



# Intel<sup>®</sup> Ethernet Controller X710-TM4/AT2 and V710-TM4/AT2

## Feature Support Matrix

---

*Rev. 2.12*

*September 2024*



No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

This document (and any related software) is Intel copyrighted material, and your use is governed by the express license under which it is provided to you. Unless the license provides otherwise, you may not use, modify, copy, publish, distribute, disclose or transmit this document (and related materials) without Intel's prior written permission. This document (and related materials) is provided as is, with no express or implied warranties, other than those that are expressly stated in the license.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

This document contains information on products, services and/or processes in development. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest forecast, schedule, specifications and roadmaps.

The products and services described may contain defects or errors which may cause deviations from published specifications.

Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and/or other countries.

Other names and brands may be claimed as the property of others.

Copyright © 2020–2024, Intel Corporation. All rights reserved.

## Contents

---

<b>Revision History</b> .....	<b>4</b>
<b>1.0 Features Supported</b> .....	<b>6</b>
<b>2.0 Operating Systems Supported</b> .....	<b>12</b>
<b>3.0 NVM and Software Compatibility</b> .....	<b>16</b>

## Revision History

Revision	Date	Comments
2.12	September 25, 2024	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 29.3 and NVM 9.52.</li> </ul>
2.11	July 9, 2024	Updated Table 6: Row SW Release Version 28.0, column i40en (ESX) add 2.4.2.0
2.10	June 18, 2024	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 29.1 and NVM 9.50.</li> </ul>
2.9	January 10, 2024	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 28.32 and NVM 9.40.</li> </ul>
2.8	August 16, 2023	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 28.2 and NVM 9.30.</li> </ul>
2.7	February 24, 2023	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 28.0 and NVM 9.20.</li> <li>ESXi 6.5 and 6.7 are no longer supported.</li> </ul>
2.6	December 6, 2022	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 27.8 and NVM 9.10.</li> </ul>
2.5	November 14, 2022	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 27.7 and NVM 9.10.</li> </ul>
2.4	August 12, 2022	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 27.6 and NVM 9.00.</li> </ul>
2.3	May 25, 2022	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 27.3 and NVM 8.70.</li> </ul>
2.2	March 29, 2022	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 27.1 and NVM 8.60.</li> </ul>
2.1	October 19, 2021	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 26.6 and NVM 8.50.</li> </ul>
2.0	July 22, 2021	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 26.4 and NVM 8.40.</li> </ul>
1.9	May 10, 2021	Updates include the following: <ul style="list-style-type: none"> <li>Updated Table, "General Features for the X710-TM4/AT2 and V710-TM4/AT2" in relation to iSCSI Remote Boot.</li> </ul>
1.8	March 31, 2021	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 26.2 and NVM 8.30.</li> </ul>
1.7	February 2, 2021	Updates include the following: <ul style="list-style-type: none"> <li>General updates in support of Software Release 26.0 and NVM 8.20.</li> <li>General updates in support of Software Release 25.5 and NVM 8.15.</li> </ul>
1.6	October 19, 2020	Updates include the following: <ul style="list-style-type: none"> <li>Updated Table, "Operating System Support for Physical Function Driver for the X710-TM4/AT2 and V710-TM4/AT2".</li> </ul>
<i>continued...</i>		



Revision	Date	Comments
1.5	October 1, 2020	Updates include the following: <ul style="list-style-type: none"> <li>• General updates in support of Software Release 25.4 and NVM 8.10.</li> </ul>
1.4	July 29, 2020	Updates include the following: <ul style="list-style-type: none"> <li>• Updated Table, "Software/NVM Compatibility for the X710-TM4/AT2 and V710-TM4/AT2"</li> </ul>
1.3	July 13, 2020	Updates include the following: <ul style="list-style-type: none"> <li>• General updates in support of Software Release 25.2 and NVM 8.00.</li> </ul>
1.2	May 11, 2020	Updates include the following: <ul style="list-style-type: none"> <li>• General updates in support of Software Release 25.1 and NVM 7.30.</li> </ul>
1.1	February 20, 2020	Updates include the following: <ul style="list-style-type: none"> <li>• Updated Table, "Software/NVM Compatibility for the X710-TM4/AT2 and V710-TM4/AT2".</li> </ul>
1.0	January 31, 2020	Initial public release.

