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s1017105ca:atomic vlkale$ export KOKKOS_T00LS_LIBS="/Users/vlkale/
Desktop/vlap/wk/code/softwareTech/kto-vk1/common/kokkos-sampler/
kp_sampler.so;/Users/vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/
debugging/kernel-logger/kp_kernel_logger.so"; ./
atomic_perf.exe desul/
s1017105ca:atomic vlkale$ export KOKKOS_T00LS_LIBS="/Users/vlkale/
Desktop/vlap/wk/code/softwareTech/kto-vk1/common/kokkos-sampler/
kp_sampler.so;/Users/vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/
debugging/kernel-logger/kp_kernel_logger.so"; ./atomic_perf.exe 1000
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:
20211015)
KokkosP: Function Status:
KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:    yes
KokkosP: begin-parallel-reduce:  yes
KokkosP: end-parallel-for:       yes
KokkosP: end-parallel-scan:      no
KokkosP: end-parallel-reduce:    yes
KokkosP: Sampling rate set to: (null)
Arguments: L N M D K R T
  L:  Number of iterations to run
  N:  Length of array to do atomics into
  M:  Number of atomics per iteration to do
  D:  Distance from index i to do atomics into (randomly)
  K:  Number of FMAD per atomic
  R:  Number of repeats of the experiments
  T:  Type of atomic
      1 - int
      2 - long
      3 - float
      4 - double
      5 - complex<double>
Example Input GPU:
  Histogram : 1000000 1000 1 1000 1 10 1
  MD Force  : 100000 100000 100 1000 20 10 4
  Matrix Assembly : 100000 1000000 50 1000 20 10 4
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export KOKKOS_T00LS_LIBS="/Users/vlkale/
Desktop/vlap/wk/code/softwareTech/kto-vk1/common/kokkos-sampler/
kp_sampler.so;/Users/vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/
debugging/kernel-logger/kp_kernel_logger.so"; ./atomic_perf.exe 100000
1000000 50 1000 20 10 4
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:

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20211015)
KokkosP: Function Status:
KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:     yes
KokkosP: begin-parallel-reduce:   yes
KokkosP: end-parallel-for:        yes
KokkosP: end-parallel-scan:       no
KokkosP: end-parallel-reduce:     yes
KokkosP: Sampling rate set to: (null)
8
Time: double 100000 1000000 50 1000 20 10 (t_atomic: 2.402024e+00
t_nonatomic: 2.369094e+00 ratio: 1.013900 )( GUpdates/s: 0.020816 GB/
s: 0.310179 )
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export
KOKKOS_TOOLS_SAMPLER_SKIP="102";export KOKKOS_TOOLS_LIBS="/Users/
vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/common/kokkos-
sampler/kp_sampler.so;/Users/vlkale/Desktop/vlap/wk/code/softwareTech/
kto-vk1/debugging/kernel-logger/kp_kernel_logger.so"; ./
atomic_perf.exe 100000 1000000 50 1000 20 10 4
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:
20211015)
KokkosP: Function Status:
KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:     yes
KokkosP: begin-parallel-reduce:   yes
KokkosP: end-parallel-for:        yes
KokkosP: end-parallel-scan:       no
KokkosP: end-parallel-reduce:     yes
KokkosP: Sampling rate set to: 102
8
Time: double 100000 1000000 50 1000 20 10 (t_atomic: 2.391020e+00
t_nonatomic: 2.351103e+00 ratio: 1.016978 )( GUpdates/s: 0.020912 GB/
s: 0.311607 )
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export
KOKKOS_TOOLS_SAMPLER_SKIP="120";export KOKKOS_TOOLS_LIBS="/Users/
vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/common/kokkos-
sampler/kp_sampler.so;/Users/vlkale/Desktop/vlap/wk/code/softwareTech/
kto-vk1/debugging/kernel-logger/kp_kernel_logger.so"; ./
atomic_perf.exe 100000 1000000 50 1000 20 10 4
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:
20211015)
KokkosP: Function Status:
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KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:     yes
KokkosP: begin-parallel-reduce:   yes
KokkosP: end-parallel-for:        yes
KokkosP: end-parallel-scan:       no
KokkosP: end-parallel-reduce:     yes
KokkosP: Sampling rate set to: 120
8
Time: double 100000 1000000 50 1000 20 10 (t_atomic: 2.346018e+00
t_nonatomic: 2.331788e+00 ratio: 1.006103 )( GUpdates/s: 0.021313 GB/
s: 0.317584 )
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export KOKKOS_TOOLS_SAMPLER_SKIP="84";export
KOKKOS_TOOLS_LIBS="/Users/vlkale/Desktop/vlap/wk/code/softwareTech/
kto-vk1/common/kokkos-sampler/kp_sampler.so;/Users/vlkale/Desktop/
vlap/wk/code/softwareTech/kto-vk1/debugging/kernel-logger/
kp_kernel_logger.so"; ./atomic_perf.exe 100000 1000000 50 1000 20 10 4
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:
