Mode: All

Left file: D:\workspace\study\Code-Optimization\MIT-6.172\Lectures\Week3\MIT6_172F18_hw3\homework3\loop-v-nu.s Right file: D:\workspace\study\Code-Optimization\MIT-6.172\Lectures\Week3\MIT6_172F18_hw3\homework3\loop-v-nu-avx2.s

Right file: D:\workspace\study\Code-Optimization\MIT-6.172	2\Lectur	res\Week3\MIT6_172F18_hw3\homework3\loop-v-nu-avx2.s
.text	=	.text
.file "loop.c"		.file "loop.c"
.section .rodata.cst8,"aM",@	р	.section .rodata.cst8,"aM",@p
» rogbits,8		» rogbits,8
.p2align 3 # -	-	.p2align 3 #
» Begin function main		» Begin function main
.LCPI0_0:		.LCPI0_0:
quad 4472406533629990549 # d	0	
» uble 1.00000000000001E-9		» uble 1.00000000000001E-9
.text		.text
.globl main		.globl main
.p2align 4, 0x90		.p2align 4, 0x90
.type main,@function		.type main,@function
main: # @	m	
	""	
» ain		» ain
.cfi_startproc		.cfi_startproc
# %bb.0:		# %bb.0:
pushq %r15		pushq %r15
.cfi_def_cfa_offset 16		.cfi_def_cfa_offset 16
pushq %r14		pushq %r14
.cfi_def_cfa_offset 24		.cfi_def_cfa_offset 24
pushq %r12		pushq %r12
.cfi_def_cfa_offset 32		.cfi_def_cfa_offset 32
pushq %rbx		pushq %rbx
.cfi_def_cfa_offset 40		.cfi_def_cfa_offset 40
subq \$12328, %rsp # i	m	subq \$12328, %rsp # im
		m = 0x3028
.cfi_def_cfa_offset 12368		.cfi_def_cfa_offset 12368
.cfi_offset %rbx, -40		.cfi_offset %rbx, -40
.cfi_offset %r12, -32		.cfi_offset %r12, -32
.cfi_offset %r14, -24		.cfi_offset %r14, -24
.cfi_offset %r15, -16		.cfi_offset %r15, -16
movl \$0, 12(%rsp)		movl \$0, 12(%rsp)
leaq 8224(%rsp), %rdi		leaq 8224(%rsp), %rdi
xorl %ebx, %ebx		xorl %ebx, %ebx
xorl %esi, %esi		xorl %esi, %esi
movl \$4096, %edx # i	m	movl \$4096, %edx # im
		» m = 0x1000
callq memset		callq memset
leaq 4128(%rsp), %rdi		leaq 4128(%rsp), %rdi
xorl %esi, %esi		xorl %esi, %esi
movl \$4096, %edx # i	m	movl \$4096, %edx # im
» m = 0x1000		$m = 0 \times 1000$
callq memset		callq memset
leaq 32(%rsp), %rdi		leaq 32(%rsp), %rdi
xorl %esi, %esi		xorl %esi, %esi
movl \$4096, %edx # i	m	movl \$4096, %edx # im
		» m = 0x1000
callq memset		callq memset
leaq 16(%rsp), %rsi		leaq 16(%rsp), %rsi
movl \$1, %edi		movl \$1, %edi
callq clock_gettime		callq clock_gettime
movq 16(%rsp), %r15		movq 16(%rsp), %r15
movq 24(%rsp), %r14		movq 24(%rsp), %r14
.p2align 4, 0x90		.p2align 4, 0x90
LBB0_1: # =	,	.LBBO_1: # =>
1,21,	,	Beyond Compare v3.3.13

Left file: D:\workspace\study\Code-Optimization\MIT-6.172\Lectures\Week3\MIT6_172F18_hw3\homework3\loop-v-nu.s Right file: D:\workspace\study\Code-Optimization\MIT-6.172\Lectures\Week3\MIT6_172F18_hw3\homework3\loop-v-nu-avx2.s (continued)

(continued	d)									
» This	Loop Hea	der: Depth=1				»	This Loop Hea	der: Depth=1		
Ch		DD0 2 D	#				Child Land	DDO 2 December 2	#	
» Child Loop BBO_2 Depth 2					>>	•	BB0_2 Depth 2			
movq \$-4096, %rax		#	im			movq	\$-4096, %rax	#	im	
» m = 0						>>	$m = 0 \times F000$			
	.p2alig	n 4,0x90					.p2alig	n 4, 0x90		
.LBB0_2:		#			1	BB0_2:		#		
» Paren	<pre>» Parent Loop BB0_1 Depth=1</pre>					>>	Parent Loop B	B0_1 Depth=1		
			#	=>					#	=>
» Thi		Loop Header: Depth=2				»		Loop Header: Depth=2		
	movdq <mark>a</mark>	8224(%rsp,%rax), %xmm0			<>		<mark>v</mark> movdq <mark>u</mark>	8224(%rsp,%rax), %ymm0		
	paddd	12320(%rsp,%rax), %xmm0)				v paddd	12320(%rsp,%rax), %ymm	0, %	6 <mark>y</mark> m
						>>	m0			
	movdqa	%xmm0, 4128(%rsp,%rax)					<mark>v</mark> movdq <mark>u</mark>	%ymm0, 4128(%rsp,%rax)		
	addq	\$ <mark>16</mark> , %rax					addq	\$32, %rax		
	jne	.LBB0_2			=		jne	.LBB0_2		
# %bb.3	-	_	#			#	%bb.3:	_	#	
» in Lo	op: Head	er=BB0_1 Depth=1				»	<pre>» in Loop: Header=BB0_1 Depth=1</pre>			
