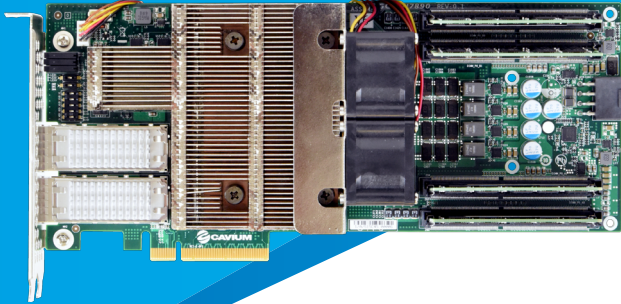


# Cavium LiquidIO® II Network Appliance Smart NIC

## Industry's Leading Smart NICs with Network and Security Acceleration



- I/O for next-generation agile data center—10/40 Gigabit Ethernet (GbE) bandwidth
- Network acceleration with maximum application performance
- Custom programmability for faster time-to-market with new features
- Hardware acceleration of compute-intensive applications and transport operations
- Workload optimized software for performance and compute scalability

## OVERVIEW

Cavium® LiquidIO® II Smart NICs with dual port 40GbE connectivity, built using Cavium's market leading technology, provide best-in-class performance for hyper-scale, Telco, and enterprise/private data centers with intelligent network acceleration.

Cloud infrastructure requires optimizing equipment for performance, cost, and power at scale. Intelligent adapters can achieve these goals by moving specific workloads onto highly optimized adapter hardware, leaving the host server to run more efficiently. Moving network virtualization, storage protocols, security, software defined networks (SDN), and network overlays to the adapter can dramatically reduce operational and capital expenditures.

LiquidIO II Adapters provide flexible I/O capabilities, advanced network and security hardware accelerators, and software support to provide the best-in-class performance for a variety of cloud data center models, including hyper-scale, Telco, enterprise, and hybrid clouds. LiquidIO adapters provide high performance offloads to meet the increased demands that virtualization places on server infrastructures.

### AGILITY

LiquidIO adapters delivers flexible architecture designed to meet the needs of users who want flexible 10GbE and 40GbE interface. The ability to be configured for 4 x 10GbE or 1x 40GbE per port, this family of adapters offers the agility required in the data centers.

### QUALITY OF SERVICE (QOS)

Data center efficiency and scalability depends on the capabilities of a network adapter to manage, schedule, steer and prioritize traffic based on queue management, packet marking, congestion notification and priority based scheduling. LiquidIO supports various mechanisms to manage and shape traffic with dedicated independent queues in hardware. LiquidIO adapters support hierarchical levels with single or dual rate tri-color marking and per queue shaping and scheduling.

### DPI ACCELERATORS

The DPI hardware engine includes DPI HFA (Hyper Finite Automata) engine for generic packet analysis and for complex regular expression (regex) rules. Data centers can enhance cybersecurity with a rich set of supported crypto acceleration.

Flow identification with flexible tag generation for IPsec SPI and GRE tunnel protocol is supported in hardware, essential for packet classification.

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## **DPI WITH L7 APPLICATION RECOGNITION**

Cloud networks must support the increase in data size and availability with the right cybersecurity analysis tools and software. LiquidIO hardware acceleration supports dedicated security and crypto engines to allow data analysis of traffic from L2-L7 with deep packet inspection, packet filtering and application recognition features to enhance security in data centers.

## **FULL CUSTOM PROGRAMMABILITY**

LiquidIO adapters are fully programmable making them the industry's most flexible and scalable with high performance, low cost solution for networking applications. The supported software packages accelerate data center networking with improved CPU efficiency, scalability and overall compute performance for any data center workload.

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## SPECIFICATIONS, COMPLIANCE & COMPATIBILITY

### Host Bus Interface Specifications

#### Bus Interface

- PCIe® Gen3 x8, Gen2 x8 (electrical)

### I/O Virtualization

- SR-IOV

## ETHERNET SPECIFICATIONS

### Ethernet Frame

- Jumbo Frame Support

### Offloads\*

- IP/TCP/UDP checksum offload
- Stateless offloads
- Overlay network offloads
- Security offloads

\* Any offload functionality is fully programmable by the customers.

### On-board Memory

- 32GB DDR4 +ECC

### Compliance

#### IEEE Specifications

- IEEE Std 802.3ae 10 Gigabit Ethernet
- IEEE 802.3 40GBASE-R
- IEEE 802.3ad Link Aggregation and failover
- IEEE 802.1Q.1p VLAN tags and priority
- IEEE 802.1Qbb (PFC)
- IEEE 802.1Qaz (ETS and DCBX)
- IEEE 1588

### Operating Systems/Distributions\*

- CentOS
- Scientific Linux

\* Ask your Cavium representative about the latest supported operating systems and Hypervisors.

### Physical Specifications

#### Ports

- Dual port QSFP+ (40GbE)

#### Dimensions

- 247.65mm x 98.40mm

### Agency Approvals—Safety

#### US and Canada

- cTUVus UL

### Agency Approvals—EMI and EMC (Class A)

#### US and Canada

- FCC Rules, CFR Title 47, Part 15, Subpart Class A
- Industry Canada, ICES-003: Class A

## ORDERING INFORMATION

### CN7890-240NV-32M-Y-G

- Dual Port 40G QSFP+
- cnMIPS III 48 Cores @ 1.6GHz
- 247.65mm x 98.40mm



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