# Intel® Ethernet Controller Products

## 30.1 Release Notes

***April 2025***

Revision 2.2
778690-001

# Revision History

| Revision | Date | Comments |
|---|---|---|
| 2.2 | April 2025 | Release Note 30.1:<br>• 2025R1 Updates |
| 2.1 | February 2025 | Release Note 30.0.1:<br>• Introducing support for new NICs (part of Intel® Ethernet 10 Gigabit Adapters):<br>— Intel® Ethernet Network Adapter E610-XT2<br>— Intel® Ethernet Network Adapter E610-XT4<br>— Intel® Ethernet Network Adapter E610-IT4 |
| 2.0 | February 2025 | Release Note 30.0:<br>• Introducing support for new NICs (part of Intel® Ethernet 10 Gigabit Adapters):<br>— Intel® Ethernet Controller E610 for 10GBASE-T<br>— Intel® Ethernet Network Adapter E610-IT4 for OCP 3.0 |
| 1.9 | December 2024 | Release Note 29.5:<br>• Introducing New OS support:FreeBSD 13.4<br>• 2024R5 Updates |
| 1.8 | November 2024 | Release Note 29.4.1:<br>• Introducing New OS support:Red Hat Enterprise Linux 9.5 |
| 1.7 | October 2024 | Release Note 29.4:<br>• Introducing New OS support:Windows Server 2025 and Windows 11 24H2 OSes |
| 1.6 | August 2024 | Release Note 29.3.1:<br>• Introducing New OS support: Ubuntu 24.04 LTS |
| 1.5 | August 2024 | Release Note 29.3:<br>• Generic update for FVL, CVL and CPK NIC OEM and FreeBSD 14.1 |
| 1.4 | July 2024 | Release 29.2.1:<br>• Introducing New OS support: SLES 15 **SP6** |
| 1.3 | July 2024 | Release 29.2:<br>• Introducing New OS support: VMware ESXi **8.0u3** |
| 1.2 | June 2024 | Release 29.1.2:<br>• Introducing New OS Support: Red Hat Enterprise Linux **9.4** and Red Hat Enterprise Linux **8.10** |
| 1.0 | May 2024 | Release Note 29.1:<br>• Dot release, ESXi drivers update.<br>• Full OEM Gen container release for E810, E700 and E820. |

# Contents

# 1.0 Overview

This document provides an overview of the changes introduced in the latest Intel® Ethernet Controller/ Adapter family of products. References to more detailed information are provided where necessary. The information contained in this document is intended as supplemental information only; it should be used in conjunction with the documentation provided for each component.

These release notes list the features supported in this software release, known issues, and issues that were resolved during release development.

## 1.1 New Features

### 1.1.1 Hardware Support

| Release | New Hardware Support |
|---|---|
| 30.1 | • None for this release. |

### 1.1.2 Software Features

| Release | New Software Support for E610 NICs |
|---|---|
| 30.1 | • Ability to read Slot ID data from SMBIOS and provide to FW for E810<br>• Support various resets through ethtool flags for Columbiaville<br>• Columbiaville RDMA capability on Windows Client 10/11<br>• Restore LLDP Control to xUEFI for CVL<br>• Columbiaville - ARM platform support for UEFI tools<br>• Introduced a sysfs interface for SMA control for E810<br>• Linux kernel DPLL subsystem for control of the SMA direction for Columbiaville<br>• PTP interface configuration for SDP control for E810<br>• Introduced FEC and PHY Stats Update for Columbiaville<br>• Ethernet Cmdlets - SaveRestore Support<br>• Columbiaville NDIS Update *QoS Presented Text to indicate FW LLDP Agent<br>• Add module parameter to configure BMC shared LAN on X550 for ESXi<br>• New OS Support: Ubuntu for ARM architecture compatibility |

### 1.1.3 Firmware Features

| Release | New Firmare Support |
|---|---|
| 30.1 | • Added E810 DPLL phase/frequency monitoring imprisonments<br>• E810 RDE improvements including reset annotation improvement, description property for all schemas, location and ActiveWidth properties, added links to manage the relationship between RDE schemas<br>• Add Port Schema Activewidth Property<br>• Supporting new redfish schemas and properties for E610<br>• Add Redfish Port Schema<br>• Activewidth Property for E610<br>• Add Redfish PCIeFunction Links for E610 |

