Intel® Ethernet Controller Products

30.6 Release Notes

December 2025

Revision 3.5
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Revision History

Revision	Date	Comments
3.5	December 2025	Release Note 30.6 (Version 1): • 2025R3 Updates • Introducing new support for: — Intel® Ethernet Network Adapter E810-XXVDA2 Support — Intel® Ethernet Network Adapter OCP3.0 E810-XXVDA2 — Intel® Ethernet Network Adapter E830-XXVDA4F • Added new OS support for RHEL 10.1 and RHEL 9.7
3.4	December 2025	Release Note 30.5.1 (Version 2): • Split the E830 series into two rows for the NVM Versions Supported - Table 5
3.3	November 2025	Release Note 30.5.1 (Version 1): • Added new support SUSE SLE 16, Windows 11 25H2 for i40ea & i40eb
3.2	October 2025	Release Note 30.5 (Version 1): • Refresh and custom bugfixes for Dell • Added new support Windows 11 25H2 • Tools and drivers support for a new Intel E610 controller chip which can operate in -40 to 85°C • E825: NC-SI 1.2 support for E825 (Phase 1+2+3) • E825: Support NCSI-over-RMII Control-Only Mode (no Passthrough) • E825: NC-SI 1.2 Get Pass-through Mode • Removed Windows 11 21H2 Support - EOL • Removed Windows 11 22H2 Support - EOL
3.1	September 2025	Release Note 30.4.2 (Version 1): • Refresh and bugfixes for ESXi 8.0 and 9.0 drivers for 10G and 40G
3.0	September 2025	Release Note 30.4.1 (Version 1): • Introducing new OS Support ESXi 9.0
2.9	August 2025	Release Note 30.4 (Version 1): • 2025R2 updates Release Note 30.4 (Version 2): • Removed all ESXi 9.0 information • Removed FW support for X710 - Modern standby for workstation • Updated the NVM table for E830, E820, E610 series and added E825 series • Added E825 fixes in Fixed Issue section • Added Thermal sensor information and support in Firmware support
2.8	July 2025	Release Note 30.3: • Introducing new support SUSE Linux Enterprise Server 15 SP7
2.7	July 2025	• (Internal Release Only)

Revision	Date	Comments
2.6	July 2025	Release Note 30.2: • Introducing support for new NICs (Only Linux are supported): — Intel(R) Ethernet Network Adapter E830-XXV-8F for OCP 3.0 — Intel(R) Ethernet Network Adapter E830-C-Q2 — Intel(R) Ethernet Network Adapter E830-C-Q2 for OCP 3.0 — Intel(R) Ethernet Controller E830-CC for QSFP — Intel(R) Ethernet Controller E830-CC for SFP — Intel(R) Ethernet Connection E825-C 10GbE — Intel(R) Ethernet Connection E825-C for QSFP — Intel(R) Ethernet Connection E825-C for SFP — Intel(R) Ethernet Connection E825-C for backplane — Intel(R) Ethernet Network Adapter E830-XXV-2 for OCP 3.0 — Intel(R) Ethernet Network Adapter E830-XXV-2 — Intel(R) Ethernet Controller E830-XXV for SFP
2.5	June 2025	— (Internal Release Only)
2.4	June 2025	Release Note 30.1.1: • Introducing New OS support Red Hat Enterprise Linux 9.6 and 10.0
2.3	June 2025	Release Note 30.1.0.1: • Linux drivers point release with critical fix
2.2	April 2025	Release Note 30.1: • 2025R1 Updates
2.1	February 2025	Release Note 30.0.1: • Introducing support for new NICs (part of Intel® Ethernet 10 Gigabit Adapters): — Intel® Ethernet Network Adapter E610-XT2 — Intel® Ethernet Network Adapter E610-XT4 — Intel® Ethernet Network Adapter E610-IT4
2.0	February 2025	Release Note 30.0: • Introducing support for new NICs (part of Intel® Ethernet 10 Gigabit Adapters): — Intel® Ethernet Controller E610 for 10GBASE-T — Intel® Ethernet Network Adapter E610-IT4 for OCP 3.0
1.9	December 2024	Release Note 29.5: • Introducing New OS support: FreeBSD 13.4 • 2024R5 Updates
1.8	November 2024	Release Note 29.4.1: • Introducing New OS support: Red Hat Enterprise Linux 9.5
1.7	October 2024	Release Note 29.4: • Introducing New OS support: Windows Server 2025 and Windows 11 24H2 OSes
1.6	August 2024	Release Note 29.3.1: • Introducing New OS support: Ubuntu 24.04 LTS
1.5	August 2024	Release Note 29.3: • Generic update for FVL, CVL and CPK NIC OEM and FreeBSD 14.1
1.4	July 2024	Release 29.2.1: • Introducing New OS support: SLES 15 **SP6**
1.3	July 2024	Release 29.2: • Introducing New OS support: VMware ESXi **8.0u3**

