# SPEC® CINT2006 Result

## Hewlett-Packard Company

ProLiant BL20p G4  
(1.86 GHz, Intel Xeon processor E5320)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>61.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>59.2</td>
</tr>
</tbody>
</table>

### CPU2006 license: 3  
Test sponsor: Hewlett-Packard Company  
Tested by: Hewlett-Packard Company  
Test date: Feb-2007  
Hardware Availability: Jan-2007  
Software Availability: Nov-2006

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon E5320</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU MHZ:</td>
<td>1860</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>8 cores, 2 chips, 4 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1.2 chips</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>8 MB L1+D on chip per core, 4 MB shared / 2 cores</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>16 GB (8x2 GB PC2-5300F CL5)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>2x72 GB 10k SAS</td>
</tr>
</tbody>
</table>

### Software

Operating System: Windows Server 2003 Enterprise x64 Edition SP1
Compiler: Intel C++ Compiler for 32-bit applications,  
Version 9.1, Build 20061103Z  
Package ID: W_CC_C_9.1.033  
Microsoft Visual Studio .NET 2003  
(v7.1.3088, for libraries)
Auto Parallel: No  
File System: NTFS  
System State: Default  
Base Pointers: 32-bit  
Peak Pointers: 32-bit  
Other Software: MicroQuill SmartHeap Library 8.0
SPEC CINT2006 Result

Hewlett-Packard Company
ProLiant BL20p G4
(1.86 GHz, Intel Xeon processor E5320)

SPECint_rate2006 = 61.1
SPECint_rate_base2006 = 59.2

CPU2006 license: 3
Test sponsor: Hewlett-Packard Company
Tested by: Hewlett-Packard Company

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
</tr>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>750</td>
<td>104</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>8</td>
<td>1320</td>
<td>58.5</td>
</tr>
<tr>
<td>403.gcc</td>
<td>8</td>
<td>2516</td>
<td>25.6</td>
</tr>
<tr>
<td>429.mcf</td>
<td>8</td>
<td>1464</td>
<td>49.8</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>8</td>
<td>888</td>
<td>94.6</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8</td>
<td>1200</td>
<td>62.2</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>1069</td>
<td>90.5</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>8</td>
<td>7089</td>
<td>23.4</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>8</td>
<td>1164</td>
<td>152</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>8</td>
<td>1409</td>
<td>35.5</td>
</tr>
<tr>
<td>473.astar</td>
<td>8</td>
<td>1166</td>
<td>48.1</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>8</td>
<td>760</td>
<td>72.6</td>
</tr>
</tbody>
</table>

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

Platform Notes
Power Regulator set to Static High Performance Mode in BIOS. Adjacent Sector Prefetch disabled in BIOS.

Base Compiler Invocation
C benchmarks:
icl -Qvc7.1 -Qc99
C++ benchmarks:
icl -Qvc7.1

Base Portability Flags
403.gcc: -DSPEC_CPU_WIN32
464.h264ref: -DSPEC_CPU_NO_INTTYPES -DWIN32

Base Optimization Flags
C benchmarks:
-fast /F512000000 shlw32m.lib -link /FORCE:MULTIPLE
## Hewlett-Packard Company

**ProLiant BL20p G4**  
(1.86 GHz, Intel Xeon processor E5320)

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>61.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>59.2</td>
</tr>
</tbody>
</table>

**CPU2006 license:** 3  
**Test date:** Feb-2007  
**Hardware Availability:** Jan-2007  
**Test sponsor:** Hewlett-Packard Company  
**Tested by:** Hewlett-Packard Company  
**Software Availability:** Nov-2006

### Base Optimization Flags (Continued)

- **C++ benchmarks:**
  - `-fast -Qcxx\_features /F512000000 shlw32m.lib`  
  - `-link /FORCE:MULTIPLE`

### Base Other Flags

- **C benchmarks:**  
  - `403.gcc: -Dalloca=_alloca`

### Peak Compiler Invocation

- **C benchmarks:**
  - `icl -Qvc7.1 -Qc99`

- **C++ benchmarks:**
  - `icl -Qvc7.1`

### Peak Portability Flags

- **C benchmarks:**
  - `403.gcc: -DSPEC\_CPU\_WIN32`
  - `464.h264\_ref: -DSPEC\_CPU\_NO\_INNTYPES -DWIN32`

### Peak Optimization Flags

- **C benchmarks:**
  - `400.perlbench: -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -fast /F512000000 shlw32m.lib -link /FORCE:MULTIPLE`
    - `401.bzip2: Same as 400.perlbench`
    - `403.gcc: Same as 400.perlbench`
    - `429.mcf: basepeak = yes`
    - `445.gobmk: Same as 400.perlbench`
    - `456.hmmer: Same as 400.perlbench`
    - `458.sjeng: Same as 400.perlbench`

Continued on next page
## SPEC CINT2006 Result

### Hewlett-Packard Company

**ProLiant BL20p G4**  
(1.86 GHz, Intel Xeon processor E5320)

<table>
<thead>
<tr>
<th>CPU2006 license: 3</th>
<th>Test date: Feb-2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor:</td>
<td>Hewlett-Packard Company</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Hewlett-Packard Company</td>
</tr>
</tbody>
</table>

**SPECint_rate2006 = 61.1**  
**SPECint_rate_base2006 = 59.2**

### Peak Optimization Flags (Continued)

- `462.libquantum`: Same as 400.perlbench
- `464.h264ref`: Same as 400.perlbench

**C++ benchmarks:**

- `-Qprof_gen(pass 1) -Qprof_use(pass 2) -fast -Qcxx_features`  
- `/F512000000 shlw32m.lib`  
- `-link /FORCE:MULTIPLE`

### 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/hp-ic91-flags.20090715.02.html

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

http://www.spec.org/cpu2006/flags/hp-ic91-flags.20090715.02.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.0.  