NFE-3240 Appliance Adapters
NETWORK FLOW ENGINE APPLIANCE ADAPTERS

Accelerate Network and Security Applications

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
## Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>NFE-3240-20F-AB-21</th>
<th>NFE-3240-20F-EA-20</th>
<th>NFE-3240-20F-DC-20</th>
<th>NFE-3240-6C-DC-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>NFP-3240</td>
<td>NFP-3240</td>
<td>NFP-3240</td>
<td>NFP-3240</td>
</tr>
<tr>
<td>Clock Speed</td>
<td>1.4Ghz</td>
<td>1.1Ghz</td>
<td>1.0Ghz</td>
<td>1.0Ghz</td>
</tr>
<tr>
<td>TCAM</td>
<td>36Mb</td>
<td>36Mb</td>
<td>Algorithmic (SW)</td>
<td>Algorithmic (SW)</td>
</tr>
<tr>
<td>QDR2 SRAM</td>
<td>32MB</td>
<td>32MB</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>DDR3 DRAM</td>
<td>8GB</td>
<td>4GB</td>
<td>4GB</td>
<td>4GB</td>
</tr>
<tr>
<td>Crypto and PKI</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Virtualized I/O</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ports(s)</td>
<td>2x10GbE</td>
<td>2x10GbE</td>
<td>2x10GbE</td>
<td>6x1GbE</td>
</tr>
<tr>
<td>PCIe</td>
<td>Gen2 x8</td>
<td>Gen2 x8</td>
<td>Gen2 x8</td>
<td>Gen2 x8</td>
</tr>
</tbody>
</table>

- 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

### Netronome Network Flow Engine Family

- 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