ThinkSystem Intel E810-DA2 and DA4 10/25GbE SFP28 Ethernet Adapters

Product Guide

The ThinkSystem Intel E810-DA2 and E810-DA4 10/25GbE SFP28 network adapters improve application efficiency and network performance with innovative and versatile capabilities. With two or four 25GbE SFP28 ports and key performance optimizations, the E810 adapters supports solutions across Cloud, Enterprise, and Communications. The adapters are available in PCIe low profile and OCP 3.0 form factors.

The following figure shows the ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter.

Figure 1. ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter

Did you know?

The Intel E810 adapter offers excellent small packet performance, and offers virtualization features with support for GENEVE, VXLAN, NVGRE offloads, DPDK, SR-IOV, and VMDq protocols.

Part number information

The following table provides the ordering part numbers and feature codes for the Intel E810 adapters.

Table 1. Ordering information

Part number	Feature code	Description
PCIe adapters		
4XC7A08295	BCD6	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter
4XC7A80267	BP8M	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter
OCP adapters		
4XC7A08294	BCD4	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter
4XC7A80269	BP8L	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port OCP Ethernet Adapter
CTO only	BMHG	ThinkEdge SE450 Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter

The option part numbers includes the following items:

- One Intel Ethernet adapter
- PCIe adapters: Full-height (3U) bracket attached with low-profile (2U) bracket included in the box
- Documentation

Note: The adapters ship without any SFP28 transceivers or direct attach cables. These items must be ordered separately as listed in the following section.

Supported transceivers and cables

The Intel E810 adapters have empty SFP28 cages for connectivity. The adapter either supports connections to a 10 Gb or 25 Gb switch or can share a connection to a 100 Gb switch using a 4:1 breakout cable.

The following table lists the supported transceivers.

Table 2. Transceivers

Part number	Feature code	Description
10Gb transceivers		
46C3447	5053	SFP+ SR Transceiver
4TC7A78615	BNDR	ThinkSystem Accelink 10G SR SFP+ Ethernet transceiver
25Gb transceivers		
7G17A03537	AV1B	Lenovo 25GBase-SR SFP28 Transceiver (supports 10Gb and 25Gb)
4M27A67041	BFH2	Lenovo 25Gb SR SFP28 Ethernet Transceiver

25Gb transceivers: When installed in this 25Gb Ethernet adapter, certain supported 25Gb transceivers (as listed in the above table) are designed to operate at either 25 Gb/s or 10 Gb/s speeds, depending on the negotiation with the connected switch. In most configurations, this negotiation is automatic, however in some configurations you may have to manually set the link speed or FEC mode.

The following table lists the supported fiber optic cables and Active Optical Cables.

