



## Multi-core Processors: Impact On Oracle Processor Licensing

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### ***Q: How does Oracle price its software?***

A: For its technology products, Oracle has two primary pricing models. Customers can choose between Named User Plus and Per Processor pricing models based on their specific needs. Named User Plus is ideal for organizations with discrete and countable user populations. For uncountable populations, processor licensing is required. The Processor pricing model is based on the number of processors a customer has installed and the number of those processors that the customer has operating. This model is easily measured, a fact that makes costs transparent for our customers.

### ***Q: Why did Oracle change its multi-core pricing?***

A: The goal of Oracle's pricing and licensing strategy is to provide simple and flexible licensing models to meet our customers' needs. For the past several months, we have been working closely with our customers and hardware Partners to address the recent advancements in multi-core processor chips. To meet these needs, Oracle is changing its licensing policy regarding multi-core chips. Our first change to address multi-core technology occurred in July 2005 and further changes as described below became effective on December 19, 2005.

### ***Q: What is the new multi-core pricing and licensing model?***

A: Oracle will continue to recognize each core as a separate processor; however, the processor definition has been amended when counting multi-core chips when determining the total number of processor licenses required. There are four categories for processor licensing. Each category has a unique processor-pricing factor, which is used to determine the total number of processor licenses. See the table below. In addition, for all programs with Standard Edition or Standard Edition One in the program name, Oracle recognizes a socket as equivalent to a processor for the purposes of counting and licensing these programs. The number of cores on a chip in a socket does not matter when determining the number of processor licenses required for these programs.

<b>Oracle Processor Licensing:</b>	<b>Cores</b>	<b>Processor Factor</b>	<b>CPUs for SW (other than SE and SE One programs) Licenses</b>
UltraSPARC T1	8	0.25	2
AMD/Intel	4	0.50	2
All other Multi-core Chips (IBM Pseries, SM USIV, etc.)	2	0.75	2
Single Core Servers	1	1.00	1

To find the total number of processors, which require licensing, for a Sun UltraSPARC T1 processor with 4, 6 or 8 cores at 1.0 gigahertz or 8 cores at 1.2 gigahertz for only those servers

specified on the Sun Server Table which can be accessed at <http://oracle.com/contracts>, “n” cores shall be determined by multiplying the total number of cores by a factor of .25. For the purposes of counting the number of processors, which require licensing for AMD and Intel multi-core chips, “n” cores shall be determined by multiplying the total number of cores by a factor of .50. For the purposes of counting the number of processors which require licensing for all hardware platforms not otherwise specified in this section, a multi-core chip with "n" cores shall be determined by multiplying "n" cores by a factor of .75. All cores on all multi-core chips for each licensed program for each factor listed below are to be aggregated before multiplying by the appropriate factor and all fractions of a number are to be rounded up to the next whole number. For example, for the purposes of licensing Database Enterprise Edition, an 8–way p5 570 Server from IBM is actually a 4-way dual core server. The server has four chips with 8 physical processors. Prior to our multi-core licensing changes, this server had a list license price of \$320,000 ( $4 * 2 [cores] * \$40,000$ ). Based on the updated licensing methodology, this IBM server’s software licensing fees will be \$240,000 ( $0.75 * 8 * \$40,000$ ), which is a price decrease of 25%.

***Other examples (for SW other than SE and SE One):***

A Sun Fire T2000 Server with one 1.2 GHz UltraSPARC T1 processor (with 8 cores) will require  $8 * 0.25 = 2$  Processor licenses

A Sun Fire T2000 Server with one 1.2 GHz UltraSPARC T1 processor (with 4 cores) will require  $4 * 0.25 = 1$  Processor licenses with a total list license price of \$40,000

An HP ProLiant DL145 G2 with two AMD Opteron 200 Series dual-core processors Model 280 will require  $2 * 2 * 0.5 = 2$  processor licenses with total list license fee of \$80,000

Licensing our database software by processor is one of several choices we provide to our customers. As mentioned earlier, other options include licensing per user and per employee. Oracle also offers the option of licensing its software on a perpetual or term basis (1-year, 2-year, 3-year, 4-year and 5-year).

**Q: Do the multicore processor licensing changes impact how Oracle Database Standard Edition and Standard Edition One are calculated?**

A: Yes. According to the latest amendment to the hardware-licensing requirement for Database SE and SE One programs, the following policy applies:

Oracle Database Standard Edition can only be licensed on servers that have a maximum capacity of 4 sockets. When using RAC to cluster this limitation is mirrored in the cluster. It may be licensed on a single cluster of servers supporting up to a maximum of four sockets.

For SE One programs: Oracle Standard Edition One may only be licensed on servers that have a maximum capacity of 2 sockets

Note that this change is retroactive and applies to all customers licensed for these programs previously.

**Q: Does that mean that Oracle’s software prices will increase for customers using dual-core processors?**

A: No. Oracle's software pricing per processor has not increased for customers using dual core processors. The effective price per processor has decreased. Many hardware industry experts state that dual core processors yield 1.5 to 1.75 times the performance of a single core processor, but do not yield twice the performance of single core processors. Oracle's dual core pricing is a factor of 0.75 of a single core, which is effectively a 25% decrease for processor based licenses with the dual core technology. For Intel and AMD based multi-core chips this factor is 0.50 and for SUN's UltraSPARC T1 multi-core chips this factor is 0.25.

Additionally, for the purpose of managing processor licenses, customers can also partition their servers and run Oracle on a subset of the processor cores within a server. This facilitates the customer's ability to efficiently manage their software licenses and only pay for those that are employed for the purpose of running Oracle's software. More information on Partitioning is located at <http://www.oracle.com/corporate/pricing/partitioning.pdf>

**Q: Does Oracle charge for multithreading or have specific pricing for multithreading?**

A: No, Oracle does not charge for multithreading. A processor core is a set of one or more processor threads. The processor thread tracks execution of a software program thread. As a result, Oracle does not charge per number of threads.

**Q: How does the new pricing affect an existing customer?**

A: All customers are eligible for the new licensing. No new contracts are regarded, nor are any migrations needed to take advantage of the new licensing changes.

**Q: How does Oracle see licensing models evolving over the next couple of years?**

A: Software licensing models evolve as IT environments continue to evolve. Driven by the propagation of n-tier architectures, our current licensing models grew from concurrent user, named user single server and named user multi-server licensing models to processor and named user plus models. As the software landscape continues to transform, we anticipate that software licensing will continue to transform along with it.