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```

67126 name = Add
67127 compiler = turbofan
67128 Instructions (size = 822)
67129 0x23fafe40  0 55          push ebp
67130 0x23fafe41  1 00e5        mov ebp,esp
67131 0x23fafe43  3 0a16        push 0x16
67132 0x23fafe45  5 03cc20      sub esp,0xc20
67133 0x23fafe48  8 0fbf540f01  movsx w,edx,[edi+ecx*1+0x1]
67134 0x23fafe4d  d 0b5d00      mov ebx,[ebp+0x0]
67135 0x23fafe50  10 0b1405      mov edx,[ebx+edx*4]
67136 0x23fafe53  13 8975f8      mov [ebp+0x8],esi
67137 0x23fafe56  16 8073fc      mov esi,[ebx+0x4]
67138 0x23fafe59  19 0fbf7c0f03  movsx w,edi,[edi+ecx*1+0x3]
67139 0x23fafe5e  1e 8940f0      mov [ebp+0x10],ecx
67140 0x23fafe61  21 8040f8      mov ecx,[ebx+0x8]
67141 0x23fafe64  24 8b4917      mov ecx,[ecx+0x17]
67142 0x23fafe67  27 8b4903      mov ecx,[ecx+0x3]
67143 0x23fafe6a  2a 895c14      mov [ebp+0xc],eax
67144 0x23fafe6d  2d f6c201      test b,cl,0x1
67145 0x23fafe70  30 0f8410000000  jz 0x23fafeb9 <+0x70>
67146 0x23fafe75  35 b6d42e020  mov ebx,0x20e0420d      ;; object: 0x20e0420d
67147 0x23fafe7b  3b 205aff      cmp [eax+0x1],ebx
67148 0x23fafe7e  3e 0f85d5000000  jnz 0x23fafe69 <+0x110>
67149 0x23fafe84  44 a001        test al,0x1
67150 0x23fafe86  46 0f841d000000  jz 0x23fafeba <+0x60>
67151 0x23fafe8c  4c b6d42e020  mov ebx,0x20e0420d      ;; object: 0x20e0420d
67152 0x23fafe91  51 205aff      cmp [eax+0x1],ebx
67153 0x23fafe94  54 0f8503010000  jnz 0x23fafe1d <+0x1dd>
67154 0x23fafe9a  5a f20f104003  movsd xmm1,[ecx+0x3]
67155 0x23fafe9f  5f f20f105003  movsd xmm2,[ecx+0x3]
67156 0x23fafea4  64 c956000000  jnp 0x23fafeff <+0xbfb>
67157 0x23fafea9  69 f20f104003  movsd xmm1,[ecx+0x3]
67158 0x23fafeac  6e c1f8        sar eax,1
67159 0x23fafead  70 f20f2a00  cvtsi2sd xmm2,ecx
67160 0x23fafeb4  74 c946000000  jmp 0x23fafeff <+0xbfb>
67161 0x23fafeb9  79 a001        test al,0x1
67162 0x23fafeb6  7b 0f841e000000  jz 0x23fafeff <+0x9fb>
67163 0x23fafeb1  81 b6d42e020  mov ebx,0x20e0420d      ;; object: 0x20e0420d
67164 0x23fafeb6  86 205aff      cmp [eax+0x1],ebx
67165 0x23fafeb9  89 0f8559010000  jnz 0x23fafeff <+0x1ef>
67166 0x23fafebf  8f c1fa        sar edx,1
67167 0x23fafebf  91 f20f2a00  cvtsi2sd xmm1,edx
67168 0x23fafece  95 f20f105003  movsd xmm2,[ecx+0x3]
67169 0x23fafed0  9a c020000000  jmp 0x23fafeff <+0xbfb>
