SPEC® CINT2006 Result
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Acer Incorporated

Altos R380 F3 (Intel Xeon E5-2650 v4)

SPECint®_rate2006 = 982

SPECint_rate_base2006 = 932

CPU2006 license: 97

Test sponsor: Acer Incorporated

Tested by: Acer Incorporated

Test date: May-2017

Hardware Availability: Mar-2016

Software Availability: Sep-2016

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Hardware

CPU Name: Intel Xeon E5-2650 v4

CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz

CPU MHz: 2200

FPU: Integrated

CPU(s) enabled: 24 cores, 2 chips, 12 cores/chip, 2 threads/core

CPU(s) orderable: 1,2 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: 30 MB I+D on chip per chip

Other Cache: None

Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2400T-R)

Disk Subsystem: 1 x 4000 GB SATA, 7200 RPM

Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 7.3 (Maipo)
3.10.0-514.el7.x86_64

Compiler: C/C++: Version 17.0.0.098 of Intel C/C++ Compiler for Linux

Auto Parallel: No

File System: xfs

System State: Run level 3 (multi-user)

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: Microquill SmartHeap V10.2

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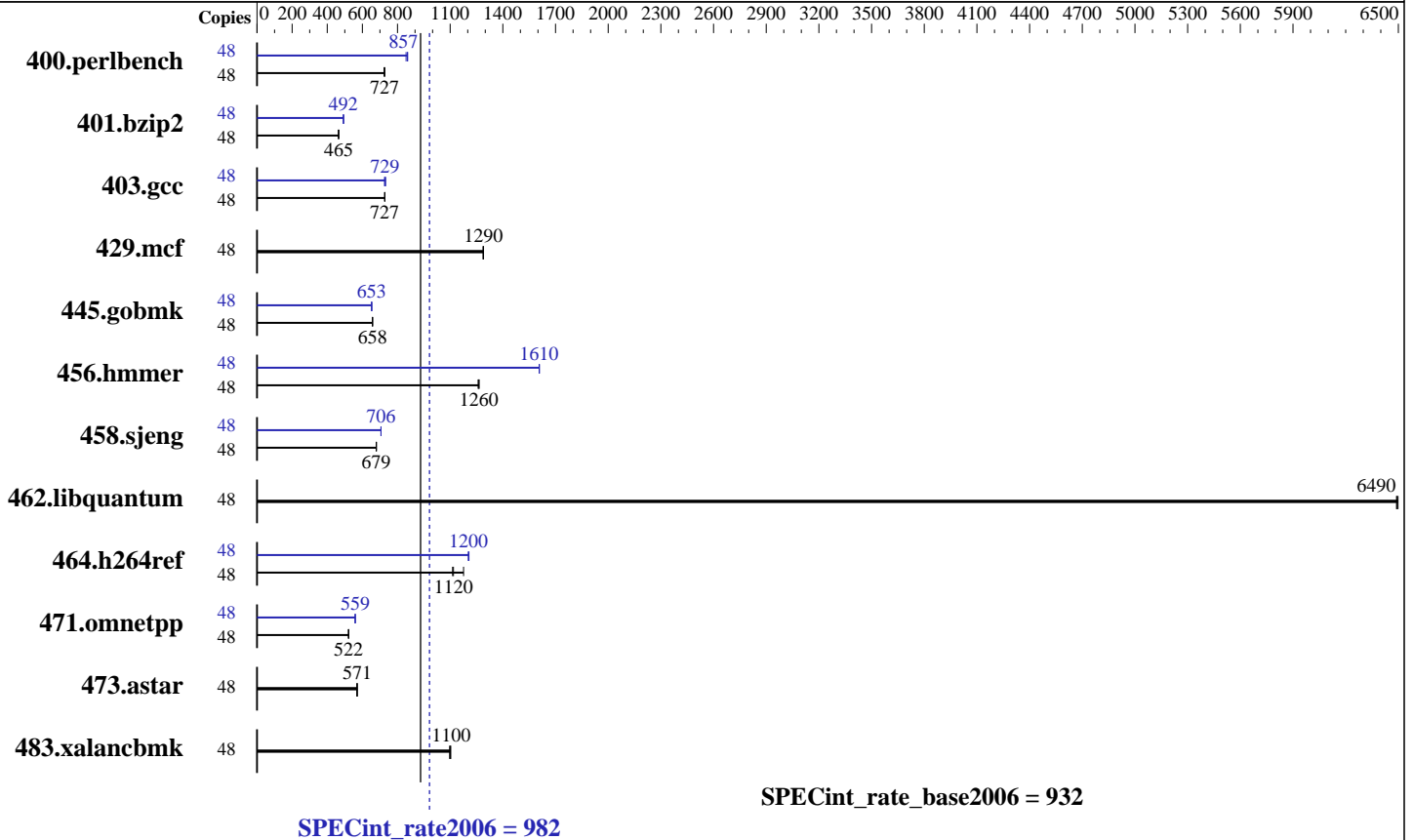
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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	48	645	727	648	724	**645**	**727**		48	**547**	**857**	547	858	552	849
401.bzip2	48	995	465	**996**	**465**	1000	463		48	940	493	942	492	**941**	**492**
403.gcc	48	**531**	**727**	531	727	531	728		48	527	733	532	726	**530**	**729**
429.mcf	48	339	1290	**340**	**1290**	340	1290		48	339	1290	**340**	**1290**	340	1290
445.gobmk	48	**765**	**658**	766	657	765	658		48	770	654	772	653	**771**	**653**
456.hmmer	48	**354**	**1260**	354	1260	356	1260		48	279	1610	279	1610	**279**	**1610**
458.sjeng	48	855	680	**855**	**679**	855	679		48	823	706	822	706	**822**	**706**
462.libquantum	48	**153**	**6490**	153	6490	153	6500		48	**153**	**6490**	153	6490	153	6500
464.h264ref	48	954	1110	903	1180	**949**	**1120**		48	882	1200	880	1210	**882**	**1200**
471.omnetpp	48	576	521	**575**	**522**	575	522		48	**536**	**559**	536	559	536	559
473.astar	48	593	568	**590**	**571**	590	571		48	593	568	**590**	**571**	590	571
483.xalancbmk	48	**301**	**1100**	302	1100	300	1100		48	**301**	**1100**	302	1100	300	1100

