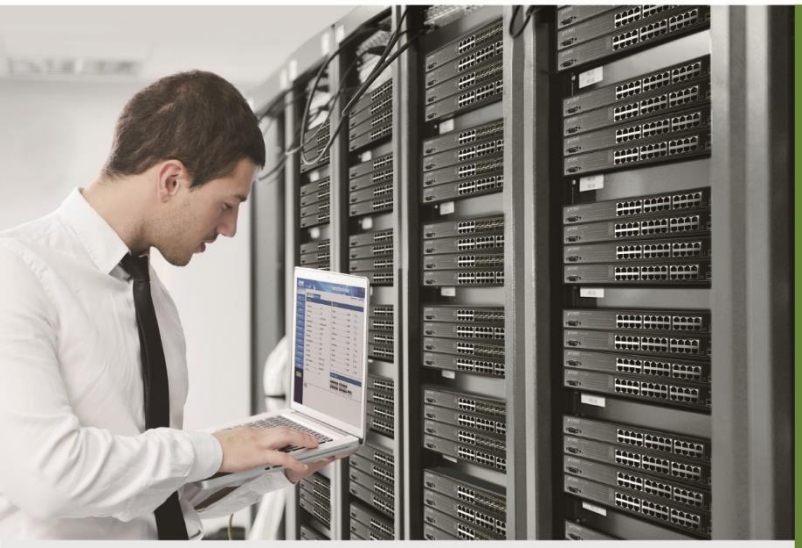
PLANET
Networking & Communication

User's Manual

Dual-Port 100Gbps QSFP28 PCI Express Ethernet Adapter (Intel)

▶ ENW-2QSFP28



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FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at whose own expense.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

WEEE Warning

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Revision

User Manual of PLANET Gigabit PoE Network Interface Card

Models: ENW-2QSFP28

Revision: 1.0 (November 2025)

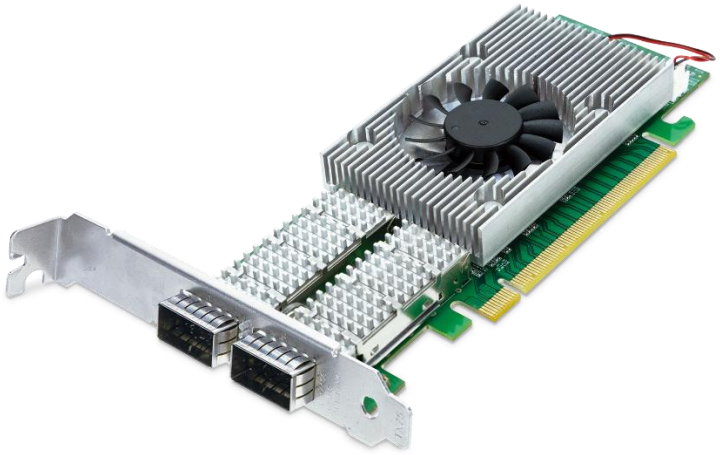
Part No.: EM-ENW-2QSFP28_v1.0

Table of Contents

Chapter 1 Introduction

PLANET ENW-2QSFP28 100GbE QSFP28 PCI Express server adapter adopts the Intel® Ethernet Controller solution. It provides a PCI Express Gen4 x16 interface and advanced features as follows:

- **Smaller and compact in design**
- **Flexible 100G QSFP28 module installation**
- **Supports PXE boot/Wake-on-LAN**
- **Long/Low profile bracket**



The Server Level Adapter to Expand Networking Environments

The ENW-2QSFP28 is a PCI Express 100Gbps Ethernet Adapter designed to meet high-performance system application requirements. Leveraging the PCI Express Gen4 x16 bus architecture, the ENW-2QSFP28 delivers superior bandwidth and efficiency for modern data centers and enterprise servers. Providing up to ten times the speed of legacy 10GbE solutions, it is ideal for connecting servers and workstations with extremely high throughput and excellent signal quality.

Moreover, the ENW-2QSFP28 supports IEEE 802.1Q VLAN for flexible and secure network segmentation. With jumbo frames up to 9.5K bytes and IEEE 802.3 flow control, it optimizes throughput and ensures wire-speed packet transfer without packet loss. These features make it an excellent solution for 100 Gigabit Ethernet environments.