## 1.0 Features Supported

The following tables list the feature support provided by the NVM and software drivers for a given release starting with the production release (Release 24.0, NVM 7.10). The *Intel® Ethernet Controller X710-TM4/AT2 Datasheet* reflects the silicon device capability, while this document reflects what is actually supported in the NVM and software for a given release.

Notes:

- Throughout this document:
  - The Intel® Ethernet Controller X710-TM4/AT2 and Intel® Ethernet Controller V710-TM4/AT2 are represented as “X710-TM4/AT2 and V710-TM4/AT2”.
  - “X” = Supported with Intel NVM and software driver.
  - “---” = Not supported with Intel NVM and software driver.
- The following table lists software releases and associated NVMs:

Software Release Version	NVM Version	SRev
24.0	7.10	10
24.3	7.10	10
25.0	7.20	10
25.1	7.30	10
25.2	8.00	10
25.4	8.10	10
25.5	8.15	10
26.0	8.20	20
26.2	8.30	20
26.4	8.40	20
26.6	8.50	30
27.1	8.60	30
27.3	8.70	30
27.6	9.00	30
27.7	9.10	40
27.8	9.10	40
28.0	9.20	40
28.2	9.30	40
28.3	9.40	40
29.1	9.50	40
29.3	9.52	40

- Features and CFG\_IDs not listed in this document are not officially supported.

**Table 1. Interface and CFG\_ID Supported for the X710-TM4/AT2 and V710-TM4/AT2**

Feature	Supported in Release			
	24.0 through 28.2	28.3	29.1	29.3
<b>Link Modes 4x10 GbE</b>				
<b>10GBASE-T &amp; Backplane (CFG_IDs supported):</b>				
KR (14.0)	X	X	X	X
SFI and KR (14.01)	X	X	X	X
<b>10GBASE-T &amp; SFP+ (CFG_IDs supported):</b>				
KR & SFI (14.01)	X	X	X	X
SFI (14.11)	X	X	X	X
<b>10GBASE-T (CFG_IDs supported):<sup>1</sup></b>				
KR (14.2)	X	X	X	X
<b>Link Modes 2x10 GbE</b>				
<b>10GBASE-T (CFG_IDs supported):</b>				
KR (14.3)	X	X	X	X
SFI (14.4)	X	X	X	X
<b>Link Modes 1 GbE:</b>				
SGMII	X	X	X	X
KX <sup>2</sup>	X	X	X	X
<b>Link Modes 100 Mb/s</b>				
SGMII <sup>3</sup>	X	X	X	X
Notes: 1. Only supported with external 10GBASE-T PHY device. 2. KX link can be achieved in any of the backplane images via auto-negotiation. 3. Supported on X710-T2L/X710-T4L/I710-T4L via auto-negotiation.				

**Table 2. Supported Media Types for the X710-TM4/AT2 and V710-TM4/AT2**

Feature	Supported in Release			
	24.0 through 28.2	28.3	29.1	29.3
<b>10 GbE Media Supported</b>				
SFP+ SR/LR single-speed (10 GbE)	X	X	X	X
SFP+ SR/LR multi-speed (1/10 GbE) optical modules	X	X	X	X
SFP+ DA twinaxial cables (up to 7m)	X	X	X	X
SFP+ AOCs (Active Optical Cables) <sup>1</sup>	X	X	X	X
SFP+ 10G-LRM, 10G-ER and 10G-ZR	---	---	---	---
10GBASE-T	X	X	X	X
SFP+ loopback modules <sup>2</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>
<b>1 GbE Media Supported:</b>				
SFP 1GBASE-T Transceiver (single speed) <sup>4,5</sup>	---	---	---	---
SFP SX/LX optical modules (single speed)	X	X	X	X
SFP+ SR/LR multi-speed (1/10 GbE) optical modules	X	X	X	X
<p><i>Notes:</i> 1. Only "Limiting Initialization" cables are supported.</p> <p>2. Any loopback modules having an EEPROM configuration that matches any of the supported media of the device should achieve link.</p> <p>3. Verification was done with SFP+: Amphenol SFP+ 3.5 dB APF14120016DKD P/N 610540001.</p> <p>4. Support limited to: Finisar FCLF-8521-3, Kinnex A XSFP-T-RJ12-0101-DLL, Avago ABCU-5710RZ.</p> <p>5. Finisar FCLF8521P2BTL is described to be functionally equivalent to Finisar FCLF-8521-3.</p>				



