CAVIUM

Multi-Core MIPS64® Processors

OCTEON® II CN63XX Multi-Core MIPS64 Processors

Product Brief

OVERVIEW

The OCTEON II CN63XX family of Multi-Core MIPS64 Internet Application Processors targets mainstream, high-volume applications in enterprise routers, switches, appliances, 3G/4G basestations, and intelligent storage and server adapters up to 10+Gbps. The family includes six software and pin-compatible processors, with two to six cnMIPS64 v2 cores 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 to deliver a major performance, power, and real-estate value proposition over alternative solutions.

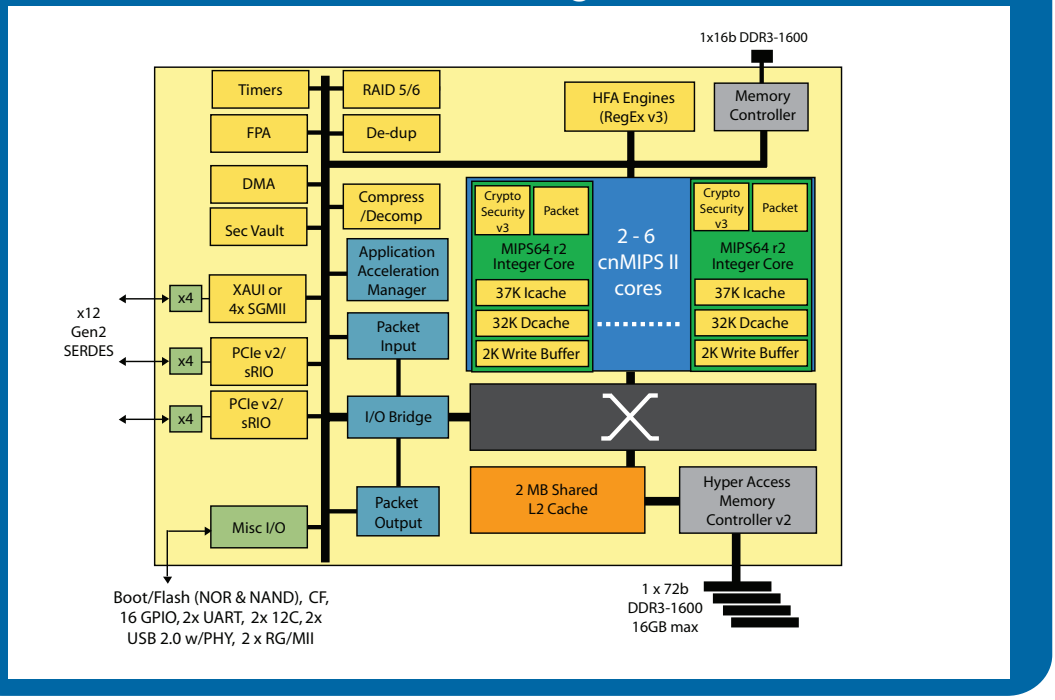
FEATURES

- Up to 1.5 GHz / core with large 2MB 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, 10GbE/GbE
- 7W to 17W max power and power optimizer technology
- Powerful DMA, RAID, and De-dup engines

BENEFITS

- 2x control plane performance per core with total compute of up to 9 GHz
- Up to 10+Gbps of packet processing with QoS
- Up to 10+Gbps security, addition of encryption support for 4G wireless
- 4Gbps+ 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
- Enables 10 Gbps storage HBAs, intelligent server offload cards

OCTEON® II CN63XX - Block Diagram



CAVIUM

2315 N. First Street
San Jose, CA 95131
T 408-943-7100
F 408-577-1992
E sales@cavium.com
www.cavium.com

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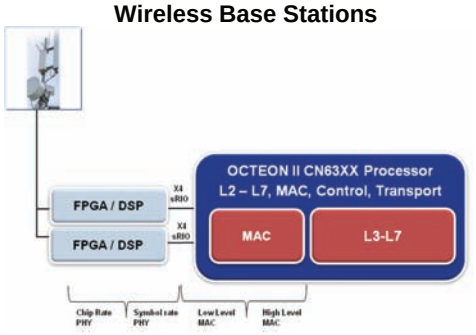
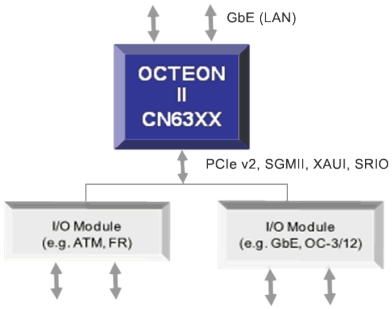
OCTEON® II CN63XX - Based System Block Diagrams

Wireless Base Stations



Integrated Management and Data Application



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
- Application aware/L4+ content processing and switching
- Network acceleration cards for security, TCP, content processing, compression
- Integrated management and route processor cards
- Switch/router line card and services card control and datapath processing
- TCP, iSCSI, RAID, compression processing for storage applications
- Wireless LAN switch/appliance security and packet processing
- Wireless WAN security, control and packet processing including 3G/4G/LTE and WiMAX

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 CN63XX - Product Family

Device	Part Number	cnMIPS cores	Performance	Option		L2 Cache	Networking Interfaces	PCI-Express/ SRIO	Memory IO w/ECC	Package
			Max. Available Instructions Per Second	AAP	CP					
CN6320	CN6320-XXXBG900- Option Code	2	6.0G	Y	Y	2MB	1x XAUI or 4x SRGMII	2x[x4 lanes PICe v2 or x4 lanes SRIO]	DDR3 up to 1600 MHz 72-bit or 1 x 72-bit wide	900 FCBGA
CN6330	CN63300-XXXBG900- Option Code	4	12.0G	Y	Y	2MB				
CN6335	CN6335-XXXBG900- Option Code	6	18.0G	Y	Y	2MB				

Device Options:
Device Speed Grade (800 = 800 MHz, 1000 = 1 GHz, 1200 = 1.2 GHz, 1500 = 1.5 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

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E sales@cavium.com
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