# Intel® Ethernet Connection X722

## Feature Support Matrix

***Rev. 3.6***

***September 2025***

Doc. No.: 336882, Rev.: 3.6

# Contents

# Revision History

| Revision | Date | Comments |
|---|---|---|
| 3.6 | September 08, 2025 | Updates include the following:<br>• General updates in support of Software Release 30.4 and NVM 6.50. |
| 3.5 | June 03, 2025 | Updates include the following:<br>• General updates in support of Software Release 30.1.0.1 and NVM 6.50. |
| 3.4 | January 24, 2025 | Updates include the following:<br>• General updates in support of Software Release 29.5 and NVM 6.50. |
| 3.3 | November 18, 2024 | Updates include the following:<br>• General updates in support of Software Release 29.3 and NVM 6.50. |
| 3.2 | July 15, 2024 | Updates include the following:<br>• General updates in support of Software Release 29.1 and NVM 6.50. |
| 3.1 | January 12, 2024 | Updates include the following:<br>• General updates in support of Software Release 28.3 and NVM 6.20. |
| 3.0 | August 11, 2023 | Updates include the following:<br>• General updates in support of Software Release 28.2 and NVM 6.20. |
| 2.9 | February 24, 2023 | Updates include the following:<br>• General updates in support of Software Release 28.0 and NVM 6.20. |
| 2.8 | August 12, 2022 | Updates include the following:<br>• General updates in support of Software Release 27.6 and NVM 6.00. |
| 2.7 | April 4, 2022 | Updates include the following:<br>• General updates in support of Software Release 27.1 and NVM 5.60. |
| 2.6 | October 19, 2021 | Updates include the following:<br>• General updates in support of Software Release 26.6 and NVM 5.50. |
| 2.5 | July 22, 2021 | Updates include the following:<br>• General updates in support of Software Release 26.4 and NVM 5.40. |
| 2.4 | April 20, 2021 | Updates include the following:<br>• General updates in support of Software Release 26.2 and NVM 5.30.<br>• General updates in support of Software Release 26.0 and NVM 5.15.<br>• General updates in support of Software Release 25.5 and NVM 5.15. |
| 2.3 | April 9, 2021 | Updates include the following:<br>• Added NVM and SRev information.<br>• Updated table “Software/NVM Compatibility”.<br>• Added table “NVM Transition Support”. |
| 2.2 | March 31, 2021 | Updates include the following:<br>• General updates in support of Software Release 26.2 and NVM 5.15. |
| 2.1 | February 9, 2021 | Updates include the following:<br>• Updated table “Software/NVM Compatibility”<br>— changed i40e driver version from 2.13.10 to 2.14.13. |
| 2.0 | October 1, 2020 | Updates include the following: |

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| Revision | Date | Comments |
|---|---|---|
| | | • General updates in support of Software Release 25.4 and NVM 5.10. |
| 1.9 | July 13, 2020 | Updates include the following:<br>• General updates in support of Software Release 25.2 and NVM 5.00. |
| 1.8 | May 18, 2020 | Updates include the following:<br>• General updates in support of Software Release 25.1 and NVM 4.30. |
| 1.7 | February 20, 2020 | Updates include the following:<br>• Updated table “Software/NVM Compatibility”. |
| 1.6 | February 4, 2020 | Updates include the following:<br>• General updates in support of Software Release 24.3 and NVM 4.11. |
| 1.5 | June 12, 2019 | Updates include the following:<br>• General updates in support of Software Release 24.0 and NVM 4.10. |
| 1.4 | March 6, 2019 | Updates include the following:<br>• General updates in support of Software Release 23.5.2 and NVM 4.00. |
| 1.3 | November 19, 2018 | Updates include the following:<br>• General updates in support of Software Release 23.4 and NVM 4.00.<br>• Added table “NVM Transition Support” |
| 1.2 | July 10, 2018 | Updates include the following:<br>• General updates in support of Software Releases 22.10, 23.1, and 23.2 and NVM 3.51. |
| 1.1 | January 19, 2018 | Updates include the following:<br>• Updated table “Operating System Support for Physical Function Driver”.<br>• Updated table “Operating System Support for RDMA Driver”<br>• Updated table “Virtualized Operating System”. |
| 1.0 | December 13, 2017 | Initial public release. |

# 1.0 Features Supported

The following tables list the feature support provided by the NVM and software drivers at a given release starting with the production release (Release 22.0.1, NVM 3.29). The *Intel® C620 Series Chipset Platform Controller Hub Datasheet* reflects the silicon device capability, while this document reflects what is actually supported in the software at a given release.