## 1.2 Removed Features

| Release | Hardware/Feature Support |
|---|---|
| 30.1 | • End of OS Support (EOL) - Ubuntu 18.04<br>• End of OS Support (EOL) - RHEL 8.2, 8.3, 8.4, 8.5, 8.6<br>• End of OS Support (EOL) - RHEL 9.0<br>• End of OS Support (EOL) - FreeBSD 13.2, 14.0<br>• End of OS Support (EOL) - SLES12, SLES12SP1, SLES12SP2, SLES12SP3, SLES12SP4, SLES15SP1, SLES15SP2, SLES15SP3, SLES15SP4<br>• End of Life (EOL) - FreeBSD igb and 40G OOT driver support |

## 1.3 Operating Systems Supported

### 1.3.1 Linux

Operating Systems supported:

- Linux Real Time Kernel 6.x, 5.x and 4.x (only on Intel Ethernet E810 Series)
- Kyline Linux Advance Server V10 (only for Intel Ethernet E810 Series)
- Red Hat *Enterprise Linux* (RHEL) 9.5
- Red Hat Enterprise Linux (RHEL) 8.10
- SUSE Linux Enterprise Server 15 SP6
- SUSE Linux Enterprise Server 12 SP5
- Canonical Ubuntu 24.04 LTS
- Canonical *Ubuntu* 22.04 LTS
- Debian* 11 (not available for Intel Ethernet E610 Series)
- openEuler (not available for Intel Ethernet E610 Series)

**Table 1. Supported Operating Systems: Linux**

| Product | PF Driver | VF Driver | RDMA Driver |
|---|---|---|---|
| **Intel® Ethernet 810/820 Series** | 1.17.2 | 4.13.5 | 1.17.31 |
| **Intel® Ethernet 700 Series** | 2.28.5 | 4.13.5 | 1.17.31 |
| **Intel® Ethernet 10 Gigabit Adapters** | 6.1.3 | 5.1.2 | Not Supported |
| **Intel® Ethernet Gigabit Adapters** | 5.19.2 | Not Supported | Not Supported |

## 1.4 Windows Server

Operating Systems supported:

- Microsoft Windows Server 2025
- Microsoft Windows Server 2022
- Microsoft Windows Server 2019, Version 1903 (Not available for Intel Ethernet E610 Series)
- Microsoft Windows Server 2016 (Not available for Intel Ethernet E610 Series)
- Microsoft Azure Stack HCI

## Table 2. Supported Operating Systems: Windows Server

| Driver | Windows Server 2025 | Windows Server 2022 | Windows Server 2019 | Windows Server 2016 |
|---|---|---|---|---|
| **Intel® Ethernet 800 Series** | | | | |
| **icea** | 1.17.73.0 | 1.17.72.0 | 1.17.72.0 | 1.14.104.0 |
| **scea** | 1.16.58.0 | 1.16.58.0 | 1.16.58.0 | Not Supported |
| **Intel® Ethernet 700 Series** | | | | |
| **i40ea** | 1.21.67.0 | 1.21.67.0 | 1.21.67.0 | 1.18.369.0 |
| **i40eb** | 1.21.73.0 | 1.21.67.0 | 1.21.74.0 | 1.18.369.0 |
| **Intel® Ethernet 600 Series** | | | | |
| **ixw** | 1.2.43.0 | 1.2.43.0 | Not Supported | Not Supported |
| **Intel® Ethernet Adaptive Virtual Function** | | | | |
| **iavf** | 1.17.63.0 | 1.17.63.0 | 1.17.63.0 | 1.14.203.0 |
| **Intel® Ethernet 10 Gigabit Adapters and Connections** | | | | |
| **ixs** | 4.2.7.0 | 4.1.254.0 | 4.1.254.0 | 4.1.254.0 |
| **sxa** | 4.2.9.0 | 4.1.254.0 | 4.1.254.0 | 4.1.254.0 |
| **sxb** | 4.1.254.0 | 4.1.254.0 | 4.1.254.0 | 4.1.254.0 |
| **ixt** | Not Supported | Not Supported | 4.1.228.0 | 4.1.229.0 |
| **ixn** | Not Supported | Not Supported | 4.1.254.0 | 4.1.254.0 |
| **ixw** | 1.2.43.0 | 1.2.43.0 | Not Supported | Not Supported |
| **vxs** | 2.3.2.4 | 2.3.2.4 | 2.1.252.0 | 2.1.232.0 |
| **vxn** | Not Supported | Not Supported | 2.1.252.0 | 2.1.252.0 |
| **Intel® Ethernet 2.5 Gigabit Adapters and Connections** | | | | |
| **e2f** | 2.1.4.3 | 1.1.4.43 | 1.1.4.43 | Not Supported |
| **Intel® Ethernet Gigabit Adapters and Connections** | | | | |
| **e1r** | 14.1.24.0 | 14.1.13.0 | 14.0.7.0 | 14.0.7.0 |
| **v1q** | Not Supported | Not Supported | 1.4.7.3 | 1.4.7.3 |

