WHY INTEL ETHERNET?

Driving continuous innovation for more than 35 years, Intel® Ethernet products deliver a reliable out-of-the-box experience, and proven interoperability for your current and future networking infrastructure.

Customers say it just works. Here’s why:

High compatibility and broad interoperability
• Fully tested network adapters and accessories (optics and cables)
• Hardware and software is thoroughly validated across server and networking ecosystem
• Supports a broad selection of operating systems

Ease of use
• Works out of the box
• Automatic and highly optimized configuration setups
• Delivers the right traffic to the right VM with 128 perfect match filters

Performance assurance
• Optimized for Intel® architecture and broad OSV ecosystem
• Scales with CPU technology, leverages intelligent hardware offloads, network virtualization, and fast packet processing via Data Plane Development Kit (DPDK)

Worldwide product support
• World-class pre- and post-sales support provide convenient accessibility to customers
• Adheres to global regulatory, environmental, and market requirements
• Long product lifecycle support

Broad product selection and accessories
• Supports all speeds (1/10/25/40GbE) and media types (BASE-T, Fiber, SFP+, QSFP+, SFP28, QSFP28, KR, XAUI, CAUI)
• Available in many different form factors: discrete controller, Intel® SoCs, and add-in cards (PCIe®, OCP, and custom form factors)

At Aspen Systems our mission is to provide leading best-in-class solutions to High Performance Computing (HPC) users and administrators. We are proud to service all key market sectors including government, universities, corporations and anywhere research and science can be found. ISO 9001:2008 Certified. GSA Contract #GS-35F-0192K.

Aspen Systems, turning complex problems into simple solutions.

Contact Us for more Information
(303) 431-4606 | aspsys.com
INTEL® ETHERNET 700 SERIES NETWORK ADAPTERS

Accelerate the delivery of new services and capabilities by increasing the speed and efficiency of your network infrastructure. The Intel® Ethernet 700 Series is the foundation for server connectivity, providing broad interoperability, critical performance optimizations, and increased agility for Telecommunications, Cloud, and the Data Center.

- **Interoperability** – Multiple speeds and media types for broad compatibility backed by extensive testing and validation.
- **Optimization** – Intelligent offloads and accelerators to unlock network performance in servers with Intel® Xeon® processors.
- **Agility** – Both kernel and Data Plane Development Kit (DPDK) drivers for scalable packet processing.

<table>
<thead>
<tr>
<th>Product</th>
<th>Connector &amp; Cable Medium</th>
<th>Cabling Type</th>
<th>Intel® Ethernet Controller</th>
<th>Slot Type, Maximum Bus Speed &amp; Bus Width</th>
<th>Bus Speed &amp; Bus Width Connection Speed</th>
<th>Ports</th>
<th>Supported Slot Heights</th>
<th>Network Virtualization Acceleration</th>
<th>Storage over Ethernet</th>
<th>Order Codes</th>
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</thead>
<tbody>
<tr>
<td>XL710-QDA1, XL710-QDA2</td>
<td>QSFP+ Direct Attach Copper Twinaxial QSFP+ LC Fiber Optic Module</td>
<td>Direct Attach Passive Twinaxial: - up to 7 m Multimode Fiber: - up to 150 m (OM4) Single-mode Fiber: - up to 10 km</td>
<td>XL710</td>
<td>PCI Express® v3.0 8.0 GT/s, x8 Lanes</td>
<td>10GbE/40GbE</td>
<td>Single and Dual Port</td>
<td>Low Profile and Full Height</td>
<td>Multi-Queue and Stateless Offloads for NVO, such as VXLAN, NVGRE, and GENEVE.</td>
<td>Enhanced DPDK packet-processing support</td>
<td>iSCSI, NFS, SMB</td>
</tr>
<tr>
<td>X710-T4</td>
<td>RJ45 Copper Twisted-pair</td>
<td>Category 6: - up to 55 m Category 6A or better: - up to 100 m</td>
<td>X710</td>
<td>PCI Express® v3.0 8.0 GT/s, x8 Lanes</td>
<td>100Mb/1GbE/10GbE</td>
<td>Quad Port</td>
<td>Low Profile and Full Height</td>
<td>Multi-Queue and Stateless Offloads for NVO, such as VXLAN, NVGRE, and GENEVE.</td>
<td>Enhanced DPDK packet-processing support</td>
<td>iSCSI, NFS, SMB</td>
</tr>
</tbody>
</table>

1. Learn more about DPDK at intel.com/dpdk

All Intel® Ethernet 700 Series and 500 Series Network Adapters include intelligent offloads, are optimized for Data Plane Development Kit (DPDK) and Intel® Ethernet Flow Director, and include these server virtualization attributes: on-chip QoS and traffic management, Flexible Port Partitioning, Virtual Machine Device Queues (VMDq), PCI-SIG® SR-IOV capable.