**Notes:**

- Throughout this document:
  - The Intel® Ethernet Connection X722 is represented as "X722".
  - "X" = Supported with Intel NVM and software driver.
  - "---" = Not supported with Intel NVM and software driver.
- The following table lists software releases:

| Software Release Version | X722 NVM Version | SRev |
|---|---|---|
| 22.0.1 | 3.29 | 1 |
| 22.2 | 3.37 | 1 |
| 22.5 | 3.45 | 1 |
| 22.7 | 3.49 | 1 |
| 22.9 | 3.51 | 1 |
| 22.10 | | |
| 23.1/23.2 | | |
| 23.4 | 4.00 | 10 |
| 23.5.2 | | |
| 24.0 | 4.10 | 10 |
| 24.3 | 4.11 | 10 |
| 25.1 | 4.30 | 10 |
| 25.2 | 5.00 | 10 |
| 25.4 | 5.10 | 10 |
| 25.5 | 5.15 | 10 |
| 26.0 | | 20 |
| 26.2 | 5.30 | 20 |
| 26.4 | 5.40 | 20 |
| 26.6 | 5.50 | 30 |
| 27.1 | 5.60 | 30 |
| 27.6 | 6.00 | 30 |

*continued...*

| Software Release Version | X722 NVM Version | SRev |
|---|---|---|
| 28.0/28.2/28.3 | 6.20 | 30 |
| 29.1/29.3/29.5 | 6.50 | 30 |
| 30.1.0.1/30.4 | 6.50 | 30 |

- Features not listed in this document are not officially supported.

## Table 1. Supported Link Modes

| Feature | Supported in Release |
|---|---|
| | 22.0.1 through 30.4 |
| 10 Gb/s Native SFI/SFP+[1] | X |
| KR+X557 10GBASE-T 2x10 GbE[2] | X |
| KR+X557 10GBASE-T 4x10 GbE[2] | X |
| KX+ Marvell 88E1512 2x1 GbE[3] | X |
| KX+ Marvell 88E1543 4x1 GbE[3] | X |
| KR+ CS4223 SFI/SFP+ 4x10 GbE | X |
| KR+ CS4227 SFI/SFP+ 2x10 GbE | X |
| SFI/QSFP+ 4x10 GbE | X |
| KR/KX Backplane | X |

*Notes:* 1. Supports four 10 Gb/s SFI direct attach connections in a QSFP+ connector.
2. Only supported with Intel® Ethernet Connection X557 device.
3. KX link can be achieved in any of the backplane images via auto-negotiation.

## Table 2. Supported Media Types

| Feature | Supported in Release |
|---|---|
| | 22.0.1 through 30.4 |
| **10 GbE Media Supported:** | |
| SFP+ SR/LR single-speed (10 GbE) | X |
| SFP+ SR/LR multi-speed (1/10 GbE) optical modules | X |
| SFP+ DA twinaxial cables (up to 7 meters) | X |
| SFP+ AOCs (Active Optical Cables) | X |
| QSFP+ DA twinaxial breakout cables | X |
| QSFP+ SR4 breakout cables | --- |
| QSFP+ AOC breakout cables | --- |
| SFP+ 10G-LRM, 10G-ER and 10G-ZR | --- |
| QSFP+ SR4/LR multi-speed (1/10 GbE) optical module | --- |
| **1 GbE Media Supported:** | |
| SFP+ SR/LR multi-speed (1/10 GbE) optical modules | X |

***continued...***

| Feature | Supported in Release |
|---|---|
| | 22.0.1 through 30.4 |
| SFP branded SFP SX/LX optical modules (single speed) | --- |
| SFP 1GBASE-T Transceiver (single speed) | --- |
| SFP+ legacy 1 GbE modules | --- |