**Table 3. General Features for the X710-TM4/AT2 and V710-TM4/AT2**

Feature1	Supported in Release				
	24.0 through 25.5	26.0 through 28.2	28.3	29.1	29.3
<b>Link Flow Control</b>	X	X	X	X	X
<b>Priority Flow Control</b>	X	X	X	X	X
<b>Transmit Allocation Buffers Driver Uses</b> (Range 128-4096, default is 512)	X	X	X	X	X
<b>Checksum Offload</b> (IPv4/IPv6, SCTP, TCP, UDP, Tx/Rx)	X	X	X	X	X
<b>Large Send Offload (TSO)</b> (Up to 64 KB)	X	X	X	X	X
<b>Header split</b>	---	---	---	---	---
<b>VLANs</b>	X	X	X	X	X
<b>Teaming</b>	X	X	X	X	X
<b>Interrupt Moderation Rate</b>	X	X	X	X	X
<b>Message Signaled Interrupts (MSI)</b>	X	X	X	X	X
<b>Message Signaled Interrupts (MSI-X)</b>	X	X	X	X	X
<b>Jumbo Packet</b> (4088 and 9014 bytes for Windows)	X	X	X	X	X
<b>Receive Side Scaling (RSS)</b>	X	X	X	X	X
<b>RSS Receive Queues</b> (Linux: 64 RSS PF queues / 4 VF queues <sup>2</sup> ) (Windows: 32 RSS PF queues / 4 VF queues)	X	X	X	X	X
<b>OS2BMC</b>	X	X	X	X	X
<b>Wake from S1-S4</b>	---	---	---	---	---
<b>Wake from S5</b>	X	X	X	X	X
<b>DCB CEE</b>	---	---	---	---	---
<b>Fiber Channel over Ethernet (FCoE)</b>	---	---	---	---	---
<b>FCoE Boot</b>	---	---	---	---	---
<b>Receive Side Coalescing (RSC)</b> (Done by software)	X	X	X	X	X
<b>IEEE 1588<sup>3</sup></b> (Linux only and session-based, not per packet)	X	X	X	X	X
<b>Intel® Ethernet Flow Director (Intel® Ethernet FD)</b> (SW ATR and sideband Add Filter cmd – Linux only)	X	X	X	X	X
<b>Remote Boot<sup>4</sup>: PXE</b>	X	X	X	X	X
<b>Remote Boot<sup>4</sup>: iSCSI</b>	X	X	X	X	X
<b>Legacy iSCSI</b>	---	---	---	---	---
<b>UEFI iSCSI</b>	X	X	X	X	X