Table 3. Optical cables

Part number	Feature code	Description
LC-LC OM3 Fiber Optic Cables (these cables require a 10 GbE SFP+ SR or 25 GbE SFP28 SR transceiver)		
00MN499	ASR5	Lenovo 0.5m LC-LC OM3 MMF Cable
00MN502	ASR6	Lenovo 1m LC-LC OM3 MMF Cable
00MN505	ASR7	Lenovo 3m LC-LC OM3 MMF Cable
00MN508	ASR8	Lenovo 5m LC-LC OM3 MMF Cable
00MN511	ASR9	Lenovo 10m LC-LC OM3 MMF Cable
00MN514	ASRA	Lenovo 15m LC-LC OM3 MMF Cable
00MN517	ASRB	Lenovo 25m LC-LC OM3 MMF Cable
00MN520	ASRC	Lenovo 30m LC-LC OM3 MMF Cable
MTP-4xLC OM3 MMF Breakout Cables (these cables require a transceiver)		
00FM412	A5UA	Lenovo 1m MPO-4xLC OM3 MMF Breakout Cable
00FM413	A5UB	Lenovo 3m MPO-4xLC OM3 MMF Breakout Cable
00FM414	A5UC	Lenovo 5m MPO-4xLC OM3 MMF Breakout Cable
SFP+ 10Gb Active Optical Cables		
00YL634	ATYX	Lenovo 1M SFP+ to SFP+ Active Optical Cable
00YL637	ATYY	Lenovo 3M SFP+ to SFP+ Active Optical Cable
00YL640	ATYZ	Lenovo 5M SFP+ to SFP+ Active Optical Cable
00YL643	ATZ0	Lenovo 7M SFP+ to SFP+ Active Optical Cable
00YL646	ATZ1	Lenovo 15M SFP+ to SFP+ Active Optical Cable
00YL649	ATZ2	Lenovo 20M SFP+ to SFP+ Active Optical Cable
SFP28 25Gb Active Optical Cables		
7Z57A03541	AV1F	Lenovo 3m 25G SFP28 Active Optical Cable
7Z57A03542	AV1G	Lenovo 5m 25G SFP28 Active Optical Cable
7Z57A03543	AV1H	Lenovo 10m 25G SFP28 Active Optical Cable
7Z57A03544	AV1J	Lenovo 15m 25G SFP28 Active Optical Cable
7Z57A03545	AV1K	Lenovo 20m 25G SFP28 Active Optical Cable
QSFP28 100Gb Breakout Active Optical Cables		
7Z57A03551	AV1R	Lenovo 3m 100G to 4x25G Breakout Active Optical Cable
7Z57A03552	AV1S	Lenovo 5m 100G to 4x25G Breakout Active Optical Cable
7Z57A03553	AV1T	Lenovo 10m 100G to 4x25G Breakout Active Optical Cable
7Z57A03554	AV1U	Lenovo 15m 100G to 4x25G Breakout Active Optical Cable
7Z57A03555	AV1V	Lenovo 20m 100G to 4x25G Breakout Active Optical Cable
OM4 LC to LC Cables (these cables require a transceiver)		
4Z57A10845	B2P9	Lenovo 0.5m LC-LC OM4 MMF Cable
4Z57A10846	B2PA	Lenovo 1m LC-LC OM4 MMF Cable
4Z57A10847	B2PB	Lenovo 3m LC-LC OM4 MMF Cable
4Z57A10848	B2PC	Lenovo 5m LC-LC OM4 MMF Cable
4Z57A10849	B2PD	Lenovo 10m LC-LC OM4 MMF Cable
4Z57A10850	B2PE	Lenovo 15m LC-LC OM4 MMF Cable
4Z57A10851	B2PF	Lenovo 25m LC-LC OM4 MMF Cable

Part number	Feature code	Description
4Z57A10852	B2PG	Lenovo 30m LC-LC OM4 MMF Cable

The following table lists the supported direct-attach copper (DAC) cables.

Table 4. Copper cables

Part number	Feature code	Description
SFP+ 10Gb Passive DAC Cables		
00D6288	A3RG	0.5m Passive DAC SFP+ Cable
90Y9427	A1PH	1m Passive DAC SFP+ Cable
00AY764	A51N	1.5m Passive DAC SFP+ Cable
00AY765	A51P	2m Passive DAC SFP+ Cable
90Y9430	A1PJ	3m Passive DAC SFP+ Cable
90Y9433	A1PK	5m Passive DAC SFP+ Cable
00D6151	A3RH	7m Passive DAC SFP+ Cable
SFP28 25Gb Passive DAC Cables		
7Z57A03557	AV1W	Lenovo 1m Passive 25G SFP28 DAC Cable
7Z57A03558	AV1X	Lenovo 3m Passive 25G SFP28 DAC Cable
7Z57A03559	AV1Y	Lenovo 5m Passive 25G SFP28 DAC Cable
QSFP28 100G-to-4x25G Breakout Cables		
7Z57A03564	AV22	Lenovo 1m 100G QSFP28 to 4x25G SFP28 Breakout DAC Cable
4Z57A85043	BS32	Lenovo 1.5m 100G to 4x25G Breakout SFP28 Breakout DAC Cable
4Z57A85044	BS33	Lenovo 2m 100G to 4x25G Breakout SFP28 Breakout DAC Cable
7Z57A03565	AV23	Lenovo 3m 100G QSFP28 to 4x25G SFP28 Breakout DAC Cable
7Z57A03566	AV24	Lenovo 5m 100G QSFP28 to 4x25G SFP28 Breakout DAC Cable

The following figure shows the ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter.

