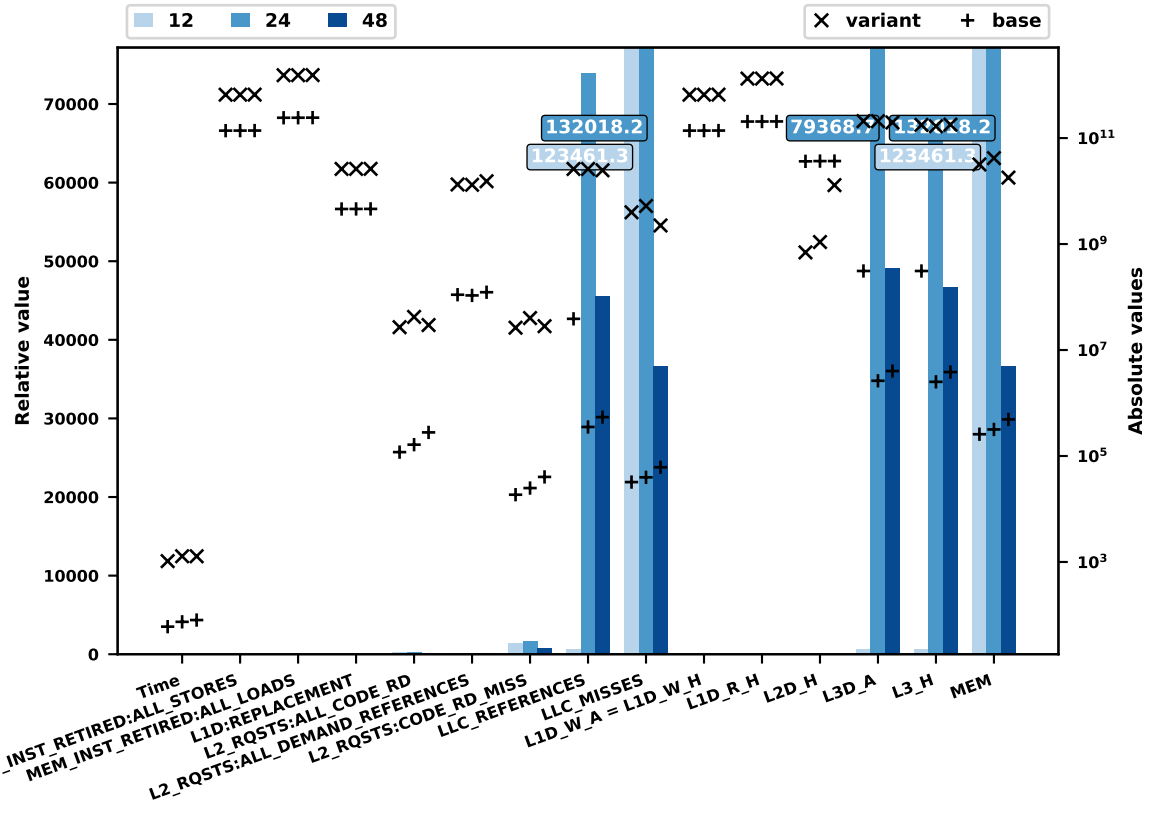

A. Comparing 372.smithwa-tsan-noread variant
with base for region ImplTaskRegion3
12
24
48
variant
base
Relative value
Absolute values
70000
60000
50000
40000
30000
20000
10000
0
10^{11}
10^{9}
10^{7}
10^{5}
10^{3}
141735.5
132216.3
80618.5
132216.3
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

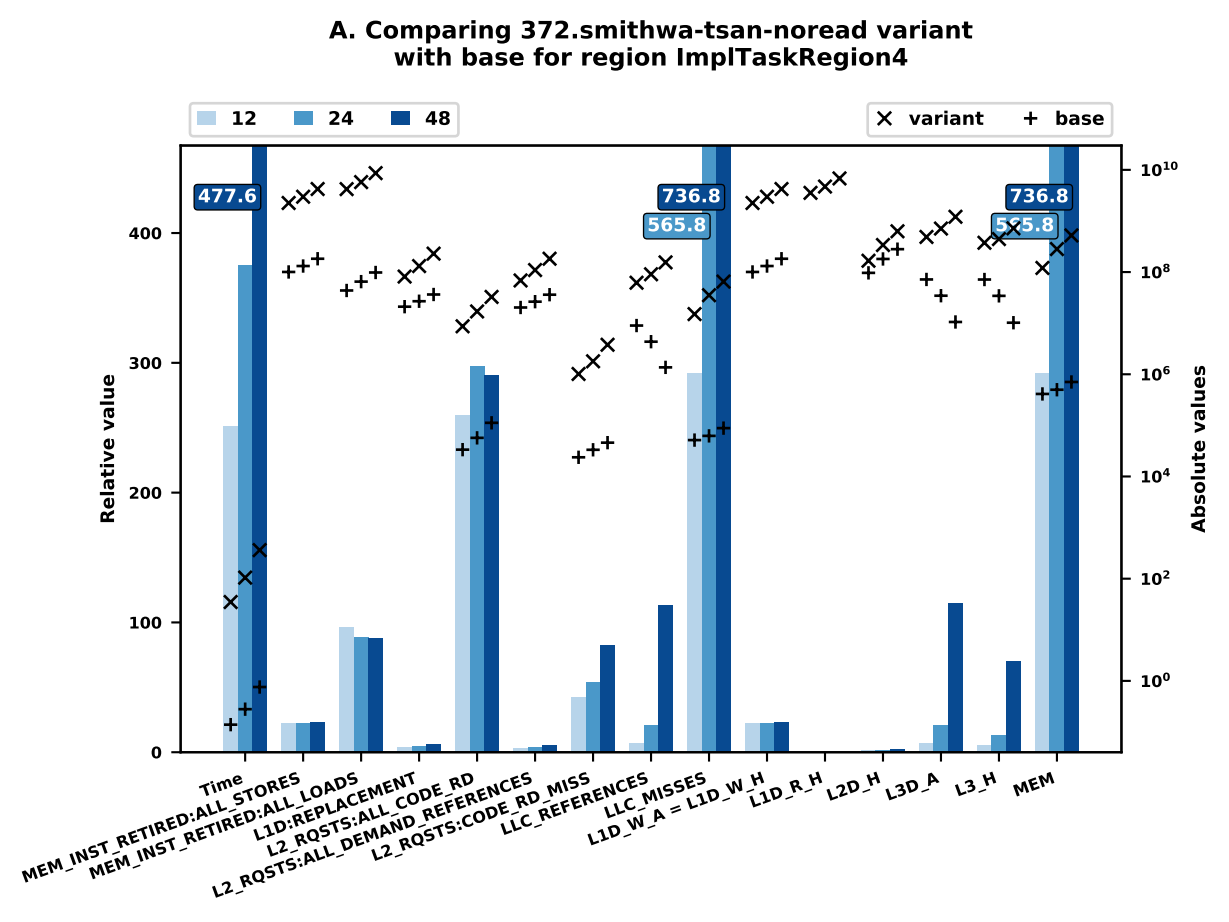

A. Comparing 372.smithwa-archer-noread variant
with base for region ImplTaskRegion3
12
24
48
variant
base
Relative value
Absolute values
70000
60000
50000
40000
30000
20000
10000
0
10^{11}
10^{9}
10^{7}
10^{5}
10^{3}
147447.2
131753.4
80730.5
147447.2
131753.4
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