ONE ARCHITECTURE. MULTIPLE SPEEDS.

Intel Ethernet 700 Series Network Adapters offer customers a common architecture.

- Greater intelligence and performance for NFV
- Enhanced network virtualization overlays (NVOs)
- Flexible and scalable I/O for virtualized infrastructures
- Improved performance and efficiency
- Flexible port partitioning (FPP)
- Advanced traffic steering
INTEL® ETHERNET 500 SERIES NETWORK ADAPTERS

The best choice for 10GBASE-T, the Intel® Ethernet 500 Series is backward compatible with existing 1000BASE-T networks, simplifying the transition to 10GbE when more bandwidth is needed.

- Supports 100Mb/1000BASE-T/2.5GbE/5GbE, and 10BASE-T
- Low cost, low power
- Optimized for network virtualization overlays

<table>
<thead>
<tr>
<th>Product</th>
<th>Connector &amp; Cable Medium</th>
<th>Cabling Type</th>
<th>Intel® Ethernet Controller</th>
<th>Slot Type, Maximum Bus Speed &amp; Bus Width</th>
<th>Bus Speed &amp; Bus Width Connection Speed</th>
<th>Ports</th>
<th>Supported Slot Heights</th>
<th>Network Virtualization Acceleration</th>
<th>Storage over Ethernet</th>
<th>Order Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>X550-T1</td>
<td>RJ45 Copper Twisted-pair</td>
<td>Category 6: - up to 55 m (10GbE) Category 6A or better: - up to 100 m (10GbE) Category 5 or better: - up to 100 m (10GbE/2.5GbE/5GbE)</td>
<td>X550</td>
<td>PCI Express® v3.0 8.0 GT/s, x4 Lanes Operable in x8 and x16 slots</td>
<td>100Mb/10GbE/2.5GbE/5GbE/10GbE</td>
<td>Single and Dual Port</td>
<td>Low Profile and Full Height</td>
<td>Multi-Queue and Stateless Offloads for NVO, such as VXLAN, NVGRE, and GENEVE Enhanced DPDK packet-processing support¹</td>
<td>iSCSI, FCoE, NFS, SMB</td>
<td>X550T1, X550T1BLK, X550T2, X550T2BLK</td>
</tr>
<tr>
<td>X550-T2</td>
<td>RJ45 Copper Twisted-pair</td>
<td>Category 6: - up to 55 m (10GbE) Category 6A or better: - up to 100 m (10GbE) Category 5 or better: - up to 100 m (10GbE)</td>
<td>X540</td>
<td>PCI Express® v2.1 5.0 GT/s, x8 Lanes</td>
<td>100Mb/10GbE/10GbE</td>
<td>Single and Dual Port</td>
<td>Low Profile and Full Height</td>
<td>RSS for UDP for VXLAN Enhanced DPDK packet-processing support¹</td>
<td>iSCSI, FCoE, NFS, SMB</td>
<td>X540T1, X540T1BLK, X540T2, X540T2BLK</td>
</tr>
<tr>
<td>X540-T1</td>
<td>SFP+ Direct Attach Copper Twinaxial</td>
<td>Direct Attach Passive Twinaxial: - up to 15 m Multimode Fiber: - up to 300 m (OM3) - up to 400 m (OM4) Single-mode Fiber: - up to 10 km</td>
<td>B2599ES</td>
<td>PCI Express® v2.0 5.0 GT/s, x8 Lanes</td>
<td>1GbE/10GbE</td>
<td>Dual Port</td>
<td>Low Profile and Full Height</td>
<td>RSS for UDP for VXLAN Enhanced DPDK packet-processing support¹</td>
<td>iSCSI, FCoE, NFS, SMB</td>
<td>E10G42TDA, E10G42TDA8BLK</td>
</tr>
<tr>
<td>X540-T2</td>
<td>SFP+ Direct Attach Copper Twinaxial</td>
<td>Direct Attach Passive Twinaxial: - up to 15 m Multimode Fiber: - up to 300 m (OM3) - up to 400 m (OM4) Single-mode Fiber: - up to 10 km</td>
<td>B2599ES</td>
<td>PCI Express® v2.0 5.0 GT/s, x8 Lanes</td>
<td>1GbE/10GbE</td>
<td>Single and Dual Port</td>
<td>Low Profile and Full Height</td>
<td>RSS for UDP for VXLAN Enhanced DPDK packet-processing support¹</td>
<td>iSCSI, FCoE, NFS, SMB</td>
<td>E10G42FBR, E10G42FBRSBLK, E10G42FBFS, E10G42FBFSRBLK</td>
</tr>
<tr>
<td>X540-LR1</td>
<td>LC Fiber Optic</td>
<td>Multimode Fiber: - up to 300 m (OM3) - up to 400 m (OM4) Single-mode Fiber: - up to 10 km</td>
<td>B2599ES</td>
<td>PCI Express® v2.0 5.0 GT/s, x8 Lanes</td>
<td>1GbE/10GbE</td>
<td>Single Port</td>
<td>Low Profile and Full Height</td>
<td>RSS for UDP for VXLAN Enhanced DPDK packet-processing support¹</td>
<td>iSCSI, FCoE, NFS, SMB</td>
<td>E10G41BFLR, E10G41BFLRBLK</td>
</tr>
</tbody>
</table>