Revision	Date	Comments
1.2	June 2024	Release 29.1.2: • 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: • Dot release, ESXi drivers update. • Full OEM Gen container release for E810, E700 and E820.

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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
30.6	• Intel® Ethernet Network Adapter E810-XXVDA2 Support • Intel® Ethernet Network Adapter OCP3.0 E810-XXVDA2 • Intel® Ethernet Network Adapter E830-XXVDA4F

1.1.2 Software Features

Release	New Software Support
30.6	• E610: Read Slot ID data from SMBIOS and provide it to firmware • E610: SR-IOV VF link speed display correction • E610: PF/VF feature negotiation • E610: Windows DMA remapping policy update • E800: Linux* kernel DPLL subsystem for phase offset monitor interface • E800: SR-IOV LAG Active/Active • E825: Firmware Management Protocol (FMP) Support • E830: SR-IOV LAG Package • EPCT: Update listing device branding data presentation • Read-only Device Level Configuration in HII for non-PF0 ports • Added new support - RHEL 10.1 and RHEL 9.7

1.1.3 Firmware Features

Release	New Firmware Support
30.6	• E830 - SYNCE FOLLOWER infrastructure support for default DPLL Settings at Init • E830 - alignment in parity with latest E810. (LLDP dedicated features from E810 are still under bring-up)

1.2 Removed Features

Release	Hardware/Feature Support
30.6	• Removed ESX 7.0 - EOL • Removed Niantic* - EOL • Discontinued support for CentOS 7.x/8.x, RHEL 8.8, RHEL 9.1, and RHEL 9.2 • Discontinued support for FreeBSD 13.3, 13.4, 14.0, 14.1, and 14.2 • Discontinued support for Linux Stable Kernel up to version 4.19 • Discontinued support for SUSE Linux Enterprise Server 12 SP5 - EOL

1.3 Operating Systems Supported

1.3.1 Linux

Operating Systems supported:

- Linux Kernel 6.x and 5.x
- Linux Real Time Patch 6.x and 5.x
- Kyline Linux Advance Server V10 (only for Intel Ethernet E810 Series)
- Red Hat *Enterprise Linux* (RHEL) 10.1
- Red Hat Enterprise Linux (RHEL) 10.0
- Red Hat Enterprise Linux (RHEL) 9.7
- Red Hat Enterprise Linux (RHEL) 9.6
- SUSE Linux Enterprise Server 16
- SUSE Linux Enterprise Server 15 SP7
- SUSE Linux Enterprise Server 15 SP6
- 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 810/820/830 Series	2.4.5	4.13.20	2.5.21
Intel® Ethernet 700 Series	2.28.16	4.13.20	2.5.21
Intel® Ethernet 10 Gigabit Adapters	6.3.4	5.2.2	Not Supported
Intel® Ethernet Gigabit Adapters	5.19.10	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	1.18.86.0	1.18.71.0	1.18.74.0	1.14.104.0
iceb	1.1.183.0	1.1.183.0	1.1.183.0	Not Supported
scea	1.17.83.0	1.17.86.0	1.17.91.0	Not Supported
sceb	1.16.213.0	1.16.213.0	Not supported	Not Supported
Intel® Ethernet 700 Series				
i40ea	1.22.84.0	1.22.88.0	1.22.91.0	1.18.369.0
i40eb	1.22.86.0	1.22.75.0	1.22.86.0	1.18.369.0
Intel® Ethernet Adaptive Virtual Function				
iavf	1.17.63.0	1.18.161.0	1.18.162.0	1.14.203.0
Intel® Ethernet 600 Series / 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	2.3.7.0	2.3.7.0	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	2.1.5.7	1.1.4.45	1.1.4.45	Not Supported
Intel® Ethernet Gigabit Adapters and Connections				
e1r	14.1.24.0	14.0.13.0	14.0.7.0	14.0.6.0
v1q	Not Supported	Not Supported	1.4.7.3	1.4.7.3