### 1.4.1 Windows Client

Operating Systems Supported:

- Microsoft Windows 11 24H2
- Microsoft Windows 11 23H2
- Microsoft Windows 11 22H2
- Microsoft Windows 10 21H2 (Not available for Intel Ethernet E610 Series)
- Microsoft Windows 10 RS5, Version 1809 (Not available for Intel Ethernet E610 Series)

**Table 3. Supported Operating Systems: Windows Client**

| Driver | Windows 11 | Windows 10 21H2 / Windows 10 RS5 |
|---|---|---|
| **Intel® Ethernet 800 Series** | | |
| **icea** | 1.17.73.0 | 1.17.72.0 |
| **Intel® Ethernet 700 Series** | | |
| **i40ea** | 1.21.67.0 | 1.21.67.0 |
| **i40eb** | 1.21.73.0 | Not Supported |
| **Intel® Ethernet Adaptive Virtual Function** | | |
| **iavf** | 1.17.63 | 1.17.63 |
| **Intel® Ethernet 10 Gigabit Adapters and Connections** | | |
| **ixs** | 4.1.264.0 | 4.1.254.0 |
| **ixt** | Not Supported | 4.1.228.0 |
| **ixn** | Not Supported | 4.1.254.0 |
| **ixw** | 1.2.43.0 | Not Supported |
| **vxs** | 2.3.2.4 | 2.1.252.0 |
| **vxn** | Not Supported | 2.1.252.0 |
| **Intel® Ethernet 2.5 Gigabit Adapters and Connections** | | |
| **e2fn** | 2.1.4.3 | 1.1.4.43 |
| **Intel® Ethernet Gigabit Adapters and Connections** | | |
| **e1r** | 14.1.22.0 | 14.0.7.0 |
| **e1d** | 12.19.2.60 | 21H2: 12.19.2.60<br>RS5: 12.18.9.10 |
| **e1c** | Not Supported | Not Supported |
| **v1q** | Not Supported | 1.4.7.3 |

### 1.4.2 FreeBSD

Operating Systems supported:

- FreeBSD 14.2
- FreeBSD 13.4

**Table 4. Supported Operating Systems: FreeBSD**

| Driver | PF Driver | VF Driver | RDMA Driver |
|---|---|---|---|
| **Intel® Ethernet 810/820 Series** | 1.42.10 | 3.1.2 | 1.3.27 |
| **Intel® Ethernet 700 Series** | 1.14.2 | 3.1.2 | 1.3.27 |
| **Intel® Ethernet 10 Gigabit Adapters** | 3.4.29 | 1.6.9 | Not Supported |
| **Intel® Ethernet Gigabit Adapters** | 2.5.31 | Not Supported | Not Supported |

### 1.4.3 ESXi Drivers

**Note:** Intel® ESXi drivers are available from VMware.

- VMWare ESXi 8.0
- VMware ESXi 7.0

Refer to VMWare's download site for the latest ESXi drivers for Intel® Ethernet® devices.

## 1.5 NVM Versions Supported

The following table shows the NVM versions supported in this release.

