Intel® Core™ i5-7360U CPU @ 2.30GHz (Kabylake) L1: 32KB, L2: 256KB, L3: 4MB Compiler: clang 12.0.0 Flag:-march=native -O3 13.5 L1 Cache L2 Cache 13.0 mul fix naive 12.5 mul\_fix\_precision Theoretical Maximum Performance 12.0 mul\_fix\_precision\_unfold 11.5 mul\_fix\_precision\_1x\_unfold 11.0 mul\_fix\_precision\_2x\_unfold 10.5 10.0 mul fix precision 4x unfold 9.5 mul\_fix\_precision\_8x\_unfold 9.0 mul\_fix\_precision\_12x\_unfold 8.5 mul\_fix\_precision\_16x\_unfold 8.0 7.5 7.0 6.5 16x Speedup 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0

2<sup>6</sup>

2<sup>5</sup>

24

2<sup>3</sup>

2<sup>7</sup>

28

29

Input Size

 $2^{11}$ 

 $2^{12}$ 

 $2^{13}$ 

 $2^{14}$ 

 $2^{10}$ 

 $2^{16}$ 

 $2^{15}$ 

Performance [Intops/Cycle]