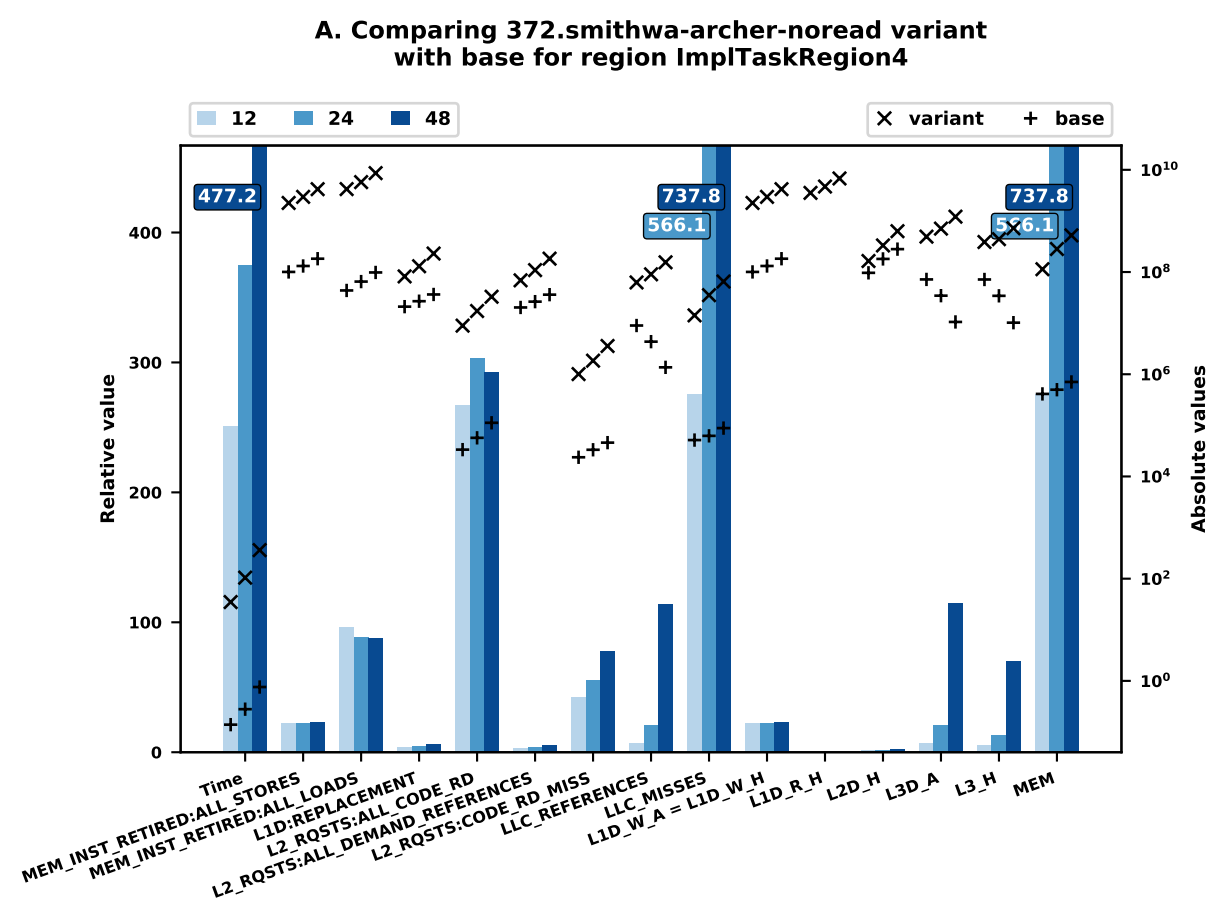

A. Comparing 372.smithwa-tsan-sampling variant
with base for region ImplTaskRegion3
12
24
48
variant
base
Relative value
Absolute values
117269.6
106045.7
78177
106045.7
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