## Table 3. General Features

| Feature | Supported in Release | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 22.0.1 | 22.2 and 22.5 | 22.7 through 22.10 | 23.1 and 23.2 | 23.4 and 23.5.2 | 24.0 through 26.4 | 27.1 through 28.3 | 29.1 through 30.4 |
| **Link Flow Control**[1] | X | X | X | X | X | X | X | X |
| **Priority Flow Control** | X | X | X | X | X | X | X | X |
| **Transmit Allocation Buffers Driver Uses** (Range 128-4096, default is 512) | X | X | X | X | X | X | X | X |
| **Checksum Offload** (IPv4/IPv6, SCTP, TCP, UDP, Tx/Rx) | X | X | X | X | X | X | X | X |
| **Generic Receive Offloads** | X | X | X | X | X | X | X | X |
| **Large Send Offload (TSO)** (Up to 64 KB) | X | X | X | X | X | X | X | X |
| **Header split** | X | X | X | X | X | X | X | X |
| **VLANs** | X | X | X | X | X | X | X | X |
| **LBFO Teaming** | X | X | X | X | X | X | X | X |
| **ANS Teaming** | --- | --- | --- | --- | --- | --- | --- | --- |
| **Persistent LLDP** | --- | --- | --- | --- | --- | X | X | X |
| **Interrupt Moderation Rate** | X | X | X | X | X | X | X | X |
| **Message Signaled Interrupts (MSI)** | X | X | X | X | X | X | X | X |
| **Message Signaled Interrupts (MSI-X)** | X | X | X | X | X | X | X | X |
| **Jumbo Packet(4088 and 9014 bytes)** | X | X | X | X | X | X | X | X |
| **Receive Side Scaling (RSS)** | X | X | X | X | X | X | X | X |
| **RSS Receive Queues** (Linux: 128 RSS PF Queues / 4 VF Queues) (Windows: 182 RSS PF Queues / 4 VF Queues) | X | X | X | X | X | X | X | X |
| **OS2BMC** | X | X | X | X | X | X | X | X |
| **Wake from S1–S4** | --- | --- | --- | --- | --- | --- | --- | --- |
| **Wake from S3, S4 (client OS only)** | X | X | X | X | X | X | X | X |
| **Wake from S5** | X | X | X | X | X | X | X | X |
| **DCB** | X | X | X | X | X | X | X | X |
| **Fiber Channel over Ethernet (FCoE)** | --- | --- | --- | --- | --- | --- | --- | --- |
| **FCoE Boot** | --- | --- | --- | --- | --- | --- | --- | --- |
| **Receive Side Coalescing (RSC)**[2] (Done by software) | X | X | X | X | X | X | X | X |
| **IEEE 1588**[3] (Linux only and session-based, not per packet) | X | X | X | X | X | X | X | X |
| **Intel® Ethernet Flow Director (Intel® Ethernet FD)** | X | X | X | X | X | X | X | X |

*continued...*

| Feature | Supported in Release | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 22.0.1 | 22.2 and 22.5 | 22.7 through 22.10 | 23.1 and 23.2 | 23.4 and 23.5.2 | 24.0 through 26.4 | 27.1 through 28.3 | 29.1 through 30.4 |
| (SW ATR and sideband Add Filter cmd – Linux only) | | | | | | | | |
| **MFP** | --- | --- | --- | --- | --- | --- | --- | --- |
| **Remote Boot[4]: PXE** | X | X | X | X | X | X | X | X |
| **Remote Boot[4]: iSCSI** | X | X | X | X | X | X | X | X |
| **Secure NVM** | X | X | X | X | X | X | X | X |
| **TPH** | X | X | X | X | X | X | X | X |
| **LPLU[5]** | X | X | X | X | X | X | X | X |
| **EEE** | --- | --- | --- | --- | --- | --- | --- | --- |
| **Malicious Driver** | X | X | X | X | X | X | X | X |
| **Recovery Mode** | --- | --- | --- | --- | X | X | X | X |
| **Azure Stack Additional Qualification (AQ) Certification[6]** | --- | X | X | X | X | X | X | X |
| **IEEE Data Center Bridging (DCB):** | | | | | | | | |
| MSFT DCB (QoS support) 10 GbE | X | X | X | X | X | X | X | X |
| DCBx in FW | X | X | X | X | X | X | X | X |
| DCBx in SW (Linux only) | X | X | X | X | X | X | X | X |
| SW only DCB | --- | --- | --- | --- | --- | --- | --- | --- |
| **Virtualization (SR-IOV):** | | | | | | | | |
| VMDq (For ESX and Hyper V Only) | X | X | X | X | X | X | X | X |
| SR-IOV (KVM and 2012 R2 Hyper V) | X | X | X | X | X | X | X | X |
| RSS in VF | X | X | X | X | X | X | X | X |
| 4 queues per VM | X | X | X | X | X | X | X | X |
| **Cloud Offloads:** | | | | | | | | |
| VXLAN (Linux i40e only[7]) | X | X | X | X | X | X | X | X |
| VXLAN (VMware driver) | --- | --- | X | X | X | X | X | X |
| VXLAN (Windows Server 2019 only) | --- | --- | --- | --- | --- | X | X | X |
| NVGRE (Windows only) | X | X | X | X | X | X | X | X |
| GENEVE (ESX[8]) | --- | --- | X | X | X | X | X | X |
| GENEVE (Linux) | --- | --- | X | X | X | X | X | X |
| **Manageability Support:** | | | | | | | | |
| NC-SI | X | X | X | X | X | X | X | X |
| OS2BMC | X | X | X | X | X | X | X | X |
| SMBus | X | X | X | X | X | X | X | X |
| **SR-IOV supported on 1 GbE PHY** | --- | --- | --- | --- | --- | --- | --- | --- |
| **DCB/DCBX for 1 GbE SKU** | --- | --- | --- | X | X | X | X | X |
| **iWARP on 1 GbE SKU** | X | X | X | X | X | X | X | X |
| **iWARP on 10 GbE SKU:** | | | | | | | | |
| NDK 1.0/NDK 2.0 mode 2 | X | X | X | X | X | X | X | X |
| NDK 2.0 mode 3 | --- | --- | --- | --- | --- | --- | --- | --- |