*continued...*

Feature1	Supported in Release				
	24.0 through 25.5	26.0 through 28.2	28.3	29.1	29.3
<b>Secure NVM</b>	X	X	X	X	X
<b>TPH</b>	---	---	---	---	---
<b>LPLU</b>	X	X	X	X	X
<b>EEE</b>	X	X	X	X	X
<b>Malicious Driver</b>	X	X	X	X	X
<b>Recovery Mode<sup>5</sup></b>	X	X	X	X	X
<b>IEEE Data Center Bridging (DCB):</b>					
MSFT DCB (QoS support) 10 GbE	---	---	---	---	---
MSFT DCB (QoS support) 40 GbE	---	---	---	---	---
DCBx in FW	---	---	---	---	---
DCBx in SW (Linux only)	---	---	---	---	---
SW only DCB	---	---	---	---	---
<b>Virtualization (SR-IOV):</b>					
VMDq (for ESXi and Hyper-V only)	X	X	X	X	X
SR-IOV (ESXi, KVM, and 2012 R2 Hyper-V)	X	X	X	X	X
RSS in VF	X	X	X	X	X
4 queues per VM <sup>2</sup>	X	X	X	X	X
Intel® Ethernet Adaptive Virtual Function iavf 3.7.34 or later (out-of-tree version)	X	X	X	X	X
<b>Cloud Offloads:</b>					
VXLAN (Linux i40e only <sup>6</sup> )	X	X	X	X	X
VXLAN (Windows Server 2016)	---	---	X	X	X
VXLAN (VMware driver)	---	---	X	X	X
NVGRE (Windows only)	X	X	X	X	X
GENEVE	---	---	X	X	X
<b>Manageability Support:</b>					
NC-SI	X	X	X	X	X
OS2BMC	X	X	X	X	X
SMBus	X	X	X	X	X
MCTP	X	X	X	X	X
PLDM Type 0 - Message Control and Discovery	---	X	X	X	X
<i>continued...</i>					



Feature1	Supported in Release				
	24.0 through 25.5	26.0 through 28.2	28.3	29.1	29.3
PLDM Type 2 - Platform Monitoring and Control	---	X	X	X	X
PLDM Type 6 - Redfish Device Enablement	---	X <sup>7</sup>	X <sup>7</sup>	X <sup>7</sup>	X <sup>7</sup>
<p><i>Notes:</i></p> <ol style="list-style-type: none"> <li>1. For features supported with DPDK drivers please refer to <a href="https://dpdk.org">dpdk.org</a>.</li> <li>2. 16 queues per VF is supported using Linux Kernel PF and poll mode VF only.</li> <li>3. The device only processes PTP packets using the Layer 2 packet format.</li> <li>4. Pre-Boot Option ROM should be stored in the Flash attached to the X710-TM4-AT2.</li> <li>5. The design of Recovery Mode precludes rollback to prior versions of the NVM, as indicated in <a href="#">Table 7</a> on page 18. This is because the addition of the Recovery Mode capability changed the definition of some regions of the NVM to be write-protected. Rollback to a prior version requires access to these write-protected regions, and thus, the rollback would fail.</li> <li>6. All Linux i40e support refers to the driver posted on <a href="https://www.intel.com">intel.com</a> and <a href="https://sourceforge.net">sourceforge.net</a>. OS vendors may release feature on different schedules. Contact OS vendor for more information.</li> <li>7. Supports read-only operation.</li> </ol>					

## 2.0 Operating Systems Supported

The following tables list the supported operating systems and virtualized operating systems, respectively. For the latest OS support, see <http://intel.com/support/ethernetos>.