**Table 5. Current NVM**

| Product | NVM Version |
|---|---|
| **810 Series** | |
| **E810** | 4.80 |
| **820 Series** | |
| **E822** | 3.42 |
| **E823-C** | 3.42 |
| **E823-L** | 3.42 |
| **700 Series** | |
| **X710** | 9.54 |
| **X722** | 6.50 |
| **600 Series** | |
| **E610** | 1.20 |
| **500 Series** | |
| **X550** | 3.70 |
| **X552NS** | 2.10 |
| **X552DE** | 2.10 |
| **X553** | 2.10 |
| **200 Series** | |
| **I210** | 1.00 |

## 1.6 DDP Versions Supported

The following table shows the versions supported in this release.

**Table 6. Current DDP**

| Package | DDP Version |
|---|---|
| OS Package | 1.3.39.1 |
| Comms Package | 1.3.53.0 |
| Wireless Edge Package | 1.3.21.0 |

# 2.0 Fixed Issues

## 2.1 Intel® Ethernet 800 Series Network Adapters

### 2.1.1 Intel® Ethernet 810 Series

#### 2.1.1.1 General

- None in this release.

#### 2.1.1.2 Firmware/NVM/NVM Update

- On certain platforms running the PLDM update, updating from previous release (4.7) can fail due to FW issue that got fixed in 4.8.
- When RDE enabled host upgrade/downgrade might be blocked from 4.7. fixed in 4.8.
- Added custom module handling for LCP rj45 transceivers to successfully achieve link.
- Improved plug-related sensors indexing.
- Allow DPLL input priority modification during phase adjust procedure.
- Fixed bad implementation of some code refactoring which in 4.7 when an SPDM packet is sent to CVL device, the FW will get stuck and end up in recovery or rollback.
- Freerun state reporting is filtered during phase adjust procedure.

#### 2.1.1.3 Linux

- For some AOC cables, the driver did not analyze properly the information and presented them as AUI, when ethtool command was executed.
- 'ethtool ethx' displayed 'AUI' with AOC cable, should display 'Fibre'.
- I/O error on the network interfaces with "Transmit Balance" enabled in Linux environment. Tx Topology Option data was updated and programmed with correct data.
- Support for Software Cross Timestamping - This release introduces support for software cross timestamping in the Linux ICE driver. Details about this feature will be provided in the next release of the Linux README.
  **NOTE:** The following functionality is not yet documented in the Linux README.

#### 2.1.1.4 Windows Driver

- An incorrect statement in RX packet processing identified that led to D1 blue screen caused when in the Jumbo frame scenario, descriptors were not associated with packets correctly.
- The Tx Topology Option data file contained incorrect data, which, during package validation by the firmware, resulted in initialization problems and a blue screen. The correct DDP package, with updated Tx Topology Option data, has been incorporated into the driver, resolving the issue.
- When Large Send Offload (LSO) V2 is enabled, the network adapter is unable to transmit frames larger than the MTU, which can impact network performance. Additionally, the incorrect incrementing of checksums OID_INTEL_OFFLOAD_LARGE_SEND_VXLAN_COUNT may lead to inaccurate network statistics.

  **Workaround**: Users can temporarily disable Large Send Offload V2 on their network adapters to allow the transmission of frames larger than the MTU. However, note that this workaround may

impact other aspects of network performance. We recommend using this workaround only if absolutely necessary and awaiting the software update for a comprehensive solution.

#### 2.1.1.5 Windows Server

- None for this release.

#### 2.1.1.6 ESX Driver

- None for this release.

#### 2.1.1.7 Pre-Boot

- None for this release.

### 2.1.2 Intel® Ethernet 820 Series

#### 2.1.2.1 Firmware/NVM/NVM Update

- Fixed firmware not setting page on 'sff read write module' activity (0x23).

#### 2.1.2.2 Linux Driver

- For e822/823 devices, it was observed failure of reading cgu abilities when unload/load the ICE Linux driver.
- It was observed that ICE Linux driver does not load properly, when the driver left TSPLL in a different source than TCXO and the reboot accured.

