

Shang at -O0 optimization

Starting at PC 4008e4

Total number of dynamic instructions: 1165086982

Total number of cycles: 1385439959

RType: 519728194

IType: 638148918

JType: 7209870

Number of Memory Reads: 382192000

Number of Memory Writes: 88827150

Number of Register Reads: 1907458085

Number of Register Writes: 1229378640

Number of Forwards:

From Ex Stage: 574722754

From Mem Stage: 244580057

Branches:

Forward:

Taken: 11531213

Not taken: 3586553

Backward:

Taken: 43100062

Not taken: 1806470

Branch delay slot:

Useful instruction: 0

Not useful instruction: 60024298

Jump delay slot:

Useful instruction: 0

Not useful instruction: 9052292

Load Use Hazard:

Has load use stall: 151276387

Has load use hazard: 0

Has no load use hazard: 382192000

256 byte cache (blocksize 4 bytes): 437338571 hits, 33680579 misses (hit rate: 92.8494%)

256 byte cache (blocksize 8 bytes): 443144761 hits, 27874389 misses (hit rate: 94.0821%)

256 byte cache (blocksize 16 bytes): 436781971 hits, 34237179 misses (hit rate: 92.7313%)

256 byte cache (blocksize 32 bytes): 423429659 hits, 47589491 misses (hit rate: 89.8965%)

256 byte cache (blocksize 64 bytes): 399325399 hits, 71693751 misses (hit rate: 84.779%)

256 byte cache (blocksize 128 bytes): 358056072 hits, 112963078 misses (hit rate: 76.0173%)

256 byte cache (blocksize 256 bytes): 306803190 hits, 164215960 misses (hit rate: 65.136%)

Shang at O1 optimization

Starting at PC 40052c

Total number of dynamic instructions: 341253330

Total number of cycles: 386447534

RType: 47199704

IType: 286747099

JType: 7306527

Number of Memory Reads: 47382214

Number of Memory Writes: 33369840

Number of Register Reads: 512558390

Number of Register Writes: 287758105

Number of Forwards:

From Ex Stage: 68327486

From Mem Stage: 45876964

Branches:

Forward:

Taken: 6104032

Not taken: 14152522

Backward:

Taken: 36047667

Not taken: 1708840

Branch delay slot:

Useful instruction: 52756579

Not useful instruction: 5256482

Jump delay slot:

Useful instruction: 8736743

Not useful instruction: 412206

Load Use Hazard:

Has load use stall: 39525516

Has load use hazard: 0

Has no load use hazard: 47382214

256 byte cache (blocksize 4 bytes): 55885096 hits, 24866958 misses (hit rate: 69.2058%)

256 byte cache (blocksize 8 bytes): 63396666 hits, 17355388 misses (hit rate: 78.5078%)

256 byte cache (blocksize 16 bytes): 65941581 hits, 14810473 misses (hit rate: 81.6593%)

256 byte cache (blocksize 32 bytes): 67874834 hits, 12877220 misses (hit rate: 84.0534%)

256 byte cache (blocksize 64 bytes): 67896111 hits, 12855943 misses (hit rate: 84.0797%)

256 byte cache (blocksize 128 bytes): 56138062 hits, 24613992 misses (hit rate: 69.5191%)

256 byte cache (blocksize 256 bytes): 2431222 hits, 78320832 misses (hit rate: 3.01072%)