Product Guide

Intel® Ethernet PCIe Network Adapters

1 to 100 Gb Ethernet

Introducing the Intel® Ethernet 800 Series

Supports speeds up to 100Gbps and includes innovative and versatile capabilities to optimize workload performance.

Workload-optimized performance

Application Device Queues (ADQ) dedicates queues to high-priority applications to improve application response-time predictability, reduce latency, and improve throughput.

Versatility for changing network needs

Dynamic Device Personalization (DDP) adds on-demand support for new and advanced network protocols to reduce server CPU utilization, improve throughput, and reduce latency. Classify advanced and proprietary protocols on the adapter instead of the CPU.

Ethernet Port Configuration simplifies the configuration of port connections and speeds, making it easier to enable new services and optimize diverse workloads.

Flexibility to meet network requirements

Both Remote Direct Memory Access (RDMA) protocols, iWARP and RoCEv2, and NVMe over TCP are supported to provide flexibility and choice for scaling high-performance storage and HPC workloads.

Move Data Faster

Intel's evolving Ethernet product portfolio consistently delivers a reliable experience and proven interoperability. Whether migrating from 1 to 10GBASE-T, or from 1 to 100Gbps, Intel Ethernet Products and technologies help move data faster.

Compatibility and interoperability

- Extensive conformance testing to IEEE and Ethernet Technology Consortium standards
- Broad network interoperability testing of different media types and Ethernet switches for best-in-class compatibility
- Comprehensive operating system and hypervisor support

Performance assurance

- Optimized for Intel® architecture
- Data Plane Development Kit (DPDK) enabled for faster network functions virtualization (NFV), advanced packet forwarding, and highly-efficient packet processing

Worldwide product support

- Limited lifetime warranty for retail Ethernet Products
- Adherence to global regulatory, environmental, and market requirements

Intel Ethernet 800 Series Network Adapters

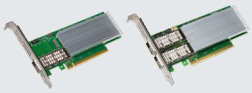
Improve application efficiency and network performance with innovative and versatile capabilities that optimize high-performance server workloads such as NFV, storage, HPC-AI, and hybrid cloud.

Performance for Cloud Applications

Delivers the bandwidth and increased application throughput required for demanding cloud workloads including edge services, web servers, database applications, caching servers, and storage targets.

Optimizations for Communications Workloads

Provides packet classification and sorting optimizations for high-bandwidth network and communications workloads, including mobile core, 5G RAN, and network appliances.

Product	Connection	Cabling Type and Range	Speed	Ports	Order Codes
 E810-2CQDA2	QSFP28	DAC: up to 5 m SMF: up to 10 km MMF: up to 100 m	100*/50/25/10/1GbE *100Gbps per port for total bandwidth of 200Gbps	Dual	E8102CQDA2G1P5
 E810-CQDA1, -CQDA2	QSFP28	DAC: up to 5 m SMF: up to 10 km MMF: up to 100 m	100/50/25/10/1GbE	Single and Dual	E810CQDA1, E810CQDA1BLK E810CQDA2, E810CQDA2BLK
 E810-XXVDA4 (FH)	SFP28	DAC: up to 5 m SMF: up to 10 km MMF: up to 100 m	25/10/1GbE	Quad	E810XXVDA4, E810XXVDA4BLK
 E810-XXVDA2	SFP28	DAC: up to 5 m SMF: up to 10 km MMF: up to 100 m	25/10/1GbE	Dual	E810XXVDA2, E810XXVDA2BLK

DAC - direct attach copper, SMF - single-mode fiber, MMF - multi-mode fiber

Many 800 Series adapters are also available in the OCP NIC 3.0 and OCP Mezzanine 2.0 form factors. For details see intel.com/ocpnic

Versatility and Flexibility for the Data Center

100Gb Intel Ethernet 800 Series Network Adapters can reduce complexity for port-constrained network environments. Using the Ethernet Port Configuration Tool (EPCT), the physical port configurations and port speeds can be changed on demand, and as often as needed. The ability to configure and reconfigure these 100Gb adapters can also reduce validation processes and simplify deployments. A 2x100GbE network adapter, with maximum bandwidth of 100GbE, can be configured as 1x100GbE, 2x50GbE, 4x25GbE, 4x10GbE or 8x10GbE. Watch the video at intel.com/epct

Intel Ethernet 700 Series Network Adapters

The 700 Series provides broad interoperability, critical performance optimizations and increased agility for Communications, Cloud and the Data Center.