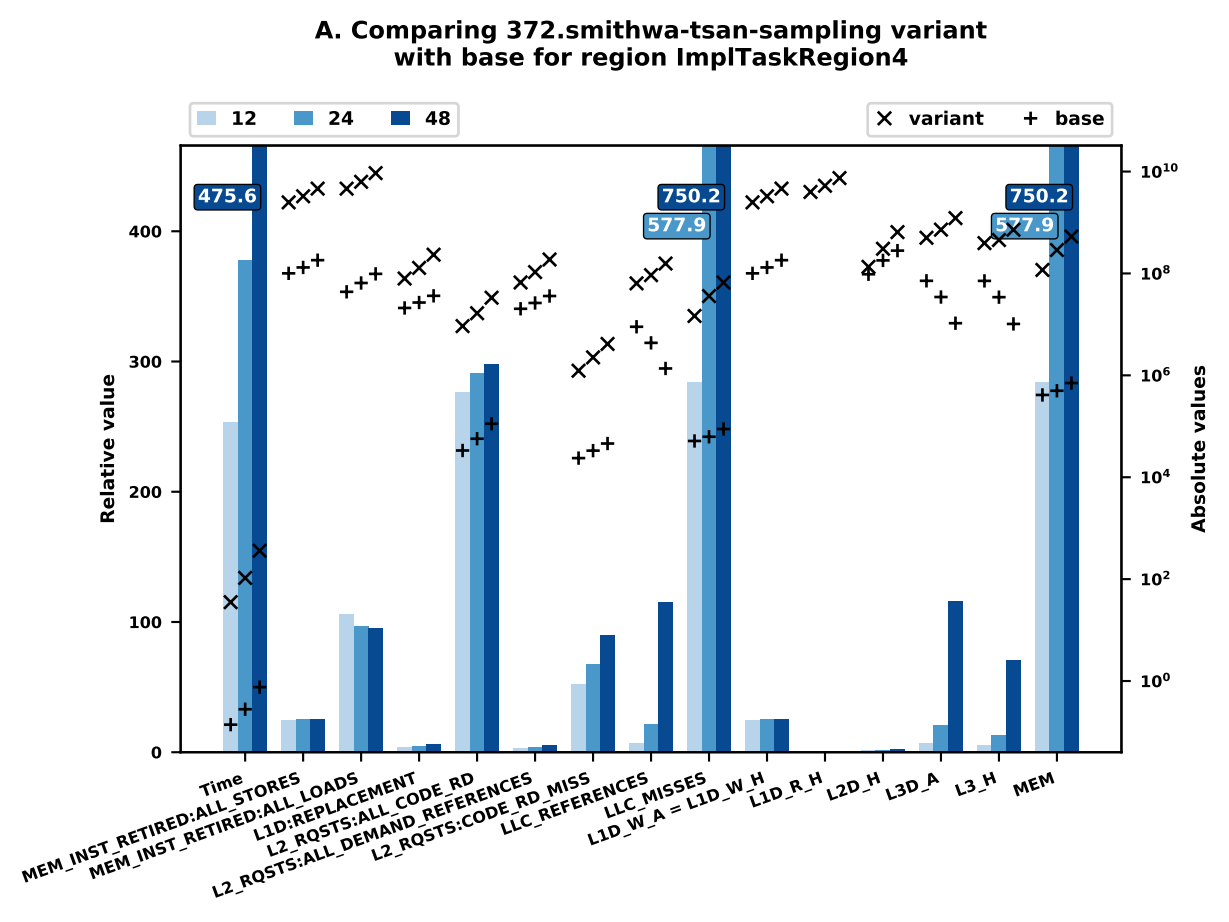

A. Comparing 372.smithwa-archer-sampling variant
with base for region ImplTaskRegion3
12
24
48
variant
base
Relative value
Absolute values
117262.6
111602.2
78144
111602.2
111602.2
0
10000
20000
30000
40000
50000
60000
70000
10^3
10^5
10^7
10^9
10^{11}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

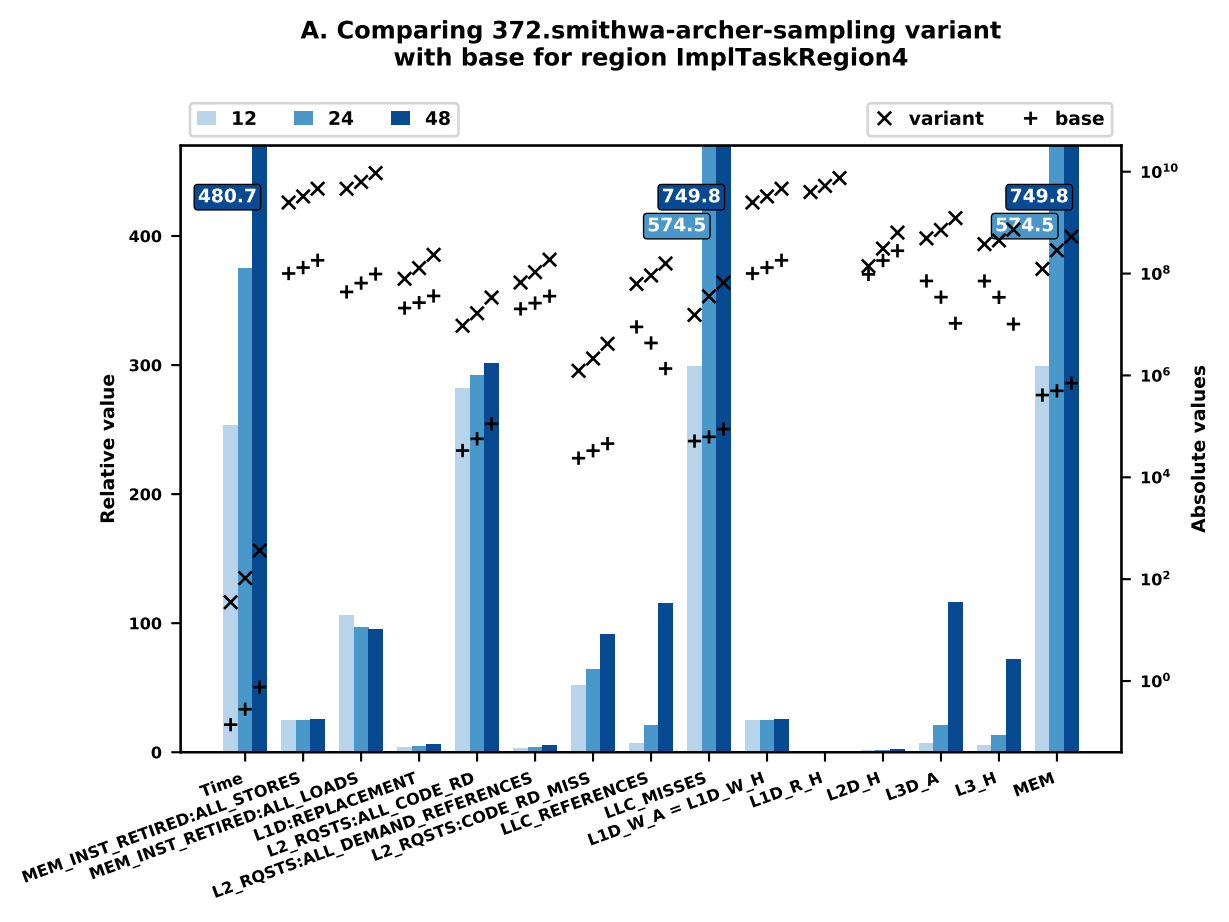

A. Comparing 372.smithwa-tsan variant
with base for region ImplTaskRegion3
12
24
48
variant
base
Relative value
Absolute values
130529.1
122726.5
79375.4
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

