Algo-Logic Systems Launches Ultra-Low-Latency Highly Scalable Key/Value Search (KVS) Solution for Datacenters

Altera and Algo-Logic Systems successfully collaborate to deliver industry leading algorithmic KVS solutions enabling 150 MSPS at 100 Gbps line rate.

Santa Clara, California, July 22, 2014 – Algo-Logic Systems, Inc., a recognized leader in providing Gateware Defined Networking (GDN)® products and solutions for datacenters, accelerated finance and data acquisition industries, announces the launch of their ultra-low-latency 10G/40G/100G Key/Value Search (KVS) solutions capable of running on multiple Altera Stratix® V platforms.

As shown in the Key performance metrics below, Algo-Logic’s KVS solutions leverage GDN on the Altera Stratix V to load balance and perform lookups with the lowest latency, highest throughput and the least packet processing power consumed. Deploying GDN 10G/40G/100G KVS solutions save network operators transaction time, infra-structure costs and datacenter power resulting in significantly lower Total Cost of Ownership (TCO).

The KVS reference design solution Key performance metrics are listed below:

- 150 million searches per second (MSPS) per core, scalable to 600 MSPS with 4 cores per FPGA
- Latency of less than 1 microsecond which is ~ 45x less latency compared to software sockets
- Line-rate network interface speeds of 10GE, 40GE and 100GE without dropping packets
- Power consumption rate of less than 0.52 µ-Joules/message which is ~21x less than sockets
- Table sizes ranging from 96k entries On-Chip to 12M entries per core with Off-Chip DDR3

Algo-Logic’s 2nd generation KVS solution performs 150 million searches per second (MSPS) enabling wire-speed 100 Gbps packet processing. Moreover, by instantiating four cores, our customers can search 600 MSPS to support up to 400 Gbps of traffic using a single programmable logic device. Consequently, the 2nd generation KVS technology increases by orders of magnitude the search capabilities of the Internet Service Providers (ISPs), Hosting Service Providers (HSPs), Software-Defined Networks (SDNs)/OpenFlow, datacenters, big-data processing systems, accelerated finance systems, network security devices, VOIP switches, firewalls, routers, financial analytics and virtualized cloud computing systems.

"This algorithmic KVS on Altera 100G Stratix V GX Board collaborative effort provides industry leading performance, lowest latency, highest throughput and the lowest power data search solution for datacenters”， said Mike Strickland, director for Altera’s computer and storage business unit.

“Our high performance and low latency KVS solutions running on Altera’s 100G Stratix V GX board provide the most cost-effective gateware accelerated search capabilities for Telecom ESNs, IPv4/IPv6 addresses, web cookies, stock market order IDs and N-Tuple rules. The technology is ideal for speeding up block store caching, NoSQL databases, Memcached and DynamoDB implementations.” said John Lockwood CEO of Algo-Logic Systems, Inc.

To enable rapid deployment of the KVS system, Algo-Logic Systems will provide a hands-on KVS Tutorial at the upcoming IEEE Hot Interconnects Symposium to be held at the Google Campus on August 28th. For more details, visit the HotI organization link at: http://www.hoti.org/
About Algo-Logic Systems:
Algo-Logic Systems is a recognized leader and developer of fast time-to-market GDN® Solutions built with Field Programmable Gate Array (FPGA) devices used in packet processing in datacenters, embedded hardware systems and accelerated finance industries. In addition, it also has extensive experience building routers, data center switches and customized network processing system solutions in FPGA/ASIC/SoC logic.

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