Figure 2. ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter

Features

Performance optimizations for Cloud, Enterprise, and Storage deployments

- Application Device Queues (ADQ) provides dedicated traffic queues to reduce latency and increase application throughput
- Dynamic Device Personalization enables protocol- specific traffic acceleration to improve packet processing efficiency and reduce CPU overhead
- iWARP and RoCEv2 support provides high-speed, low-latency, high-throughput connectivity for storage targets and initiators

Accelerated packet processing for Communications workloads

- Enhanced Data Plane Development Kit (DPDK) support increases packet processing speeds
- Dynamic Device Personalization enables protocol- specific traffic acceleration and reduces CPU overhead for emerging high-bandwidth workloads
- IEEE 1588 PTP v2 support enables precise clock synchronization across 5G RAN deployments

Application Device Queues (ADQ) for Predictability at Scale

As modern data centers scale, a key challenge is to provide scalable, predictable application-level performance. ADQ technology improves performance scalability and predictability by dedicating queues to key workloads, delivering predictable high performance through dramatically reduced jitter.

Increasing the predictability of application response times by lowering jitter enables more servers to be assigned to a task and can allow more users to access the system, providing a better end-user experience. Even applications that are not large scale can benefit from higher consistency, enabling them to meet service-level agreements (SLAs) more easily.

ADQ enables application-specific data steering, signaling, and rate limiting using an optimized application thread to device data path. This ability to dedicate queues and shape network traffic not only increases performance, it reduces latency and improves throughput.

Improve Packet Processing Efficiency with Dynamic Device Personalization (DDP)

DDP customizable packet filtering, along with enhanced DPDK, support advanced packet forwarding and highly-efficient packet processing for both Cloud and NFV workloads.

The Intel E810 adapter firmware loads an enhanced DDP profile with many workload-specific protocols at driver initialization for greater flexibility. When multiple Intel E810 adapters are present in a system, the pipeline on each adapter can be programmed independently with a different DDP profile.

IEEE 1588 Precision Time Protocol (PTP)

Intel E810 adapters support both IEEE 1588 PTP v1 and v2 with two-step option. The products provide increased accuracy at single-digit nanosecond level, and can report the reception time for every packet. This level of timing accuracy can help ensure tight synchronization across network deployments ranging from 5G RAN to financial services, industrial automation, and energy monitoring.

Increase Throughput and Lower Latency with Remote Direct Memory Access (RDMA)

RDMA provides high throughput and low-latency performance for modern high-speed Ethernet by eliminating three major sources of networking overhead: TCP/IP stack process, memory copies, and application context switches. Intel E810 adapters support all major storage transport protocols, including iWARP, RoCEv2, and NVMe over TCP.

RoCE (RDMA over Converged Ethernet): RoCEv2 substitutes the InfiniBand physical layer and data link layer with Ethernet, operates on top of UDP/IP, and is routable over IP networks.

iWARP, IETF standard protocols based: Delivers RDMA on top of the pervasive TCP/IP protocol. iWARP RDMA runs over standard network and transport layers and works with all Ethernet network infrastructure. TCP provides flow control and congestion management and does not require a lossless Ethernet network. iWARP is a highly routable and scalable RDMA implementation.

Protect, Detect, and Recover

Zero Trust is a security design strategy centered on the belief that organizations, by default, should not automatically trust any request for system access. This includes requests coming from outside, as well as inside its perimeters. Zero Trust demands that every access request be verified before granting access.

The Intel E810 adapters implement a design philosophy of platform resiliency with 3 attributes compliant with the NIST Cybersecurity Framework, including NIST 800-193 Platform Firmware Resiliency Guidelines: Protect, Detect and Recover. By design, the Hardware Root of Trust in the adapters protect the firmware and critical device settings with authentication for every access. Signed firmware updates and the Hardware Root of Trust protects and verifies critical device settings with built-in corruption detection and automated device recovery. Together these features ensure the device safely returns to its originally programmed state.