	addl	\$1, %ebx					addl	 \$1, %ebx		
	cmpl	\$100000, %ebx	#	im			cmpl	\$100000, %ebx	#	im
» m = 0:	•	+=cccc, week)»	$m = 0 \times 186A0$	4 200000, 20002	••	
" - 02	jne	.LBB0_1				"	jne	.LBB0_1		
# %bb.4	•	. 2000_1				#	%bb.4:	. 2000_1		
π //000.4	leaq	16(%rsp), %rsi				π	leaq	16(%rsp), %rsi		
	-						•			
	movl	\$1, %edi					movl	\$1, %edi		
	11 .	-1111			-+		vzeroup			
	callq	clock_gettime			=		callq	clock_gettime		
	movq	16(%rsp), %r12					movq	16(%rsp), %r12		
	subq	%r15, %r12					subq	%r15, %r12		
	movq	24(%rsp), %rbx					movq	24(%rsp), %rbx		
	subq	%r14, %rbx					subq	%r14, %rbx		
	leaq	12(%rsp), %rdi					leaq	12(%rsp), %rdi		
	callq	rand_r					callq	rand_r		
	movl	%eax, %ecx					movl	%eax, %ecx		
	sarl	\$31, %ecx					sarl	\$31, %ecx		
	shrl	\$22, %ecx					shrl	\$22, %ecx		
	addl	%eax, %ecx					addl	%eax, %ecx		
	andl	\$-1024, %ecx	#	im			andl	\$-1024, %ecx	#	im
» m = 0	xFC00	•				»	$m = 0 \times FC00$	•		
	subl	%ecx, %eax					subl	%ecx, %eax		
	cltq	,					cltq	,		
	cvtsi2s	dq %r12, %xmm1			<>		vcvtsi2	sdq %r12, %xmm1, %	xmm6	7
	xorps	%xmm0, %xmm0			`´		V C V C J 1 Z		- Ciniii C	
	cvtsi2s						vcvtsi2	sdq %rbx, %xmm1, %	xmm1	
	movl	32(%rsp,%rax,4), %ebx			=		movl	32(%rsp,%rax,4), %ebx	ZIIIII	
	mulsd	.LCPI0_0(%rip), %xmm0					vmulsd	.LCPI0_0(%rip), %xmm1,	%v"	nm1
					<>				/0XII	IIIII <u>T</u>
	addsd	%xmm1, %xmm0			_		vaddsd	%xmm0, %xmm1, %xmm0		
	movl	\$.L.str, %edi	,,	.	=		movl	\$.L.str, %edi	.11	<u>.</u>
_	mov1	\$1024, %esi	#	im			movl	\$1024, %esi	#	im
» m = 0		******				>>	$m = 0 \times 400$			
	movl	\$100000, %edx	#	im			mov1	\$100000, %edx	#	im
» m = 0						»	m = 0x186A0			
	movl	\$.L.str.1, %ecx					movl	\$.L.str.1, %ecx		
	mov1	\$.L.str.2, %r8d					movl	\$.L.str.2, %r8d		
	movb	\$1, %al					movb	\$1, %al		
	callq	printf					callq	printf		
1	•					1	•	Daviand Ca		

```
movl
                %ebx, %eax
                                                           movl
                                                                   %ebx, %eax
        addq
                $12328, %rsp
                                         # im
                                                           addq
                                                                   $12328, %rsp
                                                                                            # im
m = 0x3028
                                                  m = 0x3028
                %rbx
                                                                   %rbx
        popq
                                                           popq
                %r12
                                                                   %r12
        popq
                                                           popq
                %r14
                                                                   %r14
        popq
                                                           popq
                %r15
                                                                   %r15
        popq
                                                           popq
        retq
                                                          retq
                                                  .Lfunc_end0:
.Lfunc_end0:
                main, .Lfunc_end0-main
                                                                   main, .Lfunc_end0-main
        .size
                                                           .size
                                                           .cfi endproc
        .cfi endproc