1.4.1 Windows Client

Operating Systems Supported:

- Microsoft Windows 11 25H2
- Microsoft Windows 11 24H2
- Microsoft Windows 11 23H2
- 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	1.19.36.0	1.18.74.0
Intel® Ethernet 700 Series [1]		
i40ea	1.23.39.0	1.22.91.0
i40eb	1.23.38.0	Not Supported
Intel® Ethernet Adaptive Virtual Function		
iavf	1.18.161.0	1.18.162.0
Intel® Ethernet 10 Gigabit Adapters and Connections		
ixs	4.1.267.0	4.1.254.0
ixt	Not Supported	4.1.228.0
ixn	Not Supported	4.1.254.0
ixw	1.5.49.0	Not Supported
vxs	2.3.7.0	2.1.252.0
vxn	Not Supported	2.1.252.0
Intel® Ethernet 2.5 Gigabit Adapters and Connections		
e2fn	2.1.5.7	1.1.4.45
Intel® Ethernet Gigabit Adapters and Connections		
e1r	14.1.24.0	14.0.7.0
e1d	12.19.2.65	21H2: 12.19.2.65 RS5: 12.18.9.10
e1dn	20.0.3.9	Not Supported

Table 3. Supported Operating Systems: Windows Client [continued]

Driver	Windows 11	Windows 10 21H2 / Windows 10 RS5
e1c	Not Supported	Not Supported
v1q	Not Supported	1.4.7.3

1. For i40ea and i40eb:
   - Supported, validated and certified on Windows 11 24H2
   - Only supported on Windows 11 25H2

1.4.2 FreeBSD

Operating Systems supported:

- FreeBSD 14.3
- FreeBSD 13.5

Table 4. Supported Operating Systems: FreeBSD

Driver	PF Driver	VF Driver	RDMA Driver
Intel® Ethernet 810/820 Series	2.0.16	3.1.6	1.3.55
Intel® Ethernet 700 Series	1.14.2	3.1.6	1.3.55
Intel® Ethernet 10 Gigabit Adapters	3.4.37	1.6.11	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 9.0
- 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	4.91
820 Series	
E822	3.44
E823-C	3.44
E823-L	3.44
825 Series	
E825	4.03
830 Series	
E830	1.11
700 Series	
X710	9.56
X722	6.50
600 Series	
E610	1.40
500 Series	
X550	3.70
X552NS	2.10
X552DE	2.10
X553	2.10
200 Series	
I210	2.00
I225	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	1.3.50.0
Comms Package	1.3.58.0
Wireless Edge Package	1.3.25.0

2.0 Fixed Issues

2.1 Intel® Ethernet 800 Series Network Adapters

2.1.1 Intel® Ethernet 810 Series

2.1.1.1 General

- The UEFI device-level configuration menus have been modified so that the configuration changes are permitted only on the primary port. All other ports display the current settings in a read-only state.
- Fixed packet loss issue by cleaning shared receive queue.

2.1.1.2 Firmware/NVM/NVM Update

- The kbuild of i40e Linux driver on SuSE operating systems was fixed and can be compiled without any issues.
- On a Linux host, if transmit balancing is enabled in HII Menu, kernel panic may occur right after EMPR for instance triggering after a FW update on an E810 device due to the driver's issue.

  Workaround: Disabling transmit balancing in HII if EMPR is needed.
- Westport channel fails to link up 25G after changing the speed support from 1G/10G/25G to 25G only.

2.1.1.3 Linux

- Fixed an issue where VF RDMA devices were not being created if a DDP package is different than ice_lag that was loaded.
- On a Linux host, if transmit balancing is enabled in HII Menu kernel, panic may occur right after EMPR (e.g. triggered after FW update) on an E810 device due to driver's issue.
- Filtering on tunnel fields (GRE/Geneve/GTP/Vxlan) in switchdev mode fails to program filter to hardware.

2.1.1.4 Windows Driver

- None in this release.

2.1.1.5 Windows Server

- None for this release.

2.1.1.6 ESX Driver

- VLAN priority for Unreliable Datagram (UD) traffic is incorrect if supplied ToS is not set to Priority 0.

