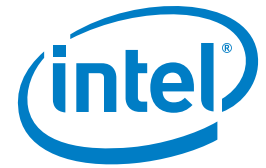


**SOLUTION PROFILE**

**Intel® Ethernet Converged Network Adapters**

Cisco Nexus Switches



# Intel® Ethernet Converged Network Adapters and Cisco Nexus\* Switches Product Reference



Intel® Ethernet Converged Network Adapters and Cisco Nexus\* Switches together deliver a high-performance, converged fabric foundation for virtualized and cloud data centers. These solutions have been tested and validated by Intel and Cisco for reliability, performance, and interoperability across a range of 10 Gigabit Ethernet (10GbE) interfaces.

	Intel® Ethernet Converged Network Adapter	KEY FEATURES	Compatible Cisco Nexus Switch or Fabric Extender
10GBASE-T	<b>Intel® Ethernet Converged Network Adapter X540-T2</b> Product code: X540T2  <b>Intel® Ethernet Converged Network Adapter X540-T1</b> Product code: X540T1	<ul style="list-style-type: none"> <li>Single-chip design for low-cost, low-power 10GBASE-T connectivity</li> <li>Compatibility with Gigabit Ethernet (1000BASE-T) infrastructures</li> <li>Support for NAS, iSCSI, FCoE</li> <li>Intel® Virtualization Technology for Connectivity</li> <li>One- and two-port designs</li> </ul>	<ul style="list-style-type: none"> <li>Cisco Nexus 5596T Switch</li> <li>Cisco Nexus 2232TM, 2232TM-E Fabric Extenders</li> <li>Cisco Nexus 2148T, 2224TP, 2248TP, 2248TP-E Fabric Extenders (Gigabit Ethernet speeds only)</li> <li>Cisco Nexus 7000 F2e Copper Module</li> <li>Cisco Nexus 3064-T Switch</li> </ul>
	<b>Intel® Ethernet Converged Network Adapter X520 (SFP+ models)</b> Product codes: <ul style="list-style-type: none"> <li>E10G42BTDA (dual-port Direct Attach copper)</li> <li>E10G41BFSR (single-port SR fiber)</li> <li>E10G42BFSR (dual-port SR fiber)</li> <li>E10G41BFLLR (single-port LR fiber)</li> </ul>	<ul style="list-style-type: none"> <li>Single-chip design for low-cost, low-power SFP+ connectivity</li> <li>Support for NAS, iSCSI, FCoE</li> <li>Intel® Virtualization Technology for Connectivity</li> <li>One- and two-port designs</li> <li>Support for Intel® Ethernet SFP+ optics</li> </ul>	<ul style="list-style-type: none"> <li>Cisco Nexus 5596UP Switch</li> <li>Cisco Nexus 5548P/5548UP Switch</li> <li>Cisco Nexus 5010/5020 Switch</li> <li>Cisco Nexus 2232PP Fabric Extender</li> <li>Cisco Nexus 7000 Switch series (SFP+ modules)</li> <li>Cisco Nexus 6001 Switch</li> <li>Cisco Nexus 6004 Switch</li> </ul>
SFP+	<b>Intel® Ethernet SFP+ Optics</b> <ul style="list-style-type: none"> <li><b>10GBASE-SR</b> Product Code: E10GSFPSR</li> <li><b>10GBASE-LR</b> Product Code: E10GSFPLR</li> </ul>	<ul style="list-style-type: none"> <li>Compatible with SFP+ ports on Intel® Ethernet Server Adapter X520</li> <li>Dual-speed (1/10) 300 meter reach using multimode SR fiber</li> <li>10 km reach using single-mode LR fiber</li> </ul>	

## A Guide to the Most Common 10 Gigabit Ethernet Interfaces

### 10GBASE-T

- Backwards-compatible with Gigabit Ethernet infrastructures, allowing a seamless migration to 10GbE
- Uses the familiar RJ-45 connector and cost-effective twisted-pair copper cabling (Category 6, 6A, 7) installed in most data centers
- Supports distances up to 100 meters for deployment flexibility (Category 6A or greater)
- Best media type for broad 10GbE deployments

### SFP+

- Direct Attach passive copper cables support distances up to 7 meters for intra-rack deployments
- Fiber optic cabling supports distances up to 300 meters (10GBASE-SR) or 10 kilometers (10GBASE-LR)

## Best-in-Class Unified Networking with Intel® Ethernet

Intel has shipped over 600 million Ethernet ports over the last decade and is the industry's leading 10GbE adapter vendor.<sup>1</sup> Intel® Ethernet 10 Gigabit Converged Network Adapters offer performance, efficiency, and value other vendors can't match.

**Reliable Performance.** Intel has more than 30 years' experience delivering reliable Ethernet products. Innovations such as intelligent hardware offloads provide outstanding performance across a wide range of applications.

**Best Choice for I/O Virtualization.** Intel Virtualization Technology for Connectivity, which includes Virtual Machine Device Queues (VMDq) and support for PCI-SIG Single Root I/O Virtualization (SR-IOV), improves I/O virtualization performance in virtualized and non-virtualized environments.

**Cost-Effective Storage.** A single Intel Ethernet 10 Gigabit Converged Network Adapter supports NFS, iSCSI, and FCoE. Using support integrated into the operating system or hypervisor delivers high-performance storage connectivity without the limitations of proprietary offloads.

Solution provided by:



## Cisco Nexus Switches Portfolio

Cisco Unified Fabric delivers architectural flexibility and consistent networking across all datacenters – physical, virtual and Cloud. Cisco Unified Fabric comprises the Cisco Nexus Switches portfolio, which is built on a common, state-of-the-art platform – Cisco NX-OS. These datacenter switching innovations deliver a resilient, high performance, scalable fabric with operational efficiency and consistency across all platforms and a variety of connectivity options, including 10 Gigabit fiber, Direct Attach copper, and 10GBASE-T.

Key features of the Cisco Nexus Switches portfolio include

- **Convergence**
  - Incorporate flexible and reliable FCoE across all Nexus platforms<sup>2</sup>
  - Deliver high performance, highly available networks to serve diverse datacenter needs
  - Take advantage of Ethernet's economy of scale, extensive vendor community, and future innovations
- **Scalability**
  - Unify all network locations into one environment
  - Support efficient access and use of resources, regardless of size or location
  - Provide resilient, scalable networks with predictable performance and reduced complexity
- **Intelligence**
  - Make services available consistently across applications and workloads
  - Scale service delivery capability automatically
  - Deploy applications faster, with policy-based compliance instead of physical infrastructure changes

## Intel and Cisco: Leaders in Ethernet

As longtime leaders in Ethernet, Intel and Cisco are uniquely positioned to drive the industry transition to broad 10 Gigabit Ethernet deployment. Intel Ethernet Converged Network Adapters and Cisco Nexus Switches bring the performance and reliability needed for the next generation of data centers.

Learn more:

[www.intel.com/go/ethernet](http://www.intel.com/go/ethernet)

[www.cisco.com/go/unifiedfabric](http://www.cisco.com/go/unifiedfabric)

<sup>1</sup> Source: Crehan Research, Q1'13

<sup>2</sup> FCoE over 10GBASE-T support pending FCoE characterization

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