# 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 |
|---------|-----------|----------------------|-------|-------|-------------|
| <br>E810-2CQDA2 | QSFP28 | DAC: up to 5 m<br>SMF: up to 10 km<br>MMF: up to 100 m | 100*/50/25/10/1GbE<br><br>*100Gbps per port for total bandwidth of 200Gbps | Dual | E8102CQDA2G1P5 |
| <br>E810-CQDA1, -CQDA2 | QSFP28 | DAC: up to 5 m<br>SMF: up to 10 km<br>MMF: up to 100 m | 100/50/25/10/1GbE | Single and Dual | E810CQDA1, E810CQDA1BLK<br>E810CQDA2, E810CQDA2BLK |
| <br>E810-XXVDA4 (FH) | SFP28 | DAC: up to 5 m<br>SMF: up to 10 km<br>MMF: up to 100 m | 25/10/1GbE | Quad | E810XXVDA4, E810XXVDA4BLK |
| <br>E810-XXVDA2 | SFP28 | DAC: up to 5 m<br>SMF: up to 10 km<br>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<br>SMF: up to 10 km<br>MMF: up to 100 m (OM3), up to 150 m (OM4) | 40/10/1GbE | Single and Dual | XL710QDA1, XL710QDA1BLK<br>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<br>DAC: 10GbE up to 15 m<br>SMF: up to 10 km<br>MMF: up to 70 m (OM3), up to 100 m (OM4) | 25/10/1GbE | Single and Dual | XXV710DA1, XXV710DA1BLK<br>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<br>DAC: 10GbE up to 15 m<br>SMF: up to 10 km<br>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<br>SMF: up to 10 km<br>MMF: up to 300 m (OM3), up to 400 m (OM4) | 10/1GbE | Dual and Quad | X710DA2, X710DA2BLK<br>X710DA4FH, X710DA4FHBLK<br>X10DA4G2P5 |
| X710-T2L, -T4L | RJ45 | CAT6 up to 55 m<br>CAT6A or better up to 100 m | 10/1GbE/100Mb | Dual and Quad | X710T2L, X710T2LBLK<br>X710T4L, X710T4LBLK |
| X710-T4 | RJ45 | CAT6 up to 55 m<br>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)<br>CAT6A or better, up to 100 m (10GbE)<br>CAT5 or better, up to 100 m (5/2.5/1GbE) | 10/5/2.5/1GbE/<br>100Mb | Dual | X550T2, X550T2BLK |
| X520-DA2 | SFP28 (DAC and Fiber Optic) | DAC: up to 15 m<br>SMF: up to 10 km<br>MMF: up to 300 m (OM3), up to 400 m (OM4) | 10/1GbE | Dual | E10G42BTDA,<br>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<br>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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