***continued...***

| Feature | Supported in Release | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 22.0.1 | 22.2 and 22.5 | 22.7 through 22.10 | 23.1 and 23.2 | 23.4 and 23.5.2 | 24.0 through 26.4 | 27.1 through 28.3 | 29.1 through 30.4 |
| Linux iWARP SR-IOV | X | X | X | X | X | X | X | X |
| RDMA VMware support | --- | --- | --- | --- | --- | --- | X | X |

*Notes:*
1. A 10 GbE controller port can either be configured to receive 802.3x Link Flow Control (LFC) packets or 802.1Qbb/802.3bd PFC packets. It does not support the reception of both types of packets simultaneously over the same port.
2. Not supported in VF.
3. The device only processes PTP packets using the Layer 2 packet format.
4. X722 has an integrated flash. OROM is stored in the 10 GbE region of flash.
5. For 10GBASE-T applications only.
6. For Software Release 24.0, the Azure Stack Additional Qualification (AQ) Certification is for Windows Server 2016 only. Windows Server 2019 will be supported in future releases.
7. All Linux i40e support refers to the driver posted on intel.com and sourceforge.net. OS vendors may release feature on different schedules. Contact OS vendor for more information.
8. For ESX, only Native mode driver will support these features going forward.

# 2.0 Operating Systems Supported

The following tables list the supported operating systems and virtualized operating systems. For the latest list of OS supported, refer the Purley snapshot.

**Table 4. Operating System Support for Physical Function Driver**

| Operating System | In-box/In-distro | Additional Notes |
|---|---|---|
| Windows Server 2025 | Yes | 64 bit only. |
| Windows Server 2022 | Yes | 64 bit only. |
| Windows Server 2019 | Yes | 64 bit only. |
| Windows Server 2016 | No | 64 bit only. |
| Windows 11 24H2/23H2/22H2 | Yes | 64 bit only. |
| Windows 10 21H2/RS5 (Version 1809) | Yes | 64 bit only. |
| Windows PE | No | 64 bit only. |
| Linux: RHEL 10 | Yes | 64 bit only. |
| Linux: RHEL 9.6/9.5/9.4/9.3/9.2/9.1 | Yes | 64 bit only. |
| Linux: RHEL 8.10/8.9 | Yes | 64 bit only. |
| Linux: SLES 15 SP7/SP6/SP5 | Yes | 64 bit only. |
| Linux: SLES 12 SP5 | Yes | 64 bit only. |
| Linux: Debian 11 | Yes | 64 bit only. |
| Linux: Ubuntu 24.04 LTS/22.04 LTS | Yes | 64 bit only. |
| Linux Stable Kernel version 6.10/6.9/6.8/6.7/6.6/6.5/5.13/5.10/5.7/5.4/4.x | N/A | 64 bit only. |
| Solaris | | Contact Oracle for release details. |
| VMware vSphere 8.0 (ESXi 8.0) | Yes | Driver available at VMware website. |
| VMware vSphere 7.0 (ESXi 7.0) | Yes | Driver available at VMware website. |
| FreeBSD 14.2/14.1/13.4/13.3 | Yes | 64 bit only. |
| UEFI 2.9/2.8/2.4/2.3/2.1 | N/A | |
| Option ROM support: Legacy PXE, Legacy iSCSI, x64 UEFI driver | N/A | |

