OCTEON® II CN62XX Multi-Core MIPS64 Processors

Product Brief

OCTEON® II
CN62XX

OVERVIEW

The OCTEON® II CN62XX family of Multi-Core MIPS64 Internet Application Processors targets mainstream, high-volume applications in enterprise routers, switches, control plane applications, appliances, 3G/4G basestations, and intelligent storage and server adapters. The family includes four software and pin-compatible processors, with two to four cnMIPS64 v2 cores at up to 1.0GHz speed on a massively integrated SoC that includes the latest SERDES-based I/O's including PCIe Gen2, XAUI, and sRIO, along with Cavium's most advanced third-generation application hardware acceleration. CN62XX processors deliver over 6Gbps application performance.
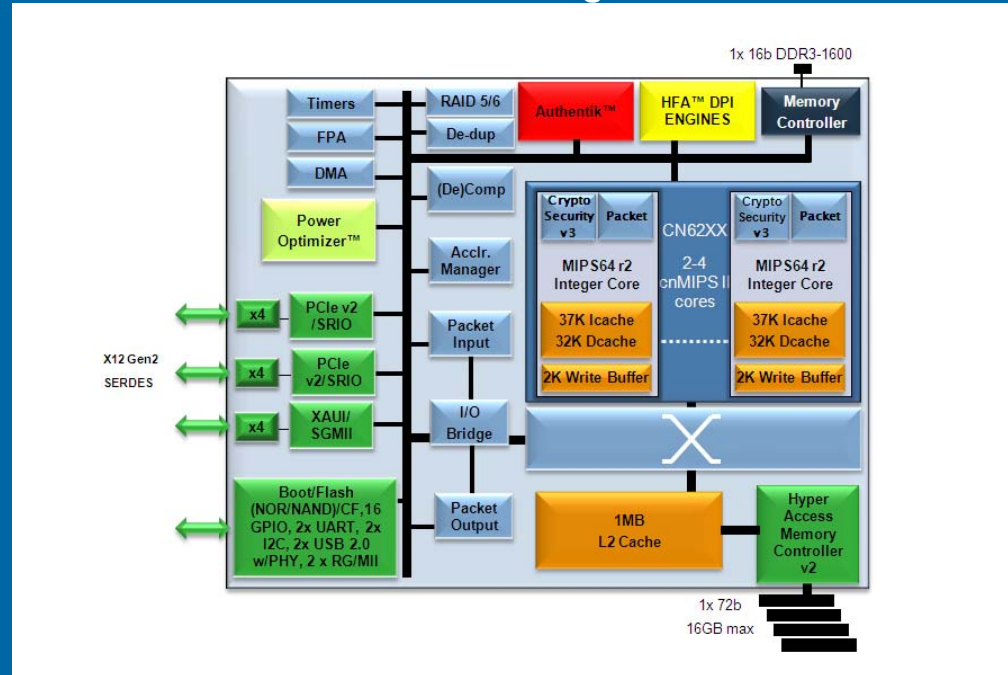
FEATURES

- Up to 1.0 GHz / core with large 1MB L2 cache and enhanced core architecture
- Packet I/O processors and hardware application acceleration manager
- New security acceleration engine with expanded algorithm support (3GSNOW)
- Third-generation pattern search capability with new Hyper Finite Automata (HFA) engines
- Latest memory and I/O Interfaces: DDR3, SRIO PCIe Gen2
- 1 x10GbE & 4GbE
- 8W to 12W max power and power optimizer technology
- Powerful DMA, RAID engines

BENEFITS

- Foot print and software compatibility with 63XX & 67XX providing a seamless scalability from 2 to 10 cores
- 2x control plane performance per core with total compute of up to 4 GHz
- Up to 6+Gbps of packet processing with QoS
- Up to 6+Gbps security, addition of encryption support for 4G wireless
- 7Gbps+ Deep Packet Inspection, with mainstream pattern memory and 10X+ reduction in graph size
- Future proof I/O's along with seamless connectivity to DSP's and peripherals
- >2x performance/watt over best alternatives