Specifications

The Intel E810 adapters have the following specifications:

Host Interface

- 2-port adapters: PCIe 4.0 x8 host interface
- 4-port adapters: PCIe 4.0 x16 host interface
- Concurrency for 256 non-posted requests

Software Interface

- Base mode VF compatibility with Intel® Adaptive Virtual Functions Specification
- Tx/Rx Queues
  - 2048 Tx queues and 2048 Rx queues
  - Dynamic allocation of queues to functions and VSIs
- Interrupts
  - 2048 interrupts vectors, allocated in a flexible manner to queues and other causes
  - Multiple interrupt moderation schemes
  - 20M interrupts/sec
- Control Queues (a.k.a. Admin Queues)
  - Mailbox Queues for PF-VF and driver-driver
  - Admin Queues for Software-Firmware control flows
  - Sideband Queues for Software to access IPs inside the E810
- 256 Tx Doorbell (DB) Queues
- 512 Tx Completion Queues
- Quanta Descriptor (QD) Queue per Tx queue. Quanta information is also embedded in the Tx doorbell
- Programmable Rx descriptor fields

Packet Processing

- Enhanced Data Plane Development Kit (DPDK)
- General
  - Stages of parsing, switching, ACLs, classification, packet modification
  - Programmable packet processing pipeline

    - Profile based
    - Programmable actions
    - Propagation of priorities between stages
- Parser
    - Parses up to 504B from packet header
    - Parse Graph based
    - Session-based parsing
    - Programmable parse engine
- Binary Classifier (VEB Switch)
    - 768 switch ports (VSIs)
    - Programmable forwarding rules
    - Storm Control
- ACLs
    - 8K programmable TCAM entries
    - Tiling capability to n*40b width
- Classification Filters
    - Hash-based statistical distribution
    - Intel® Ethernet Flow Director (Intel® Ethernet FD) flow-based classification
    - Flow-based identification of iWARP and RoCE flows
    - Programmable rules
- Modifier
    - Insert (Tx), remove (Rx), and modify of packet VLANs
    - L3 and L4 checksums and CRC

Virtualization

- Host virtualization via VMDQ and SR-IOV
- Up to 256 SR-IOV Virtual Functions
- Stateless offloads for tunneled packets (network virtualization support)
- Malicious VF protection
- Virtual machine load balancing (VMLB)
- Advanced packet filtering
- VLAN support with VLAN tag insertion, stripping and packet filtering for up to 4096 VLAN tags
- VxLAN, GENEVE, NVGRE, MPLS, VxLAN-GPE with Network Service Headers (NSH)
- Intel® Ethernet Adaptive Virtual Function drivers

RDMA

- iWARP and RoCEv2
- 256K Queue Pairs (QPs)
- Send Queue Push Mode

Note: RDMA is not supported when the E810 is configured for >4-port operation.

Quality of Service (QoS)

- WFQ Transmit scheduler with nine programmable layers
- Pipeline sharing and starvation avoidance
- QoS via 802.1p PCP or Differentiated Services Code Point (DSCP) value
- Packet shaping

Manageability

- SMBus operating at up to 1Mb/s
- OCP 3.0 adapter: DMTF-compliant NC-SI 1.1 Interface at 100Mb/s
- MCTP over PCIe and SMBus
- Enterprise-level management schemes via local BMC
- SNMP and RMON statistic counters
- Watchdog timer
- PLDM over MCTP; PLDM Monitoring; PLDM firmware update; PLDM for RDE
- Firmware Management Protocol support

Power Management

- Supports PCI power management states D3hot and D3cold

Time Synchronization

- Time stamp with each Rx packet
- Selective time stamps for Tx packets
- IEEE 1588 PTP v1 and v2
- Time synchronization signaling with other local platform ingredients

Pre-Boot

- Signed UEFI option ROM compatible with HTTPS boot

Security

- Hardware-based Root of Trust
- Authentication on NVM Read and Power On
- Built-in detection of firmware/critical setting corruption with automated device recovery

Server support

The following tables list the ThinkSystem servers that are compatible.