## Table 5. Operating System Support for RDMA Driver

| Operating System | In-box/In-distro | Additional Notes |
|---|---|---|
| Windows Server 2025 | Yes | 64 bit only. |
| Windows Server 2022 | Yes | 64 bit only. |
| Windows Server 2019 | Yes | 64 bit only. |
| Windows Server 2016 | Yes | 64 bit only. |
| Linux: RHEL 10 | Yes | 64 bit only. |
| Linux: RHEL 9.6/9.5/9.4/9.3/9.2/9.1 | Yes | 64 bit only. |
| Linux: RHEL 8.10/8.9/8.8/8.7 | Yes | 64 bit only. |
| Linux: SLES 15 SP7/SP6/SP5 | Yes | 64 bit only. |
| Linux: SLES 12 SP5 | Yes | 64 bit only. |
| Linux: Ubuntu 24.04 LTS/22.04 LTS | Yes | 64 bit only. |
| Linux Stable Kernel version 6.10/6.9/6.8/6.7/6.6/6.5/5.13/5.10/5.7/5.4/4.x | N/A | 64 bit only. |
| VMware vSphere 8.0 (ESXi 8.0) | Yes | 64 bit only. |
| VMware vSphere 7.0 (ESXi 7.0) | Yes | 64 bit only. |
| FreeBSD 14.2/14.1/13.4/13.3 | No | 64 bit only. |

## Table 6. Virtualized Operating System

| Virtualized OS | Host OS | PF Driver | Guest OS | Guest OS VF Driver |
|---|---|---|---|---|
| Linux | RHEL 10.0/KVM<br>RHEL 9.6/KVM<br>RHEL 9.5/KVM<br>RHEL 9.4/KVM<br>RHEL 9.3/KVM<br>RHEL 9.2/KVM<br>RHEL 9.1/KVM<br>RHEL 8.10/KVM<br>RHEL 8.9/KVM<br>SLES 15 SP7/KVM<br>SLES 15 SP6/KVM<br>SLES 15 SP5/KVM<br>SLES 12 SP5/KVM<br>Ubuntu 24.04/KVM<br>Ubuntu 22.04/KVM | Linux i40e | RHEL 10.0<br>RHEL 9.6/9.5/9.4/9.3/9.2/9.1<br>RHEL 8.10/8.9<br>SLES 15 SP7/SP6/SP5<br>SLES 12 SP5<br>Ubuntu 24.04/22.04 | i40evf/iavf[1] (Linux) |
| | | | Windows Server 2025<br>Windows Server 2022<br>Windows Server 2019<br>Windows Server 2016 | V40E/iavf[2] (Windows) |
| | | | FreeBSD 14.1<br>FreeBSD 13.4/13.3 | iXLv/iavf[3] (FreeBSD) |
| Windows Hyper-V | Azure Stack HCI 24H2<br>Azure Stack HCI 23H2<br>Azure Stack HCI 22H2 | I40EB | RHEL 10.0<br>RHEL 9.6/9.5/9.4/9.3/9.2/9.1<br>RHEL 8.10/8.9<br>SLES 15 SP7/SP6/SP5<br>SLES 12 SP5<br>Ubuntu 24.04/22.04 | i40evf/iavf[1] (Linux) |
| | | | Windows Server 2025<br>Windows Server 2022<br>Windows Server 2019 | V40E/iavf[2] (Windows) |