High-Performance 100GbE QSFP28 Adapter for Data Center and IPC

The PLANET ENW-2QSFP28 is a dual-port 100GbE QSFP28 PCI Express server adapter designed for high-speed networking in modern data centers and industrial applications. Powered by the Intel® Ethernet Controller E810-CAM2, it supports PCI Express Gen4 x16 (backward compatible with PCIe 3.0 x16) for seamless integration into server or IPC motherboards.

Featuring dual QSFP28 ports, the ENW-2QSFP28 delivers up to 2 × 100GbE connectivity with low power consumption and a standard low-profile form factor. The onboard Intel controller integrates advanced networking technologies and a 100GbE MAC into a single chip, achieving up to 100Gbps throughput per port. By offloading key networking and virtualization tasks from the server CPU, it ensures near line-rate performance while maintaining the simplicity of a conventional Network Interface Card (NIC).

High-Speed 100GbE Connectivity and Flexible Extension

The ENW-2QSFP28 is a dual-port 100GbE QSFP28 PCI Express adapter powered by the Intel® Ethernet Controller E810-CAM2. It supports flexible QSFP28 transceivers for connections up to 100 meters over multi-mode fiber or 10 kilometers over single-mode fiber, making it ideal for data center and enterprise deployments. With PCIe Gen4 x16 bandwidth, low power consumption, and a standard low-profile form factor, it delivers up to 100Gbps throughput per port while offloading key networking and virtualization tasks from the server CPU, ensuring near line-rate performance and reliable operation.

High-Performance 802.1Q VLAN and Jumbo Frame Support

The ENW-2QSFP28, powered by the Intel® Ethernet Controller E810-CAM2, supports IEEE 802.1Q VLAN tagging and jumbo frames up to 9.5K bytes, enabling flexible and secure network segmentation. With IEEE 802.3 flow control, it ensures optimized throughput and wire-speed packet transfer without packet loss. Designed for 100GbE high-speed Ethernet environments, the device delivers exceptional performance for demanding server and data center applications.

Multiple OS Support

The ENW-2QSFP28 is fully compatible with a wide range of modern operating systems, including Microsoft Windows® 10/11 (64-bit) and Windows Server® 2016/2019/2022/2025. It also supports leading Linux platforms with kernel versions 5.x and 6.x (RHEL / SLES with driver support), as well as FreeBSD. With this broad OS compatibility, the ENW-2QSFP28 can be seamlessly integrated into diverse server and industrial networking environments.

Low-Profile Design

The ENW-2QSFP28 supports both full-height and low-profile PCI Express slots. It comes with an optional low-profile bracket, making it suitable for IPC systems or servers with limited space. This flexible form factor design allows the ENW-2QSFP28 to be deployed in a wide range of industrial and data center applications.

Dual-port 100GbE QSFP28 for Enhanced Deployment

Equipped with two 100GbE QSFP28 fiber interfaces, the ENW-2QSFP28 provides high-speed connectivity and deployment flexibility. The dual-port design allows administrators to build redundant connections for high availability or aggregate both ports to double bandwidth up to 200Gbps, ensuring efficient data transmission in enterprise data centers, cloud computing, and HPC environments. This versatile configuration makes it ideal for scenarios requiring both performance and reliability.

1.1 Package Contents

Thank you for purchasing PLANET ENW-2QSFP28 PCI Express 100 Gigabit Ethernet adapter. The 100 Gigabit Ethernet adapter provides a highly cost-effective solution that can upgrade your existing Ethernet infrastructure to the 100 Gigabit network.

Make sure your package contains the following items:

- 1 x ENW-2QSFP28 Dual-Port 100Gbps QSFP28 PCI Express Ethernet Adapter (with full-height bracket)
- 1 x Low Profile Bracket

If any of these are missing or damaged, please contact your dealer immediately. If possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

1.2 Product Features

- Intel® Ethernet Controller E810-CAM2 for server-grade performance
- Dual-port 100GbE QSFP28 interfaces
- PCI Express Gen4 x16 interface (backward compatible with PCIe Gen3 x16)
- PXE Boot and Wake-on-LAN support for remote deployment and management
- IEEE 802.1Q VLAN tagging for secure and flexible network segmentation
- Jumbo Frame support up to 9.5K bytes for optimized throughput
- IEEE 802.3 Flow Control for reliable wire-speed packet delivery
- SR-IOV, VMDq, RSS, DPDK support for virtualization and high-performance networking
- Low-profile and full-height brackets included for flexible installation
- Compatible with Microsoft Windows® 10/11 (64-bit), Windows Server® 2016/2019/2022/2025, Linux Kernel 5.x / 6.x (RHEL / SLES with ice driver), and FreeBSD