2.1.1.7 Pre-Boot

- None for this release.

2.1.2 Intel® Ethernet 820 Series

2.1.2.1 General

- None for this release.

2.1.2.2 Firmware/NVM/NVM Update

- If LANconf is showing the wrong PHY FW version for device 0x37, the incorrect PHY FW could get programmed resulting in the controller failing INIT.

2.1.2.3 Linux Driver

- It was observed that the ICE Linux driver does not load properly when the driver left in TSPLL which is a different source than TCXO and the reboot occurred.

2.1.3 Intel® Ethernet 825 Series

- When using the 50G 2x50 SFP NVM, the link is lost after programming the MAC addresses using EEUpdate and rebooting with a 50G PAM-4 cable connected. Link can be brought back up by removing the cable and rebooting again. The issue is not seen when using a 25G cable.
- <EthAgent 2.0.31>DFX functions that are not working. Adapter Initialization failure related to DMA setting in BIOS (DMA disable required).
- AQ command failures on E825 HCC hardware with 1GPHY TYPES and 100M_SGMII.
- PHYSS returning back CPI Errors. These CPI errors occurred for the opcodes that are supported by PHYSS.
- While working towards DNL SDLe changes, all phy types (100G-SR4, 100G-LR4, 100G-CAUI4 and 100G-CAUI4-AOC/ACC) giving CPI errors in DNL.

2.1.4 Intel® Ethernet 830 Series

2.1.4.1 General

- None for this release.

2.1.4.2 Linux Driver

- None for this release.

2.1.4.3 Firmware/NVM/NVM Update

- E830 RDE feature enhancement, including the operation of "Reset To Default", Network Adapter and Port-related resources.

2.1.4.4

The response for the Activate Firmware command does not need to wait for the firmware to complete the internal data dump. The response is just sent before the internal data dump, which works as part of the firmware activation process and followed by calling the FW Reset (EMPR). **FreeBSD Driver**

- None in this release.

2.2 Intel® Ethernet 700 Series Network Adapters

2.2.1 General

- None for this release.

2.2.2 Firmware/NVM/NVM Update

- Selected customers reported link lost after updating to FVL 8.4 and later NVM releases using select SFP+ modules.

2.2.3 Windows Driver

- Removed a conditional behavior in the code which was preventing the driver from calling NdisMIndicateStatus to the OS, even in cases where there was no change.

2.2.4 ESX Driver

- None for this release.

2.2.5 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.

2.3 Intel® Ethernet I211/I210 Series Network Adapters

2.3.1 General

- None for this release.

2.4 Intel® Ethernet 610 Series Network Adapters

2.4.1 General

- When the SMBIOS Type 9 Base Bus Number does not match the adapter Bus, the driver iterates over Peer Devices Buses in an attempt to find a match.

2.4.2 Firmware/NVM/NVM Update

- NC-SI Get Controller Packet Statistics does not return all the statistics types in low power states.
- E610 XAT does not allow firmware update through NVM Update utility.
- E610 adapter blinks speed LED instead of activity LED on Identify.
- E610 disables pull-ups after initialization on RMII/RBT pins: TX_EN, TX0, TX1, RX0, RX1, CRS_DV.
- Report Network Adapter SKU and Model from NVM/VPD to reflect the IAT4 OCP NIC name.
- Resetting E610 IT4 OCP to default via Redfish causes the FirmwarePackageVersion to revert from 1.21 to 1.01. After reboot, iLO and Redfish show 1.01 while RBSU HII and OS report 1.21. Issue persists after cold reboot or AC cycle; recovery requires re-flashing NVM to version 1.21.

- The get_inventory_info command is incorrectly flagged as unsupported on E610-XT2 running Axel X05 (ETID: AA9F). As a result, the command does not return inventory details to the management controller, even though it should be supported per DMTF DSP0222_1.2 specification.
- Wake-on-LAN (WoL) is not supported on LKV NICs for Dell R7525 systems, and the BIOS cannot retrieve WoL configuration for these adapters. Attempts to enable PME and send magic packets will not wake the system.
- On 2.5G E610 NIC adapters (models E610-IT2 and E610-IT4), the RDE MaxSpeedGbps property incorrectly displays a value of 10G, even though the adapter's actual maximum speed is 2.5G.
- When reading NetworkAdapter schema on Aux power mode, a proper error handling for E610 in regard to PCI functions in S5 state, due to the lack of access to PCI config space.
- LEDs light up during boot and subsequent reboots without cable plugged in. Affects both 2 ports and 4 ports adapters.

