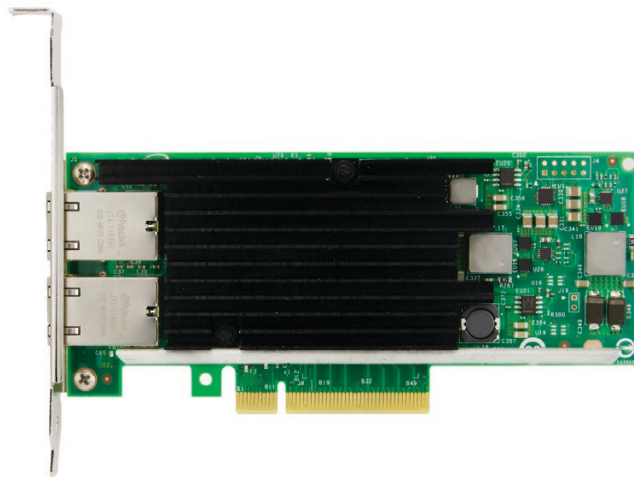# Intel X540 10GbaseT Network Adapter Family for System x

Delivers high-performance networking using an economical cabling infrastructure

The explosive growth in virtualization is driving the need for a faster network. Meanwhile, network-intensive applications, such as video and real-time media, are also demanding more bandwidth. The Intel X540 Dual Port 10BaseT Adapter Family for System x® is an excellent choice for addressing the needs of today's data center networks.

The Intel X540 network adapter family supports 10GBASE-T connectors that utilize RJ-45 ports over unshielded twisted pair cabling. Because these adapters are backward compatible with your existing 1000BASE-T switches, they greatly simplify your transition to 10 GbE technology.

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Specifications

Part numbers	• 49Y7970 – Intel X540 Dual Port 10GbaseT PCIe Adapter for System x • 49Y7990 – Intel X540 Dual Port 10GbaseT Embedded Adapter for System x • 00D1994 – Intel X540 ML2 Dual Port 10GbaseT Adapter for System x
ASIC	Intel x540
Ports	2x RJ45
Bus interface	x8 PCIe Gen 2.0
Standards	• 10GBaseT, 1000BaseT, 100BaseT • IEEE802.3ad (Link Aggregation) • IEEE802.1q (VLAN), 802.1p (QoS/CoS) • IEEE802.3x (Flow Control),802.1au (Congestion Notification), 802.1Qau (Backward Flow Control) • IEEE 802.1ae (MAC Level Encryption) • IEEE 1588 (Time Stamping) and 802.1as (Timing and Synchronization) • Jumbo Frames (15,500 bytes)
VMDq	• Offloads the data-sorting functionality from the hypervisor to the network hardware, improving data throughput and CPU usage • Provides QoS feature on the Tx data by providing round-robin servicing and preventing head-of-line blocking • Sorting based on MAC addresses and VLAN tags
Next-generation VMDq1 (64 queues per port)	• Enhanced QoS feature by providing weighted round-robin servicing for the Tx data • Provides loopback functionality, where data transfer between the virtual machines within the same physical server need not go out to the wire and come back in, improving throughput and CPU usage • Supports replication of multicast and broadcast data
Virtual machine load balancing	Virtual machine load balancing (VMLB) provides traffic load balancing (Tx and Rx) across virtual machines bound to the team interface, as well as fault tolerance in the event of switch, port, cable, or adapter failure
Physical features	• PCIe: LxWxH: 168 mm x 69 mm x 15 mm, Standard bracket (low profile available) • Embedded: conforms to System x mezzanine form factor • ML2: conforms to Mezzanine LOM Gen 2 form factor
Environmental	• Operating temperature: 0° to 55°C (32° to 131°F) • Storage temperature: -20° to 65°C (-4° to 149°F) • Relative humidity: maximum 85% noncondensing

Specifications

Supported servers	Visit the ServerProven® page for the latest supported servers at: **ibm.com**/servers/eserver/serverproven/compat/us/
Supported operating systems	For latest information, visit ServerProven information at: http://www-03.ibm.com/systems/info/x86servers/serverproven/compat/us/xseries/lan/matrix.html
UTP performance	**10GBASE-T** • UTP Category 7 (100 meters maximum) • UTP Category 6a (100 meters maximum) • UTP Category 6 (55 meters maximum) **1000BASE-T and 100BASE-TX** • UTP Category 7 (100 meters maximum) • UTP Category 6a (100 meters maximum) • UTP Category 6 (100 meters maximum) • UTP Category 5 (100 meters maximum)
Power	12.5 W maximum
Warranty	One year limited warranty. When installed in an System x server, these cards assume your system's base warranty and any IBM ServicePac® upgrade

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Why System x

System x is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. System x also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

For more information

To learn more about the Intel X540 Dual Port 10GbaseT Network Adapter Family for System x, please contact your Lenovo representative or Business Partner, or visit the following website: **ibm.com**/systems/x/options/networking

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