67170 0x23fafedf  9f 00c3        mov ebx,ecx
67171 0x23fafee1  a1 03d0        add ebx,ecx
67172 0x23fafee3  a3 0f8000000000  jo 0x23fafeff3 <+0xb3>
67173 0x23fafee9  ad b002000000  mov eax,0x2
67174 0x23fafee0  ac c03c000000  jnp 0x23fafe31 <+0xf1>
67175 0x23fafe13  b3 c1fa        sar edx,1
67176 0x23fafe15  b5 f20f2a00  cvtsi2sd xmm1,edx
67177 0x23fafe19  b9 c1f8        sar eax,1
67178 0x23fafe1b  ba f20f2a00  cvtsi2sd xmm2,ecx
67179 0x23fafe1f  bf c5f358ca  vaddsd xmm1,xmm1,xmm2
67180 0x23fafe23  c3 b8084ef357  mov eax,0x57f34e08      ;; external reference
67181 0x23fafe28  c8 8b10        mov edx,[eax]
67182 0x23fafe2a  ca 8cf508c     lea ebx,[edx+0xc]
67183 0x23fafe2d  cd 205aff      cmp [eax+0x1],ebx
67184 0x23fafe30  d0 0f8699010000  jna 0x23fafeff <+0x26fb>
67185 0x23fafe36  d6 8018        mov [eax],ebx
67186 0x23fafe38  d8 8018        lea eax,[edx+0x1]
67187 0x23fafe3b  db b6d42e020  mov ebx,0x20e0420d      ;; object: 0x20e0420d
67188 0x23fafe38  e0 205aff      mov [eax+0x1],edx
67189 0x23fafe33  e3 f20f114003  movsd [eax+0x3],xmm1
67190 0x23fafe38  e8 00c3        mov ebx,ecx
67191 0x23fafe3a  ea b006000000  mov ecx,0x6
67192 0x23fafe3f  ef 00c2        mov edx,ecx
67193 0x23fafe41  f1 0b44b907  or eax,[ecx+edi+4+0x7]
67194 0x23fafe45  f5 0b44b907  mov [ecx+edi+4+0x7],eax
67195 0x23fafe49  f9 8b45f0      mov eax,[ebp+0x10]
67196 0x23fafe4c  fc 804805      lea ecx,[ecx+0x5]
67197 0x23fafe4f  ff 8b45f4      mov eax,[ebp+0xc]
67198 0x23fafe52  102 8075f8      mov edi,[ecx+0x10]
67199 0x23fafe55  105 0fbf60439  movsx b,ecx,[ecx+edi*1]
67200 0x23fafe59  109 8075f8      mov esi,[ebp+0x8]
67201 0x23fafe5c  10c 801486      mov edx,[esi+eax*4]
67202 0x23fafe5f  10f 8b6c00      mov ebp,[ebp+0x0]
67203 0x23fafe62  112 89d8        mov eax,ebx
67204 0x23fafe64  114 83c430      add esp,0x40
67205 0x23fafe67  117 ffe2        jmp edx
67206 0x23fafe69  119 804dec      mov [ebp+0x14],ecx
67207 0x23fafe6c  11c 8b4aff      mov ecx,[edx+0x1]
67208 0x23fafe6f  11f 0fbf6097  movsx b,ecx,[ecx+0x7]
67209 0x23fafe73  123 007d00      mov [ebp+0x10],edi
67210 0x23fafe76  126 01f002000000  cmp ecx,0x02
67211 0x23fafe7c  12c 0f8405000000  jz 0x23fafeff7 <+0x1b7>
67212 0x23fafe7e  132 01f000000000  cmp ecx,0x00
67213 0x23fafe80  138 0f85b0000000  jnc 0x23fafeff3b <+0x1fb>
