

# The 2013 Global Multi-core Challenge



**Objective:** Design the Highest Performing Multi-core Packet Processing Algorithm using bare metal C/C++ programming of the OCTEON Multi-core processor, on a state-of-the-art Multi-core Simulator. The OCTEON SDK and Simulator can run on a Linux-based x86 PC.



**Challenge Deadline:** Entries must be submitted by 11:59 PM PDT, Thursday October 31, 2013.

**Eligibility and Background:** The Challenge is an annual contest for 3rd and 4th year university undergraduates in engineering, math and the physical sciences. Cavium OCTEON Multi-core processors power the internet and won The Linley Group “Best Embedded Processor” Award of 2011.

**Prizes:** The total amount of the cash prizes is \$7448; of that amount we are allocating \$5380 for First Prize and \$2068 for Second Prize.

**Why 7448, 5380 and 2068?** For added fun, there is a contest for students to submit Youtube videos speculating on our rationale for the three cash amounts. An iPad mini will be awarded for each of the following – (1) the video with the correct answer, and (2) the funniest video explanation (as judged by the most votes on our Youtube channel at [www.youtube.com/user/CaviumUniversityProg](http://www.youtube.com/user/CaviumUniversityProg)) Video entries must be submitted by the Challenge deadline.

**Algorithm Requirements:** The winning entry will be the code that processes traffic in the fewest clock cycles while meeting specific functional requirements and design constraints – such as maintaining packet order and scaling performance as the number of cores increases.

**Getting Started:** After registering for the Challenge, you will receive an email directing you to a download site for the Challenge details and the required resources. To register – see the “Global Multi-core Challenge” at [www.facebook.com/CaviumUniversityProgram](http://www.facebook.com/CaviumUniversityProgram)