

Enabling the new network

Network traffic in both enterprise and carrier networks is continuing to rise, driving the bandwidth requirements and line rates to 10 Gbps today, and is expected to grow to 40 Gbps and beyond in a few years. With the need for application awareness, content inspection, and security processing, the amount of processing power within the network infrastructure at these ever-increasing line rates is growing exponentially.

In a typical enterprise or carrier network environment, network traffic is sourced by many users and applications, and as a result, tends to be uncorrelated. This aggregated multiplexed packet stream might consist of packets belonging to real-time applications, such as video conferencing and VoIP, and others belonging to non-real-time applications, like e-mail and text messaging.

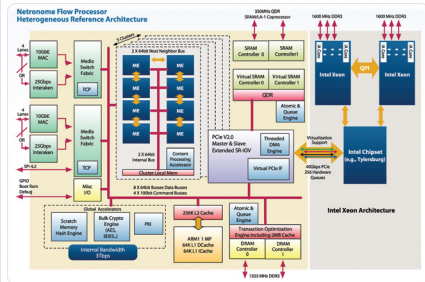
To enable service providers and network equipment vendors to meet the high-performance challenge, a new multichip, multicore heterogeneous processor architecture is required – the NFP-32xx family.

40 cores tackle packets

Multicore processing technology is continuing to evolve, and creative new architectures are showing up to do more work with less power consumption. A good example is the new Netronome NFP-32xx family, delivering more than 1.838 billion instructions per watt in a profile of 15 to 35 W. These highly integrated network flow processor engines are designed to team with Intel architecture processors using the Single Root I/O Virtualization (SR-IOV) features of PCI Express Gen 2 to provide 256 queues for I/O coprocessing.

The 40 microengines are integrated into an optimized high-speed interconnect, with programming tools available to help designers utilize the architecture. To integrate with high-speed networks, NFP-32xx incorporates 25 Gbps Interlaken, SPI 4.2, and 10 Gbps XAUI interfaces. On-chip security processing is also important, with crypto engines supporting RC4, Triple Data Encryption Standard (3DES), Advanced Encryption Standard (AES), Secure Hash Algorithm 1 (SHA-1), and SHA-2.

The result, according to Netronome, is the ability to perform 20 Gbps of Layer 2-7 deep packet processing with line-rate security features, all in an optimized power profile.



Netronome | www.netronome.com

Model: NFP-32xx family | **RSC#** 42250

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