# SPEC® CINT2006 Result



## Unisys Corporation

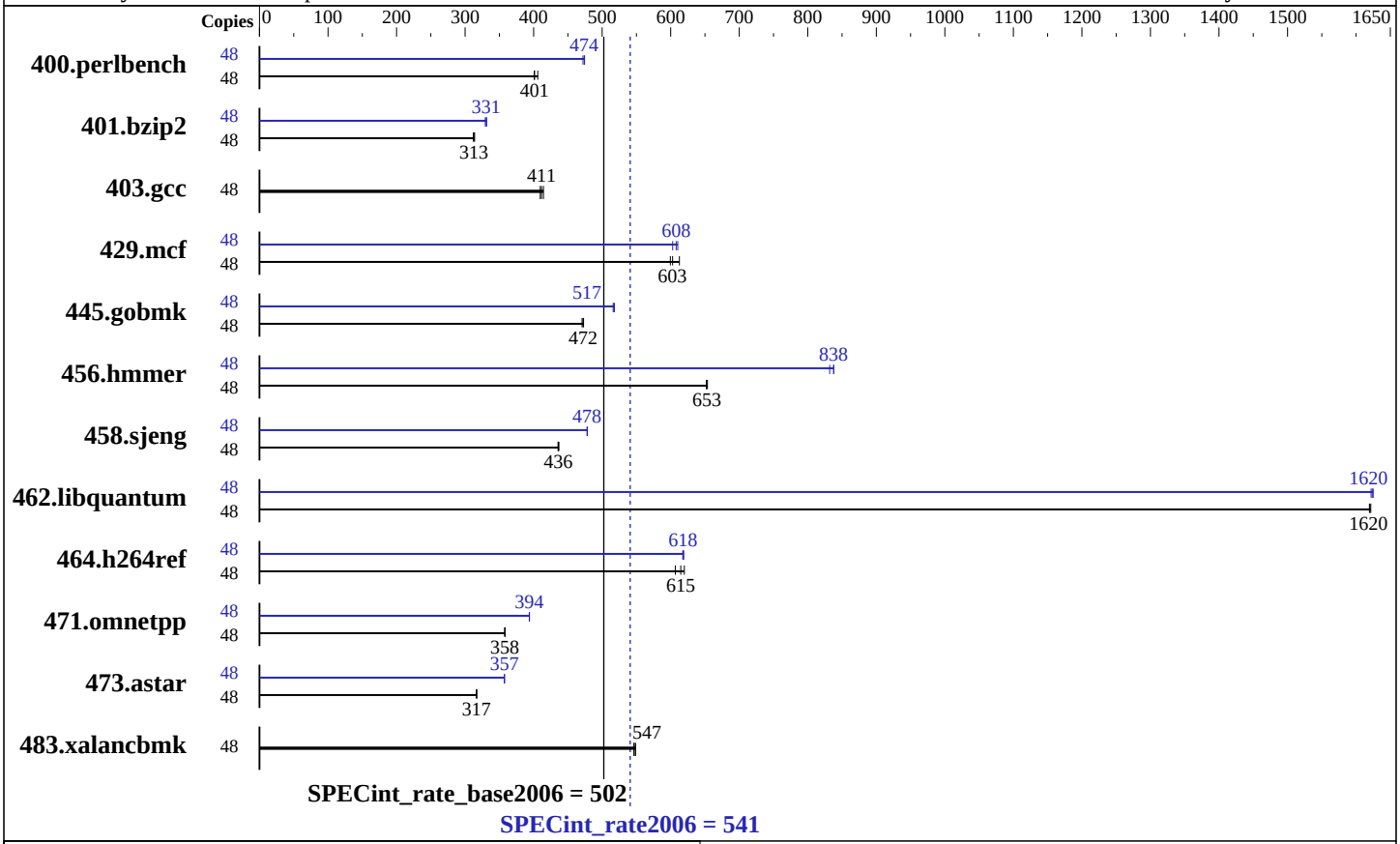
Unisys ES7000 Model 7600R G2 (Intel Xeon E7540)

