

Intel® Pentium® III Processor with 512KB Cache

Performance for the Internet and Server Applications

Product Brief



The Intel® Pentium® III processor with 512KB cache delivers solid performance for mid-range and value servers. It provides the power to handle today's information overload, with the versatility and compatibility to manage a broad range of server applications. The Pentium III processor is fully compatible with existing Intel® architecture-based software and delivers the performance, scalability, and manageability required by today's server demands.

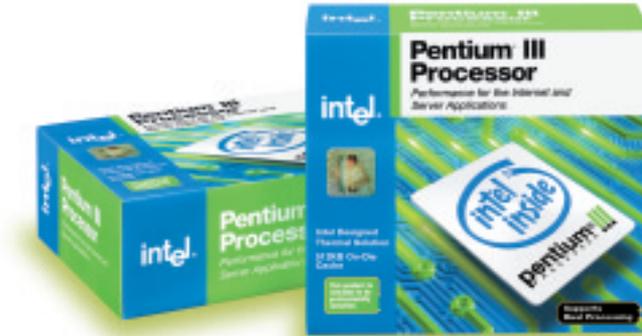
The Intel Pentium III processor with 512KB cache combines a larger L2 cache with the best attributes of the P6 microarchitecture: Dynamic Execution performance, a multi-transaction system bus, Intel® MMX™ media-enhancement technology, and Internet Streaming SIMD Extensions with 70 new instructions that enable advanced audio and video streaming for enhanced Internet performance. At speeds up to 1.40 GHz, the Intel Pentium III processor with 512KB cache offers great performance for today's and tomorrow's applications, as well as quality, reliability, and compatibility from the world's leading microprocessor company.

The boxed Intel Pentium III processor includes a validated Intel-designed thermal solution. Tested to the highest standards for a variety of computing environments, this thermal solution provides an efficient and effective cooling solution for the Pentium III processor.

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Boxed Intel® Pentium® III Processor with 512KB Cache Features

- Intel-designed thermal solution
- Three-year limited warranty
- Fan power cable (3-wire)
- Installation manual
- Certificate of authenticity
- Intel Inside® logo label



Processor Package

The Intel Pentium III processor with 512KB cache is currently available in the FC-PGA2 package. This package technology continues Intel's ongoing strategy to reduce the cost of the PC platform and fully supports dual-processing configurations. The Pentium III processor with 512KB cache is designed to support both pedestal and rack-mounted dual-processing servers.

Dual-Processor Capability

Pentium III processors with 512KB cache are dual-processor-capable, utilizing a GTL+ bus that provides "glueless" support for up to two processors. This enables system integrators to use Pentium III processors to provide low-cost, two-way symmetric multiprocessing systems that deliver significant performance gains for multitasking servers and multi-threaded applications.

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Features	Benefits
Core speeds of up to 1.40 GHz	Performance headroom for demanding server applications
Validated thermal solution	Increased server reliability and lifespan
Data integrity and reliability features such as Error Correction Code, fault analysis, recovery, and functional redundancy checking for both system and L2 cache buses	Supports the accuracy required in mission-critical servers
512KB Level 2 Advanced Transfer Cache	Reduced latency interface to cache data that enables increased performance of memory-sensitive applications
2-way processing capability	Two-way symmetric multiprocessing provides a significant performance boost for multi-threaded applications
Support for up to 6GB of main memory	Flexibility for best application performance

P6 Microarchitecture Dynamic Execution Technology

- Multiple branch prediction calculates program execution through several branches, accelerating the flow of work to the processor.
- Dataflow analysis creates an optimized, reordered schedule of instructions by analyzing data dependencies between instructions.
- Speculative execution carries out instruction execution speculatively, ensuring that the processor's superscalar execution units remain busy, thus enabling an overall performance boost.

Internet Streaming SIMD Extensions

- The Internet Streaming SIMD Extensions consist of 70 new instructions and include Single Instruction Multiple Data (SIMD) operations for floating point, additional SIMD-integer, and cacheability control instructions.

Other Significant Features of the Intel Pentium III Processor

- The Intel processor serial number provides for improved levels of asset management, platform identification, and information management.

- A pipelined floating-point unit (FPU) supports the 32-bit and 64-bit formats specified in IEEE standard 754, as well as an 80-bit format.
- Parity-protected address/request and response system bus signals with a retry mechanism for high data integrity and reliability.

Features for Testing and Performance Monitoring

- Built-in Self Test (BIST) provides single stuck-at fault coverage of the microcode and large logic arrays, as well as testing of the instruction cache, data cache, Translation Lookaside Buffers (TLBs), and ROMs.
- IEEE 1149.1 Standard Test Access Port and Boundary Scan mechanism enables testing of the Pentium III processor and system connections through a standard interface.
- Internal performance counters for performance monitoring and event counting.
- Incorporates an on-die diode that can be used by a thermal sensor on a motherboard to monitor die temperature for management purposes.

New Intel® Pentium® III Processor with 512KB L2 Cache

Technology	
Process core technology	0.13 micron
Packaging (connector type)	FC-PGA2
Available core speeds	Available core speeds up to 1.40 GHz
Available bus speeds	133 MHz
Built-in Level 2 cache	512KB Advanced Transfer Cache (on-die)
Built-in Level 1 cache	32KB (16KB instruction and 16KB data) integrated, non-blocking Level 1 cache
Dual-processing support	Yes

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