## 2.2 Intel® Ethernet 700 Series Network Adapters

### 2.2.1 Firmware/NVM/NVM Update

- After patch RDE AutoSpeedNegotiationEnabled property the value will maintain current value.
- On 4-Port Ethernet Adapter, port 2 and port 3 do not always report link down when link is down.

### 2.2.2 Windows Driver

- None for this release.

### 2.2.3 ESX Driver

- None for this release.

## 2.3 Intel® Ethernet I211/I210 Series Network Adapters

### 2.3.1 General

- Driver package for PRO1000 and PROXGB missing cert tag vb.
- Driver package (PRO1000, PROXGB, PROCGB and PRO40GB), the declarative is "False".

## 2.4 Intel® Ethernet 610 Series Network Adapters

### 2.4.1 General

- Devlink cannot be used to exit recovery mode. NVM Update Tool is recommended to exit recovery mode. It's possible that recovery mode cannot be fixed via software tools on SLES operating systems - If such issue is observed then the recommendation is to use NVM Update Tool on EFI

### 2.4.2 Firmware/NVM/NVM Update

- Port 0 and port 1 of the E610-XT4 OCP/E610-IT4 OCP could not link up after some AC power cycles.
- NIC in shared port mode loses connection in S5 after shutdown from OS.
- The get_inventory_info command returns unsupported when it should be supported.
- Warm reboot deadlock removal implementation added in the Firmware.
- Fixed an issue with PF driver not able to load after immediate reboot triggered by the BMC.

### 2.4.3 Windows Driver

- BSOD may occur on Windows Server 2025 during creation or removal of LBFO teaming. It's recommended to use Switch Embedded Teaming (SET) instead of Load Balancing/Failover. LBFO is deprecated by Microsoft on Windows Server 2022.

### 2.4.4 Linux Driver

- Server can be woken up via any type of Wake on LAN (WOL) magic packet despite specific ethtool configuration.
- When system has more than 128 CPU cores available it may be possible that XDP will not work. This limit is going to be removed in future releases.

### 2.4.5 VMware Driver

- Intnet list is listed as supported for 'Available Namespaces' however Intnet support has been already removed.

## 2.5 Intel® Ethernet I350 Series Network Adapters

### 2.5.1 Firmware/NVM/NVM Update

- The resolution of the issue includes igbn driver and Tool enhancement for better error tolerance and robustness.

# 3.0 Known Issues

## 3.1 Intel® Ethernet 800 Series Network Adapters

### 3.1.1 Intel® Ethernet 810 Series

#### 3.1.1.1 General

- Intel's validation team found issue in Windows Server 21H1. This OS version is unable to save memory dump (crash dump) on disk. It is considered to be OS defect.
- DPDK traffic is stopped after FLR reset. This issue has been documented in the **rte_eth_dev_reset** API.
  **Workaround: testpmd** can be used to recover a VF after a reset.
  • When a VF reset happens, **testpmd** will print out "port reset" event to the console.
  • Use the "port reset' command to call **rte_eth_dev_reset**, and everything will go back to normal
- Running Unreliable Datagram (UD) RDMA mixed traffic with more than 2 QPs may lead to a receiver side UD application hang.
  **Workaround:** Restart the RDMA UD application. This is not expected to impact storage (NVMeoF, iSER, VSAN) applications since they do not rely on UD communication.

#### 3.1.1.2 Firmware/NVM/NVM Update

- None for this release.

#### 3.1.1.3 Linux

- The Intel SIOV does not work on Rhel, due to backports applied by Red Hat.
- DPDK traffic is stopped after FLR reset. This issue has been documented in the rte_eth_dev_reset API.

  **Workaround**: testpmd can be used to recover a VF after a reset.

  — When a VF reset happens, testpmd will print out "port reset" event to the console.

  — Use the "port reset' command to call rte_eth_dev_reset, and everything will go back to normal.
- On a Linux host, iavf interfaces in FreeBSD-13.0 guests may experience poor receive performance during stress.

  **Workaround:** The workaround for this behavior is to do the power cycle of the setup to see the assigned DCB-MAP is reflecting.
- When user sets more than 8 VLANs for trusted VF, and then moves VF as untrusted, the VLAN configuration will be lost.