Table 5. Server support (Part 1 of 3)

Part Number	Description	Edge		1S Intel V2			AMD V3			Intel V3				Dense V3				2S Intel V2			
		SE350 (7Z46 / 7D1X)	SE450 (7D8T)	ST50 V2 (7D8K / 7D8J)	ST250 V2 (7D8G / 7D8F)	SR250 V2 (7D7R / 7D7Q)	SR645 V3 (7D9D / 7D9C)	SR665 V3 (7D9B / 7D9A)	SR675 V3 (7D9Q / 7D9R)	SR630 V3 (7D72 / 7D73)	SR650 V3 (7D75 / 7D76)	SR850 V3 (7D97 / 7D96)	SR860 V3 (7D94 / 7D93)	SD665 V3 (7D9P)	SD665-N V3 (7DAZ)	SD650 V3 (7D7M)	SD650-I V3 (7D7L)	ST650 V2 (7Z75 / 7Z74)	SR630 V2 (7Z70 / 7Z71)	SR650 V2 (7Z72 / 7Z73)	SR670 V2 (7Z22 / 7Z23)
PCIe adapters																					
4XC7A08295	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y
4XC7A80267	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y
OCP adapters																					
4XC7A08294	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y
4XC7A80269	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port OCP Ethernet Adapter	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	Y	Y	Y
BMHG	ThinkEdge SE450 Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Table 6. Server support (Part 2 of 3)

Part Number	Description	AMD V1					4S/8S V2			4S V1			Dense V2				1S Intel V1			
		SR635 (7Y98 / 7Y99)	SR655 (7Y00 / 7Z01)	SR655 Client OS	SR645 (7D2Y / 7D2X)	SR665 (7D2W / 7D2V)	SR850 V2 (7D31 / 7D32)	SR860 V2 (7Z59 / 7Z60)	SR950 (7X11 / 7X12)	SR850 (7X18 / 7X19)	SR850P (7D2F / 2D2G)	SR860 (7X69 / 7X70)	SD630 V2 (7D1K)	SD650 V2 (7D1M)	SD650-N V2 (7D1N)	SN550 V2 (7Z69)	ST50 (7Y48 / 7Y50)	ST250 (7Y45 / 7Y46)	SR150 (7Y54)	SR250 (7Y52 / 7Y51)
PCIe adapters																				
4XC7A08295	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	Y	Y	N	Y	Y	N	N	N	N	Y	Y	Y	N	Y	N	N	N	N	N
4XC7A80267	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	Y	Y	N	Y	Y	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
OCP adapters																				
4XC7A08294	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	Y	Y	N	Y	Y	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
4XC7A80269	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port OCP Ethernet Adapter	Y	Y	N	Y	Y	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N
BMHG	ThinkEdge SE450 Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

Table 7. Server support (Part 3 of 3)

Part Number	Description	2S Intel V1								Dense V1			
		ST550 (7X09 / 7X10)	SR530 (7X07 / 7X08)	SR550 (7X03 / 7X04)	SR570 (7Y02 / 7Y03)	SR590 (7X98 / 7X99)	SR630 (7X01 / 7X02)	SR650 (7X05 / 7X06)	SR670 (7Y36 / 7Y37)	SD530 (7X21)	SD650 (7X58)	SN550 (7X16)	SN850 (7X15)
PCIe adapters													
4XC7A08295	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port PCIe Ethernet Adapter	N	N	N	N	N	Y	Y	N	Y	N	N	N
4XC7A80267	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port PCIe Ethernet Adapter	N	N	N	N	N	N	N	N	N	N	N	N
OCP adapters													
4XC7A08294	ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	N	N	N	N	N	N	N	N	N	N	N	N
4XC7A80269	ThinkSystem Intel E810-DA4 10/25GbE SFP28 4-Port OCP Ethernet Adapter	N	N	N	N	N	N	N	N	N	N	N	N
BMHG	ThinkEdge SE450 Intel E810-DA2 10/25GbE SFP28 2-Port OCP Ethernet Adapter	N	N	N	N	N	N	N	N	N	N	N	N

Note: The use of both an Intel E810 network adapter and an X350 HBA/RAID adapter (9350, 5350 and 4350) is currently not supported in ThinkSystem servers. For details see Support Tip HT513226. Planned support for this combination of adapters is 2Q/2023 (23A).

