Intel® Ethernet Controller Products

30.4 Release Notes

August 2025

Revision 2.9
778690-001

Revision History

Revision	Date	Comments
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 GNR-D 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)
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

Revision	Date	Comments
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**
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.

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
30.4	• None for this release.

1.1.2 Software Features

Release	New Software Support
30.4	• EEUpdate: adds support for VPD access, logging config, and LLDP agent control • EEUpdate/CELO: display Segment ID in NIC output for precise PCI identification • ice: SR-IOV LAG with shared switch resources and VF active/backup via bonding • NDIS 100G: improves media type detection via updated PHY logic • UEFI UNDI 100G: adds error log collector and HII form for debug protocol support • ESXi: adds interrupt mode support for ixgben-ens driver in ESX 8.0 for DVS compatibility • ESXi: enables NetQRSS in ENS mode for i40e driver on ESX 8.0 • E610: adds PHY-based PTP for 1G and lower speeds • E610: enables auto negotiation for 2.5G and 5G speeds • E800: enables Rx no drop policy in UEFI for manageability • E800: adds switchdev/tc support for ICMPv6 filtering by header type • E800: adds UEFI option to disable link on startup • E800: adds Link Down event counter in ethtool • E800: clears the PFA Link Default Override section settings • E810: adds ethtool flags to disable MAC/VF source pruning in legacy mode • E823: adds 40G link speed support • E825: moves Marvell PHY update to FW for faster execution • E830: adds EthAgent access to PCIESS registers for debug and validation via AQ command

1.1.3 Firmware Features

Release	New Firmware Support
30.4	• E830 - added parity support with E810 for link management related features • Added Thermal sensor information and support

1.2 Removed Features

Release	Hardware/Feature Support
30.4	• EOL - Ubuntu 20.04 • EOL - Linux 32-bit and FreeBSD 32-bit support • EOL - iSCSI Crash Dump Driver

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) 10.0
- Red Hat Enterprise Linux (RHEL) 9.6
- Red Hat Enterprise Linux (RHEL) 9.5
- SUSE Linux Enterprise Server 15 SP7
- 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 810/820/830 Series	2.3.10	4.13.16	2.0.26
Intel® Ethernet 700 Series	2.28.9	4.13.16	2.0.26
Intel® Ethernet 10 Gigabit Adapters	6.2.5	5.1.6	Not Supported
Intel® Ethernet Gigabit Adapters	5.19.4	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
scea	1.17.83.0	1.17.86.0	1.17.91.0	Not Supported
Intel® Ethernet 825-C Series				
sceb	1.16.207.0	1.16.207.0	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 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	4.2.26.0	4.2.10.0	4.1.254.0	4.1.254.0
sxb	4.2.1.0	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	2.1.5.4	1.1.4.45	1.1.4.45	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	1.18.71.0	1.18.74.0
Intel® Ethernet 700 Series		
i40ea	1.22.89.0	1.22.91.0
i40eb	1.22.79.0	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	2.1.5.4	1.1.4.45
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 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 14.3
- FreeBSD 13.5

Table 4. Supported Operating Systems: FreeBSD

Driver	PF Driver	VF Driver	RDMA Driver
Intel® Ethernet 810/820 Series	2.0.9	3.1.5	1.3.46
Intel® Ethernet 700 Series	1.14.2	3.1.5	1.3.46
Intel® Ethernet 10 Gigabit Adapters	3.4.31	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	4.90
820 Series	
E822	3.44
E823-C	3.44
E823-L	3.44
825 Series	
E825	4.01
830 Series	
E830	1.10
700 Series	
X710	9.55
X722	6.50
600 Series	
E610	1.30
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	1.3.49.0
Comms Package	1.3.55.0
Wireless Edge Package	1.3.23.0

2.0 Fixed Issues

2.1 Intel® Ethernet 800 Series Network Adapters

2.1.1 Intel® Ethernet 810 Series

2.1.1.1 General

- Link Speed Method is not seen in HII/EFI Menu for the E810 after updating CVL4.8 FW.

2.1.1.2 Firmware/NVM/NVM Update

- Users should not get the annotation message when PATCH the READ_Only property of Port.Ethernet.AssociatedMACAddresses in the port schema.
- E810 starts to have the DCR0678 support adding the AllowableValues. The Port resource shall get an “ResetType@Redfish.AllowableValues” annotation under the #Port.Reset action but, current response resource indicates "@Redfish.AllowableValues", which does not follow the DCR 0678 and the DSP2046 definition.

2.1.1.3 Linux

- The call trace is observed during removing ICE Linux driver from memory. It was caused by wrong unregistering devlink instance and was fixed.
- The call trace was observed during unloading driver when ts2phc is running. This regression was introduced for unmanaged DPLL implementation by changing the pins registration flow and was fixed.