  **Workaround:** To avoid losing VLAN configuration, user shall first reduce VLANs configuration allowed for untrusted VF (not more than 8 VLANs per VF), and then switched the VF to untrusted mode.

#### 3.1.1.4 FreeBSD Driver

- During traffic in RoCEv2 mode, using large number of QPs (>64), a PE Critical Error may occur. In such circumstances the card may become inoperational, and reboot is required to restore RDMA capability.

- iavf virtual interfaces in FreeBSD-13.0 guests may experience a poor receive performance during stress.

#### 3.1.1.5 RDMA Driver

- None for this release.

#### 3.1.1.6 VMware Driver

- None for this release.

#### 3.1.1.7 Windows Driver

- None for this release.

#### 3.1.1.8 ESX Driver

- Running Unreliable Datagram (UD) RDMA mixed traffic with more than 2 QPs may lead to a receiver side UD application hang.
  **Workaround:** Restart the RDMA UD application. This is not expected to impact storage (NVMeoF, iSER, VSAN) applications since they do not rely on UD communication.
- VMWARE - When instantiating the maximum number of VFs in NSX-T, adding a Transport Node afterwards might fail due to timeout.VLAN priority for Unreliable Datagram (UD) traffic is incorrect if supplied ToS is not set to Priority 0.

#### 3.1.1.9 Application Device Queues (ADQ)

- None for this release.

### 3.1.2 Intel® Ethernet 820 Series

#### 3.1.2.1 General

- None for this release.

#### 3.1.2.2 Firmware/NVM/NVM Update

- The incorrect PHY FW could get programmed resulting in the controller failing INIT. LANconf is showing the wrong PHY FW version for device 0x37.
- The 100 MB option, is visible in Windows Device Manager. However, when it is selected, a link cannot be established.
- Lane Reversal broken preventing proper functionality of 2x1x50g port option on quad 1. CPI opcode 0x67 PortLaneOrder does not support setting lane 1 as the autoneg lane and returns error code 1 (Configuration Error).

#### 3.1.2.3 Linux Driver

- None for this release.

#### 3.1.2.4 FreeBSD Driver

- None for this release.

#### 3.1.2.5 Windows Driver

- None for this release.

#### 3.1.2.6 VMware Driver

- None for this release.

## 3.2 Intel® Ethernet 700 Series Network Adapters

### 3.2.1 Windows Driver

- None for this release.

### 3.2.2 Intel® Ethernet Controller V710-AT2/X710-AT2/TM4

- None in this release.

### 3.2.3 Linux Driver

- In some cases ./nvmupdate64e can't initialize the XL710 card in recovery mode.

```
Intel® Ethernet NVM Update Tool
NVMUpdate version 1.41.3.1
Copyright © 2013 - 2024 Intel Corporation.

Config file read.

Warning: Cannot initialize port: [00:059:00:00] Intel® Ethernet Converged Network
Adapter XL710-Q2
Warning: Cannot initialize port: [00:059:00:01] Intel® Ethernet Controller XL710
Generic ID
```

- Changing the inner or outer VLAN tag protocols after setting the private flag "vf-true-promisc-support" disables the promiscuity on the VF's VLAN interfaces.

### 3.2.4 Pre-Boot

- The blink LED test executed from the UEFI setup menu may not work correctly for 10G speed when the link is up for the given port.

### 3.2.5 VMware Driver

- None for this release.

### 3.2.6 Firmware/NVM/NVM Update

- Caswell and SMC reported physical link issue after NVM update. First failing release is 8.4 (example NVM: 8000ABFB), last working version 8.3 (example NVM: 8000A4C2). The error is occurring when called : ifconfig <dev> up; ethtool -m <dev>.
- Addressed an issue seen with updating to FVL 8.4 and later NVM releases where link is lost when using select SFP+ modules.

- After updating to NVM 4.11 in some servers, one port of X557/X527 OCP adapter appears link down from Windows Device Manager after reboot. (disabling SR-IOV increases repro rate)

  **Workaround:** Link status is restored back to normal after unplug/plug cable or disable/enable the affected port from Windows Device Manager.

