Hewlett-Packard Company
HP Integrity Superdome (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPEC® CFP2006 Result

SPECfp®_rate2006 = 1480
SPECfp_rate_base2006 = 1420

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Hewlett-Packard Company

CPU2006 license: 03
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Hardware

CPU Name: Dual-Core Intel Itanium 2 9050
CPU Characteristics: 1.6GHz/24MB, 533MHz FSB
CPU MHz: 1600
FPU: Integrated
CPU(s) enabled: 128 cores, 64 chips, 2 cores/chip
CPU(s) orderable: 1-64 chips
Primary Cache: 16 KB I + 16 KB D on chip per core
Secondary Cache: 1 MB I + 256 KB D on chip per core

Software

Operating System: HPUX11i-TCOE B.11.23.0609
Compiler: HP C/aC++ Developer's Bundle C.11.23.12
HP Fortran90 Compiler B.11.23.32
Auto Parallel: No
File System: vxfs
System State: Multi-user
Base Pointers: 32-bit
Peak Pointers: 32-bit
Other Software: None

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## Results Table

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

## Operating System Notes

The system had the September 2006 HP-UX 11i v2 Technical Computing Environment (TCOE) and compilers installed, along with the following patches:

- PHSS_34858  linker + fdp cumulative patch
- PHSS_34853  Math Library Cumulative Patch
- PHSS_34854  Integrity Unwind Library
- PHSS_34855  HP C Compiler (A.06.12)
- PHSS_34856  aC++ Compiler (A.06.12)
- PHSS_34857  u2comp/be/plugin library patch
- PHSS_34859  FORTRAN I/O Library [libIO77]
- PHSS_34897  FORTRAN Intrinsics [libF90 B.11.23.17]
- PHSS_34899  Fortran Product Patch, v3.1 to v3.1.1
- PHKL_34020  Perfmon enhancements and Itanium Dual-Core

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Operating System Notes (Continued)

The following kernel tunables were set, in addition to the defaults set by the Technical Computing OE:

dbc_max_pct=20
dbc_min_pct=20
maxdsiz=3221225472
maxssiz=401604608

Platform Notes

The system was configured as a single partition with 16 cells and 4 processors (8 cores) per cell. Memory was configured as 50% local and 50% interleaved.

The following config file entry was used to bind processes to cells using the HP-UX "mpsched" utility:
submit = let "MYNUM=$SPECCOPYNUM" ; let "LDOM=$MYNUM/8" ; mpsched -l $LDOM $command

Base Compiler Invocation

C benchmarks:
/opt/ansic/bin/cc -Ae

C++ benchmarks:
/opt/aCC/bin/aCC -Aa

Fortran benchmarks:
/opt/fortran90/bin/f90

Benchmarks using both Fortran and C:
/opt/ansic/bin/cc -Ae /opt/fortran90/bin/f90

Base Portability Flags

453.povray: -DSPEC_CPU_NEED_INVHYP
454.calculix: -DSPEC_CPU_NOZMODIFIER
481.wrf: -DNOUNDERSCORE +noppu

Base Optimization Flags

C benchmarks:
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N

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Base Optimization Flags (Continued)

C++ benchmarks:
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
- Wl,+pi,64M -Wl,-N

Fortran benchmarks:
+Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+pi,64M -Wl,-N

Benchmarks using both Fortran and C:
+Ofaster(-hp_cc) +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
- Wl,+pi,64M +Ofaster(-hp_f90) -Wl,-N

Peak Compiler Invocation

C benchmarks:
/opt/ansic/bin/cc -Ae

C++ benchmarks:
/opt/aCC/bin/aCC -Aa

Fortran benchmarks:
/opt/fortran90/bin/f90

Benchmarks using both Fortran and C:
/opt/ansic/bin/cc -Ae /opt/fortran90/bin/f90

Peak Portability Flags

453.povray: -DSPEC_CPU_NEED_INVHYP
454.calculix: -DSPEC_CPU_NOZMODIFIER
481.wrf: -DNOUNDERSCORE +noppu

Peak Optimization Flags

C benchmarks:

433.milc: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster
+Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
- Wl,+pi,64M +Onoparmsoverlap -Wl,-N

470.lbm: basepeak = yes

482.sphinx3: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster
+Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
- Wl,+pi,64M +Onoparmsoverlap
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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: basepeak = yes
447.dealII: basepeak = yes
450.soplex: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster
+Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
-Wl,+p1,64M +Onoparmsoverlap -Wl,-N

453.povray: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster
+Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M
-Wl,+p1,64M

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: +Ofaster -Wl,-a,archive_shared -Wl,+pd,64M -Wl,+p1,64M
+Odataprefetch=direct -Wl,-N

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster
-Wl,-a,archive_shared -Wl,+pd,64M -Wl,+p1,64M
+Odataprefetch=direct -Wl,-N

465.tonto: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2) +Ofaster
-Wl,-a,archive_shared -Wl,+pd,64M -Wl,+p1,64M
+Odataprefetch=direct

Benchmarks using both Fortran and C:

435.gromacs: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster(-hp_cc) +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+p1,64M +Onoparmsoverlap +Ofaster(-hp_f90)

436.cactusADM: basepeak = yes
454.calculix: basepeak = yes
481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.html
## SPEC CFP2006 Result

**Hewlett-Packard Company**

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**CPU2006 license:** 03  
**Test sponsor:** Hewlett-Packard Company  
**Tested by:** Hewlett-Packard Company  
**Test date:** Aug-2006  
**Hardware Availability:** Sep-2006  
**Software Availability:** Sep-2006

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.xml

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 09:56:27 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 September 2006.