                                         # --
                                                                                            # --
   End function
                                                    End function
        .type
              .L.str,@object
                                         # @.
                                                           .type
                                                                 .L.str,@object
                                                                                            # @.
» str
                                                  » str
                        .rodata.str1.1, "aMS"
                                                                           .rodata.str1.1, "aMS"
        .section
                                                           .section
» ,@progbits,1
                                                  » ,@progbits,1
.L.str:
                                                  .L.str:
        .asciz "Elapsed execution time: %f
                                                           .asciz "Elapsed execution time: %f
» sec; N: %d, I: %d, __OP__: %s, __TYPE__: %
                                                  » sec; N: %d, I: %d, __OP__: %s, __TYPE__: %
» s\n"
                                                  » s\n"
                .L.str, 72
                                                                   .L.str, 72
        .size
                                                           .size
                .L.str.1,@object
                                         # @.
                                                                   .L.str.1,@object
                                                                                            # @.
        .type
                                                           .type
» str.1
                                                  » str.1
.L.str.1:
                                                  .L.str.1:
        .asciz "+"
                                                           .asciz "+"
                .L.str.1, 2
        .size
                                                           .size
                                                                   .L.str.1, 2
                .L.str.2,@object
                                                                   .L.str.2,@object
        .type
                                         # @.
                                                           .type
                                                                                            # @.
» str.2
                                                  » str.2
.L.str.2:
                                                  .L.str.2:
        .asciz "uint32 t"
                                                           .asciz "uint32 t"
        .size
                .L.str.2, 9
                                                           .size
                                                                   .L.str.2, 9
        .ident "clang version 6.0.0-1ubuntu
                                                           .ident "clang version 6.0.0-1ubuntu
» 2 (tags/RELEASE 600/final)"
                                                  » 2 (tags/RELEASE_600/final)"
                        ".note.GNU-stack",""
                                                                           ".note.GNU-stack",""
        .section
                                                           .section
» ,@progbits
                                                  » ,@progbits
```