2.4.3 Windows Driver

- Expanded the value of the device name definition so that the adapter name can be fully displayed in the event viewer.
- It is 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
- Link flapping occurs after reaching the maximum number of VFs on E610-XAT2 NIC when SR-IOV and VMQ are enabled in a Hyper-V environment. Some VFs fail to start traffic due to unstable links, and warnings appear in the event log.
- Changed the logic of the vector assignment for queues. Limited vector IDs to be no higher than 4 for PF queues in SR-IOV mode.
  https://github.com/intel-innersource/drivers.ethernet.windows.ndis-ccv2/pull/5285
- When Large Send Offload V2 is enabled, the adapter may not be able to send frames larger than the MTU
- Link down/up events were logged twice in the original driver infrastructure causing duplicated messages to event viewer. Add a flag to prevent it. 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 after disabling the VF. Re-enabling the E610 Virtual Function adapter restores the traffic.

2.4.4 Linux Driver

- None in this release.

2.4.5 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 is related only to 100MB and 1G speed.

2.4.6 ESX Driver

- Enable 2.5G and 5G speeds for auto-negotiation on E610. Ensure auto-negotiation is manually configured on the device using the command: esxcli network nic set -a -n vmnicX. ,

2.5 Intel® Ethernet I350 Series Network Adapters

2.5.1 Windows Driver

- SR-IOV and VMQ feature support with Intel® Ethernet Controller I350 (Powerville) is End of Interactive Support (EoIS) in Windows Server OS (WS2019, WS2022, WS2025, and beyond) and Microsoft Azure Local 21H2 onwards, starting with Release 30.1.
  Please refer to doc#861636 (EoIS: Intel® Ethernet Controller I350 SR-IOV Windows OS Support) for details: https://www.intel.com/content/www/us/en/secure/content-details/861636/eois-intel-ethernet-controller-i350-sr-iov-windows-os-support.html?DocID=861636 .

2.6 Intel® Ethernet 500 Series Network Adapters

2.6.1 General

- Intel® Advanced Network Services (ANS) is not supported on Windows 11*. Microsoft Windows® 10 supports Intel® Advanced Network Services. Intel has also removed Teaming from ANS suggested customer to leverage MSFT LBFO as teaming function.
  ANS feature that are not supported in Windows 11 are:

  1) Multiple VLANs (currently only 1 is supported natively in the OS) and,
  2) LBFO (Teaming/fail over).

  The teaming function will be considered as feature limitation currently.

3.0 Known Issues

3.1 Intel® Ethernet 800 Series Network Adapters

3.1.1 Intel® Ethernet 810 Series

3.1.1.1 General

- Windows Server 21H1 OS is unable to save memory dump (crash dump) on disk. It is considered to be an 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

3.1.1.2 Firmware/NVM/NVM Update

- None in this release.

3.1.1.3 Linux

- tc filters containing GTP fields failed to be programmed into hardware in switchdev mode
- Configuration of a link down on PF0 in LAG mode resulted in a rping test failure.
- IRDMA SLES RPM installation with rpm -ivh may see a conflict with a directory due to multi-kernel installed.

  Workaround: Use --force option to force install the rpm.
- The system crash is observed when user is changing ring size (ethtool -G) when Jumbo frames are enabled (MTU 9000) with traffic present.
- 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 switch the VF to untrusted mode.

3.1.1.4 FreeBSD Driver

- A PE Critical Error may be observed during traffic in RoCEv2 mode and, using a large number of QPs (>64). In such circumstances the card may become in-operational, and a reboot is required to restore RDMA capability.
- FreeBSD-13.0 guests may experience a poor receive performance on iavf virtual interfaces 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.

3.1.2 Intel® Ethernet 820 Series

3.1.2.1 General

- None for this release.