1.3 Product Specifications

Product	ENW-2QSFP28
Hardware Specifications	
Controller	E810-CAM2
Interface	2 x QSFP28
LED Indicator	Link Speed: Green Link/ ACT: Green
Data Rate	100Gbps per port
Optical Module Options	SR4, LR4, DAC
Dimensions (W x D x H)	175 x 18 x 150 mm
Weight	170g
PCIe Bus Type	PCI Express Gen4 x16, backward compatible with PCIe Gen3 x16
Typical Power Consumption	Max.12 watts/ 40.92BTU (No Loading) Max.16 watts/ 54.56BTU (Full loading)
Jumbo Frame	9.5K bytes
Advanced Functions	
Layer 2 Features	IEEE 802.3x Flow Control support IEEE 802.1Q VLAN support
Pre-boot Execution Environment (PXE)	Yes
Operating System Support	Windows® 10/11 (64-bit) Windows Server® 2016/2019/2022/2025 Linux Kernel 5.x / 6.x (RHEL / SLES with ice driver) FreeBSD
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class B, CE
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3cd 100GbE IEEE 802.3bd Priority-based Flow Control Enhancements IEEE 802.3x Flow Control and Back Pressure IEEE 802.1Q VLAN Tagging IEEE 802.1p Priority Tagging IEEE 802.1D MAC Bridges IEEE 802.1AX Link Aggregation IEEE 802.1Qbb Priority-based Flow Control IEEE 802.1Qbg Edge Virtual Bridging IEEE 802.1BR Bridge Port Extension

	IEEE 802.1AB LLDP
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -10 ~ 85 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Standard Accessories	
Package Contents	ENW-2QSFP28 Server Adapter Low Profile Bracket QR Code Sheet

1.4 Gathering Tools and Documentations

To install the ENW-2QSFP28 Gigabit PoE server adapter, you will need the following items:

- A suitable screw driver
- Your operating system documentation
- Your system unit documentation, including any service documentation

Chapter 2 Hardware Installation

2.1 LED Definition

Below are the pictures of the face plates of the ENW-2QSFP28, consisting of two LEDs: Link Speed and Link/ACT. Table

1 explains the function and state of the LEDs.

➢ **Product Outlook**

■ **Per 100G QSFP28 Status LED**

LED	Color	Description
Link Speed	**Green**	Lights: To indicate the port is successfully established at 100Gbps.
LNK/ACT	**Green**	Lights: It indicates a functional network link through the port. Blinks: It indicates data is transmitted and receiving through the port.

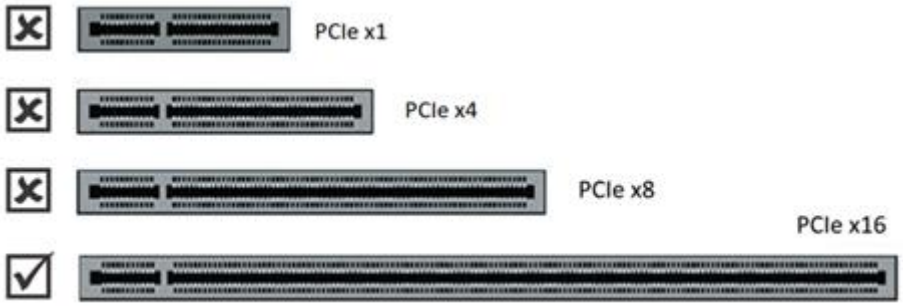
2.2 System Requirement

■ **PCI-Express support**

ENW-2QSFP28: The Server/Workstation supports PCI Express v4.0 (16GT/s) with a PCIe x16 interface.

Note

Below are the different PCI Express slots.
The ENW-2QSFP28 requires a PCIe Gen4 x16 slot for optimal performance.



