

OCTEON® II CN60XX Multi-Core MIPS64 Processors

Product Brief



OVERVIEW

The OCTEON® II CN60XX family of Multi-Core MIPS64 Processors targets SMB and entry level Enterprise platforms for networking and storage including Broadband Gateway, Switches, Routers, UTM, Mainstream Control Plane, WLAN Access Points, and NAS/iSCSI appliances. The family includes four software and pin-compatible processors, with one to two cnMIPS64 v2 cores on power and area efficient, integrated SoC that includes a rich set of I/O's including PCIe Gen2, six GbE controllers, along with Cavium's most advanced third-generation application hardware acceleration to deliver most optimized solution for power, performance, price over alternative solutions.

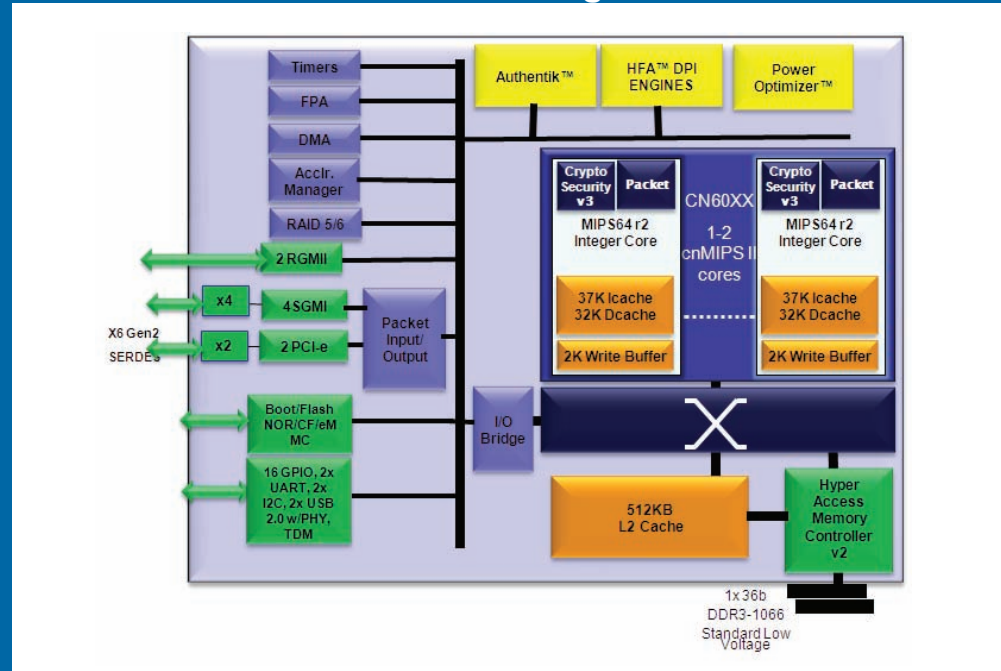
FEATURES

- Up to 800MHz / core with large 512KB L2 cache and enhanced core architecture
- Packet I/O processors and hardware Application Acceleration manager
- New security acceleration engine integrated into the core offering a seamless SW experience without complicated off-loading schemes
- Third-generation pattern search capability with new Hyper Finite Automata (HFA) engines without additional memory requirement for BOM reduction
- Rich I/O Interfaces: DDR3, PCIe Gen2, eMMC, PCIe Gen2, 6 GbE
- 2.5W to 4W max power and power optimizer technology
- Powerful DMA, RAID engines

BENEFITS

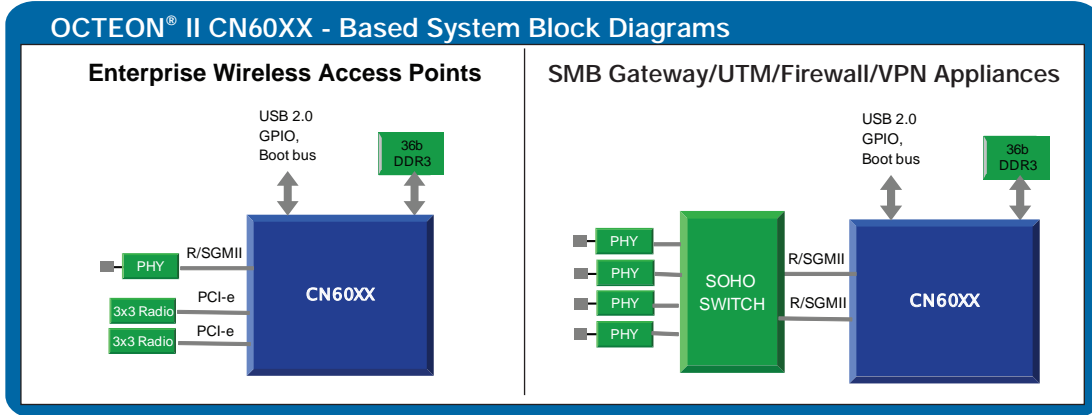
- Power, Performance and Cost Optimized control plane solution with total compute of up to 1.6 GHz
- Up to 2+Gbps of packet processing with QoS
- Up to 2+Gbps security
- 1Gbps+ Deep Packet Inspection, with mainstream pattern memory and 10X+ reduction in graph size
- Highest amount of PCIe and Ethernet controllers in its class
- 2x performance/watt over best alternatives

OCTEON® II CN60XX - Block Diagram



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OCTEON II APPLICATIONS

- SMB class 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 Line Cards in networking and storage
- Switch/router line card and services card control and datapath processing
- SMB NAS/iSCSI appliances with RAID
- Wireless LAN switch/appliance security and packet processing
- Broadband and Service Provider Gateway

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 CN60XX - 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 | A | C | | | | | |
| CN6010 | CN6010-XXXBG900- Option Code | 1 | 1.8G | Y | Y | 512KB | 4x SGMII and 2x RGMII | 2 x1 PCIe v2 1x2 PCIe-V2 | DDR3 up to 1066 MHz, 1 x 36-bit ECC | 868 HS8GA |
| CN6020 | CN6020-XXXBG900- Option Code | 2 | 3.6G | Y | Y | 512KB | | | | |

Device Options:

Device Speed Grade (400 = 400 MHz, 500 = 500 MHz, 600 = 600 MHz, 800 = 800 MHz)

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