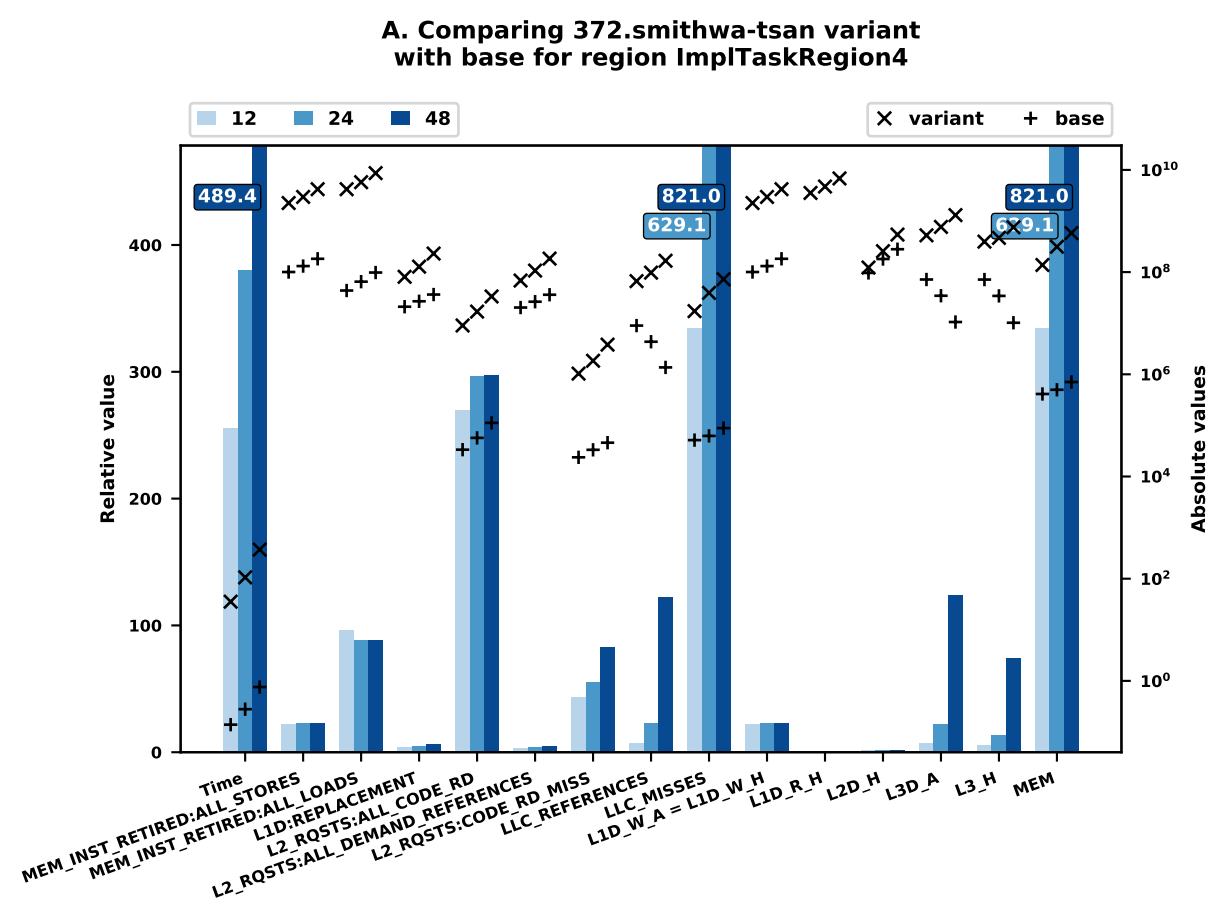

A. Comparing 372.smithwa-archer variant
with base for region ImplTaskRegion3
12
24
48
variant
base
Relative value
Absolute values
132018.2
123461.3
79368.7
123461.3
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

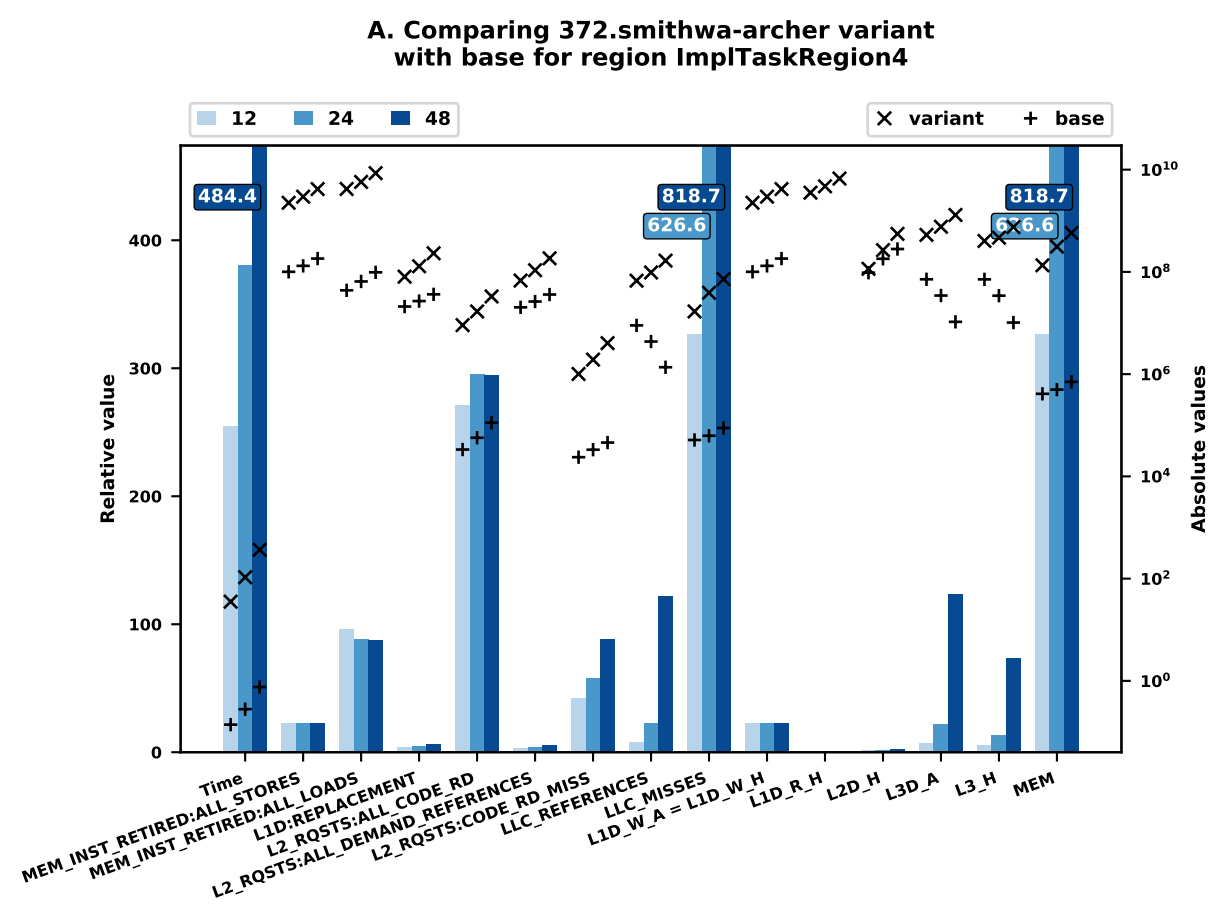

A. Comparing 372.smithwa-tsan-noread variant
with base for region ImplTaskRegion4
12
24
48
variant
base
Relative value
Absolute values
0
100
200
300
400
10^0
10^2
10^4
10^6
10^8
10^{10}
477.6
736.8
565.8
736.8
565.8
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

