

## High-Bandwidth Network Security

# Xelera Secure Networks

Xelera Secure Networks is a high-performance software suite which provides network security functions with high bandwidth and low latency. The software suite runs on data center and public cloud servers. Networks with security capabilities are often limited in bandwidth and scalability. Xelera Secure Networks eliminates these performance bottlenecks and provides up to 200Gbps secure network bandwidth.

### PERFORMANCE

The Xelera Secure Networks software takes the performance bottlenecks out of network security. It provides a performance range from 10 Gbps to 200 Gbps bandwidth, starting with a software-only accelerator and scaling up to 100G Ethernet with the transparent utilization of server-class hardware accelerators such as FPGAs.

### DEPLOYMENT

The software is deployed on COTS server hardware either bare-metal or in virtualized/containerized environments. It provides an optional high-speed interface to the Linux Kernel Network Stack or works as a full Kernel bypass. The acceleration software is managed through an API-controlled configuration interface.

## PRODUCT BRIEF

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# SECURE NETWORKS

- High-performance network security software
- High bandwidth, low latency
- Full performance range in a COTS server - from a 10 Gbps software-only accelerator to 200 Gbps

### ACCELERATOR MODES

#### Software-only Accelerator

Performance-optimized user-space software for data plane processing running solely on CPU cores.

**Saturates 10 Gbps Ethernet**

#### Look-aside Accelerator

Connects to standard (virtual) network interfaces and offloads security functions to hardware accelerators.

**Saturates 40 Gbps Ethernet**

#### Inline Accelerator

Uses the physical network ports on the hardware accelerator and performs all networking & security functions on-chip.

**Saturates 200 Gbps Ethernet**

### XELERA SECURE NETWORK SUITE



**IPsec Accelerator**  
High-speed IPsec  
Reduction of CPU cores



**DDoS Detection**  
Low latency packet and  
flow inspection



**TLS Offload**  
High-bandwidth TLS  
Reduction of CPU core



**WireGuard**  
Accelerating next-  
generation VPNs

The Xelera Secure Network Suite provides multiple high-speed network security functions built on a performance-optimized data plane processing framework.

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## SECURE NETWORKS

## High-Bandwidth Network Security

# Xelera Secure Networks – IPsec Accelerator

### ESP

- AES256 GCM 12/16
- Compliant with RFC 4303

### KEY EXCHANGE

- IKEv2
- Encryption: AES256 GCM 8/12/16
- PRF (HMAC): MD5, SHA1, SHA2-256, SHA2-384, SHA2-512
- Integrity (HMAC): SHA1, SHA2-256, SHA2-384, SHA2-512
- DH: MODP groups 1 (768 bits), 2 (1024 bits), 5 (1536 bits), 14 (2048 bits), 15 (3072 bits), 16 (4096 bits), 17 (6144 bits), 18 (8192 bits)
- DH Perfect Forward Secrecy
- Authentication: RSA
- Compliant with RFC 5996

### DEPLOYMENT

- Bare metal
- Docker / Kubernetes
- Virtual machines
- Tested with popular hypervisors

#### Software-only Accelerator

- COTS servers
- CPU core count: 4 logical cores

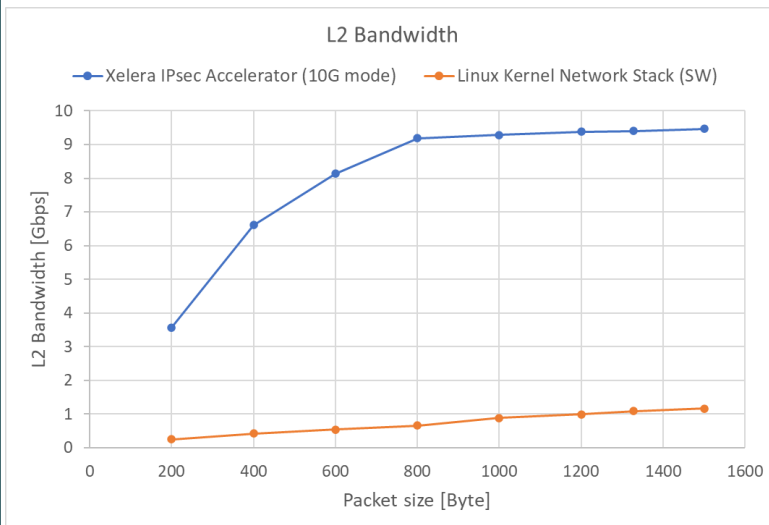
#### Look-aside Accelerator

- COTS servers with Xilinx FPGA accelerators
- CPU core count: 4 logical cores

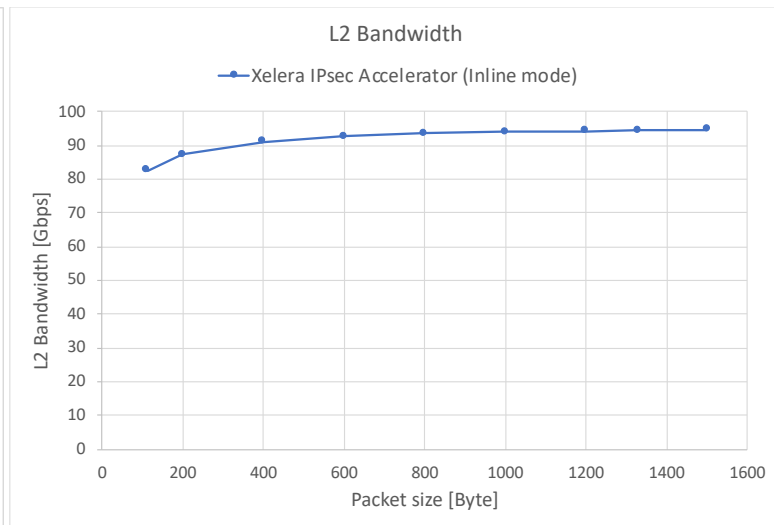
#### Inline Network Accelerator

- COTS servers with Xilinx FPGA accelerators
- CPU core count: 1 logical core

## BENCHMARK



Full-duplex, worst-case latency: 0.93 ms



Full-duplex, worst-case latency: 0.74 ms

Server 1: Dell PowerEdge R740 | 2x Intel Xeon Gold 2.3 GHz | 12C/24T | 64GB RAM  
 Server 2: Dell PowerEdge R7525 | 2x AMD EPYC 7252 3,10 GHz | 8C/16T | 64GB RAM  
 Linux kernel: 5.4.0-77-generic (Stock Ubuntu 20.04.2 LTS)  
 L2 bandwidth measurement (discards Ethernet preamble, checksum and interframe gap)

## CONTACT

Further information and licensing: [sales@xelera.io](mailto:sales@xelera.io)

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