



Not Optimized

Thomas Algorithm	Explicit	Crank Nicolson	ADI
Visual Studio Compiler x86	0.04333	0.04669	0.34690
Visual Studio Compiler x64	0.03285	0.03403	0.26058
Intel Compiler x86	0.04034	0.04387	0.32967
Intel Compiler x64	0.03245	0.03436	0.26679
Intel Solver	Explicit	Crank Nicolson	ADI
Visual Studio Compiler x86	0.04090	0.04252	0.31399
Visual Studio Compiler x64	0.03190	0.03243	0.24595
Intel Compiler x86	0.03669	0.03723	0.29872
Intel Compiler x64	0.03183	0.03265	0.24821
Cyclic Reduction	Explicit	Crank Nicolson	ADI
Intel Compiler x86	0.03872	0.04311	0.31157
Intel Compiler x64	0.03105	0.03315	0.24346



Not Optimized		
Thomas Algorithm	Explicit	Crank Nicolson
Visual Studio Compiler x86	0.04249	0.04442
Visual Studio Compiler x64	0.03646	0.03784
Intel Compiler x86	0.04322	0.04583
Intel Compiler x64	0.03408	0.03631
Intel Solver	Explicit	Crank Nicolson

Visual Studio Compiler x86	0.04161	0.04571
Visual Studio Compiler x64	0.03240	0.03426
Intel Compiler x86	0.04057	0.04432
Intel Compiler x64	0.03276	0.03382
<b>Cyclic Reduction</b>	<b>Explicit</b>	<b>Crank Nicolson</b>
Intel Compiler x86	0.03911	0.04203
Intel Compiler x64	0.03259	0.03519









in seconds

## Heat Equation

/O2 Optimized

Thomas Algorithm	Explicit	Crank Nicolson	ADI
Visual Studio Compiler x86	0.03859	0.04069	0.30110
Visual Studio Compiler x64	0.03080	0.03200	0.24480
Intel Compiler x86	0.03862	0.04079	0.30157
Intel Compiler x64	0.03111	0.03185	0.24491
Intel Solver	Explicit	Crank Nicolson	ADI
Visual Studio Compiler x86	0.03775	0.04002	0.29258
Visual Studio Compiler x64	0.03154	0.03191	0.24274
Intel Compiler x86	0.03667	0.03819	0.28508
Intel Compiler x64	0.03005	0.03084	0.23253
Cyclic Reduction	Explicit	Crank Nicolson	ADI
Intel Compiler x86	0.03457	0.03597	0.27861
Intel Compiler x64	0.02947	0.03069	0.23230

/O2 Optimized

Thomas Algorithm	Explicit	Crank Nicolson	ADI
Visual Studio Compiler x86	10.9%	12.8%	13.2%
Visual Studio Compiler x64	6.3%	6.0%	6.1%
Intel Compiler x86	4.3%	7.0%	8.5%
Intel Compiler x64	4.1%	7.3%	8.2%
Intel Solver	Explicit	Crank Nicolson	ADI
Visual Studio Compiler x86	8.3%	6.2%	7.3%
Visual Studio Compiler x64	1.1%	1.6%	1.3%
Intel Compiler x86	0.1%	-2.5%	4.8%
Intel Compiler x64	5.9%	5.9%	6.7%
Cyclic Reduction	Explicit	Crank Nicolson	ADI
Intel Compiler x86	12.0%	19.8%	11.8%
Intel Compiler x64	5.4%	8.0%	4.8%

/Ox

Thomas Algorithm
Visual Studio Compiler x86
Visual Studio Compiler x64
Intel Compiler x86
Intel Compiler x64

Intel Solver
Visual Studio Compiler x86
Visual Studio Compiler x64
Intel Compiler x86
Intel Compiler x64

Cyclic Reduction
Intel Compiler x86
Intel Compiler x64

/Ox

Thomas Algorithm
Visual Studio Compiler x86
Visual Studio Compiler x64
Intel Compiler x86
Intel Compiler x64

Intel Solver
Visual Studio Compiler x86
Visual Studio Compiler x64
Intel Compiler x86
Intel Compiler x64