20211015)
KokkosP: Function Status:
KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:     yes
KokkosP: begin-parallel-reduce:   yes
KokkosP: end-parallel-for:        yes
KokkosP: end-parallel-scan:       no
KokkosP: end-parallel-reduce:     yes
KokkosP: Sampling rate set to: 84
8
Time: double 100000 1000000 50 1000 20 10 (t_atomic: 2.492035e+00
t_nonatomic: 2.346533e+00 ratio: 1.062007 )( GUpdates/s: 0.020064 GB/
s: 0.298976 )
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export KOKKOS_TOOLS_SAMPLER_SKIP="20";export
KOKKOS_TOOLS_LIBS="/Users/vlkale/Desktop/vlap/wk/code/softwareTech/
kto-vk1/common/kokkos-sampler/kp_sampler.so;/Users/vlkale/Desktop/
vlap/wk/code/softwareTech/kto-vk1/debugging/kernel-logger/
kp_kernel_logger.so"; ./atomic_perf.exe 100000 1000000 50 1000 20 10 4
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:
20211015)
KokkosP: Function Status:
KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:     yes
KokkosP: begin-parallel-reduce:   yes
KokkosP: end-parallel-for:        yes
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KokkosP: end-parallel-scan:      no
KokkosP: end-parallel-reduce:    yes
KokkosP: Sampling rate set to: 20
KokkosP: sample 21 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 0
KokkosP:      Z14test_no_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2_E_
KokkosP: sample 0 calling child-end function...
KokkosP: Execution of kernel 0 is completed.
8
Time: double 100000 1000000 50 1000 20 10 (t_atomic: 2.358008e+00
t_nonatomic: 2.477051e+00 ratio: 0.951942 )( GUpdates/s: 0.021204 GB/
s: 0.315969 )
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export KOKKOS_TOOLS_SAMPLER_SKIP="4";export
KOKKOS_TOOLS_LIBS="/Users/vlkale/Desktop/vlap/wk/code/softwareTech/
kto-vk1/common/kokkos-sampler/kp_sampler.so;/Users/vlkale/Desktop/
vlap/wk/code/softwareTech/kto-vk1/debugging/kernel-logger/
kp_kernel_logger.so"; ./atomic_perf.exe 100000 1000000 50 1000 20 10 4
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:
20211015)
KokkosP: Function Status:
KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:     yes
KokkosP: begin-parallel-reduce:   yes
KokkosP: end-parallel-for:        yes
KokkosP: end-parallel-scan:       no
KokkosP: end-parallel-reduce:     yes
KokkosP: Sampling rate set to: 4
KokkosP: sample 5 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 0
KokkosP:      Kokkos::View::initialization [Output] via memset
KokkosP: sample 0 calling child-end function...
KokkosP: Execution of kernel 0 is completed.
KokkosP: sample 10 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 1
KokkosP:      Z11test_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2_E_
KokkosP: sample 15 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 2
KokkosP:      Z11test_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2_E_
KokkosP: sample 20 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 3
KokkosP:      Z14test_no_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2_E_
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KokkosP: sample 25 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 4  
KokkosP: Z14test\_no\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2\_E\_8  
Time: double 100000 1000000 50 1000 20 10 (t\_atomic: 2.517985e+00 t\_nonatomic: 2.497980e+00 ratio: 1.008009 )( GUpdates/s: 0.019857 GB/s: 0.295895 )  
KokkosP: Kokkos library finalization called.  
s1017105ca:atomic vlkale\$ export KOKKOS\_TOOLS\_SAMPLER\_SKIP="2";export KOKKOS\_TOOLS\_LIBS="/Users/vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/common/kokkos-sampler/kp\_sampler.so;/Users/vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/debugging/kernel-logger/kp\_kernel\_logger.so"; ./atomic\_perf.exe 100000 1000000 50 1000 20 10 4  
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/softwareTech/kto-vk1/debugging/kernel-logger/kp\_kernel\_logger.so  
KokkosP: Loading child library ..  
KokkosP: Kernel Logger Library Initialized (sequence is 1, version: 20211015)  
KokkosP: Function Status:  
KokkosP: begin-parallel-for: yes  
KokkosP: begin-parallel-scan: yes  
KokkosP: begin-parallel-reduce: yes  
KokkosP: end-parallel-for: yes  
KokkosP: end-parallel-scan: no  
KokkosP: end-parallel-reduce: yes  
KokkosP: Sampling rate set to: 2  
KokkosP: sample 3 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 0  
KokkosP: Kokkos::View::initialization [Kokkos::Random\_XorShift64::state] via memset  
KokkosP: sample 0 calling child-end function...  
KokkosP: Execution of kernel 0 is completed.  