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

- <VMWARE> Setting LFC for PF may fail.

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

- Second PLDM update is blocked when ignited prior to reboot where first required one.

2.1.2.2 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 occurred.

2.1.3 GNR-D

- PHY update on Marvel PHY on GNR-D in tools queue takes too long.
- Second PLDM update is blocked when ignited prior to reboot where first required one. Unable to update firmware on E810-CQDA2 OCP3 (server DL385 Gen 11).
- When all ports plugged modules, PLDM FWU would failed or stuck at Component: 0 update package transfered: 50% or 75%.
- PLDM FWU support GNR-D QS CPU failures.
- Modules appear to only link when both plugged into GNR-D back to back. If remove and reinsert it, it will not link back.
- NC-SI Get Version ID Returns E810 for GNR-D (E825).
- Mismatch between actual handlers offsets in BMCIN and their defines in InterTaskMsg. BMCIN_Handlers[] defines an array of handler functions called by threadX events. Their indexes may change due to compilation flags, e.g. for GNR-D there is _DISABLE_SYNCE_ flag which affects the array. Same flag is missing in InterTaskMsg.h, hence defines here are shifted by 1 after CE_BMCIN_EVENT_SYNCE_CHG and there is a mismatch.
- There was observed a kernel panic, when the GNR-D platform was used with E830. This was caused by race condition in accessing VSI resources, what was already fixed.
- "Kernel panic - not syncing: Fatal exception" is seen with driver reload in GNRD with E830 adapter.

2.1.4 Intel® Ethernet 830 Series

2.1.4.1 General

- Change Netlist for ports 4,5,6,7 (Quad 1 CNV) to 2.5W, so optics will operate and link.
- DCR4744 tools print wrong branding string.

2.1.4.2 Linux Driver

- None for this release.

2.1.4.3 Firmware/NVM/NVM Update

- The BMC sometimes could not get RequestFirmwareData and timed out 90 seconds later after sending "update component" to E830 during PLDM FWU.
- When DCB code sets the Rx and Tx pause registers - it is set wrongly. The MAC driver API used refers to 'TRUE' as Tx, while this code uses 'TRUE' with Rx params and same goes for the other call for setting Rx which impacts dysfunctional PFC.
- Getting "Unrecoverable netlist error" during PF reset on CQDA2 OCP 200G single port. Port is coming up after reset and able to ping.

2.1.4.4 FreeBSD Driver

- 200G media types are not available when the driver is loaded with the 100G-DAC cable connected and then change the cable to 200G-DAC.

2.2 Intel® Ethernet 700 Series Network Adapters

2.2.1 Firmware/NVM/NVM Update

- None in this release.

2.2.2 Windows Driver

- Black screen occurs during S4/WB power cycling with network connected to X710-DA2/T2L card.

2.2.3 ESX Driver

- None for this release.

2.3 Intel® Ethernet I211/I210 Series Network Adapters

2.3.1 General

- Resolved an EEUpdate 5.39.56.8 and later issue programming I210 MAC@'s resulting in the error message " EEPROM Manageability Checksum update failed. Error C86A2029 - Failed to read EEPROM or EEPROM image.”.

2.4 Intel® Ethernet 610 Series Network Adapters

2.4.1 General

- For all E610 adapters NVM Version 1.01 is improperly reported in BIOS/HII as 1.1.
- [UEFI & Legacy] Windows 2022 (2019) driver problem is reported after booting installation media with updated NDIS driver.

2.4.2 Firmware/NVM/NVM Update

- 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.
- WakeOnLANEnabled property does not PATCH in the RDE Port schema.
- PLDM FWU fails and responds PLDM_UNABLE_TO_INITIATE_UPDATE (0x8A) on one E610 controller.
- PLDM Type5 Firmware Update process may be interrupted by MCTP over SMBus command received from BMC.
- SMBus Target addresses were corrected to 0x32 and 0x33 for SMBus 0 and SMBus 1 respectively.
- FW does not accept non-zero values in the CHALLENGE request's Param2 field, and its preventing security measurement reporting.
- During PLDM FWU flow, FW does not send RequestFirmwareDate PLDM Type 5 command via PLDM over MCTP over PCIe/VDM, when FWU flow is interrupted by PLDM over MCTP over SMBus command from BMC. Thus, resulting in timeouts on BMC side.
- PLDM FWU header does not contain link topology in ApplicableComponents list.

2.4.3 Windows Driver

- It is possible to create more Virtual Functions than limit allows (62). 63rd and higher Virtual Function is not operational.
- 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.