- NVM content might be corrupted after nvmupdate due to old FW version generating errors. In this cases "**i40e: eeprom check failed (-5), Tx/Rx traffic disabled**" will appear.

### 3.2.7 Windows Driver

- X710 has changed the value of DMAR "DmaRemapping in Windows 11 (value == 1)" due to BSOD.

## 3.3 Intel® Ethernet 600 Series Network Adapters

### 3.3.1 General

- For all E610 adapters NVM Version 1.01 is improperly reported in BIOS/HII as 1.1.
- It may be possible that invalid PCIe configuration can cause that EEUpdate will not show the adapter in OS.
- PHY Based PTP feature is not available during this release.
- Malicious driver detection and Tx Hang detection may seem to not work correctly. For example, some events may not be reported. However, the mechanism itself is working properly.

### 3.3.2 Linux Driver

- In case when e610 adapter will negotiate less speed, like 1GbE, the Virtual Machine (VF interface) will expose 10GbE by default. To verify the link speed for VF, user needs to verify it on the associated PF interface on the host operating system.
- SLES 15SP6 - NIC ports may not be initialized via NVM Update Tool (via inventory switch). Devlink can be used instead - which is accessible by nvmupdate - if devlink flag.
- It's possible that during blinking of NIC physical port LEDs, speed LED is blinking (not the activity LED)

### 3.3.3 Windows Driver

- Once event occurs like CORER, GLOBR, etc., the event log may report event ID only - without full message.
- For 2 vNICs connected via vSwitch when adapter is being surprisingly removed it may be possible that connection will be lost. Therefore, driver re-installation or reboot of the machine might be required to restore the connection. ,
- Speed and duplex values set on PF may not be properly displayed on VF. It's related only to 100MB and 1G speed.
- It's possible to create more Virtual Functions than limit allows (62). 63rd and higher Virtual Function is not operational.
- It's possible that more than 31 Virtual Functions per Virtual Machine may cause that VFDataPath will become inactive. This issue is related to server/host limitations - according to guidelines from Microsoft: VFs and operating system must have access to enough RAM and CPU cores. Please refer to the Microsoft Virtualization guidelines.

- It's also possible that NIC may start resetting when attempting to run 62 Virtual Functions per Physical Function. Please refer to the previous point and Microsoft Virtualization guidelines
- When Large Send Offload (LSO) V2 is enabled, the adapter may not be able to send frames larger than the MTU. After disabling LSO frames larger than 1514 bytes may appear on the VM.
- SR-IOV enabled vNIC may not pass traffic until Intel® Ethernet Controller E610 Virtual Function (VF) Driver is installed. It's possible that traffic will stop when after disabling the VF. Re-enabling the E610 Virtual Function adapter restore the traffic.

### 3.3.4 VMware Driver

- Tx or Rx Pause setting status might be displayed incorrectly - for example instead of Tx enabled it may be reported that Tx is disabled.
- Speed and duplex values set on PF may not be properly displayed on VF. It's related only to 100MB and 1G speed.
- When port is down the physical port LED may not be turned ON. When port is up the LED shows the link correctly - LED is turned ON.

### 3.3.5 Firmware/NVM/NVM Update Tool

- LEDs light up during boot and subsequent reboots without cable plugged in. Affects both 2 ports and 4 ports adapters.
- It may be possible that NVM Update Tool is not going to report that during rollback operation FW is in Rollback mode. However, the rollback procedure is being performed correctly.
- Once NVM is updated via NVM Update Tool, it might be possible that target image is not loaded yet. If such situation occurs then warm reset (reboot) is required, then target image will be fully loaded.

## 3.4 Intel® Ethernet 500 Series Network Adapters

- For X550 windows driver design, vectors 0 through 7 are enabled at driver init and all Rss queues and queues form various TCs are mapped to it. But more vectors are available to use (GetVectorsAvailableForRssQueues = 16 , NumRssQueues = 8). After getting an RSS indirection table update, a new vector outside of 0 to 7 range can be chosen for a queue while doing the queue to CPU remapping process. If that vector is outside of the 0-7 range, current design will have trouble for the queue to CPU remapping process and cause 10400 event.