- Full height and low-profile
- PCI Express 3.0, 8.0 GT/s, x8 lanes
- iSCSI, NFS, SMB
- Intelligent Offloads
- Optimized for Data Plane Development Kit (DPDK) and Intel Ethernet Flow Director
- On-chip QoS and traffic management, Flexible Port Partitioning, Virtual Machine Device Queues (VMDq), PCI-SIG SR-IOV capable

Product	Connection	Cabling Type and Range	Speed	Ports	Order Codes
 XL710-QDA1, -QDA2	QSFP+ (DAC and Fiber Optic)	DAC: up to 7 m SMF: up to 10 km MMF: up to 100 m (OM3), up to 150 m (OM4)	40/10/1GbE	Single and Dual	XL710QDA1, XL710QDA1BLK XL710QDA2, XL710QDA2BLK
 XXV710-DA1, -DA2	SFP28 (DAC and Fiber Optic)	DAC: 25GbE up to 5 m with RS FEC, up to 3 m with no FEC DAC: 10GbE up to 15 m SMF: up to 10 km MMF: up to 70 m (OM3), up to 100 m (OM4)	25/10/1GbE	Single and Dual	XXV710DA1, XXV710DA1BLK XXV710DA2, XXV710DA2BLK
 XXV710-DA2T	SFP28 (DAC and Fiber Optic) Includes two coaxial SMA connectors for 1PPS input/output	DAC: 25GbE up to 5 m with RS FEC, up to 3 m with no FEC DAC: 10GbE up to 15 m SMF: up to 10 km MMF: up to 70 m (OM3), up to 100 m (OM4)	25/10/1GbE	Single and Dual	XXV710DA2TLG1P5
 X710-DA2, -DA4 (FH)	SFP+ (DAC and Fiber Optic)	DAC: 10 up to 15 m SMF: up to 10 km MMF: up to 300 m (OM3), up to 400 m (OM4)	10/1GbE	Dual and Quad	X710DA2, X710DA2BLK X710DA4FH, X710DA4FHBLK X10DA4G2P5
 X710-T2L, -T4L	RJ45	CAT6 up to 55 m CAT6A or better up to 100 m	10/1GbE/100Mb	Dual and Quad	X710T2L, X710T2LBLK X710T4L, X710T4LBLK
 X710-T4	RJ45	CAT6 up to 55 m CAT6A or better up to 100 m	10/1GbE/100Mb	Quad	X710T4, X710T4L

DAC - direct attach copper, SMF - single-mode fiber, MMF - multi-mode fiber

Simplify Migration to 10GbE

10GBASE-T is one of the most cost-effective and least-disruptive paths for upgrading from 1000BASE-T.

With a 10X performance improvement, it's a solid financial decision, and it's budget friendly.

- Familiar RJ45 interface simplifies migration
- Backwards compatible, allowing for a staged approach to migration
- 10X greater bandwidth when migrating 1000BASE networks to 10GBASE-T

Intel Ethernet 500 Series Network Adapters

Product	Connection	Cabling Type and Range	Speed	Ports	Order Codes
 X550-T2	RJ45	CAT6 up to 55 m (10GbE) CAT6A or better, up to 100 m (10GbE) CAT5 or better, up to 100 m (5/2.5/1GbE)	10/5/2.5/1GbE/ 100Mb	Dual	X550T2, X550T2BLK
 X520-DA2	SFP28 (DAC and Fiber Optic)	DAC: up to 15 m SMF: up to 10 km MMF: up to 300 m (OM3), up to 400 m (OM4)	10/1GbE	Dual	E10G42BTDA, E10G42BTDABLK
 X520-SR2	LC Fiber Optic customers may remove optics as needed	MMF: up to 300 m (OM3), up to 400 m (OM4)	10/1GbE	Dual	E10G42BFSR, E10G42BFSRBLK
 X520-LR1	LC Fiber Optic customers may remove optics as needed	SMF: up to 10 km	10/1GbE	Single	E10G41BFLR, E10G41BFLRBLK

2.5Gb and 1Gb Intel Ethernet Network Adapters

Product	Connection	Cabling Type and Range	Speed	Ports	Order Codes
 I225-T1	RJ45	CAT5e, CAT6, CAT6A up to 100 m	2.5/1GbE	Single	I225T1, I225T1BLK
 I210-T1	RJ45	CAT5 or better up to 100 m	1GbE	Single	I210T1, I120T1BLK
 I350-T2, -T4	RJ45	CAT5 or better up to 100 m	1GbE	Dual and Quad	I350T2V2, I350T2V2BLK I350T4V2, I350T4V2BLK

1 Gigabit for Desktop

Product	Connection	Cabling Type and Range	Speed	Ports	Order Codes
 Intel® Gigabit CT Desktop Adapter	RJ45	CAT5 or better up to 100 m	1GbE	Single	EXPI9301CT, EXPI9301CTBLK

Move data faster with Intel® Ethernet Products

Learn more about Intel Ethernet Products and Technologies at intel.com/ethernet

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