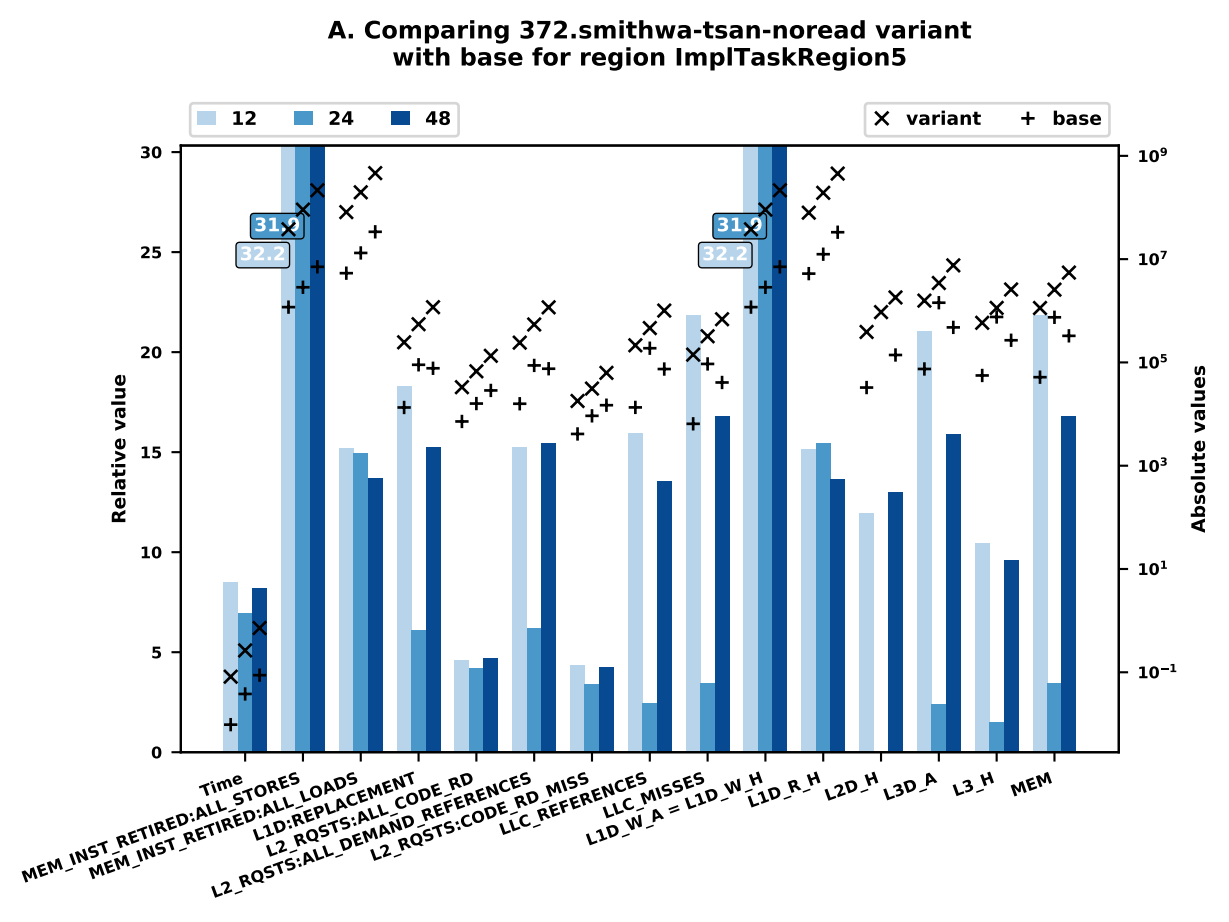

A. Comparing 372.smithwa-archer-noread variant
with base for region ImplTaskRegion4
12
24
48
variant
base
Relative value
Absolute values
477.2
737.8
566.1
737.8
566.1
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