***continued...***

| Virtualized OS | Host OS | PF Driver | Guest OS | Guest OS VF Driver |
|---|---|---|---|---|
| | | | Windows Server 2016 | |
| | Windows Server 2025 | I40EB | RHEL 10.0<br>RHEL 9.6/9.5/9.4/9.3/9.2/9.1<br>RHEL 8.10/8.9<br>SLES 15 SP7/SP6/SP5<br>SLES 12 SP5<br>Ubuntu 24.04/22.04 | i40evf/iavf[1] (Linux) |
| | | | Windows Server 2025<br>Windows Server 2022<br>Windows Server 2019<br>Windows Server 2016 | V40E/iavf[2] (Windows) |
| | Windows Server 2022 | I40EB | RHEL 10.0<br>RHEL 9.6/9.5/9.4/9.3/9.2/9.1<br>RHEL 8.10/8.9<br>SLES 15 SP7/SP6/SP5<br>SLES 12 SP5<br>Ubuntu 24.04/22.04 | i40evf/iavf[1] (Linux) |
| | | | Windows Server 2025<br>Windows Server 2022<br>Windows Server 2019<br>Windows Server 2016 | V40E/iavf[2] (Windows) |
| | Windows Server 2019 | I40EB | RHEL 10.0<br>RHEL 9.6/9.5/9.4/9.3/9.2/9.1<br>RHEL 8.10/8.9<br>SLES 15 SP7/SP6/SP5<br>SLES 12 SP5<br>Ubuntu 24.04/22.04 | i40evf/iavf[1] (Linux) |
| | | | Windows Server 2022<br>Windows Server 2019<br>Windows Server 2016 | V40E/iavf[2] (Windows) |
| | Windows Server 2016 | I40EB | Windows Server 2025<br>Windows Server 2022<br>Windows Server 2019<br>Windows Server 2016 | V40E/iavf[2] (Windows) |
| VMware vSphere | ESXi 8.0 GA, U1, U2, U3<br>ESXi 7.0 GA, U1, U3 | ESX i40en | RHEL 10.0<br>RHEL 9.6/ 9.5/9.4/9.3/9.2/9.1<br>RHEL 8.10/8.9<br>SLES 15 SP7/SP6/SP5<br>SLES 12 SP5<br>Ubuntu 24.04/22.04<br>Photon 3.0 | i40evf/iavf[1] (Linux) |
| | | | Windows Server 2025<br>Windows Server 2022<br>Windows Server 2019 | V40E/iavf[2] (Windows) |

***continued...***

| Virtualized OS | Host OS | PF Driver | Guest OS | Guest OS VF Driver |
|---|---|---|---|---|
| | | | Windows Server 2016 | |

*Notes:* 1. The Linux i40evf driver is renamed to "iavf" starting in Software Release 24.0.
2. The Windows V40E driver is renamed to "iavf" starting in Software Release 24.0.
3. The FreeBSD iXLv driver is renamed to "iavf" starting in Software Release 24.0.

# 3.0 NVM and Software Compatibility

With the X722 adapters, both the firmware (device NVM image) and network drivers are field-serviceable, and the NVM image and network driver are updated as a matched set. Updating the device image and driver together can increase key features including performance, manageability, media types, physical port counts, virtualization, offloads, remote boot options, VLAN support, teaming, and Receive Side Scaling.

The following tables indicate the sets of NVM images and Intel® Ethernet Connections Software releases that go together. Intel recommends that you update the NVM and Software Driver to compatible versions.

**NOTE**

Update to the device driver for given release prior to running the NVM update tool.

