

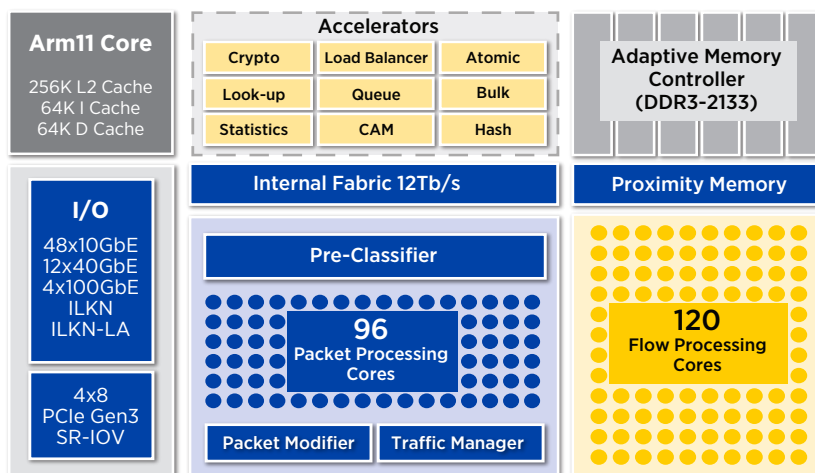
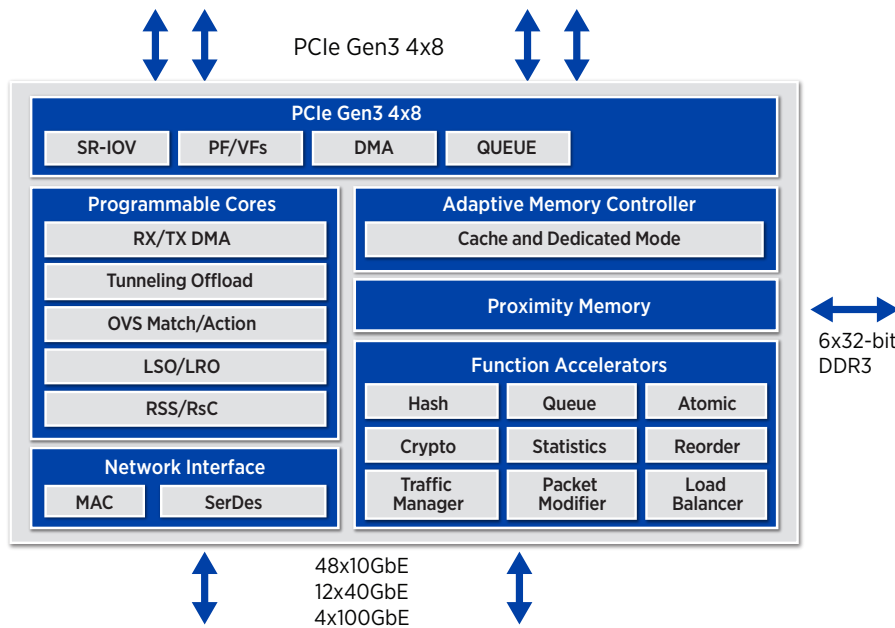
Netronome NFP-6000 Flow Processor

PURPOSE-BUILT PROCESSORS FOR INTELLIGENT NETWORKING

Netronome’s 6th generation NFP-6000 multi-threaded, multicore flow processor targets intelligent data plane processing at higher performance, with lowest power and cost, while enabling the capability to adapt quickly to new networking features. The optimized match/action-based flow processing architecture enables per tenant, per VM, per application policies at scale to support microsegmentation. In security applications, the built-in, high-performance bulk cryptography acceleration delivers secure data access at cloud scale.