**Table 4. Operating System Support for Physical Function Driver for the X710-TM4/AT2 and V710-TM4/AT2**

Operating System	In-box/In-distro	Additional Notes
Windows Server 2022	Yes <sup>1</sup>	64 bit only.
Windows Server 2019	Yes <sup>1</sup>	64 bit only.
Windows Server 2016	Yes <sup>1</sup>	64 bit only.
Windows 11 (23H2/22H2/21H2)	Yes	64 bit only.
Windows 10	Yes	64 bit only.
Linux: RHEL 9.0/9.1/9.2/9.3/9.4	Yes <sup>1</sup>	64 bit only.
Linux: RHEL 8.0-8.10	Yes <sup>1</sup>	64 bit only.
Linux: RHEL 7.1-7.9	Yes <sup>1</sup>	64 bit only.
Linux: SLES 15 SP6	Yes <sup>1</sup>	64 bit only.
Linux: SLES 15 SP5	Yes <sup>1</sup>	64 bit only.
Linux: SLES 15 SP4	Yes <sup>1</sup>	64 bit only.
Linux: SLES 15 SP1	Yes <sup>1</sup>	64 bit only.
Linux: SLES 15	Yes <sup>1</sup>	64 bit only.
Linux: SLES 12 SP5	Yes <sup>1</sup>	64 bit only.
Linux: SLES 12 SP3	Yes <sup>1</sup>	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/2.6	N/A	64 bit only.
Linux: Ubuntu 24.04.x LTS	N/A	64 bit only.
Linux: Ubuntu 22.04.x LTS	N/A	64 bit only.
Linux: Ubuntu 20.04.x LTS	N/A	64 bit only.
Linux: Ubuntu 18.04.x LTS	N/A	64 bit only.
Linux: CentOS 7.5/6.9	Yes	64 bit only.
Linux: Debian 11	Yes	64 bit only.
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.
<i>continued...</i>		



Operating System	In-box/In-distro	Additional Notes
Solaris		Contact Oracle for release details.
FreeBSD 14.1/14.0		64 bit only.
FreeBSD 13.3/13.2/13.1/13		64 bit only.
FreeBSD 12.3/12.2/12.1/12		64 bit only.
FreeBSD 11.4/11.3/11.2/11		64 bit only.
UEFI 2.10/2.9/2.8/2.4/2.3/2.1	N/A	
Option ROM support: Legacy PXE, Legacy iSCSI, x64 UEFI driver	N/A	
<i>Note:</i> 1. In-box does not apply to FVL25.		

**Table 5. Virtualized Operating System for the X710-TM4/AT2 and V710-TM4/AT2**

Virtualized OS	Host OS	PF Driver	Guest OS	Guest OS VF Driver
VMware	ESXi 8.0 (vSphere 8): GA, U1,U2,U3 ESXi 7.0 (vSphere 7): GA, U1, U2, U3 ESXi 6.7 (vSphere 6.7): GA, U1, U2, U3 ESXi 6.5 (vSphere 6.5): GA, U1, U2, U3	ESX i40en	RHEL 9 RHEL 8.9/8.6/8.5/8.4/8.3/8.2/8.1/8 RHEL 7.9/7.8/7.7/7.6/7.5 SLES 15 SP5/SP4/SP3/SP2/SP1 SLES 15 SLES 12 SP5/SP4 Ubuntu 20.04/18.04 Photon 3.0	i40evf/iavf <sup>1</sup> (Linux)
			Windows Server 2022 Windows Server 2019 Windows Server 2016	V40E/iavf <sup>2</sup> (Windows)
Linux	RHEL 9/KVM RHEL 8.9/KVM RHEL 8.6/KVM RHEL 8.5/KVM RHEL 8.4/KVM RHEL 8.3/KVM RHEL 8.2/KVM RHEL 8.1/KVM RHEL 8/KVM RHEL 7.9/KVM RHEL 7.8/KVM RHEL 7.7/KVM RHEL 7.6/KVM RHEL 7.5/KVM SLES 15 SP5/KVM SLES 15 SP4/KVM SLES 15 SP3/KVM SLES 15 SP2/KVM SLES 15 SP1/KVM SLES 15/KVM SLES 12 SP5/KVM SLES 12 SP4/KVM Ubuntu 20.04/KVM Ubuntu 18.04/KVM	Linux i40e	RHEL 9 RHEL 8.9/8.6/8.5/8.4/8.3/8.2/8.1/8 RHEL 7.9/7.8/7.7/7.6/7.5 SLES 15 SP5/SP4/SP3/SP2/SP1 SLES 15 SLES 12 SP5/SP4 Ubuntu 20.04/18.04	i40evf/iavf <sup>1</sup> (Linux)
			Windows Server 2022 Windows Server 2019 Windows Server 2016	V40E/iavf <sup>2</sup> (Windows)
			FreeBSD 13 FreeBSD 12.2/12.1/12 FreeBSD 11.4/11.3/11.2	iXLv/iavf <sup>3</sup> (FreeBSD)
<b>continued...</b>				