67214 0x23fafe8c  13c a001        test al,0x1

```

```
cmpq [rax-0x1],rbx  
jnz bailout  
movl rbx,[rax+0x1b]  
addl rbx,0x1
```

Baseline x86 assembly

Optimized x86 assembly,
only valid for parameters like
`{x: int}`

TRY IT

- `-trace-opt` and `-trace-deopt`: which functions are (de)optimized
- `-print-opt-code`: code generated by optimizing compiler
- `-trace-ic`: different object types in the caches

Baseline x86 assembly

```
67126 name = Add
67127 compiler = turbofan
67128 Instructions (size = 822)
67129 0x23fafe40 0 55 push ebp
67130 0x23fafe41 1 80e5 mov ebp,esp
67131 0x23fafe43 3 5a15 push 0x15
67132 0x23fafe45 5 83ec20 sub esp,0x20
67133 0x23fafe48 8 8fbf540f01 movzx_w ecx,[edi+ecx*1+0x1]
67134 0x23fafe4d d 8b5d80 mov ebx,[ebp+0x8]
67135 0x23fafe50 10 8b1403 mov ebx,[ebx+0x3]
67136 0x23fafe53 13 8975f8 mov [ebp+0x8],esi
67137 0x23fafe56 16 8b73fc mov esi,[ebx+0x4]
67138 0x23fafe59 19 8fbf7c0f03 movzx_w edi,[edi+ecx*1+0x3]
67139 0x23fafe5e 1e 894d78 mov [ebp+0x18],ecx
67140 0x23fafe61 21 8b4b78 mov ebx,[ebx+0x8]
67141 0x23fafe64 24 8b4b17 mov ebx,[ecx+0x17]
67142 0x23fafe67 27 8b4b08 mov ebx,[ecx+0x8]
67143 0x23fafe6a 2a 895d74 mov [ebp+0xc],ebx
67144 0x23fafe6d 2d 86c201 test_b al,0x1
67145 0x23fafe70 30 8fbf41000000 jz 0x23fafe69 <=0x70>
67146 0x23fafe75 35 8b5d72000000 mov ebx,0x20e0428d ;; object: 0x20e0428d
67147 0x23fafe7b 3b 305aff cmp [edx+0x1],ebx
67148 0x23fafe7e 3e 8fbf5d000000 jnz 0x23fafe69 <=0x110>
67149 0x23fafe84 44 a081 test al,0x1
67150 0x23fafe86 46 8fbf41000000 jz 0x23fafe69 <=0x60>
67151 0x23fafe8c 4c 8b5d42e030 mov ebx,0x20e0428d ;; object: 0x20e0428d
67152 0x23fafe91 51 305aff cmp [eax+0x1],ebx
67153 0x23fafe94 54 8fbf5d000000 jnz 0x23fafe69 <=0x1dd>
67154 0x23fafe9a 5a f20f104e03 movsd xmm1,[ecx+0x3]
67155 0x23fafe9f 5f f20f105003 movsd xmm2,[ecx+0x3]
67156 0x23fafea4 64 c050000000 jnp 0x23fafeff <=0xbdf>
67157 0x23fafea9 69 f20f104e03 movsd xmm1,[ecx+0x3]
67158 0x23fafeae 6e c1f8 sar ebx,1
67159 0x23fafeb0 70 f20f2ad0 cvtsi2sd xmm2,ebx
67160 0x23fafeb4 74 e946000000 jmp 0x23fafeff <=0xbdf>
67161 0x23fafeb9 79 a081 test al,0x1
67162 0x23fafebb 7b 8fbf41000000 jz 0x23fafe69 <=0x6f>
67163 0x23fafebf 81 8b5d42e030 mov ebx,0x20e0428d ;; object: 0x20e0428d
67164 0x23fafebf 86 305aff cmp [eax+0x1],ebx
67165 0x23fafebf 89 8fbf5d000000 jnz 0x23fafe69 <=0x1e0>
67166 0x23fafebf 8f c1fa sar ebx,1