2.4.4 Linux Driver

- When using Virtual Machine with Linux operating system it may be possible that for 1G and 100Mb speed, ethtool will not display that link is established at 1G or 100Mb. It may report that the negotiated speed is 10G. However, this is only issue with ethtool reporting link status – link is in fact established at the correct speed.

2.4.5 VMware Driver

- None in this release.

2.5 Intel® Ethernet I350 Series Network Adapters

- None for this release.

3.0 Known Issues

3.1 Intel® Ethernet 800 Series Network Adapters

3.1.1 Intel® Ethernet 810 Series

3.1.1.1 General

- Fixed packet loss issue by cleaning shared receive queue.
- Windows Server 21H1 OS 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

- Filtering on tunnel fields (GRE/Geneve/GTP/Vxlan) in switchdev mode fails to program filter to hardware.
- 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.

  Workaround: Disable transmit balancing in HII if EMPR is needed.
- 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.VLAN priority for Unreliable Datagram (UD) traffic is incorrect if supplied ToS is not set to Priority 0.

3.1.2 Intel® Ethernet 820 Series

3.1.2.1 General

- <GNR-D><EthAgent 2.0.31>DFX functions that are not working. Adapter Initialization failure related to DMA setting in BIOS (DMA disable required).

3.1.2.2 Firmware/NVM/NVM Update

- Module FINISAR CORP.FTRJ8519P1BNL is unable to regain link after issuing a link reset. Recovery requires removing the module from both GNR-D and switch to reacquire link.
- ethtool gives an invalid argument error when using ethtool -m <interface>.
- <GNR-D>AQ command failures on GNR-D HCC hardware with 1GPHY TYPES and 100M_SGMII.
- 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.
- 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.

3.1.2.7 GNR-D

- 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.
- 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.
- CISCO-OPLINK TRMTFEAS1CCISE1G shows link with no fiber connected.

3.1.3 Intel® Ethernet 830 Series

3.1.3.1 General

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

3.1.3.2 Firmware/NVM/NVM Update

- Fixed PLDM header creation with proper OROM SREV to allow PLDM update and self update.
- Sysfs ' echo 1 > /sys/bus/pci/devices/<PCI BUS address>/remove' command might cause the order the devices are probed has changed. If this is the case, the subsequent ice driver probe attempts might end up in kernel WARNING around PTP initialization, if removed PCI device was PF0. PF0 is usually source timer owner for the devices handled by ice driver (like E825C or E830 devices) and it's so called control PF for other PFs. So, non-PF0 devices require PF0 is initialized first to 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.

- Unrecoverable netlist error is seen.

3.1.3.3 Linux Driver

- There is issue with changing msix_eth value via devlink param interface - some settings of it on E830 cards cause bandwidth degradation.
- It was observed that host frozen, when maximum VF were spawned for PF on the E830 adapters and the GLOBR is issued via ethtool.
- VF failed to create maximum Flow Director rule.
- Flow Director Rule not working properly on Geneve Tunnel. Traffic is hitting on random queue.
- Observing stack trace when doing CRC strip and VLAN strip co-existence.
- When performing a "devlink dev reload pci/0000:b1:00.0" ice throws errors in dmesg.
- Devlink reload command results in WARN_ON call trace and "unable to move VSI idx 1 into aggregator 1 node”.

3.1.3.4 FreeBSD Driver

- When setting E830 and XXVDA2 OCP to only advertise 10G, the following AHS message is seen:
  - ice0: All configured link modes were attempted but failed to establish link.
  - ice0: The device will restart the process to establish link.
  - ice0: Possible Solution: Check link partner connection and configuration.
- Ucmatose failed with -c 15000 on XXVDA2 OCP.

3.1.3.5 ESX Driver

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

3.1.3.6 Windows Driver

- No TX counters on dell switch with PFC Eretrace counters hit on machines.

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 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.
- Selected customers reported link lost after updating to FVL 8.4 and later NVM releases 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.

3.2.8 ESX Driver

- With the MTU set to 9000, ICMP packets send directly between the ESXi hosts with the size over 1500 can cause the Receive Oversize Errors on the receive side. The issue is not consistent 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.
- 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

- 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 events occurs like CORER, GLOBR, etc., the event log may report event ID only - without full message.
- For 2 vNICs connected via vSwitch and adapter is being unexpectedly 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 that more than 31 Virtual Functions per Virtual Machine may cause VFDataPath to 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 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
- 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.

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

- 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.
- 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

- Add 2.5G and 5G speeds for auto negotiation for E610. Auto negotiation must be explicitly set on the device with 'esxcli network nic set -a -n vmnicX'. 16028009725,

3.4 Intel® Ethernet 500 Series Network Adapters

- 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.
- 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

3.5.1 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

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 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/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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