Virtualized OS	Host OS	PF Driver	Guest OS	Guest OS VF Driver
Windows Hyper-V	Azure Stack 23H2 HCI Azure Stack 22H2	I40EA	RHEL 9 RHEL 8.9/8.6/8.5 SLES 15 SP5/SP4 SLES 15 SLES 12 SP5 Ubuntu 20.04/18.04	i40evf/iavf <sup>1</sup> (Linux)
			Windows Server 2022 Windows Server 2019 Windows Server 2016	V40E/iavf <sup>2</sup> (Windows)
	Windows Server 2022	I40EA	RHEL 9 RHEL 8.9/8.6/8.5/8.4/8.3/8.2 /8.1/8 RHEL 7.9/7.8/7.7/7.6/7.5 SLES 15 SP5/SP4/SP3/SP2/SP1 SLES 15 SLES 12 SP5/SP4 Ubuntu 20.04/18.04	i40evf/iavf <sup>1</sup> (Linux)
			Windows Server 2022 Windows Server 2019 Windows Server 2016	V40E/iavf <sup>2</sup> (Windows)
	Windows Server 2019	I40EA	RHEL 9 RHEL 8.9/8.6/8.5/8.4/8.3/8.2 /8.1/8 RHEL 7.9/7.8/7.7/7.6/7.5 SLES 15 SP5/SP4/SP3/SP2/SP1 SLES 15 SLES 12 SP5/SP4 Ubuntu 20.04/18.04	i40evf/iavf <sup>1</sup> (Linux)
			Windows Server 2022 Windows Server 2019 Windows Server 2016	V40E/iavf <sup>2</sup> (Windows)
Windows Server 2016	I40EA	Windows Server 2022 Windows Server 2019 Windows Server 2016	V40E/iavf <sup>2</sup> (Windows)	
<p>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.</p>				

### 3.0 NVM and Software Compatibility

With Intel® Ethernet Network 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 table indicates the sets of NVM images and Intel® Ethernet Controllers 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 6. Software/NVM Compatibility for the X710-TM4/AT2 and V710-TM4/AT2**

Software Release Version	NVM Version	NVM Update Tool Version	i40e (Windows)	i40e (Linux) <sup>1</sup>	iavf (Linux) <sup>1,2</sup>	i40en (ESX)	ixl (FreeBSD)	QSFP Config. Utility (QCU)	Ethernet Port Config. Tool (EPCT)
24.0	7.10	1.33.15.1	24.0	2.9.21	3.7.53	1.8.6	1.11.9	2.34.04.0	N/A
24.3	7.10	1.34.17.3	24.3	2.10.19.30	3.7.61.20	1.9.5	1.11.20	2.34.17.3	1.34.17.5
25.0	7.20	1.34.22.6	25.0	2.10.19.82	3.7.61.20	1.10.6	1.11.22	2.34.17.3	1.34.22.5
25.1	7.30	1.35.25.0	25.1	2.11.27	3.9.5	1.10.9.0	1.11.29	EOL	1.35.23.2
25.2	8.00	1.35.33.4	25.2	2.12.6	4.0.1	1.10.9.0	1.12.2	EOL	1.35.33.3
25.4	8.10	1.35.42.7	25.4	2.14.13	4.0.1	1.10.9.0	1.12.3	EOL	1.35.42.7
25.5	8.15	1.35.42.7	25.5	2.14.13	4.0.1	1.10.9.0	1.12.3	EOL	1.35.42.7
26.0	8.20	1.35.57.4	26.0	2.14.13	4.0.2	1.12.3.0	1.12.13	EOL	1.35.57.0
26.2	8.30	1.37.1.1	26.2	2.15.9	4.1.1	1.13.1.0	1.12.16	EOL	1.37.1.0
26.4	8.40	1.37.13.5	26.4	2.16.11	4.2.7	1.13.1.0	1.12.24	EOL	1.37.13.3
26.6	8.50	1.37.28.0	26.6	2.17.4	4.2.7	2.1.5.0	1.12.29	EOL	1.37.28.0
27.1	8.60	1.38.3.7	27.1	2.18.9	4.4.2	2.2.4.0	1.12.32	EOL	1.38.3.6
27.3	8.70	1.38.13.1	27.3	2.19.3	4.4.2.1	For ESXi 6.5: 1.16.4.0 For ESXi 6.7: 1.16.4.0 For ESXi 7.0: 2.2.7.0	1.12.35	EOL	1.38.13.4

continued...