1. Learn more about DPDK at intel.com/dpdk
2. Support for new operating systems will not be added to FCoE. The last operating system versions supporting FCoE are: Microsoft Windows Server® 2012 R2, Red Hat Enterprise Linux® 7.2 & 6.7, SUSE Linux Enterprise Server 11 SP4, 12 SP1; VMware ESXi® 6.0

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INTEL® ETHERNET OPTICS AND CABLES FOR INTEL® ETHERNET 700 SERIES AND 500 SERIES NETWORK ADAPTERS

Combine these accessories with Intel Ethernet 700 Series and 500 Series Network Adapters, for dependable interoperability and consistent performance across the network.
## 1 GBE INTEL® ETHERNET NETWORK ADAPTERS

<table>
<thead>
<tr>
<th>Product</th>
<th>Connector &amp; Cable Medium</th>
<th>Cabling Type</th>
<th>Intel® Ethernet Controller</th>
<th>Slot Type, Maximum Bus Speed &amp; Bus Width</th>
<th>Ports</th>
<th>Supported Slot Heights</th>
<th>Halogen Free</th>
<th>Intelligent Offloads</th>
<th>Intel® Virtualization Technology for Connectivity</th>
<th>Storage over Ethernet</th>
<th>Intel Ethernet Power Management</th>
<th>Order Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I210-T1</td>
<td>RJ45 Copper Twisted-pair</td>
<td>Category 5 or better: - up to 100 m</td>
<td>I210</td>
<td>PCI Express® v2.1 2.5 GT/s, x1 Lane</td>
<td>Single Port</td>
<td>Low Profile and Full Height</td>
<td>Yes</td>
<td>Yes</td>
<td>Includes Audio-Video Bridging (AVB) support (802.1Qav)</td>
<td>iSCSI, NFS, SMB</td>
<td>Yes</td>
<td>I210T1 I210T1BLK</td>
</tr>
<tr>
<td>I350-T4</td>
<td>RJ45 Copper Twisted-pair</td>
<td>Category 5 or better: - up to 100 m</td>
<td>I350</td>
<td>PCI Express® v2.1 5 GT/s, x4 Lanes</td>
<td>Quad Port</td>
<td>Low Profile and Full Height</td>
<td>Yes</td>
<td>Yes</td>
<td>On-chip QoS and traffic management Flexible Port Partitioning (FPF) Virtual Machine Device Queues (VMDq) PCI-SIG® SR-IOV capable</td>
<td>iSCSI, NFS, SMB</td>
<td>Yes</td>
<td>I350T4V2</td>
</tr>
<tr>
<td>I350-T2</td>
<td>RJ45 Copper Twisted-pair</td>
<td>Category 5 or better: - up to 100 m</td>
<td>I350</td>
<td>PCI Express® v2.1 5 GT/s, x4 Lanes</td>
<td>Dual Port</td>
<td>Low Profile and Full Height</td>
<td>Yes</td>
<td>Yes</td>
<td>On-chip QoS and traffic management Flexible Port Partitioning (FPF) Virtual Machine Device Queues (VMDq) PCI-SIG® SR-IOV capable</td>
<td>iSCSI, NFS, SMB</td>
<td>Yes</td>
<td>I350T2V2</td>
</tr>
<tr>
<td>I350-F2</td>
<td>LC Fiber Optic</td>