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

Submit Notes

　　The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

　　Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

　　BIOS Configuration:
　　CPU Power and Performance Policy set to Performance
　　C1E Autopromote set to Disabled
　　Set Fan Profile set to Performance
　　Sysinfo program /usr/cpu2006/config/sysinfo.rev6993
　　Revision 6993 of 2015-11-06 (b5e8d4b4eb51ed28d7f98696cbe290c1)
　　running on localhost.localdomain Mon May 8 13:53:01 2017

　　This section contains SUT (System Under Test) info as seen by
　　some common utilities. To remove or add to this section, see:
　　　http://www.spec.org/cpu2006/Docs/config.html#sysinfo

　　From /proc/cpuinfo
　　　model name : Intel(R) Xeon(R) CPU E5-2650 v4 @ 2.20GHz
　　　　2 "physical id"s (chips)
　　　　48 "processors"
　　　cores, siblings (Caution: counting these is hw and system dependent. The

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Platform Notes (Continued)

```
    following excerpts from /proc/cpuinfo might not be reliable.  Use with
    caution.)
       cpu cores : 12
       siblings  : 24
       physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
       physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13
    cache size : 30720 KB

 From /proc/meminfo
    MemTotal:       131747392 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    os-release:
       NAME="Red Hat Enterprise Linux Server"
       VERSION="7.3 (Maipo)"
       ID="rhel"
       ID_LIKE="fedora"
       VERSION_ID="7.3"
       PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
       ANSI_COLOR="0;31"
       CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
    redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
    system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

 uname -a:
    Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
    EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

 run-level 3 May 8 13:52

 SPEC is set to: /usr/cpu2006
    Filesystem              Type  Size  Used Avail Use% Mounted on
    /dev/mapper/rhel-root xfs   3.7T   42G 3.6T   2% /
 Additional information from dmidecode:

    Warning: Use caution when you interpret this section. The 'dmidecode' program
    reads system data which is "intended to allow hardware to be accurately
    determined", but the intent may not be met, as there are frequent changes to
    hardware, firmware, and the "DMTF SMBIOS" standard.

  BIOS American Megatrends Inc. 2.1 09/13/2016
  Memory:
  8x NO DIMM NO DIMM
  8x Samsung M393A2G40EB1-CRC 16 GB 2 rank 2400 MHz

 (End of data from sysinfo program)
```

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General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh10.2"

 Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
 memory using Redhat Enterprise Linux 7.2
 Transparent Huge Pages enabled by default
 Filesystem page cache cleared with:
 echo 1>        /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:
```
    icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

C++ benchmarks:
```
    icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32
```

Base Portability Flags

```
 400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
     401.bzip2: -D_FILE_OFFSET_BITS=64
       403.gcc: -D_FILE_OFFSET_BITS=64
       429.mcf: -D_FILE_OFFSET_BITS=64
     445.gobmk: -D_FILE_OFFSET_BITS=64
     456.hmmer: -D_FILE_OFFSET_BITS=64
     458.sjeng: -D_FILE_OFFSET_BITS=64
 462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
   464.h264ref: -D_FILE_OFFSET_BITS=64
   471.omnetpp: -D_FILE_OFFSET_BITS=64
     473.astar: -D_FILE_OFFSET_BITS=64
 483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
```

Base Optimization Flags

C benchmarks:
```
    -xAVX -ipo -O3 -no-prec-div -qopt-prefetch -qopt-mem-layout-trans=3
```

C++ benchmarks:
```
    -xAVX -ipo -O3 -no-prec-div -qopt-prefetch -qopt-mem-layout-trans=3
    -Wl,-z,muldefs -L/sh10.2 -lsmartheap
```

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Base Other Flags

C benchmarks:

        403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
    icc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

    400.perlbench: icc -m64

      401.bzip2: icc -m64

    456.hmmer: icc -m64

      458.sjeng: icc -m64

C++ benchmarks:
    icpc -m32 -L/opt/intel/compilers_and_libraries_2017/linux/lib/ia32

Peak Portability Flags

    400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
      401.bzip2: -DSPEC_CPU_LP64
        403.gcc: -D_FILE_OFFSET_BITS=64
        429.mcf: -D_FILE_OFFSET_BITS=64
      445.gobmk: -D_FILE_OFFSET_BITS=64
      456.hmmer: -DSPEC_CPU_LP64
      458.sjeng: -DSPEC_CPU_LP64
    462.libquantum: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX
      464.h264ref: -D_FILE_OFFSET_BITS=64
      471.omnetpp: -D_FILE_OFFSET_BITS=64
        473.astar: -D_FILE_OFFSET_BITS=64
    483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

    400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(pass 2)
                -par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
                -no-prec-div(pass 2) -auto-ilp32 -qopt-mem-layout-trans=3

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Peak Optimization Flags (Continued)

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -qopt-prefetch -auto-ilp32
-qopt-mem-layout-trans=3

403.gcc: -xAVX -ipo -O3 -no-prec-div -qopt-mem-layout-trans=3

429.mcf: basepeak = yes

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -qopt-mem-layout-trans=3

456.hmmer: -xAVX -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
-qopt-mem-layout-trans=3

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll4 -auto-ilp32
-qopt-mem-layout-trans=3

462.libquantum: basepeak = yes

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -unroll2 -qopt-mem-layout-trans=3

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xAVX(pass 2)
-par-num-threads=1(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2)
-qopt-ra-region-strategy=block
-qopt-mem-layout-trans=3 -Wl,-z,muldefs
-L/sh10.2 -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic17.0-official-linux64.xml`

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