napatech

SmartNICs for Smarter Data Delivery

NT40E3-4-PTP
4-PORT 10/1G PCIe GEN3

4 × 10/1 Gbps PACKET CAPTURE AND ANALYSIS

Use cutting-edge network SmartNIC technology to add real-time line rate performance to your application. Napatech 4-port 10/1 Gbps SmartNICs provide full packet capture and analysis of network data at 40 Gbps with zero packet loss. The Napatech SmartNIC will capture all frames, including erroneous frames normally discarded by standard NICs. The Napatech NT40E3-4-PTP can also be used for in-line application acceleration.

The Napatech SmartNIC allows you to merge data from ports into a single, time-ordered analysis stream. It supports 1-128 packet streams using intelligent hardware flow distribution to allow your application to scale to higher packet rates with no packet loss. The Napatech SmartNIC will distribute packets based on flow or on L3/L4 filter criteria.

The 4 GB DDR3 RAM buffer allows buffering packets on the SmartNIC to prevent packet loss during peak server loads. Packets are hardware timestamped when they arrive at the network ports, ensuring that the time stamp is always reliable.

The SmartNIC also comes in a NEBS level 3 compliant variant.

NT40E3-4-PTP

NT40E3-4-PTP-NEBS
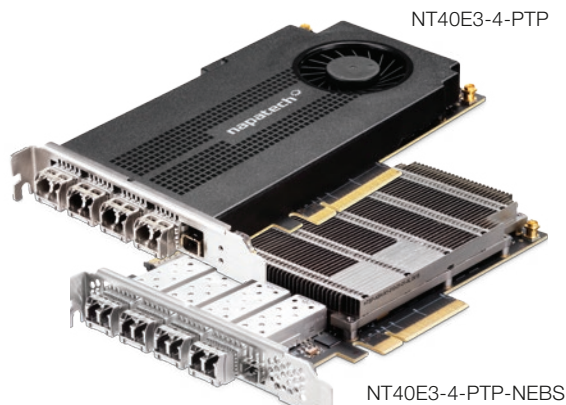
FEATURE HIGHLIGHTS

- Scalable pipeline architecture
- Network ports: 4 × SFP+
- Capture of Ethernet traffic: Full 4 × 10/1 Gbps
- Zero packet loss for all frame sizes
- 4 GB DDR3 RAM buffer (800 ms at 40 Gbps)
- Typical CPU load: < 5% of one core
- Addressing up to 1 TB application buffer memory
- Packet or segment delivery to application
- Hardware-accelerated:
  - Multi-port packet merge
  - Load distribution across up to 128 CPU cores
  - 1 ns time stamp resolution
  - Frame and protocol information
  - Filtering based on e.g. L3/L4 criteria
  - GTP, IP-in-IP, GRE and NVGRE tunneling support
  - IP fragment handling
  - Slicing at fixed or dynamic offset
  - RMON1 counters, including jumbo frames
- IEEE 1588-2008 PTP and PPS time synchronization
- OS time synchronization
- Easy-to-integrate API
- Linux, Windows, libpcap and WinPcap

NAPATECH-SUPPORTED APPLICATIONS

Napatech SmartNICs enable OEM vendors to build high-performance network appliances based on standard servers. Examples of applications include:

- Revenue and services optimization
- Quality of experience optimization
- Financial latency measurement
- Customer experience analysis
- Data loss prevention
- Virtualized activity analysis
- Cyber defense
- Fraud detection and compliance management
- Infrastructure management and security
- Network and application performance
- Troubleshooting and compliance

SPECIFICATIONS

GENERAL FEATURES

- Full line-rate processing for all frames from 64 bytes to 10,000 bytes - keep or discard erroneous frames
- IEEE standard: IEEE 802.3 10/1 Gbps, 100 Mbps Ethernet support
- Network interface: 4 × SFP+ ports
- Supported SFP modules: Multi-mode SX, single-mode LX and ZX, 1000BASE-T or 10/100/1000BASE-T
- Supported SFP+ modules: Multi-mode SR, single-mode LR and ER, 10GBASE-CR
- Supported dual-rate modules: Multi-mode SR and single-mode LR
- Data rate: 4 × 10/1 Gbps
- Typical CPU load: < 5%
- Time formats: PCAP-ns/-µs and UNIX 10 ns
- Time stamp resolution: 1 ns
- Stratum 3 compliant TCXO
- Pluggable options for IEEE 1588-2008 PTP and PPS time synchronization
- PTP slave in IEEE 1588-2008 default and telecom profiles

SmartNIC SOFTWARE

- Operating systems: Linux, Windows
- Napatech API for high performance and advanced features
- libpcap
- IEEE 1588-2008 PTP stack
- SDK tools included in source code for debugging and prototyping and as application examples

SmartNIC HARDWARE

- Bus type: 8-lane 8 GT/s PCIe Gen3
- 4 GB onboard DDR3 RAM
- Flash: Support for two boot images
- Built-in thermal protection
- Physical dimensions: ½-length and full-height PCIe
- Weight excluding pluggable modules:
  - NT40E3-4-PTP: 260 g
  - NT40E3-4-PTP-NEBS: 285 g
- MTBF according to UTE C 80-810:
  - NT40E3-4-PTP: 297,993 hours
  - NT40E3-4-PTP-NEBS: 367,807 hours

- Power consumption including SFP+ SR modules:
  - NT40E3-4-PTP: max 27 Watts
  - NT40E3-4-PTP-NEBS: max 30 Watts

ENVIRONMENT FOR NT40E3-4-PTP

- Operating temperature: 0 °C to 45 °C (32 °F to 113 °F)
- Operating humidity: 20% to 80%

ENVIRONMENT FOR NT40E3-4-PTP-NEBS

- Operating temperature: –5 °C to 55 °C (23 °F to 131 °F) measured around the SmartNIC
- Operating humidity: 5% to 85%
- Altitude: < 1,800 m
- Airflow: >= 2.5 m/s

REGULATORY APPROVALS AND COMPLIANCES

- PCI-SIG®, NEBS level 3, CE, CB, RoHS, REACH, cURus (UL), FCC, ICES, VCCI, C-TICK, KCC

COMPANY PROFILE

Napatech is the world leader in data delivery solutions for network management and security applications. As data volume and complexity grow, organizations must monitor, compile and analyze all the information flowing through their networks. Our products use patented technology to capture and process data at high speed and high volume with guaranteed performance, enabling real-time visibility. We deliver data faster, more efficiently and on demand for the most advanced enterprise, cloud and government networks. Now and in the future, we enable our customers' applications to be smarter than the networks they need to manage and protect.

Napatech. SMARTER DATA DELIVERY