## Table 7. Software/NVM Compatibility

| Software Release Version | NVM Version | NVM Update Tool Version | i40e (Windows) | i40e (Linux)[1] | i40evf/iavf[2] (Linux)[1,3] | i40en (ESX) | ixl (FreeBSD)[6] | i40iw/i40iwvf[4] | irdma[4] | irdma (ESX) |
|---|---|---|---|---|---|---|---|---|---|---|
| 22.0.1 | 3.29 | N/A | 22.0.1 | 2.0.19 | 2.0.16 | --- | 1.7.11 | 0.7.50 | --- | --- |
| 22.2 | 3.37 | N/A | 22.2 | 2.0.23 | 2.0.22 | --- | 1.7.11 | 0.7.50 | --- | --- |
| 22.5 | 3.45 | N/A | 22.5 | 2.0.30 | 2.0.30 | --- | 1.7.12 | 0.7.52 | --- | --- |
| 22.7 | 3.49 | 1.30.10.2[5] | 22.7 | 2.2.4 | 3.1.4 | --- | 1.7.39 | 1.0.22 | --- | --- |
| 22.9 | 3.51 | 1.32.3.2 | 22.9 | 2.3.6 | 3.2.5 | --- | 1.8.1 | 1.2.0 | --- | --- |
| 22.10 | 3.51 | 1.32.3.2 | 22.10 | 2.4.3 | 3.4.2 | --- | 1.9.5 | 1.2.9 | --- | --- |
| 23.1 | 3.51 | 1.32.3.2 | 23.1 | 2.4.6 | 3.5.6 | --- | 1.9.7 | 1.4.5 | --- | --- |
| 23.2 | 3.51 | 1.32.3.2 | 23.2 | 2.4.10 | 3.5.13 | --- | 1.9.8 | 1.6.16 | --- | --- |
| 23.4 | 4.00 | 1.32.20.29 | 23.4 | 2.7.12 | 3.6.11 | --- | 1.10.4 | 1.7.6 | --- | --- |
| 23.5.2 | 4.00 | 1.32.20.30 | 23.5.2 | 2.7.29 | 3.6.15 | --- | 1.10.4 | 1.7.6 | --- | --- |
| 24.0 | 4.10 | 1.33.15.1 | 24.0 | 2.8.43 | 3.7.34 | --- | 1.11.9 | 1.8.18 | --- | --- |
| 24.3 | 4.11 | 1.34.17.3 | 24.3 | 2.10.19.30 | 3.7.61.20 | --- | 1.11.20 | 1.8.18 | --- | --- |
| 25.1 | 4.30 | 1.35.20.104 | 25.1 | 2.11.29 | 3.9.5 | 1.10.9.0 | 1.11.29 | 1.8.18 | --- | --- |
| 25.2 | 5.00 | 1.35.33.4 | 25.2 | 2.12.6 | 4.0.1 | 1.10.9.0 | 1.12.2 | --- | 1.0.13 | --- |
| 25.4 | 5.10 | 1.35.42.7 | 25.4 | 2.14.13 | 4.0.1 | 1.10.9.0 | 1.12.3 | --- | 1.1.26 | --- |
| 25.5 | 5.15 | 1.35.42.7 | 25.5 | 2.14.13 | 4.0.1 | 1.10.9.0 | 1.12.3 | --- | 1.2.21 | --- |
| 26.0 | 5.15 | 1.35.57.4 | 26.0 | 2.14.13 | 4.0.2 | 1.12.3.0 | 1.12.13 | --- | 1.3.19 | --- |
| 26.2 | 5.30 | 1.37.1.1 | 26.2 | 2.15.9 | 4.1.1 | 1.13.1.0 | 1.12.16 | --- | 1.4.24 | --- |
| 26.4 | 5.40 | 1.37.13.5 | 26.4 | 2.16.11 | 4.2.7 | 1.13.1.0 | 1.12.24 | --- | 1.5.2 | 1.3.3.7 |
| 26.6 | 5.50 | 1.37.13.5 | 26.6 | 2.17.4 | 4.2.7 | 2.1.5.0 | 1.12.29 | --- | 1.6.28 | 1.3.4.23 |

*continued...*

| Software Release Version | NVM Version | NVM Update Tool Version | i40e (Windows) | i40e (Linux) [1] | i40evf/ iavf [2] (Linux) [1,3] | i40en (ESX) | ixl (FreeBSD) [6] | i40iw/ i40iwvf [4] | irdma [4] | irdma (ESX) |
|---|---|---|---|---|---|---|---|---|---|---|
| 27.1 | 5.60 | 1.38.3.7 | 27.1 | 2.18.9 | 4.4.2 | For ESXi 6.x: 1.16.3.0<br>For ESXi 7.0: 2.2.4.0 | 1.12.32 | --- | 1.7.72 | 1.3.8.0 |
| 27.6 | 6.00 | 1.39.5.5 | 27.6 | 2.20.12 | 4.5.3 | For ESXi 6.x: 1.17.2.0<br>For ESXi 7.0: 2.3.4.0 | 1.12.35 | --- | 1.9.30 | 1.3.8.0 |
| 28.0 | 6.20 | 1.39.32.6 | 28.0 | 2.22.18 | 4.8.2 | For ESXi 7.0: 2.4.2.0<br>2.5.2.0 | 1.12.40 | --- | 1.11.58 | 1.4.3.0 |
| 28.2 | 6.20 | 1.39.56.9 | 28.2 | 2.23.17 | 4.9.1 | 2.5.2.0 | 1.13.4 | --- | 1.12.55 | 1.4.4.0 |
| 28.3 | 6.20 | 1.40.5.5 | 28.3 | 2.24.6 | 4.9.5 | 2.7.2.0 | 1.13.5 | --- | 1.13.43 | 1.4.4.0 |
| 29.1 | 6.50 | 1.41.3.3 | 29.1 | 2.25.7 | 4.11.1 | 2.7.2.0 | 1.14.2 | --- | 1.14.17 | 1.4.4.0 |
| 29.3 | 6.50 | 1.42.8.0 | 29.3 | 2.26.6 | 4.12.5 | 2.9.2.0 | 1.14.2 | --- | 1.15.7 | 1.4.4.0 |
| 29.5 | 6.50 | 1.42.24.2 | 29.5 | 2.27.8 | 4.13.3 | 2.9.2.0 | 1.14.2 | --- | 1.16.10 | 1.4.4.0 |
| 30.1.0.1 | 6.50 | 1.43.8.0 | Windows Server 2016: 1.18.369.0<br>Windows Server 2019: 1.21.74.0<br>Windows Server 2022: 1.21.67.0<br>Windows Server 2025 and Windows 11: 1.21.73.0 | 2.28.6 | 4.13.5 | 2.9.2.0 | 1.14.2 | --- | 1.17.31 | 1.5.1.0 |
| 30.4 | 6.50 | 1.43.20.0 | Windows Server 2016: 1.18.369.0<br>Windows Server 2019: 1.22.86.0<br>Windows Server 2022: 1.22.75.0<br>Windows Server 2025: 1.22.86.0<br>Windows 11: 1.22.79.0 | 2.28.10 | 4.13.16 | 2.9.2.0 | --- | --- | 2.0.26 | 1.5.1.0 |