67167 0x23fafebf 91 f20f2ad0 cvtsi2sd xmm1,ebx
67168 0x23fafebf 95 f20f105003 movsd xmm2,[eax+0x3]
67169 0x23fafebf 9a c020000000 jnp 0x23fafeff <=0xbdf>
67170 0x23fafebf 9f 80d3 mov ebx,edx
67171 0x23fafebf a1 83d0 add ebx,ecx
67172 0x23fafebf a3 8fbf5d000000 jo 0x23fafe69 <=0xb3>
67173 0x23fafebf a9 b002000000 mov ebx,0x2
67174 0x23fafebf ac c03c000000 jmp 0x23fafe31 <=0xf1>
67175 0x23fafebf b3 c1fa sar ebx,1
67176 0x23fafebf b5 f20f2ad0 cvtsi2sd xmm1,ebx
67177 0x23fafebf b9 c1f8 sar ebx,1
67178 0x23fafebf bb f20f2ad0 cvtsi2sd xmm2,ebx
67179 0x23fafebf bf c5f358ca vaddsd xmm1,xmm1,xmm2
67180 0x23fafebf c3 b80e4ef357 mov ebx,0x57f34e08 ;; external reference
67181 0x23fafebf c8 8b10 mov ebx,[eax]
67182 0x23fafebf ca 8b5d8c lea ebx,[ecx+0xc]
67183 0x23fafebf cd 305aff cmp [eax+0x4],ebx
67184 0x23fafebf d0 8fbf5d000000 jna 0x23fafe69 <=0x26f>
67185 0x23fafebf d6 8b18 mov [eax],ebx
67186 0x23fafebf d8 8b4201 lea ebx,[ecx+0x1]
67187 0x23fafebf db 8b5d42e030 mov ebx,0x20e0428d ;; object: 0x20e0428d
67188 0x23fafebf e0 305aff mov [eax+0x1],ebx
67189 0x23fafebf e3 f20f114003 movsd [eax+0x3],xmm1
67190 0x23fafebf e8 80c3 mov ebx,ecx
67191 0x23fafebf ea b006000000 mov ebx,0x6
67192 0x23fafebf ef 80c2 mov ebx,ecx
67193 0x23fafebf f1 8b44b007 or ebx,[ecx+edi+4+0x7]
67194 0x23fafebf f3 8b44b007 mov [ecx+edi+4+0x7],ecx
67195 0x23fafebf f9 8b45f0 mov ebx,[ebp+0x10]
67196 0x23fafebf fc 8b4b03 lea ebx,[ecx+0x3]
67197 0x23fafebf ff 8b45f4 mov ebx,[ebp+0xc]
67198 0x23fafebf 102 8b7b78 mov edi,[ecx+0x10]
67199 0x23fafebf 105 8fbf60439 movzx_b ecx,[ecx+edi+1]
67200 0x23fafebf 109 8b75f8 mov esi,[ebp+0x8]
67201 0x23fafebf 10c 8b1486 mov ebx,[esi+ecx+4]
67202 0x23fafebf 10f 8b6d08 mov ebp,[ebp+0x8]
67203 0x23fafebf 112 8b6d08 mov ebx,ebx
67204 0x23fafebf 114 8b4b10 add esp,0x10
67205 0x23fafebf 117 ffe2 jmp ebx
67206 0x23fafebf 119 8b4d0c mov [ebp+0x14],ecx
67207 0x23fafebf 11c 8b4aff mov ebx,[edx+0x1]
67208 0x23fafebf 11f 8fbf6f907 movzx_b ecx,[ecx+0x7]
67209 0x23fafebf 123 8b7d08 mov [ebp+0x18],edi
67210 0x23fafebf 126 8fbf5d000000 cmp ecx,0x02
67211 0x23fafebf 12c 8fbf5d000000 jz 0x23fafe69 <=0x1b7>
67212 0x23fafebf 132 8fbf5d000000 cmp ecx,0x08
```

Optimized x86 assembly,
only valid for parameters like
{x: int}

```
cmpq [rax-0x1],rbx
jnz bailout
movl rbx,[rax+0x1b]
addl rbx,0x1
```