SPECint®_rate2006 = 541

SPECint_rate_base2006 = 502

**CPU2006 license:** 15
**Test sponsor:** Unisys Corporation
**Tested by:** IBM Corporation

**Test date:** Apr-2010
**Hardware Availability:** Jun-2010
**Software Availability:** Jan-2010




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E7540 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.26 GHz |
| CPU MHz: | 2000 |
| FPU: | Integrated |
| CPU(s) enabled: | 24 cores, 4 chips, 6 cores/chip, 2 threads/core |
| CPU(s) orderable: | 2,4 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |
| L3 Cache: | 18 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 256 GB (64 x 4 GB PC3-8500R, Quad Rank) |
| Disk Subsystem: | 3 x 50GB SATA, SSD, RAID 0 |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 11 (86_64), Kernel 2.6.27.19-5-default |
| Compiler: | Intel C++ Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064 |
| Auto Parallel: | No |
| File System: | ext3 |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Microquill SmartHeap V8.1 |

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## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 48 | 1170 | 401 | **1169** | **401** | 1155 | 406 | 48 | 989 | 474 | **990** | **474** | 993 | 472 |
| 401.bzip2 | 48 | 1485 | 312 | **1480** | **313** | 1476 | 314 | 48 | 1406 | 329 | **1401** | **331** | 1397 | 332 |
| 403.gcc | 48 | **939** | **411** | 943 | 410 | 933 | 414 | 48 | **939** | **411** | 943 | 410 | 933 | 414 |
| 429.mcf | 48 | 730 | 599 | 714 | 613 | **726** | **603** | 48 | 726 | 603 | 717 | 610 | **720** | **608** |
| 445.gobmk | 48 | **1067** | **472** | 1065 | 473 | 1070 | 471 | 48 | **974** | **517** | 972 | 518 | 976 | 516 |
| 456.hmmer | 48 | 685 | 654 | 687 | 652 | **686** | **653** | 48 | 538 | 832 | 534 | 838 | **535** | **838** |
| 458.sjeng | 48 | 1329 | 437 | **1332** | **436** | 1333 | 436 | 48 | 1215 | 478 | 1214 | 478 | **1215** | **478** |
| 462.libquantum | 48 | **614** | **1620** | 613 | 1620 | 614 | 1620 | 48 | 613 | 1620 | 612 | 1620 | **613** | **1620** |
| 464.h264ref | 48 | 1751 | 607 | **1728** | **615** | 1714 | 620 | 48 | 1720 | 618 | 1716 | 619 | **1718** | **618** |
| 471.omnetpp | 48 | 837 | 358 | 838 | 358 | **838** | **358** | 48 | 762 | 394 | **762** | **394** | 761 | 394 |
| 473.astar | 48 | 1064 | 317 | 1064 | 317 | **1064** | **317** | 48 | **943** | **357** | 943 | 358 | 943 | 357 |
| 483.xalancbmk | 48 | 604 | 549 | **606** | **547** | 606 | 546 | 48 | 604 | 549 | **606** | **547** | 606 | 546 |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

## Platform Notes

```
Turbo Boost set to Traditional
Demand Scrub disabled
```

## General Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
This result is measured on an IBM System x3850 X5 server.
Note that the IBM System x3850 X5 and Unisys ES7000 Model 7600R G2 are electrically equivalent.
```

# Base Compiler Invocation

C benchmarks:

```
icc  -m32
```

C++ benchmarks:

```
icpc -m32
```

## Base Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
462.libquantum: `-DSPEC_CPU_LINUX`
483.xalancbmk: `-DSPEC_CPU_LINUX`

## Base Optimization Flags

C benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`

C++ benchmarks:
`-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs`
`-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap`

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m32`

401.bzip2: `icc -m64`

456.hmmer: `icc -m64`

458.sjeng: `icc -m64`

462.libquantum: `icc -m64`

C++ benchmarks (except as noted below):
`icpc -m32`

473.astar: `icpc -m64`

## Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`

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## Peak Portability Flags (Continued)

456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -ansi-alias

401.bzip2: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -opt-prefetch -ansi-alias -auto-ilp32

403.gcc: basepeak = yes

429.mcf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

445.gobmk: -xSSE4.2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -O2
-ipo -no-prec-div -ansi-alias

456.hmmer: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2
-ansi-alias -auto-ilp32

458.sjeng: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -unroll4 -auto-ilp32

462.libquantum: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
-opt-prefetch

464.h264ref: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -static(pass 2)
-prof-use(pass 2) -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-32bit -lsmartheap

473.astar: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs

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## Peak Optimization Flags (Continued)

473.astar (continued):
`-L/home/cmplr/usr3/alrahate/cpu2006.1.1.ic11.1/libic11.1-64bit -lsmartheap64`

483.xalancbmk: `basepeak = yes`

## Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100603.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100603.xml`



For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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