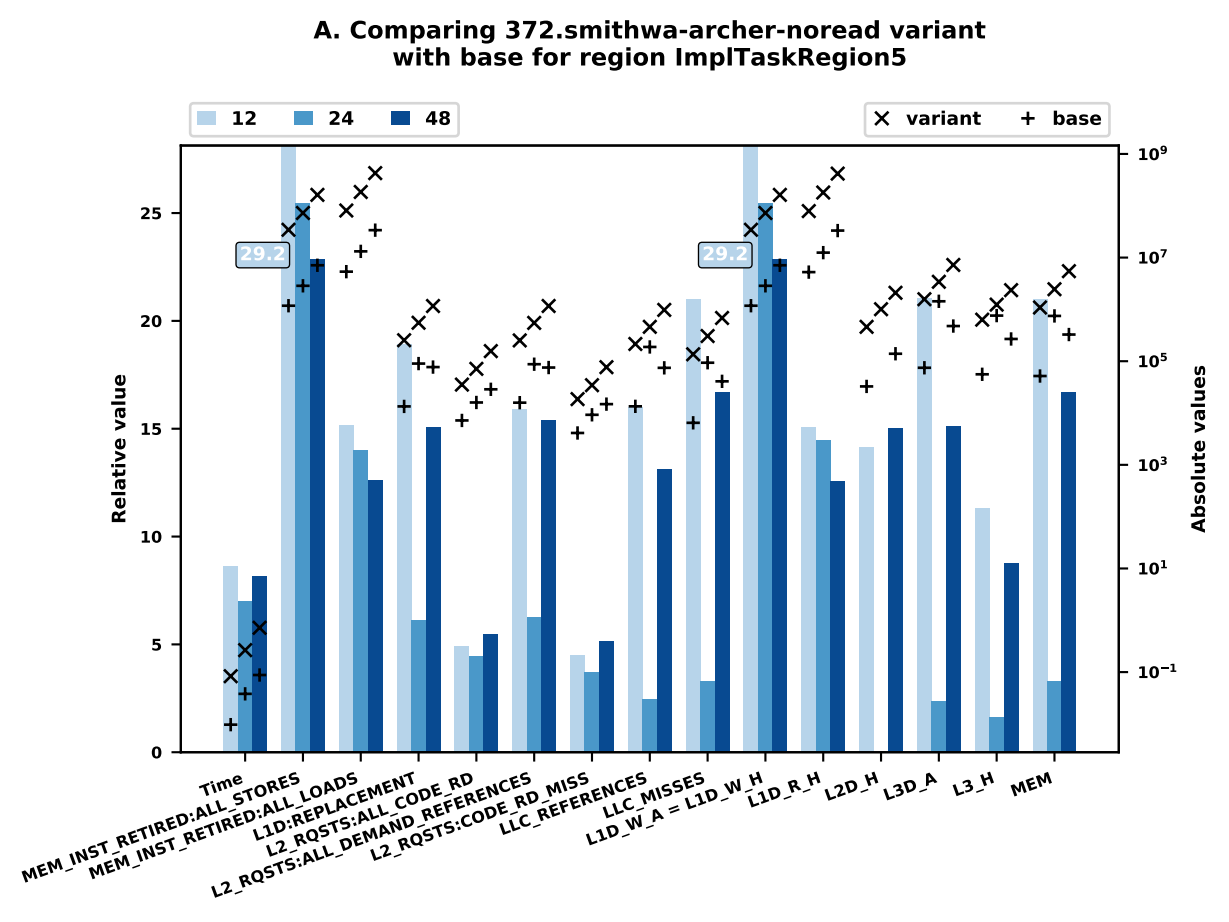

A. Comparing 372.smithwa-tsan-sampling variant
with base for region ImplTaskRegion4
12
24
48
variant
base
475.6
750.2
577.9
750.2
577.9
Relative value
Absolute values
0
100
200
300
400
10^0
10^2
10^4
10^6
10^8
10^{10}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

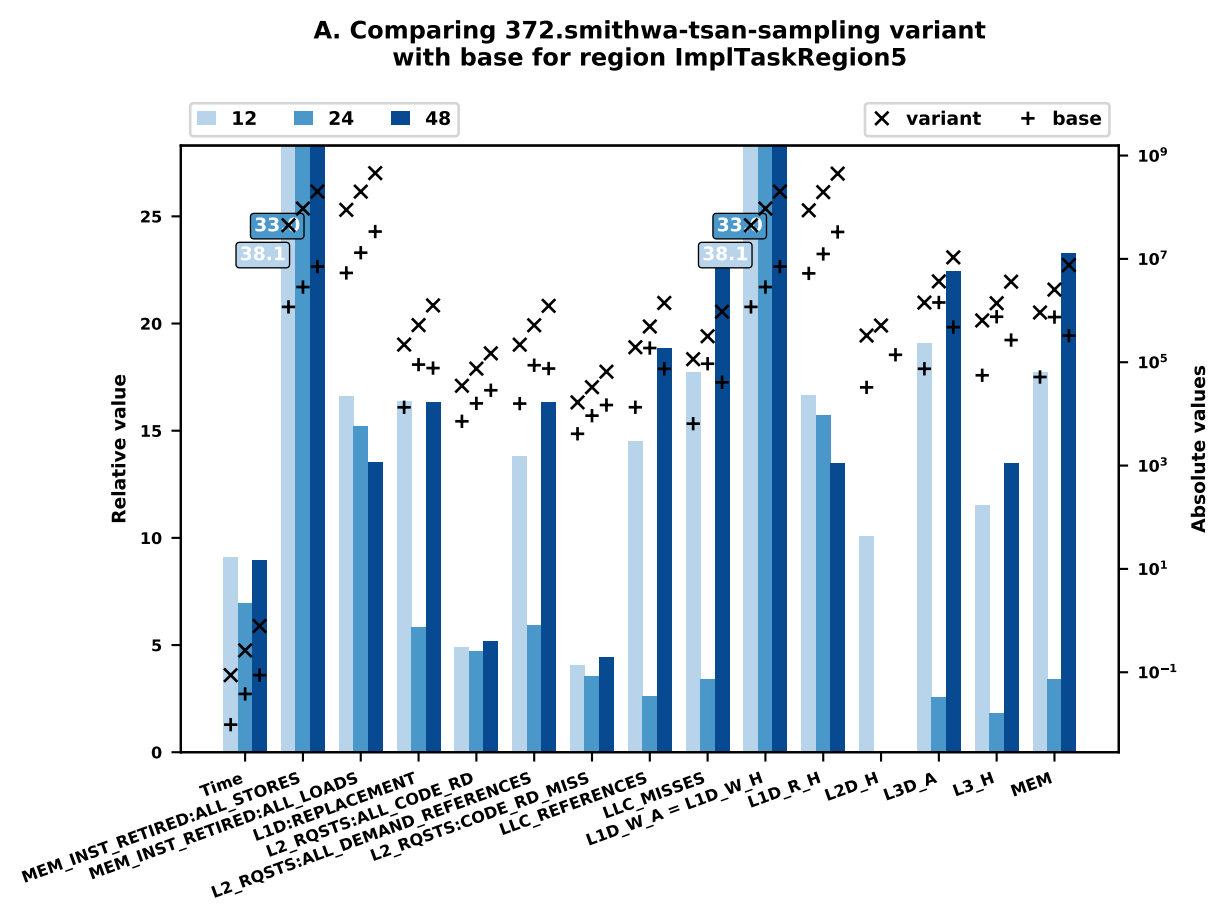

A. Comparing 372.smithwa-archer-sampling variant
with base for region ImplTaskRegion4
12
24
48
variant
base
480.7
749.8
574.5
749.8
574.5
Relative value
Absolute values
0
100
200
300
400
10^0
10^2
10^4
10^6
10^8
10^{10}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