Operating system support

The following tables list the supported operating systems for the adapters:

- ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-port PCIe Ethernet Adapter, 4XC7A08295
- ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-port OCP Ethernet Adapter, 4XC7A08294

Tip: These tables are automatically generated based on data from Lenovo ServerProven.

Table 8. Operating system support for ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-port PCIe Ethernet Adapter, 4XC7A08295 (Part 1 of 2)

Operating systems	SE450	SE350	SR645 V3	SR665 V3	SR250 V2	ST250 V2	ST50 V2	SR630 V2	SR650 V2	SR670 V2	SR850 V2	SR860 V2	ST650 V2	SR635	SR645	SR655	SR665
Microsoft Windows 11	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N
Microsoft Windows Server 2016	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Microsoft Windows Server 2019	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Microsoft Windows Server 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.6	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 7.7	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]

Operating systems	SE450	SE350	SR645 V3	SR665 V3	SR250 V2	ST250 V2	ST50 V2	SR630 V2	SR650 V2	SR670 V2	SR850 V2	SR860 V2	ST650 V2	SR635	SR645	SR655	SR665
Red Hat Enterprise Linux 7.8	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 7.9	Y	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 8.1	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 8.2	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 8.3	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.4	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.5	Y	Y	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.6	Y	Y	N	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.7	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.0	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.1	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4	N	N	N	N	N	N	N	N	N	N	N	N	N	Y [1]	N	N	N
SUSE Linux Enterprise Server 12 SP4 with Xen	N	N	N	N	N	N	N	N	N	N	N	N	N	Y [1]	N	N	N
SUSE Linux Enterprise Server 12 SP5	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 12 SP5 with Xen	N	N	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 15 SP1	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
SUSE Linux Enterprise Server 15 SP1 with Xen	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
SUSE Linux Enterprise Server 15 SP2	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2 with Xen	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3 with Xen	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4 with Xen	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U2	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.5 U3	N	N	N	N	N	N	N	N	N	N	N	N	N	Y [1]	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U2	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U3	N	Y	N	N	N	N	N	Y	Y	Y	N	N	Y	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 7.0	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y [1]	Y [1]	N	Y [1]
VMware vSphere Hypervisor (ESXi) 7.0 U1	N	Y	N	N	N	N	N	N	N	N	Y	Y	N	Y [1]	Y	N	Y
VMware vSphere Hypervisor (ESXi) 7.0 U2	N	Y	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 7.0 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

[1] The OS is not supported with EPYC 7003 processors.

Table 9. Operating system support for ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-port PCIe Ethernet Adapter, 4XC7A08295 (Part 2 of 2)

Operating systems	SD530 (Gen 2)	SR630 (Gen 2)	SR650 (Gen 2)	SR850P	SR950 (Gen 2)	SD530 (Gen 1)	SR630 (Gen 1)	SR650 (Gen 1)	SR950 (Gen 1)
Microsoft Windows 11	N	N	N	N	N	N	N	N	N
Microsoft Windows Server 2016	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2019	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.6	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.7	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.8	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.9	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.1	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.2	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.3	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.4	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.5	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.6	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.7	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.0	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.1	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP5	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP5 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP1 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5	N	N	N	N	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U1	N	N	N	N	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7	N	N	N	N	N	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U1	Y	Y	Y	Y	Y	Y	Y	Y	Y

Operating systems	SD530 (Gen 2)	SR630 (Gen 2)	SR650 (Gen 2)	SR850P	SR950 (Gen 2)	SD530 (Gen 1)	SR630 (Gen 1)	SR650 (Gen 1)	SR950 (Gen 1)
VMware vSphere Hypervisor (ESXi) 6.7 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.7 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U1	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U2	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 7.0 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 10. Operating system support for ThinkSystem Intel E810-DA2 10/25GbE SFP28 2-port OCP Ethernet Adapter, 4XC7A08294