Software Release Version	NVM Version	NVM Update Tool Version	i40e (Windows)	i40e (Linux) <sup>1</sup>	iavf (Linux) <sup>1,2</sup>	i40en (ESX)	ixl (FreeBSD)	QSFP Config. Utility (QCU)	Ethernet Port Config. Tool (EPCT)
27.6	9.00	1.39.5.5	27.6	2.20.12	4.5.3	For ESXi 6.5: 1.16.4.0 For ESXi 6.7: 1.17.2.0 For ESXi 7.0: 2.3.4.0	1.12.35	EOL	1.39.5.5
27.7	9.10	1.39.20.2	27.7	2.21.12	4.6.1	For ESXi 6.5: 1.16.4.0 For ESXi 6.7: 1.18.1.0 For ESXi 7.0: 2.4.1.0	1.12.40	EOL	1.39.20.1
27.8	9.10	1.39.24.0	27.8	2.22.8	4.7.0	For ESXi 6.5: 1.16.4.0 For ESXi 6.7: 1.18.1.0 For ESXi 7.0: 2.4.2.0	1.12.40	EOL	1.39.24.0
28.0	9.20	1.39.32.6.signed	28.0	2.22.18	4.8.2	For ESXi 7.0: 2.4.2.0 2.5.2.0	1.12.40	EOL	1.39.32.5.signed
28.2	9.30	1.39.56.9	28.2	2.23.17	4.9.1	For ESXi 7.0: 2.5.2.0	1.13.4	EOL	1.39.56.9
28.3	9.40	1.40.5.5	28.3	2.24.6	4.9.5	For ESXi 7.0: 2.5.2.0	1.13.4	EOL	1.40.5.5
29.1	9.50	1.41.3.3	29.1	2.25.7	4.11.1	2.7.2.0	1.14.2	EOL	1.41.3.3
29.3	9.52	1.42.8.0	29.3	2.26.6	4.12.5	2.9.2.0	1.14.2	EOL	1.42.8.0

Notes: 1. These are out-of-tree versions.  
 2. 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.

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 7. NVM Transition Support for the X710-TM4/AT2 and V710-TM4/AT2<sup>1</sup>**

Current (Old) NVM	New NVM (with Associated Tools, and Base Driver Version) <sup>2,3</sup>																				
	7.10	7.10	7.20	7.30	8.00	8.10	8.15	8.20	8.30	8.40	8.50	8.60	8.70	9.00	9.10	9.20	9.30	9.40	9.50	9.52	
7.10	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
7.10	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
7.20	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
7.30	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.00	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.10	Yes	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.15	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.40	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.50	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.60	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sub>4</sub>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
8.70	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
9.00	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>	Yes	Yes	Yes	Yes	Yes	Yes	
9.10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>	Yes	Yes	Yes	Yes	Yes	
9.20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>	Yes	Yes	Yes	Yes	
9.30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>	Yes	Yes	Yes	
9.40	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>	Yes	Yes	
9.50	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>	
9.52	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A <sup>4</sup>

Notes: 1. For the V710-TM4/AT2, NVM support begins with NVM version 7.30, and is supported on all subsequent releases.  
2. NVM transition must be done with the Tools and Base Driver from the latest release. Refer to Table 6 on page 16 for supported NVM, Tools, and Base Driver versions.  
3. Each step of a NVM transition requires a reboot (PCIe reset) and in rare cases a power cycle.  
4. Updating to same image again is allowed.

**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).