3.1.2.2 Firmware/NVM/NVM Update

- After advertising the link to 1G in the MRVL system, the link down and up happened 2 times in SUT and a single time in TG.
- Using the EPCT tool to change the port configuration requires 2 reboots to complete the programming process. Blank mode or PTP initialization failures may be observed after a single reboot and will be resolved after performing a second reboot.
- When loading the ICE driver with cages populated, the system displays the error message “Module is not present.”
- Module FINISAR CORP.FTRJ8519P1BNL is unable to regain link after issuing a link reset. Recovery requires removing the module from both E825 and switch to reacquire link.
- ethtool gives an invalid argument error when using ethtool -m <interface>.
- When 100mb option is selected in Windows Device Manager, a link cannot be established.
- Lane Reversal is 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 ESX Driver

- Multiple PF resets cause VMXnet3 adapter VFs in ENS mode to fail sporadically, resulting in no traffic.

3.1.3 Intel® Ethernet 825 Series

- Inconsistencies in LED behavior during system shutdown for E825-C under S5 state when using PV LEK with "NO MNG" configuration.
- The dmesg log shows "link settings prevent physical link to set to OFF" when unplugging multiple cables at once. This issue seems to be limited to SFP and is under investigation.
- On Azure Stack HCI 23H2, Event Log reports Error 289 during execution of hyperv.basic.large_send_offload_vf. This behavior is unexpected and is currently under investigation.
- It is observed that Traffic Classes for Tx queues are set to ZERO, when the DCB is configured and traffic with VLANs are sent.
- No traffic (ICMP, tcp, udp) after VF reset with NSX-T and DS configuration.
- After enabling PCI passthrough on different adapter there is no traffic.
- It is observed that forcing link speed to 1GbE for e823 with fibre optics cable causing netlink errors.
- NC-SI Health Status 0x508 / 0x507 is not generated, when Global Health Status is enabled.
- When CISCO-OPLINK TRMTFEAS1CCISE1G modules are inserted without fiber, the system incorrectly shows the link as active. LEDs turn on and ethtool reports link up, even though no physical connection exists.

3.1.4 Intel® Ethernet 830 Series

3.1.4.1 General

- Large number of UDP threads can cause traffic to go to very low throughput.

3.1.4.2 Firmware/NVM/NVM Update

-
- Sysfs ' echo 1 > /sys/bus/pci/devices/<PCI BUS address>/remove' command might cause the order the devices probed to change. If this is the case, the subsequent ice driver probe attempts might end up in kernel WARNING around PTP initialization, if removed PCI device is PF0. PF0 is usually a source timer owner for the devices handled by ice driver (like E825C or E830 devices) and it is a control PF for other PFs. So, non-PF0 devices require PF0 to be initialized first for a successful initialization.

Workaround: If the current device probe order is disturbed, the user needs to remove all other PFs as well (PF0 as the first one) and rescan PCI bus then.

- An unrecoverable netlist error is observed during driver attach on FreeBSD 14.0 when using the ice-1.41.8 driver with certain NVM images. The error appears in dmesg after loading the driver, even though functionality does not seem impacted.

3.1.4.3 Linux Driver

- There is issue with changing msix_eth value via devlink param interface - some settings of it on E830 cards cause bandwidth degradation.
- VF fails to create the expected Flow Director rules, halting due to hardware resource limitations.
- Flow Director rules do not correctly steer traffic on Geneve tunnels, causing packets to hit random queues instead of the specified queue.
- Stack trace occurs when CRC strip and VLAN strip are enabled together on RHEL 8.9 with ice PF driver 2.0.0_rc21.
- Performing devlink dev reload on PF after changing VF MSI-X allocation triggers errors in dmesg and impacts VF creation.
- Running the devlink reload command on CVL/CNV hardware with driver versions 1.16.3 or 2.0.11 on Fedora 6.11.9 causes a WARN_ON call trace and the error "unable to move VSI idx 1 into aggregator 1 node." The reload operation fails instead of completing successfully.

3.1.4.4 FreeBSD Driver

- Setting E830 and XXVDA2 OCP to only advertise 10G triggers AHS messages about failed link attempts before link comes up.
- ucmatose fails with RDMA_CM_EVENT_UNREACHABLE (-60) on XXVDA2 OCPwhen running with -c 15000 connections.

3.1.4.5 ESX Driver

- <VMWARE> When instantiating the maximum number of VFs in NSX-T, adding a Transport Node afterwards might fail due to timeout.

