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Intel® QuickAssist Adapter 8970

Cisco UCSC-P-IQAT8970

Hardware Acceleration for Data Center Security, Networking, Storage, and Communications Applications

Key Features

- Up to 100Gbps hardware acceleration performance
- Commercial ready Intel-branded solution
- Low-profile PCI Express 3.0
- Virtualization support for Network Function Virtualization (NFV) deployments
- Utilizes existing Intel® QuickAssist Technology Software Libraries and APIs supporting IPsec, SSL/TLS, network, storage, communications services and workloads

Overview

Offered by Cisco, the Intel® QuickAssist Adapter 8970 delivers turn-key standard PCI Express access to hardware acceleration for compute-intensive Data Center Networking, Security, Storage, and Communications applications.

- Hardware acceleration performance is designed to specifically meet the thermal, power, and form factor requirements for data center servers.

- Seamlessly support industry standard server deployments to comply with low-profile form factor constraints, passive thermal needs, and PCI Express 3.0 specifications.

- One physical adapter supports several virtual data center applications using single root input/output virtualization (SR-IOV) technology.

- Intel® QuickAssist Library provides an acceleration stack with a common interface for both application and accelerator function developers.

- APIs and driver capabilities for standard operating systems provide flexibility to adapt to new applications.

The Intel® QuickAssist Adapter 8970, with virtualization support, software libraries, and APIs, offers a complete and versatile acceleration stack for compute-intensive markets.

Features	Description

General

Software	• Intel® QuickAssist Technology Software Library and API Support: Linux, KVM, open source framework patches, and Open SSL
Power	• Onboard voltages are generated from the +12V main power supplied by the PCIe edge connector. The 3.3V auxiliary supply is used for the FRU EEPROM during an auxiliary state, and the 3.3V power supply is not used.
Virtualization	• Single Root I/O Virtualization (SR-IOV); Up to 48 Virtual Functions and 3 Physical Functions
Mechanical and I/O	• Supports PCI Express 3.0 x16 low-profile form factor dimensions • Passive heatsink solution • Complies with the mechanical specifications given in the PCI Express Card Electromechanical Specification, Revision 3.0

Security

Security	• Provides hardware acceleration for industry standard security algorithms for VPN, SSL/TLS, IPSec and firewall applications
Symmetric (Bulk) Cryptography	• Ciphers (AES, 3DES/DES, RC4, KASUMI, ZUC, Snow 3G) • Message digest/hash (MD5, SHA1, SHA2, SHA3) and authentication (HMAC, AES-XCBC) • Algorithm chaining (one cipher and one hash in a single operation) • Authenticated encryption (AES-GCM, AES-CCM) • AES-XTS
Asymmetric (Public Key) Cryptography	• Modular exponentiation for Diffie-Hellman (DH) • RSA key generation, encryption/decryption and digital signature generation/verification • DSA parameter generation and digital signature generation/verification • Elliptic Curve Cryptography: ECDSA, ECDHE, Curve25519

Compression

Provider hardware acceleration for Industry Standard compression/decompression algorithms for Network Bandwidth and Storage Applicaitons	• DEFLATE: LZ77 compression followed by Huffman coding, with a gzip or zlib header • Stateless Compression and Decompression

Wireless

Provides hardware acceleration for Common Mobile Wireless Standards including 3G / 4G LTE	• KASUMI, Snow 3G and ZUC in encryption and authentication modes - ZUC/ 128-EEA3 Cipher - ZUC/128-EIA3 Wireless MAC - SHA3-256

Performance Specifications

Category	8970
Performance Symmetric Ciphers AES128-CBC AES-XCBC	103Gbps @4KB Packet
RSA2K Key Decrypts	100K Ops/s
Verified Compression Level 1 Dynamic Deflate	66Gbps @64KB
Decompression Level 1 Dynamic Deflate	160Gbps @64KB

Specifications

Performance	Up to 100Gbps hardware acceleration
RSA ops/sec	100K decrypt
SR-IOV Virtual Functions	3 Physical / 48 Virtual
Connection	Low-profile PCIe 3.0 x 16
Operating Temperature (Ambient)	0 °C to 55 °C (32 °F to 131 °F)
Storage Temperature (Ambient)	-40 °C to 70 °C (-40 °F to 158 °F)
Power (maximum)	8970: ~23W
Airflow	8970: 275 LFM @ 55 °C ambient
Storage Humidity	90% non-condensing relative humidity at 35 °C
Dimensions (H x L)	2.7" x 6.6"

Product Order Code

Configuration	Cisco Product ID	Cisco Server Supported
Server installed	UCSC-P-IQAT8970	UCS C220 M5, C240 M5, C480 M5
Spare adapter	UCSC-P-IQAT8970=	UCS C220 M5, C240 M5, C480 M5

Safety and Regulatory

Safety	UL/CSA 60950-1-07, 2nd Edition + amendment 1, dated 2011/12/19. The Bi-National Standard for Safety of Information Technology Equipment, EN60950-1: 2006+A11:2009+A1:2010+A12:2010+A2:2013
Regulatory	• USA & Canada FCC, 47 CFR Part 15, Class A digital device (USA) ICES-003, Class A (CAN) • EN 55032 EN 55032: 2015 Class A Radiated and Conducted Emissions requirements for European Union • EN-55024 EN 55024: 2010 Immunity requirements for European Union (EU) • Korea • KN32 Radiated and Conducted Emissions • KN35 Immunity • Australia/New Zealand AS/NZS CISPR 22:2009 + A1:2010 Class A and CISPR 32:2015 for Radiated and Conducted • Emissions requirements • CE Passes CE specification and receives the CE Mark • Japan VCCI:2014-04 Class A Radiated and Conducted Emissions requirements • Taiwan BSMI CNS13438: 2006 (complete) Class A Radiated and Conducted Emissions requirements • EU REACH Complies with European REACH directive • EU WEEE Complies with European WEEE directive • EU RoHS Complies with European RoHS directive • China RoHS Complies with China RoHS directive