



## UltraSPARC® T2 Processor

The world's first true system on a chip



### Highlights

- Fastest commodity processor
- Up to eight UltraSPARC® V9 cores with full binary compatibility
- Up to 64 total threads
- Under 95 W (nominal) and fewer than 2 W per thread
- Dual, multithreaded, 10 Gb Ethernet
- Eight cryptographic accelerator units
- Solaris™ OS compatibility guaranteed



The UltraSPARC™ T2 processor is the industry's first “system on a chip,” packing the most cores and threads of any general-purpose processor available, and integrating all the key functions of a system on a single chip: computing, networking, security, and input/output (I/O), plus tight integration with the Solaris Operating System.

With eight cores and 64 threads on one chip, integrated 10 Gb Ethernet (10 GbE) networking, crypto, and PCI Express expansion, you have the jump on anything else on the market. The UltraSPARC T2 processor consumes less power per core and thread than any processor in its class — without compromising on performance. It gives OEMs a massively threaded, multicore alternative to power-hungry processors, with fewer threads, from competing vendors.

The superior compute power and multithreaded 10 GbE networking of the UltraSPARC T2 processor make it especially valuable for consolidation and virtualization projects. For example, by leveraging the unique, no-cost advantages of Solaris Containers and Logical Domains (LDom), the UltraSPARC T2 processor enables you to run up to 64 domains on one processor. That can help you completely refactor your network infrastructure while helping you save thousands of dollars.

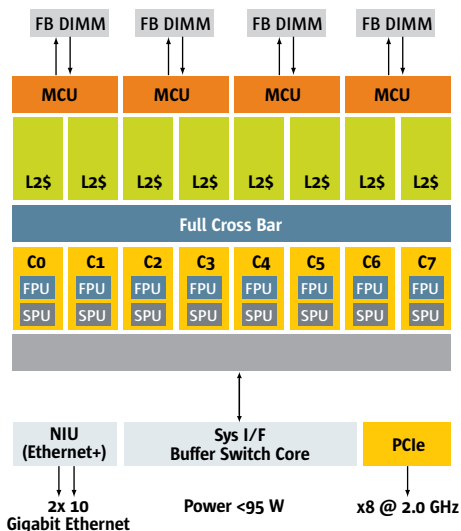
# UltraSPARC T2 Processor

## Chip features

- Up to eight cores
- Frequency — 900 MHz to 1.4 GHz
- 65nm technology
- Up to 64 threads per CPU
- Up to 64 FB DIMMs, four memory controllers
- Memory BW — 60+ GB/sec
- Power — 60 to 123 W
- Eight fully pipelined floating-point units
- Dual 10 Gigabit Ethernet and PCIe integrated onto chip
- Four MB L2 — eight banks
- Security coprocessor per core — DES, 3DES, AES, RC4, SHA1, SHA256, MD5, RSA 2048 key, ECC, CRC32

## Core features

- 12mm<sup>2</sup>
- Eight threads
- Two instruction pipelines, one floating-point unit, and one cryptographic stream processing unit
- Eight KB data cache and 16 KB instruction cache



## Package specifications

- 1,831-pin BGA
- 45mm body size
- Glass ceramic package
- 1mm BGA pitch
- 190um bump pitch
- 22-layer substrate

## Ideal application uses

- Web servers: Apache, Sun Java™ System Web Server
- Java™ Virtual Machines and JEE™ application servers: BEA WLS, IBM Websphere, Oracle Application Server, Sun Java™ System Application Server, Tomcat
- Database servers: Oracle Database, IBM DB2, MySQL, PostgreSQL
- Mail servers: Sendmail, Lotus Domino, Sun Java™ System Messaging Server
- Enterprise applications: Siebel, PeopleSoft, SAP
- Network file systems and backup

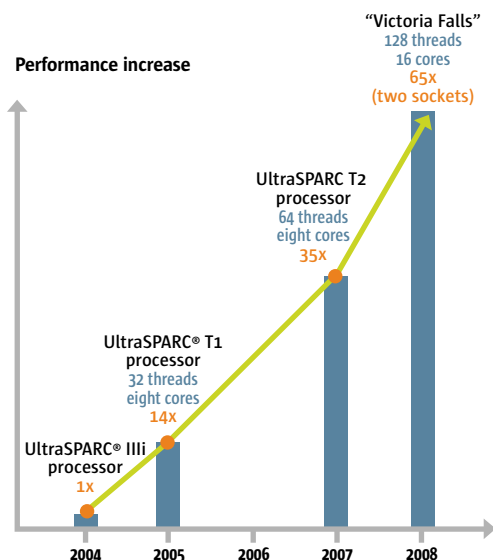
## Learn More

To learn more about the UltraSPARC T2 processor, go to: [sun.com/t2](http://sun.com/t2).

- Network infrastructure: portal, identity, directory, calendaring, messaging, SOA, Sun Java™ Enterprise System
- Search and streaming media
- Security: firewalls, antivirus, spam filters
- HPC: Monte Carlo analysis, simulations, CFD

## Ideal embedded uses

- Single-socket rackmount and blade servers
- WiMAX infrastructure
- 3G and 4G telecom infrastructure
- Network infrastructure
- I/O and proxy servers



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