Operating System Support:

Windows® 10 64 bits

Windows® 11 64 bits

Windows Server® 2016 64 bits

Windows Server® 2019 64 bits

Windows Server® 2022 64 bits

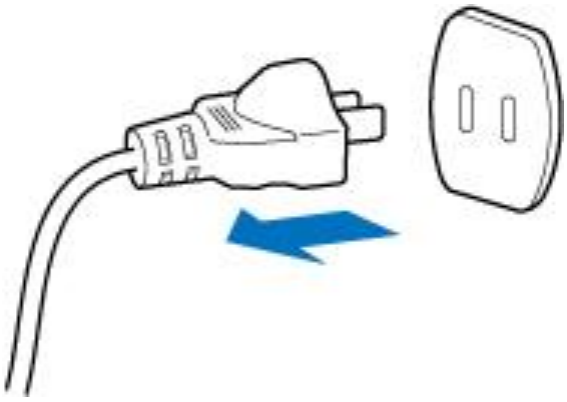
Windows Server® 2025 64 bits

Linux Kernel 5.x / 6.x (RHEL / SLES with ice driver)

FreeBSD

2.3 Hardware Installation

Step 1: Please **turn off** your PC.

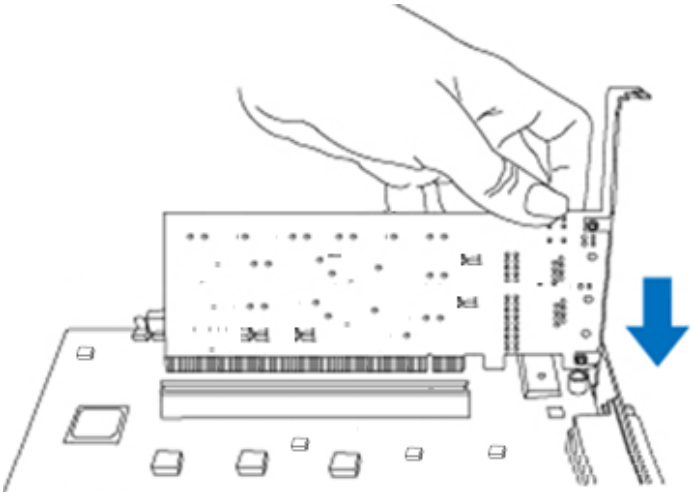


Step 2: Remove any metal decorations from your hands and wrists.

Step 3: Remove the cover from your PC.

Step 4: Locate an empty PCI Express slot and remove the corresponding back plate. Save the screw for use in Step 6.

Step 5: Carefully insert the 100 Gigabit Ethernet Adapter into the chosen slot and press firmly with proper push to ensure it is fully seated in the slot.



Step 6: Secure the 100 Gigabit Ethernet Adapter with the screw you saved in Step 4.

Step 7: Replace the PC cover.

Step 8: Power on your PC and refer to the next section to install driver.

Chapter 3 Support / Driver Download

Before installing drivers of ENW-2QSFP28 server adapter, please visit PLANET ENW-2QSFP28 web pages to download the drivers for your operation system.

https://www.planet.com.tw/en/support/downloads?&method=keyword&keyword=ENW-2QSFP28&view=4#list