*Notes:*
1. These are out-of-tree versions.
2. The Linux i40evf driver is renamed to "iavf" starting in Software Release 24.0.
3. For devices that are AVF compliant as described here (https://www.intel.com/content/www/us/en/products/docs/network-io/ethernet/controllers/ethernet-adaptive-virtual-function-hardware-spec.html), AVF base mode features are supported across NVM/PF combinations. Advanced features for VF drivers might require an update to NVM and PF/AVF drivers.
4. The i40iw/i40iwvf driver is renamed to "irdma" starting in Software Release 25.2.
5. NVM Update Tool version 1.30.10.2 has support for NVM versions up to 3.49.
6. The ixl (FreeBSD) OOT driver is EOL starting in Software Release 30.4. Upstream support only

Additionally, the NVM update package that comes with the Intel® Ethernet Controllers Software Release allows updates from older NVM versions. The following table indicates the version of NVM from which the tool allows updates.

## Table 8. NVM Transition Support

| Current (Old) NVM | New NVM (with Associated Tools, and Base Driver Version)[1,2] | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 3.29 | 3.37 | 3.45 | 3.49 | 3.51 | 4.00 | 4.10 | 4.11 | 4.30 | 5.00 | 5.10 | 5.15 | 5.30 | 5.40 | 5.50 | 5.60 | 6.00 | 6.20 | 6.50 |
| 3.29 | N/A 3 | Yes 4,5 | Yes[5] | Yes[5] | Yes 5,6 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 | Yes 5,7 |
| 3.37 | No | N/A[3] | Yes[4] | Yes[4] | Yes | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] |
| 3.45 | No | Yes[4] | N/A[3] | Yes[4] | Yes[4] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] |
| 3.49 | No | Yes[4] | Yes[4] | N/A[3] | Yes[4] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] |
| 3.51 | No | Yes | Yes[4] | Yes[4] | N/A[3] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] | Yes[7] |
| 4.00 | No | No | No | No | No | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4.10 | No | No | No | No | No | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4.11 | No | No | No | No | No | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4.30 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5.00 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5.10 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5.15 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5.30 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes | Yes |
| 5.40 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes | Yes |
| 5.50 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes | Yes |
| 5.60 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes | Yes |
| 6.00 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes | Yes |
| 6.20 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] | Yes |
| 6.50 | No | No | No | No | No | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | Yes[4] | N/A[3] |

*Notes:*
1. NVM transition must be done with the Tools and Base Driver from the latest release. Refer to Table 7 on page 15 for supported NVM, Tools, and Base Driver versions.
2. Each step of a NVM transition requires a reboot (PCIe reset) and in rare cases a power cycle.
3. Updating to same image again is allowed.
4. Rollback is allowed between supported versions and NVM configuration versions where the rollback version is the same.
5. Update from NVM 3.29 to NVM 3.37 - 5.40 requires two updates using the NVM Update Package.
6. Must transition to NVM 3.37 then NVM 3.51.
7. Rollback version is incremented when performing this update, therefore downgrade is not permitted to previous version.

**NOTE**

The MinSRev on your device determines if you can downgrade to an older SRev. For details on how this works, see the *Minimum Security Revision Control for Intel® Ethernet Products Application Note* (Doc ID: 635205) .