  **Workaround:** Change RSS processor count & queue count max/default value to 8 to align with max 8 queue mapping support on driver to avoid issue.
- Intermittent Traffic Delivery Failure on SLES 15 SP5/SP6 with VF Connected to SW Bridge: an issue has been identified in SLES 15 SP5/SP6 where network traffic from a Virtual Function (VF) connected to a software bridge (SW bridge) may intermittently fail to reach the intended client. This problem is impacting the reliability of network communications in virtualized environments utilizing software bridges.
  Result: traffic from vf connected to SW bridge sometimes may not reach a client.

## 3.5 Legacy Devices

- None for this release.

# 4.0 NVM Upgrade/Downgrade 800 Series/700 Series/ 600 series and X550

Refer to the Feature Support Matrix (FSM) links listed in Feature Support Matrix for more detail. FSMs list the exact feature support provided by the NVM and software device drivers for a given release.

# 5.0 Languages Supported

**Note:** This only applies to Microsoft Windows and Windows Server Operating Systems.

This release supports the following languages:

| Languages | |
|---|---|
| English<br>French<br>German<br>Italian<br>Japanese | Spanish<br>Simplified Chinese<br>Traditional Chinese<br>Korean<br>Portuguese |

# 6.0 Related Documents

Contact your Intel representative for technical support about Intel® Ethernet Series devices/adapters.

## 6.1 Feature Support Matrix

These documents contain additional details of features supported, operating system support, cable/ modules, and so on.

| Device Series | Support Link |
|---|---|
| Intel® Ethernet 800 Series:<br>— E810<br>— E820<br>Intel® Ethernet Controller E810 and Intel® Ethernet Connection E82X Feature Comparison Matrix | <br>https://cdrdv2.intel.com/v1/dl/getContent/630155<br>https://cdrdv2.intel.com/v1/dl/getContent/739764<br><br>https://cdrdv2.intel.com/v1/dl/getContent/751546 |
| Intel® Ethernet 700 Series:<br>— X710/XXV710/XL710<br>— X722<br>— X710-TM4/AT2 and V710-AT2 | <br>https://cdrdv2.intel.com/v1/dl/getContent/332191<br>https://cdrdv2.intel.com/v1/dl/getContent/336882<br>https://cdrdv2.intel.com/v1/dl/getContent/619407 |
| Intel® Ethernet 600 Series:<br>— E610 | <br>https://cdrdv2.intel.com/v1/dl/getContent/743366 |
| Intel® Ethernet 500 Series | https://cdrdv2.intel.com/v1/dl/getContent/335253 |

## 6.2 Specification Updates

These documents provide the latest information on hardware errata as well as device marking information, SKU information, etc.

| Device Series | Support Link |
|---|---|
| Intel® Ethernet 800 Series | https://cdrdv2.intel.com/v1/dl/getContent/616943 |
| Intel® Ethernet 700 Series:<br>— X710/XXV710/XL710<br>— X710-TM4/AT2 and V710-AT2 | <br>https://cdrdv2.intel.com/v1/dl/getContent/331430<br>https://cdrdv2.intel.com/v1/dl/getContent/615119 |
| Intel® Ethernet 600 Series:<br>— E610 | <br>https://cdrdv2.intel.com/v1/dl/getContent/743364 |
| Intel® Ethernet 500 Series<br>— X550<br>— X540 | <br>https://cdrdv2.intel.com/v1/dl/getContent/333717<br>https://cdrdv2.intel.com/v1/dl/getContent/334566 |
| Intel® Ethernet 300 Series | https://cdrdv2.intel.com/v1/dl/getContent/333066 |
| Intel® Ethernet 200 Series<br>— I210<br>— I211 | <br>https://cdrdv2.intel.com/v1/dl/getContent/332763<br>https://cdrdv2.intel.com/v1/dl/getContent/333015 |

## 6.3 Software Download Package

The release software download package can be found here.

## 6.4 GitHub Ethernet Drivers and Utilities

For additional information regarding Linux kernel drivers, refer to the *GitHub* driver repositories.

## 6.5 Intel Product Security Center Advisories

Intel product security center advisories can be found at:

https://www.intel.com/content/www/us/en/security-center/default.html

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