NETRONOME

NFE-3240 Appliance Adapters

NETWORK FLOW ENGINE APPLIANCE ADAPTERS

## Accelerate Network and Security Aplications

Netronome's Flow Engine family of appliance adapters (NFE-3240) are specifically designed to improve the network performance of x86-based appliances and servers. Available in 2-port 10GbE and 6-port 1GbE options, the NFE-3240 provides up to 20Gb/s of line-rate programmable packet and flow processing per card, providing a 10X performance increase over traditional NICs in real-world network and security applications running on IA/x86 systems. The NFE-3240 enables the acceleration of network and security applications by utilizing high-performance packet processing delivered from 40 networking-optimized processor cores. The NFE-3240 utilizes several techniques to dramatically improve network workloads, including packet classification, stateful flow analysis and per flow match/action processing, Layer 2 switching, Layer 3 routing, IPsec VPN origination/termination, SSL inspection, network address and port translation and dynamic load-balancing of flows across a virtualized PCIe datapath to parallelize application processing.

Benefits

- Line-rate flow processing, packet inspection and packet capture across all packet sizes
- Integrated security processing including 20Gb/s of line-rate cryptography and PKI operations
- Green computing through the industry's highest BIPs (billion instructions per second) per watt at 1,800 instructions/packet at 30 million pps

Features

- High-performance network flow processing powered by the NFP-3240 (40 MEs @ up to 1.4 GHz)
- Packet classification for up to 64,000 rules
- Stateful flow analysis and action processing for up to 8 million flows in hardware
- Flexible interface options including 2x10GbE and 6x1GbE
- High-speed PCIe Gen2 interface with 8 lanes offering up to 40Gb/s of bandwidth between the NFE and the host x86 system
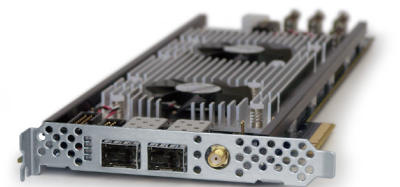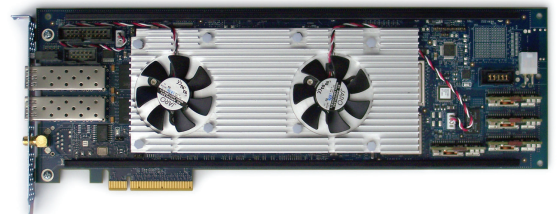
Netronome's Network Flow Engine PCIe cards offer a highly programmable heterogeneous multicore architecture that tightly couples the Netronome NFP flow processing cores – for switching and routing, packet classification, stateful flow analysis, deep packet inspection, flow-based load balancing and security processing – with the performance and ubiquity of general-purpose multicore x86 systems over a high speed virtualized PCIe datapath.

Netronome Network Flow Engine Family

	NFE-3240-20F-AB-21	NFE-3240-20F-EA-20	NFE-3240-20F-DC-20	NFE-3240-6C-DC-20
Processor	NFP-3240	NFP-3240	NFP-3240	NFP-3240
Clock Speed	1.4Ghz	1.1Ghz	1.0Ghz	1.0Ghz
TCAM	36Mb	36Mb	Algorithmic (SW)	Algorithmic (SW)
QDR2 SRAM	32MB	32MB	--	--
DDR3 DRAM	8GB	4GB	4GB	4GB
Crypto and PKI	Yes	No	No	No
Virtualized I/O	Yes	Yes	Yes	Yes
Ports(s)	2x10GbE	2x10GbE	2x10GbE	6x1GbE
PCI-e Form Factor	Full length, full profile	Full length, full profile	Half length, full profile	Half length, full profile
PCIe	Gen2 x8	Gen2 x8	Gen2 x8	Gen2 x8

- Hardware-based cryptography and PKI operations
- Low latency with less than 100μs for inline x86 applications and less than 20μs for traffic offload onto NFE
- I/O virtualization through an enhanced version of the SR-IOV standard
- Packet timestamping with 11ns accuracy
- GPS time synchronization
- Dynamic load balancing to parallelize application performance
- Layer 2 switching / Layer 3 routing
- Network address and port translation (NAPT)
- Full programming flexibility to support network or protocol changes
- Fully supported C APIs
    - An abstraction layer that controls the packet processing occurring in the NFE MEs
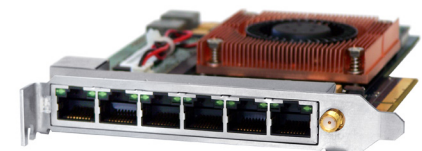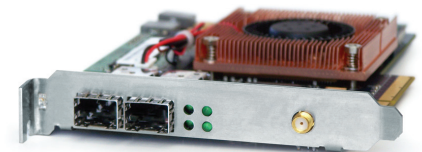
SPECIFICATIONS	
Model Number	NFE-3240
Network Ports	Two 10GbE, six 1GbE
Processor	NFP-3240
Clock Speed	up to 1.4Ghz
TCAM	up to 36MB
QDR SRAM	up to 32MB @ 300Mhz
DDR3	up to 8GB @ 1066Mhz
Port Speeds	10Gb/s or 1,000Mb/s
Connectors	RJ-45, SFP+
Bus Type	PCI Express Gen 2 x8
Power	40W (Nominal) / 65W Maximum
Diagnostic LEDs	Link status, network activity, and status
Platforms	64-bit IA/x86-compliant

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