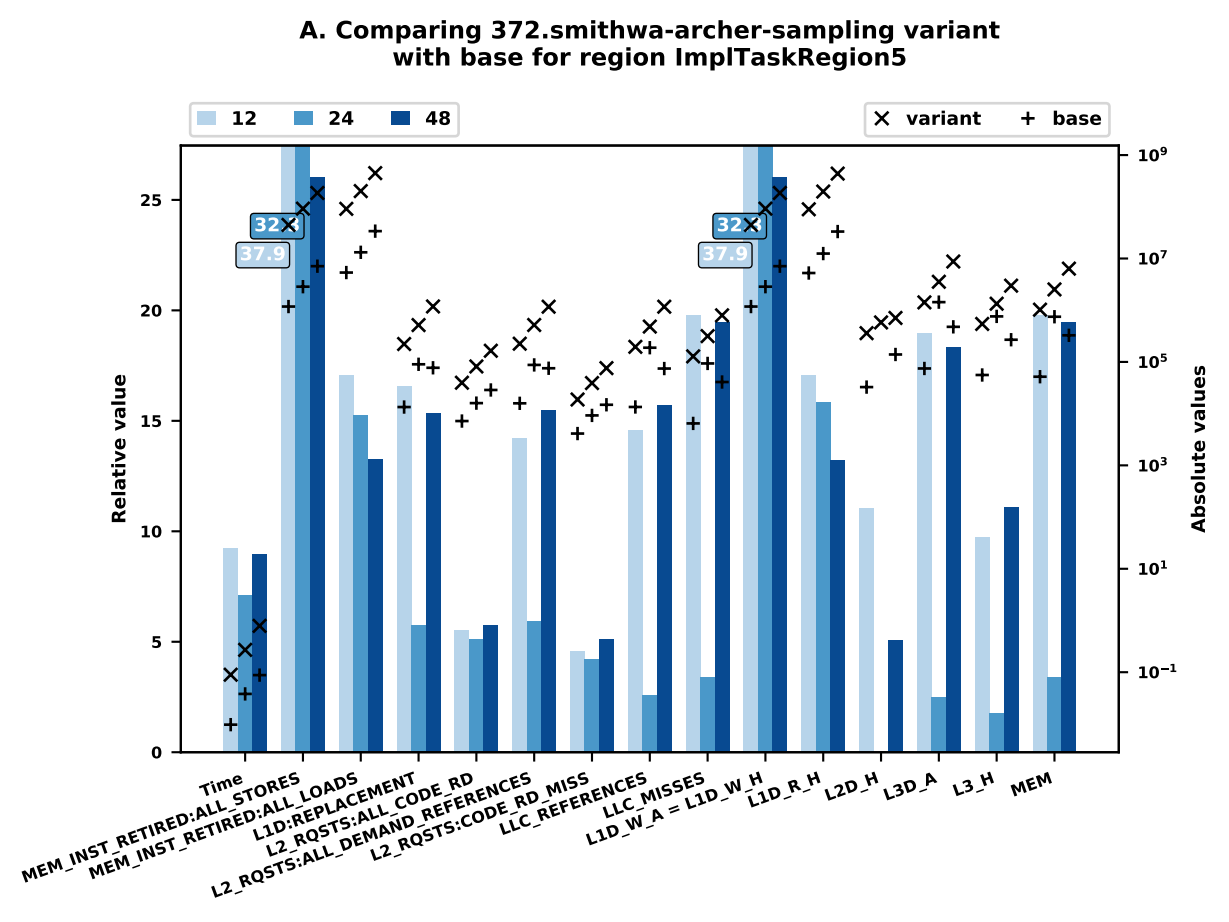

A. Comparing 372.smithwa-tsan variant
with base for region ImplTaskRegion4
12
24
48
variant
base
Relative value
Absolute values
489.4
821.0
629.1
821.0
629.1
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

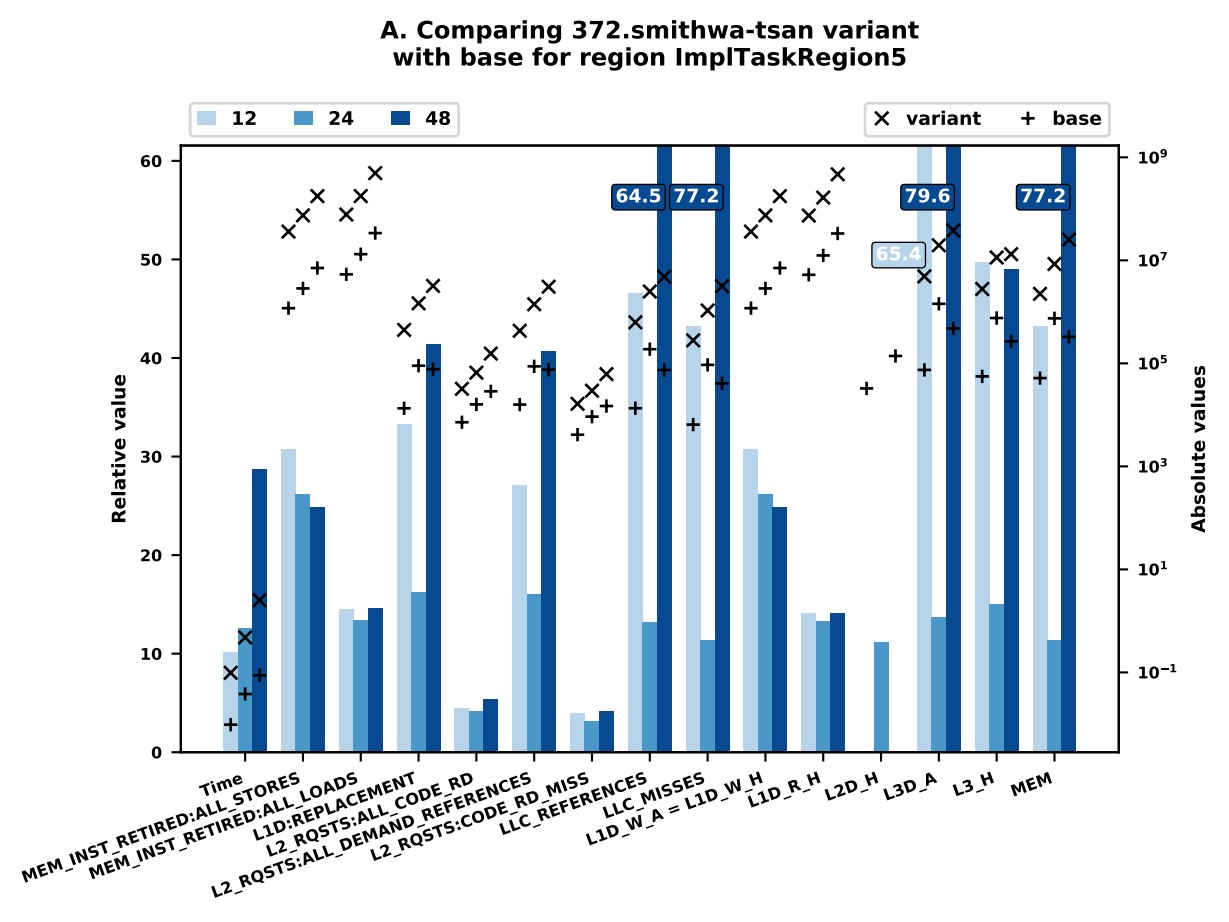

A. Comparing 372.smithwa-archer variant
with base for region ImplTaskRegion4
12
24
48
variant
base
484.4
818.7
626.6
818.7
626.6
Relative value
Absolute values
0
100
200
300
400
10^0
10^2
10^4
10^6
10^8
10^{10}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM

