

Express DS 4100 Secure Multi-Gigabit Server Adapter with Compression

CUTS BANDWIDTH USAGE IN HALF AND SEAMLESSLY SECURES LINK



Hardware Accelerated Security and Compression Offloads Host CPU

The Express DS 4100 Secure Multi-Gigabit Server Adapter with Compression leverages the second generation Hifn FlowThrough™ 8450 Applied Services Processor to eliminate all cryptographic and compression overhead for two full-duplex Gigabit Ethernet ports. The DS 4100 addresses a range of applications requiring wire-speed Ethernet or IP based security and compression, providing off the shelf, production ready solutions for the storage, IP networking, VoIP, 3G wireless, and telecommunications markets.

The DS 4100 advanced FlowThrough architecture enables complete host CPU offload for both security and compression. The DS4100 FlowThrough engines perform security policy processing, security context look-up and cryptography and compression all without impact to the host platform processor. The DS4100 generates savings in both host software complexity as well as processor cycles, since packets exit the host network interface as they would in a normal clear text environment before being automatically transformed by the DS4100. In addition, the establishment of IPsec security associations can be offloaded from the host CPU and performed transparently by running the optional on chip IKE software stack. Outgoing clear-text packets will automatically start IKE negotiations and establish complete security contexts without host involvement. In addition to saving valuable CPU overhead, the powerfull FlowThrough architecture enables quick, easy system integration, and fast time to market.

Bandwidth Optimization Reduces Data Center Expenses

The Hifn Express DS 4100 enables OEMs to add tremendous value to their products, providing added cost-saving features , and driving down capital and operating expenses. The Hifn Express DS 4100 provides enterprise-class, hardware-accelerated data reduction and encryption, and unprecedented performance, delivering on average a 2:1 reduction benefit for applications such as remote replication and backup and disaster recovery.

Low Power with High Performance Enables the Green Data Center

The DS 4100 dedicated encryption and compression hardware reduces the overall system power consumption, yielding huge benefits in cooling and power supply costs. With a typical power draw of only 8 watts, the DS 4100 delivers best in class performance per watt while helping to enable today's green data center.

Low Latency Preserves Application Performance

Applications such as packetized voice or video require minimal, deterministic latency to avoid degrading their real time performance. The dedicated FlowThrough engines ensure that performance remains deterministic, rather than dependent on host application processor load, which can vary widely in latency and throughput.

FEATURES

- In-line FlowThrough™ Architecture for protocol, algorithm and exception processing
- Complete CPU offload for encryption and compression
- High performance – Dual 1Gb/sec Ethernet ports
- Optional On-Chip IKE software stack delivers additional host CPU offload
- IPv4 and IPv6 packet processing
- IPsec, SRTP
- IPComp (LZS Compression)

SECURITY ASSOCIATION AND POLICY SUPPORT

- Support for 64,000 Security Associations
- 256 Policies on-chip

ENCRYPTION

- AES (128, 256) in CBC, CTR, GCM modes
- DES/3DES in CBC mode

AUTHENTICATION

- SHA-1, SHA-256
- MD5
- AES-XCBC-MAC
- AES-GMAC

PUBLIC KEY

- RSA, Diffie-Hellman (1024, 2048, 4096)



Hifn Express DS 4100 Card



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FRONT PANEL

- 2x Gigabit Ethernet RJ-45
- Link LED per port
- Activity LED per port

FORM FACTOR

- Low profile 1/2 height
- 2.7" x 6.6"

OPERATING ENVIRONMENT

- Temperature: 0°C to 55°C
- Operating Humidity: 0-90% @ 55°C
- Power Consumption: 8W typical

CERTIFICATIONS

- FCC Class A
- CE Compatible
- UL

OS SUPPORT

- Windows Server 2003 32/64 bit
- Windows Server 2008 32/64 bit
- Windows XP 32/64 bit
- Windows Vista 32/64 bit
- Linux 2.6 Kernel

ADDITIONAL SPECIFICATIONS

- Intel 82576 Dual Port GMAC PCIe V2.0 x4
- TCP/UDP checksum offload
- IEEE 802.1q; 802.1p
- Support for Jumbo Frames (9022 bytes)
- 256MB SDRAM
- 4MB Serial Flash

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User Friendly, Comprehensive Software Environment Enables Fast Time to Market

The DS 4100 leverages the industry proven Hifn FlowThrough software development kit (SDK), which provides a comprehensive suite of utilities and application programming interfaces (APIs) for easy, flexible configuration, collection of run-time statistics, and debugging. The same standardized FlowThrough SDK APIs and utilities are supported across the entire FlowThrough range of products, enabling fast, easy development and product migration within the FlowThrough family of boards and devices.

Easy, user friendly management is provided with a GUI for all supported Windows versions, which includes Windows Server 2003, Server 2008, XP, and Vista, and allows policies and security associations to be easily configured with a simple point and click graphical

interface. In addition, a management CLI is provided for both Windows and Linux.

At the lowest layers, the Hifn Porting Layer makes sure that specific Operating Systems can be easily supported by filling in the correct OS primitives to the Hifn SDK abstractions. Native Linux is supported through the porting layer. The Hifn Base Transport Layer, responsible for generating the FlowThrough in-band management frames, does not require kernel based device driver support. Access to the FlowThrough host interfaces is provided by the native Ethernet device driver, reducing porting effort.

Ordering Information

Part Number	Description
4100S	Dual-Port Server Adapter
4100S-K	Dual-Port Server Adapter with on-chip IKE