<td>Multimode Fiber OM1 (62.5 μm): - up to 275 m Multimode Fiber OM2 or better (50 μm): - up to 550 m</td>
<td>I350</td>
<td>PCI Express® v2.1 5 GT/s, x4 Lanes</td>
<td>Dual Port</td>
<td>Low Profile and Full Height</td>
<td>N/A</td>
<td>Yes</td>
<td>On-chip QoS and traffic management Flexible Port Partitioning (FPF) Virtual Machine Device Queues (VMDq) PCI-SIG® SR-IOV capable</td>
<td>iSCSI, NFS, SMB</td>
<td>Yes</td>
<td>I350F2 I350F2BLK</td>
</tr>
<tr>
<td>I350-F4</td>
<td>LC Fiber Optic</td>
<td>Multimode Fiber OM1 (62.5 μm): - up to 275 m Multimode Fiber OM2 or better (50 μm): - up to 550 m</td>
<td>I350</td>
<td>PCI Express® v2.1 5 GT/s, x4 Lanes</td>
<td>Quad Port</td>
<td>Full Height</td>
<td>N/A</td>
<td>Yes</td>
<td>On-chip QoS and traffic management Flexible Port Partitioning (FPF) Virtual Machine Device Queues (VMDq) PCI-SIG® SR-IOV capable</td>
<td>iSCSI, NFS, SMB</td>
<td>Yes</td>
<td>I350F4 I350F4BLK</td>
</tr>
<tr>
<td>I340-F4</td>
<td>LC Fiber Optic</td>
<td>Multimode Fiber OM1 (62.5 μm): - up to 275 m Multimode Fiber OM2 or better (50 μm): - up to 550 m</td>
<td>82580</td>
<td>PCI Express® v2.1 5 GT/s, x4 Lanes</td>
<td>Quad Port</td>
<td>Full Height</td>
<td>N/A</td>
<td>Yes</td>
<td>On-chip QoS and traffic management Flexible Port Partitioning (FPF) Virtual Machine Device Queues (VMDq)</td>
<td>iSCSI, NFS, SMB</td>
<td>N/A</td>
<td>E1G44HF</td>
</tr>
</tbody>
</table>

## 1 GBE FOR DESKTOP

<table>
<thead>
<tr>
<th>Product</th>
<th>Connector &amp; Cable Medium</th>
<th>Cabling Type</th>
<th>Intel® Ethernet Controller</th>
<th>Slot Type, Maximum Bus Speed &amp; Bus Width</th>
<th>Ports</th>
<th>Supported Slot Heights</th>
<th>Halogen Free</th>
<th>Intelligent Offloads</th>
<th>Intel® Virtualization Technology for Connectivity</th>
<th>Storage over Ethernet</th>
<th>Intel Ethernet Power Management</th>
<th>Order Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® Gigabit CT Desktop Adapter</td>
<td>RJ45 Copper Twisted-pair</td>
<td>Category 5 or better: - up to 100 m</td>
<td>82574</td>
<td>PCI Express® v1.1 2.5 GT/s, x1 Lane</td>
<td>Single Port</td>
<td>Low Profile and Full Height</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>iSCSI, NFS, SMB</td>
<td>N/A</td>
<td>EXPi9301CT EXPi9301CTBLK</td>
</tr>
</tbody>
</table>

3. Intel Ethernet Power Management includes Energy Efficient Ethernet (EEE) and DMA Coalescing.

MAKE THE CONNECTION WITH INTEL® ETHERNET ADAPTERS AT INTEL.COM/ETHERNET