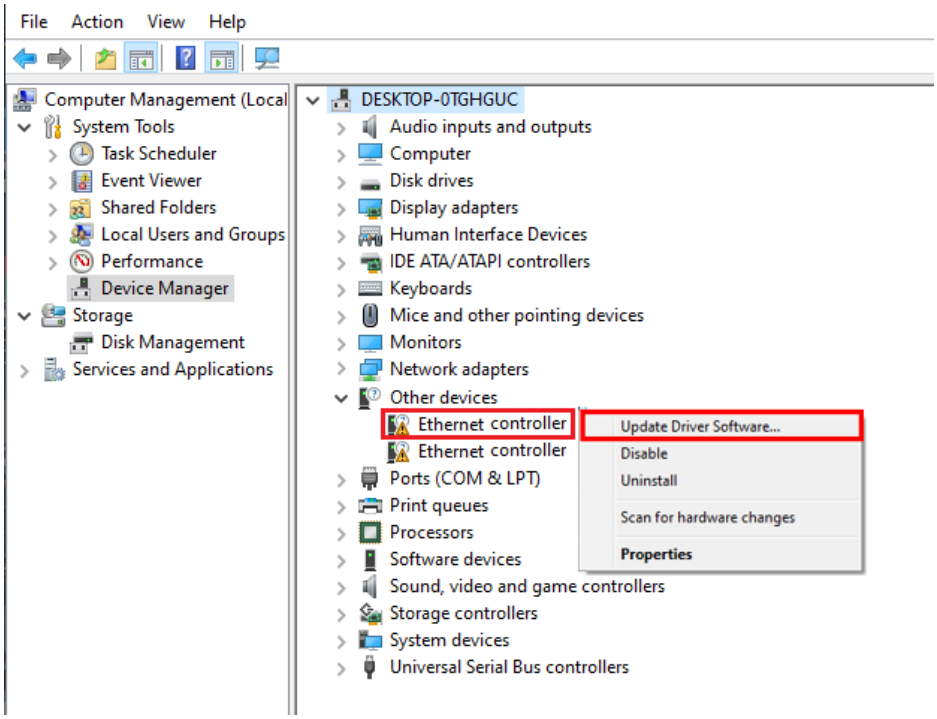
Note

1: For window 10 and other windows-based operation system, the operation system will detect server adapter and install driver automatically. However, if driver is not installed successfully, you have to install driver manually.

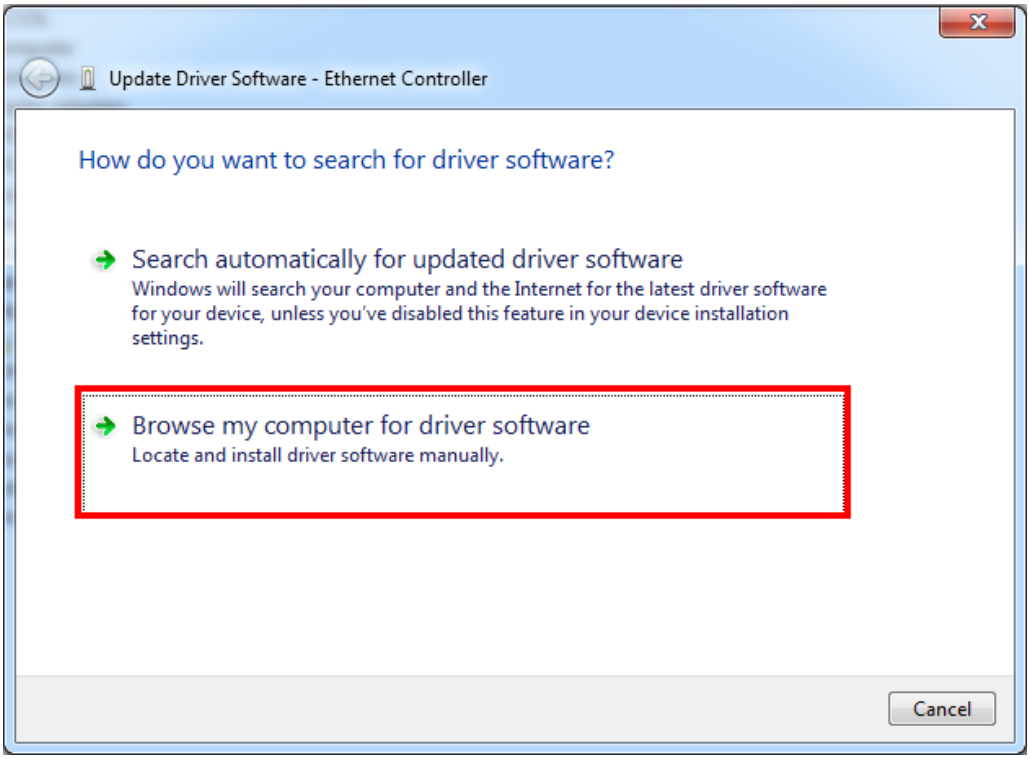
2: This operation is under Windows 10 which it is similar to Windows 11/Windows Server 2016R2/Windows Server 2019/Windows Server 2022/Windows Server 2025.