Operating systems	SR630 V2	SR650 V2	SR670 V2	SR850 V2	SR860 V2	SR635	SR645	SR655	SR665
Microsoft Windows 11	N	N	N	N	N	N	N	Y	N
Microsoft Windows Server 2016	Y	Y	Y	Y	Y	Y	Y	N	Y
Microsoft Windows Server 2019	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microsoft Windows Server 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 7.6	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 7.7	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 7.8	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 7.9	Y	Y	Y	Y	Y	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 8.1	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 8.2	Y	Y	Y	Y	Y	Y [1]	Y [1]	Y [1]	Y [1]
Red Hat Enterprise Linux 8.3	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.4	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.5	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.6	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 8.7	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.0	Y	Y	Y	Y	Y	Y	Y	Y	Y
Red Hat Enterprise Linux 9.1	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 12 SP4	N	N	N	N	N	Y [1]	N	N	N
SUSE Linux Enterprise Server 12 SP4 with Xen	N	N	N	N	N	Y [1]	N	N	N
SUSE Linux Enterprise Server 12 SP5	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 12 SP5 with Xen	Y	Y	Y	Y	Y	Y	Y	N	Y
SUSE Linux Enterprise Server 15 SP1	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
SUSE Linux Enterprise Server 15 SP1 with Xen	N	N	N	N	N	Y [1]	Y [1]	Y [1]	Y [1]
SUSE Linux Enterprise Server 15 SP2	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP2 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP3 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUSE Linux Enterprise Server 15 SP4 with Xen	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 6.5 U3	N	N	N	N	N	Y [1]	N	N	N
VMware vSphere Hypervisor (ESXi) 6.7 U3	Y	Y	Y	N	N	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 7.0	N	N	N	N	N	Y [1]	Y [1]	N	Y [1]
VMware vSphere Hypervisor (ESXi) 7.0 U1	N	N	N	Y	Y	Y [1]	Y	N	Y
VMware vSphere Hypervisor (ESXi) 7.0 U2	Y	Y	Y	Y	Y	Y	Y	N	Y
VMware vSphere Hypervisor (ESXi) 7.0 U3	Y	Y	Y	Y	Y	Y	Y	Y	Y
VMware vSphere Hypervisor (ESXi) 8.0	Y	Y	Y	Y	Y	Y	Y	Y	Y

[1] The OS is not supported with EPYC 7003 processors.

Physical specifications

The PCIe adapter has a Low Profile form factor with the following dimensions:

- Length: 168 mm (6.6 in.)
- Height: 69 mm (2.7 in.)

The OCP adapter has the following dimensions:

- Width: 76 mm (3 in.)
- Depth: 115 mm (4.5 in.)

Operating environment

The E810 adapters are supported in the following environment:

- Operating temperature: 0 to 55 °C (32 to 131 °F)
- Storage temperature: -40 °C to 70 °C (-40 °F to 158 °F)
- Relative humidity (non-operating): 10% to 90%

Warranty

One-year limited warranty. When installed in a supported server, these adapters assume the server's base warranty and any warranty upgrade.

Agency approvals

The adapter conforms to the following standards:

- FCC B
- UL
- CE
- VCCI
- BSMI
- RCM
- KCC

Related publications

For more information, see the following resources:

- Networking Options for ThinkSystem Servers
  https://lenovopress.com/lp0765-networking-options-for-thinksystem-servers
- Intel Product page for E810-XXVDA2 PCIe adapter
  https://www.intel.com/content/www/us/en/products/network-io/ethernet/ethernet-adapters/ethernet-800-series-network-adapters/e810-xxvda2.html
- Intel Product page for E810-XXVDA2 OCP adapter
  https://www.intel.com/content/www/us/en/products/network-io/ethernet/ethernet-adapters/ethernet-800-series-network-adapters/e810-xxvda2-ocp-3.html
- Lenovo ServerProven compatibility information
  http://www.lenovo.com/us/en/serverproven

Related product families

Product families related to this document are the following:

- 25 Gb Ethernet Connectivity
- Ethernet Adapters

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This document, LP1433, was created or updated on December 15, 2022.

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