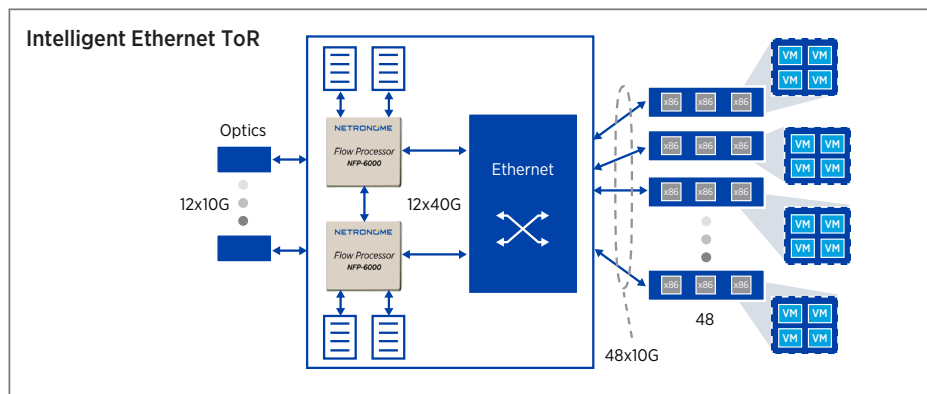
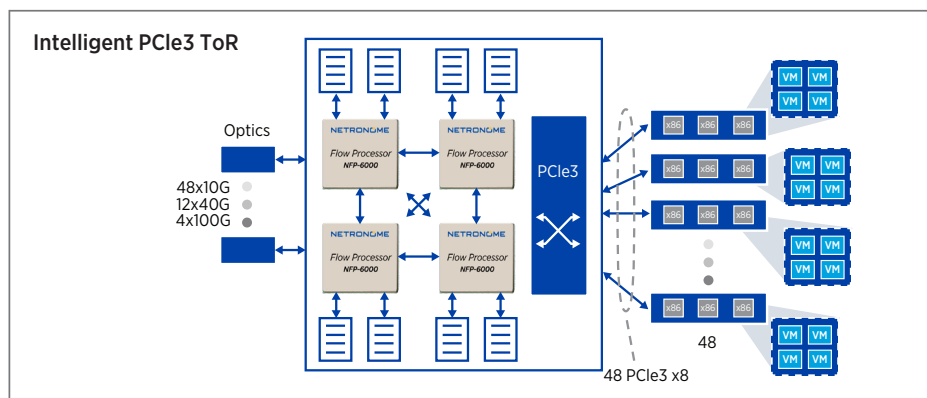
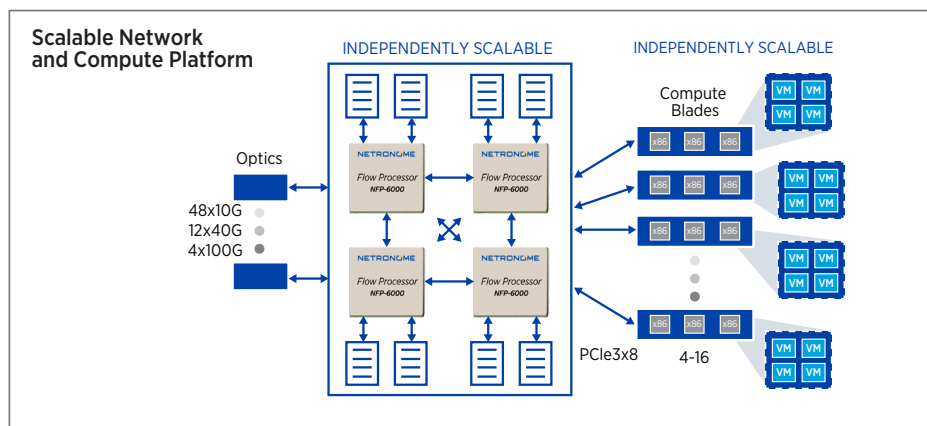
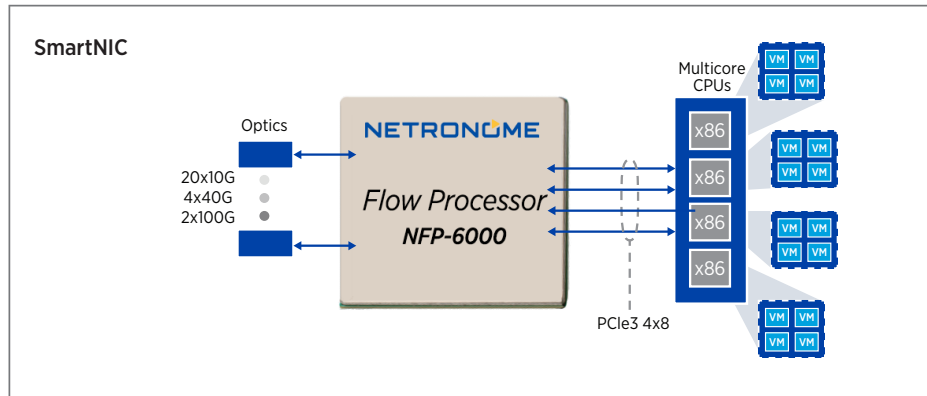
FEATURES

- 120 programmable flow processing cores
- 96 packet processing cores
- PCIe Gen3 4x8 interface (4PF/64VF each)
- SR-IOV with 256 hardware queues
- Adaptive buffer management
- Configurable 6x32-bit or 3x64-bit ECC protected DDR3-2133
- Over 31MB of on-chip memory
- 48 KR capable SerDes supporting:
 - Ethernet 10G/40G/100G
 - Interlaken x10G, x40G, x100G
- 12Tb/s credit-based internal fabric connecting processing and memory resources.
- Hardware-based, in-line bulk cryptography support for all major cypher suites
- 100 dedicated accelerators for Deep Packet Inspection (DPI)
- Regex matching, traffic management, security processing and bulk cryptography
- Arm11 Core (L1 (64K), L2 (256K))



NFP-6000 Flow Processor Block Diagram

Sample Designs



Benefits

- Fully programmable 200Gb/s L2-L7 processor
- 384 million packets per second
- Over 256Gb/s wire-speed stateful flow and packet processing
- Support for custom tunnel types: VXLAN, NVGRE, MPLS
- Millions of exact match and wild card flows
- Stateless and stateful load balancing
- Hardware flow tracking for cut-through acceleration
- 100K+ tunnel encapsulation and de-encapsulation

Target Applications

- Security appliances
- Intrusion Detection Systems (IDS)
- Intrusion Prevention Systems (IPS)
- Next Generation Firewall (NGFW)
- Routers
- Load balancers
- Packet brokers
- Data center applications
- Carrier SDN and NFV appliances
- Advanced services blades
- Data center virtualized appliances
- Open Compute Platforms
- Test and measurement equipment
- Network probes and monitors
- Aerospace and automotive
- Industrial control



Software Support

- SDK
- Drivers up-streamed to RHEL
- P4
- BPF, eBPF offload
- Open vSwitch (OVS 2.0) acceleration and offload
- SDN Support
- OpenFlow 1.3 support with 42 match fields
- KVM hypervisor support
- Intel DPDK poll mode driver and zero-copy to Linux user space
- Profile and performance tools

Specifications

- 6/6 RoHS compliant

Package

- 1,932 Ball (45x45mm) Flip Chip BGA, 1mm solder ball pitch

NETRONOME

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