OCTEON® II CN62XX - Block Diagram

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OCTEON® II CN62XX - Based System Block Diagrams

Leading Router & Security Appliance Solution
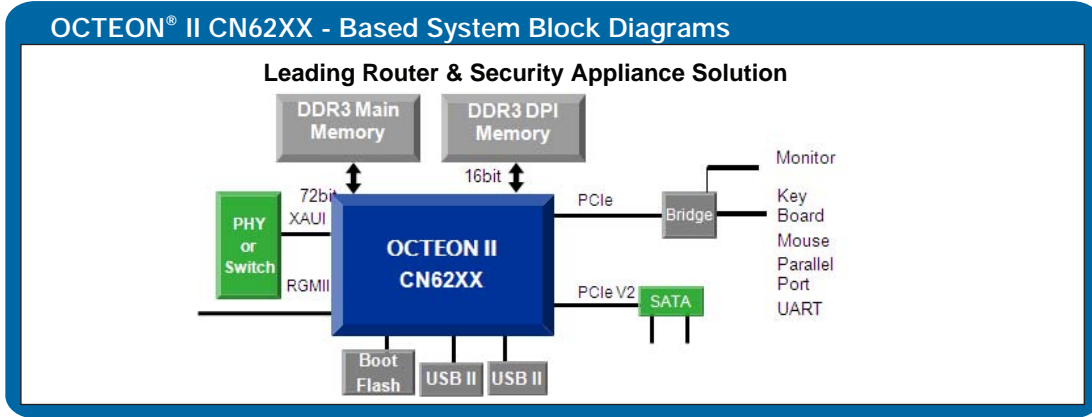
OCTEON II APPLICATIONS

• Next-generation integrated, standalone routers and appliances

• Unified Threat Management (UTM) appliances with Firewall, VPN (IPsec, SSL), IDS, IPS and anti-virus scanning

• Control Plane and Services Processor for storage and networking

• Mid-end Storage appliances with TCP, iSCSI, RAID, compression processing

• Wireless LAN switch/appliance security and packet processing

• Wireless Infrastructure control, packet, security, Deep Packet Inspection, security for LTE/4G/3G

OCTEON II SOFTWARE SUPPORT

• Cavium SDK includes:
  - Up to 32-way SMP LINUX support
  - Cavium Simple Executive for data plane applications
  - Complete GNU tool-chain, GDB, DDD and viewzilla for tuning
  - Optimized C libraries for security, regular expression, de/compression processing offload
  - Support for run-to-completion or pipelined software models

• Complete production quality development toolkits for IP, IPsec, SSL, TCP, SSL-VPN available

• Comprehensive Ecosystem support
  - Popular third-party Operating systems and toolchains

  - Broad range of third-party application software vendors

  - Appliances, AMC, ATCA cards from Cavium's Ecosystem support

• MIPS64/32 support enables thousands of MIPS and other C/C++ applications to be easily ported to OCTEON

OCTEON® II CN62XX - Product Family

Device	Part Number	cnMIPS cores	Performance Max. Available Instructions Per Second	Option AAP	Option CP	L2 Cache	Networking Interfaces	PCI-Express Interfaces	Memory IO w/ECC	Package
CN6220	CN6220-XXXBG900- Option Code	2	4B	Y	Y	1MB	1 XAUI or 4x SGMII	2x [x4 lanes PCIe v2 or x4 lanes SRIO]	DDR3 up to 1600 MHz, 1 x 72-bit	900 FCBGA
CN6230	CN6230-XXXBG900- Option Code	4	8B	Y	Y	1MB				

Device Options:
Device Speed Grade (800 = 800 MHz, 1000 = 1 GHz)
Option code for device family listed below:
AAP = Application Acceleration Processor: Includes RAID, encryption, RegEx acceleration, compression/decompression, networking, TCP acceleration, and QoS
CP = Communication Processor: Includes networking, TCP acceleration, and QoS