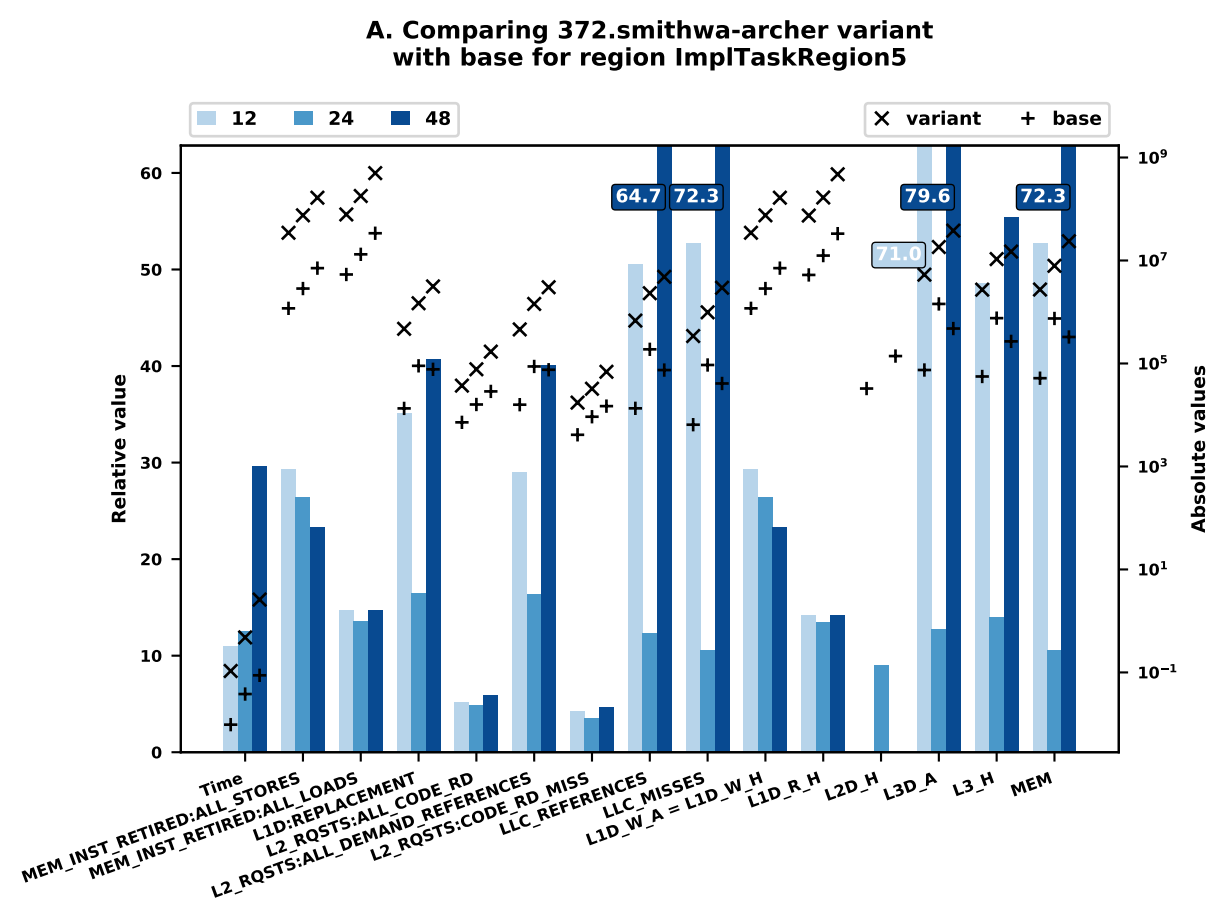

A. Comparing 372.smithwa-tsan-noread variant
with base for region ImplTaskRegion5
12
24
48
variant
base
Relative value
Absolute values
31.9
32.2
31.9
32.2
0
5
10
15
20
25
30
10^{-1}
10^{1}
10^{3}
10^{5}
10^{7}
10^{9}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM


A. Comparing 372.smithwa-archer-noread variant
with base for region ImplTaskRegion5
12
24
48
variant
base
Relative value
Absolute values
29.2
29.2
0
5
10
15
20
25
10^{9}
10^{7}
10^{5}
10^{3}
10^{1}
10^{-1}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM


A. Comparing 372.smithwa-tsan-sampling variant
with base for region ImplTaskRegion5
12
24
48
variant
base
Relative value
Absolute values
0
5
10
15
20
25
10^{9}
10^{7}
10^{5}
10^{3}
10^{1}
10^{-1}
330
38.1
330
38.1
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM


A. Comparing 372.smithwa-archer-sampling variant
with base for region ImplTaskRegion5
12
24
48
variant
base
Relative value
Absolute values
32.4
37.9
32.4
37.9
0
5
10
15
20
25
10^{9}
10^{7}
10^{5}
10^{3}
10^{1}
10^{-1}
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM


A. Comparing 372.smithwa-tsan variant
with base for region ImplTaskRegion5
12
24
48
variant
base
Relative value
Absolute values
64.5
77.2
65.4
79.6
77.2
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM


A. Comparing 372.smithwa-archer variant
with base for region ImplTaskRegion5
12
24
48
variant
base
Relative value
Absolute values
64.7
72.3
71.0
79.6
72.3
Time
MEM_INST_RETIRED:ALL_STORES
MEM_INST_RETIRED:ALL_LOADS
L1D:REPLACEMENT
L2_RQSTS:ALL_CODE_RD
L2_RQSTS:ALL_DEMAND_REFERENCES
L2_RQSTS:CODE_RD_MISS
LLC_REFERENCES
LLC_MISSES
L1D_W_A = L1D_W_H
L1D_R_H
L2D_H
L3D_A
L3_H
MEM