Cyclic Reduction
Intel Compiler x86
Intel Compiler x64

## Black - Scholes Equation

/O2 Optimized

Thomas Algorithm	Explicit	Crank Nicolson
Visual Studio Compiler x86	0.03948	0.04078
Visual Studio Compiler x64	0.03142	0.03243
Intel Compiler x86	0.03946	0.04079
Intel Compiler x64	0.03210	0.03323
Intel Solver	Explicit	Crank Nicolson

/Ox Op

Thomas Algorithm
Visual Studio Compiler x86
Visual Studio Compiler x64
Intel Compiler x86
Intel Compiler x64

Intel Solver
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Visual Studio Compiler x86	0.04004	0.04436
Visual Studio Compiler x64	0.03229	0.03405
Intel Compiler x86	0.03832	0.04281
Intel Compiler x64	0.03002	0.03263
<b>Cyclic Reduction</b>	<b>Explicit</b>	<b>Crank Nicolson</b>
Intel Compiler x86	0.03882	0.03925
Intel Compiler x64	0.03050	0.03203

/O2 Optimized		
<b>Thomas Algorithm</b>	<b>Explicit</b>	<b>Crank Nicolson</b>
Visual Studio Compiler x86	7.1%	8.2%
Visual Studio Compiler x64	13.8%	14.3%
Intel Compiler x86	8.7%	11.0%
Intel Compiler x64	5.8%	8.5%
<b>Intel Solver</b>	<b>Explicit</b>	<b>Crank Nicolson</b>
Visual Studio Compiler x86	3.8%	3.0%
Visual Studio Compiler x64	0.3%	0.6%
Intel Compiler x86	5.6%	3.4%
Intel Compiler x64	8.4%	3.5%
<b>Cyclic Reduction</b>	<b>Explicit</b>	<b>Crank Nicolson</b>
Intel Compiler x86	0.7%	7.6%
Intel Compiler x64	6.4%	6.4%

Visual Studio Compiler x86	
Visual Studio Compiler x64	
Intel Compiler x86	
Intel Compiler x64	
<b>Cyclic Reduction</b>	
Intel Compiler x86	
Intel Compiler x64	

/Ox Op	
<b>Thomas Algorithm</b>	
Visual Studio Compiler x86	
Visual Studio Compiler x64	
Intel Compiler x86	
Intel Compiler x64	
<b>Intel Solver</b>	
Visual Studio Compiler x86	
Visual Studio Compiler x64	
Intel Compiler x86	
Intel Compiler x64	
<b>Cyclic Reduction</b>	
Intel Compiler x86	
Intel Compiler x64	











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Optimized
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Explicit	Crank Nicolson	ADI
0.03739	0.03947	0.29261
0.02852	0.02912	0.22494
0.03869	0.04064	0.30079
0.03105	0.03183	0.24639

Explicit	Crank Nicolson	ADI
0.03519	0.03650	0.28663
0.03135	0.03118	0.24304
0.03886	0.03921	0.31398
0.03156	0.03234	0.25438

Explicit	Crank Nicolson	ADI
0.03590	0.03797	0.28670
0.02937	0.03012	0.23647

Optimized
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Explicit	Crank Nicolson	ADI
13.7%	15.5%	15.6%
13.2%	14.4%	13.7%
4.1%	7.4%	8.8%
4.3%	7.4%	7.6%

Explicit	Crank Nicolson	ADI
14.0%	14.1%	8.7%
1.7%	3.8%	1.2%
5.9%	5.3%	5.1%
0.9%	1.0%	2.5%

Explicit	Crank Nicolson	ADI
7.3%	11.9%	8.0%
5.4%	9.2%	2.9%

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Optimized	
Explicit	Crank Nicolson
0.04101	0.04240
0.03273	0.03401
0.03800	0.03878
0.03103	0.03196
Explicit	Crank Nicolson

0.03978	0.04403
0.03531	0.03748
0.04031	0.04410
0.03675	0.03897
Explicit	Crank Nicolson
0.03838	0.03903
0.02972	0.03087

Optimized	
Explicit	Crank Nicolson
3.5%	4.5%
10.2%	10.1%
12.1%	15.4%
9.0%	12.0%
Explicit	Crank Nicolson
4.4%	3.7%
9.0%	9.4%
0.6%	0.5%
12.2%	15.2%
Explicit	Crank Nicolson
1.9%	7.1%
8.8%	12.3%



