3.1 Windows 10/11 and Windows Server 2016/2019/2022/2025

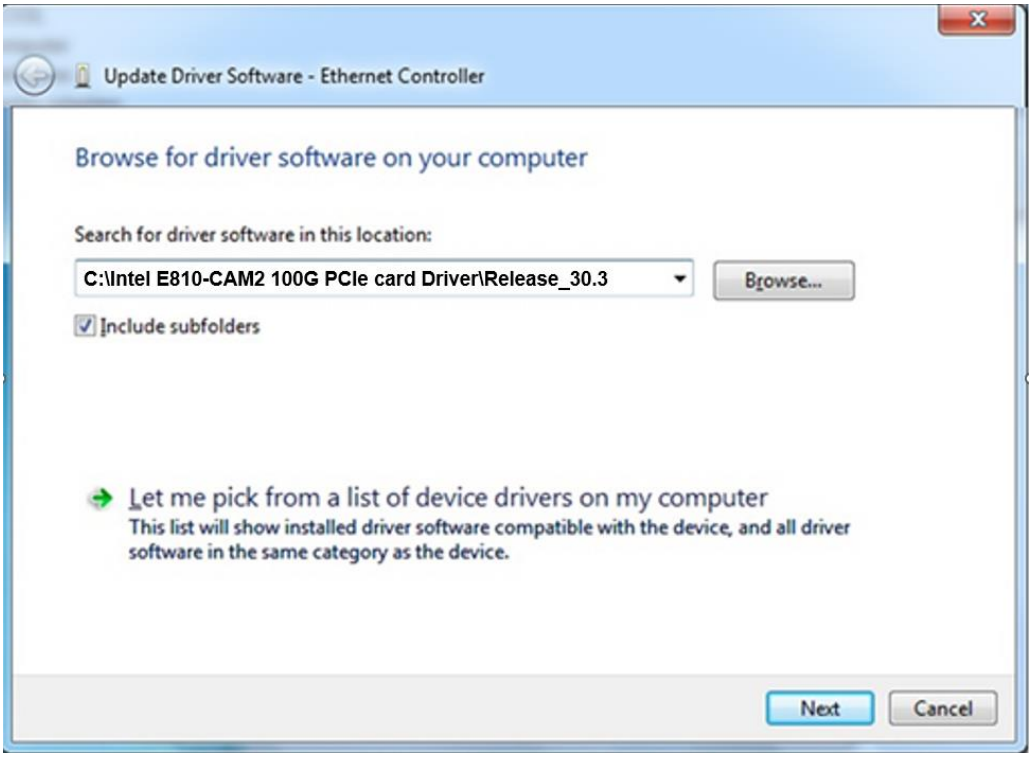
1. Open Device Manager → Other devices → Ethernet controller.
2. Right-click the adapter and select Update Driver Software



3. Please select “Browse my computer for driver software”

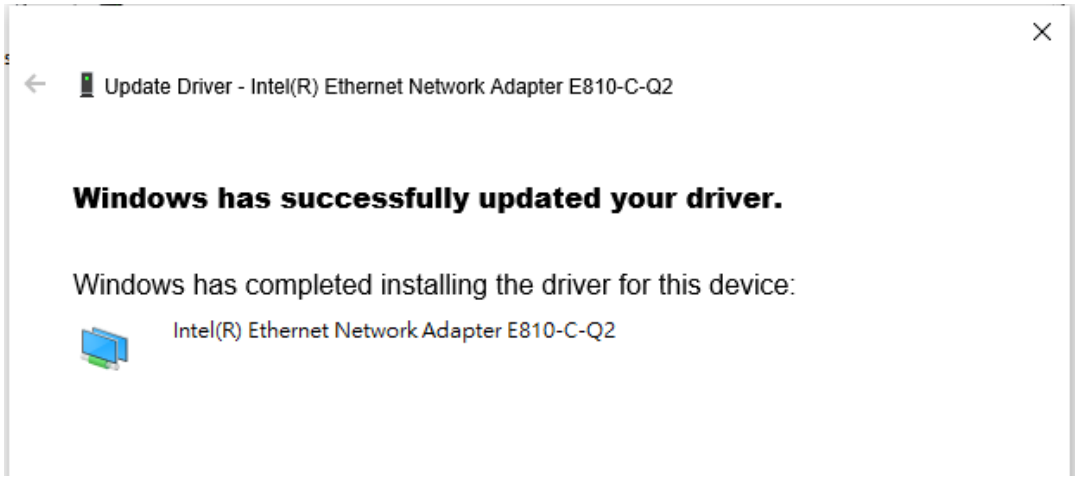


4. Browse to the extracted driver folder and click Next to install.



5. Installing the driver.

6. Windows has successfully updated your driver.



7. Verify the device displays as a Intel(R) Ethernet Network Adapter E810-C-Q2 under Network adapters.