KokkosP: sample 6 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 1  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2\_E\_8  
KokkosP: sample 9 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 2  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2\_E\_8  
KokkosP: sample 12 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 3  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2\_E\_8  
KokkosP: sample 3 calling child-end function...  
KokkosP: Execution of kernel 3 is completed.  
KokkosP: sample 15 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique

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execution identifier 4
KokkosP:      Z11test_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2_E_
KokkosP: sample 18 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 5
KokkosP:      Z14test_no_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2_E_
KokkosP: sample 21 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 6
KokkosP:      Z14test_no_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2_E_
KokkosP: sample 6 calling child-end function...
KokkosP: Execution of kernel 6 is completed.
KokkosP: sample 24 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 7
KokkosP:      Z14test_no_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2_E_
8
Time: double 100000 1000000 50 1000 20 10 (t_atomic: 2.758183e+00
t_nonatomic: 2.684444e+00 ratio: 1.027469 )( GUpdates/s: 0.018128 GB/
s: 0.270126 )
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export KOKKOS_TOOLS_SAMPLER_SKIP="1";export
KOKKOS_TOOLS_LIBS="/Users/vlkale/Desktop/vlap/wk/code/softwareTech/
kto-vk1/common/kokkos-sampler/kp_sampler.so;/Users/vlkale/Desktop/
vlap/wk/code/softwareTech/kto-vk1/debugging/kernel-logger/
kp_kernel_logger.so"; ./atomic_perf.exe 100000 1000000 50 1000 20 10 4
KokkosP: Next library to call: /Users/vlkale/Desktop/vlap/wk/code/
softwareTech/kto-vk1/debugging/kernel-logger/kp_kernel_logger.so
KokkosP: Loading child library ..
KokkosP: Kernel Logger Library Initialized (sequence is 1, version:
20211015)
KokkosP: Function Status:
KokkosP: begin-parallel-for:      yes
KokkosP: begin-parallel-scan:     yes
KokkosP: begin-parallel-reduce:   yes
KokkosP: end-parallel-for:        yes
KokkosP: end-parallel-scan:       no
KokkosP: end-parallel-reduce:     yes
KokkosP: Sampling rate set to: 1
KokkosP: sample 2 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 0
KokkosP:      Kokkos::View::initialization
[Kokkos::Random_XorShift64::locks] via memset
KokkosP: sample 0 calling child-end function...
KokkosP: Execution of kernel 0 is completed.
KokkosP: sample 4 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 1
KokkosP:      Kokkos::fill_random
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KokkosP: sample 6 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 2  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 2 calling child-end function...  
KokkosP: Execution of kernel 2 is completed.  
KokkosP: sample 8 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 3  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 10 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 4  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 4 calling child-end function...  
KokkosP: Execution of kernel 4 is completed.  
KokkosP: sample 12 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 5  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 14 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 6  
KokkosP: Z11test\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 6 calling child-end function...  
KokkosP: Execution of kernel 6 is completed.  
KokkosP: sample 16 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 7  
KokkosP: Kokkos::View::initialization [Output] via memset  
KokkosP: sample 18 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 8  
KokkosP: Z14test\_no\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 8 calling child-end function...  
KokkosP: Execution of kernel 8 is completed.  
KokkosP: sample 20 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 9  
KokkosP: Z14test\_no\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 22 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 10  
KokkosP: Z14test\_no\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_  
KokkosP: sample 10 calling child-end function...  
KokkosP: Execution of kernel 10 is completed.  
KokkosP: sample 24 calling child-begin function...  
KokkosP: Executing parallel-for kernel on device 100663297 with unique execution identifier 11  
KokkosP: Z14test\_no\_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEULRS2\_E\_

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KokkosP: sample 26 calling child-begin function...
KokkosP: Executing parallel-for kernel on device 100663297 with unique
execution identifier 12
KokkosP:      Z14test_no_atomicIdEdiiiiN6Kokkos4ViewIPPKiJEEEEU\RS2_E_
KokkosP: sample 12 calling child-end function...
KokkosP: Execution of kernel 12 is completed.
8
Time: double 100000 1000000 50 1000 20 10 (t_atomic: 3.025250e+00
t_nonatomic: 2.892772e+00 ratio: 1.045796 )( GUpdates/s: 0.016528 GB/
s: 0.246280 )
KokkosP: Kokkos library finalization called.
s1017105ca:atomic vlkale$ export KOKKOS_TOOLS_SAMPLER_SKIP="1";export
KOKKOS_TOOLS_LIBS="/Users/vlkale/Desktop/vlap/wk/code/softwareTech/
kto-vk1/common/kokkos-sampler/kp_sampler.so;/Users/vlkale/Desktop/
vlap/wk/code/softwareTech/kto-vk1/debugging/kernel-logger/
kp_kernel_logger.so"; ./atomic_perf.exe 100000 1000000 50 1000 20 10 4
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