3.1.4.6 Windows Driver

- TX counters are missing on Dell switches when PFC is enabled. Retrace counters are observed on hosts during testing, even with different PFC bandwidth allocations (50/50 split)

3.2 Intel® Ethernet 700 Series Network Adapters

3.2.1 General

- None for this release.

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

- Upon unloading the i40e driver when some VFs are assigned to VM before it fully operates may cause the VF to hang. To avoid the VF from hanging, destroy the VFs before unloading i40e Linux driver.

3.2.3 Linux Driver

- IRDMA SLES RPM installation with rpm -ivh may see a conflict with a directory due to multi-kernel installed.

  Workaround: Use --force option to force install the rpm.

- 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

- None for this release.

3.2.5 ESX Driver

- None for this release.

3.2.6 Firmware/NVM/NVM Update

- AutoSpeedNegotiationEnabled property returns current status of the Autonegotiation from the link, not the configured value to control AN.
- Selected customers reported physical link issue after NVM update. First failing release is 8.4, last working version 8.3. The error is occurring when called : ifconfig up; ethtool -m.
- 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.

3.2.8 ESX Driver

- When MTU is set to 9000, sending ICMP packets larger than 1500 bytes between ESXi hosts may occasionally trigger Receive Oversize Errors on the receiving side; this issue is rare and was observed only in one setup.

3.3 Intel® Ethernet 600 Series Network Adapters

3.3.1 General

- It may be possible that invalid PCIe configuration can cause that EEUpdate will not show the adapter in OS.

3.3.2 Linux Driver

- 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.

3.3.3 Windows Driver

- After a reset event (e.g., CORER, GLOBR), the Windows Event Log should display a descriptive message, but currently it only shows the Event ID without the proper description.
- If two vNICs are connected through a vSwitch and the adapter is unexpectedly removed, the network connection may be lost. Restoring connectivity might require reinstalling the driver or rebooting the system. ,
- Speed and duplex values set on PF may not be properly displayed on VF. It's related only to 100MB and 1G speed.

3.3.4 VMware Driver

3.3.5 Firmware/NVM/NVM Update

- E610 incorrectly reports RDE property EthernetInterface.MaxFrameSize as 9022 bytes instead of 9728.
- After NVM Update from Firmware Recovery mode, additional NVM Update is required for adapter to get back into operational state.
- Unexpected sensor (ID 0x5) can be encountered on PLDM sensor list.
- MAC Address set using OS IP tools is not reflected in RDE NetworkDeviceFunction and Port schemas.
- Activity LED may not work properly on E610 XAT (single port device).
- 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.

3.3.6 ESX Driver

- None for this release.

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 Intel® Ethernet I350 Series Network Adapters

- None for this release.

3.6 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 French German Italian Japanese	Spanish Simplified Chinese Traditional Chinese Korean 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: — E810 — E820 — E830 Intel® Ethernet Controller E810 and Intel® Ethernet Connection E82X Feature Comparison Matrix	 https://cdrdv2.intel.com/v1/dl/getContent/630155 https://cdrdv2.intel.com/v1/dl/getContent/739764 https://cdrdv2.intel.com/v1/dl/getContent/861044 https://cdrdv2.intel.com/v1/dl/getContent/751546
Intel® Ethernet 700 Series: — X710/XXV710/XL710 — X722 — X710-TM4/AT2 and V710-AT2	 https://cdrdv2.intel.com/v1/dl/getContent/332191 https://cdrdv2.intel.com/v1/dl/getContent/336882 https://cdrdv2.intel.com/v1/dl/getContent/619407
Intel® Ethernet 600 Series: — E610	 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: — X710/XXV710/XL710 — X710-TM4/AT2 and V710-AT2	 https://cdrdv2.intel.com/v1/dl/getContent/331430 https://cdrdv2.intel.com/v1/dl/getContent/615119
Intel® Ethernet 600 Series: — E610	 https://cdrdv2.intel.com/v1/dl/getContent/743364
Intel® Ethernet 500 Series — X550 — X540	 https://cdrdv2.intel.com/v1/dl/getContent/333717 https://cdrdv2.intel.com/v1/dl/getContent/334566
Intel® Ethernet 300 Series	https://cdrdv2.intel.com/v1/dl/getContent/333066
Intel® Ethernet 200 Series — I210 — I211	 https://cdrdv2.intel.com/v1/dl/getContent/332763 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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