Chelsio Communications

Accelerate

Chelsio Unified Wire for Linux

Release Notes



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I. Chelsio Unified Wire

1. Introduction

This document provides details on Chelsio Unified Wire for Linux Release v4.2.0.8-1.

2. New Features

The following are the new features in this release:

- Precision Time Protocol (PTP)
- Network Controller Sideband Interface (NC-SI)
- Support added for S7250 series of adapters

2.1. Precision Time Protocol (PTP)

In this release, hardware-assisted PTP support is added on the T7 Unified Wire Adapter to enable precise clock synchronization between master and slave devices on a local network. Software-based packet time stamping is inherently limited in accuracy; this release moves time stamping into the NIC hardware itself, delivering nanosecond-level timing precision. Key capabilities include:

- High-precision timers, readable via PIO registers
- Wall-clock time based on time-of-day
- Hardware time stamping of selected PTP packets on both ingress and egress paths.

2.2. Network Controller Sideband Interface (NC-SI)

This release adds support for NC-SI, a DMTF DSP0222 (version 1.1.0) sideband protocol that allows a Baseboard Management Controller (BMC) to send and receive traffic on the external network through the adapter's ports, enabling out-of-band manageability independent of the host operating system. The feature is implemented entirely in the T7 firmware, requiring no support from the host driver, and provides one NC-SI channel per adapter port for BMC pass-through traffic over a dedicated 100 Mbps BMC link that operates independently of the Ethernet wire speed.

2.3. Support added for S7250 series of adapters

This release adds support for the **S7250 series** of adapters, enabling expanded hardware compatibility and high-performance network connectivity.

3. Firmware Changelog

- Firmware has been updated from 2.1.28.0 to 2.1.32.0.
- Bug #47083
    - Fixed ptp_tx_pkt_handler had multiple bugs which will cause crash if function observes backpressure. The new implementation is clean and self-contained and not using eth handler.
    - Fixed an issue where an incorrect ulptxm offset calculation—introduced in the previous stability fix—caused transmission hangs.
- Bug #47077 Partial Fix: A new subcommand FW_PTP_SC_PPS is added in FW_PTP_CMD to enable/disable the PTP PPS.
- Bug #46336
    - Initial Scaffolding for NCSI support. NCSI needs to be up before and after host driver load. Before driver load support, we use fwwiremode infra in firmware.
    - NCSI command handlers added for some command.
    - NCSI link related handling added. These changes bringup the link based on NCSI commands and setup passthrough.
    - Support added to send configuration required AEN on driver load and unload if AEN is enabled.
    - Available NCSI stats and packet stats returned in the corresponding command responses.
    - NCSI code addition increased the firmware size. Extended fw regions to accomodate new code.
    - Removed channel enabled flag and added clear initial state flag. NCSI NC needs to return error INT_REQUIRED if BMC has not sent clear initial state command on a channel.
    - Use serial init file field STATIC_PKG_ID to read the package id and remove the hardcoding.
- Bug #47008: Added 0x2 (Module/connector soldered to motherboard) as supported SFP identifier
- Inline IPSec: Use flowc_nipsec_transport and flowc_nipsec_tunnel in the units of 1
- Bug #47095: Setting RX amplitude level unsupported by the optical module caused poor signal on T7 Rx. Added logic to query the capabilities from module and update only the supported amplitude and pre-cursor levels.
- Bug #47062: eTopus PHY configuration changes to stabilize PAM4 DAC link on revd adapters. Integrated eTopus PHY FW 0.4.8 and eTopus SDK changes for the new PHY firmware.
- Bug #47178: No need to update TX FIR during link training for NRZ rate.
- Bug #47203: Fixed T7 asic MPS changes broken the T7 fpga MPS MPS_CMN_CTL[SBA_EN] setting.
- Fixed incorrect usage of various macros fixed in ofld_rocev2.c file.

Disclaimer: This initial release may contain corner-case and platform-specific issues.

- Fixed typo fixed in mc size check.
- Updated README. Control queues are created per uP core.
- Bug #47202: Fixed VPD_VW_NCSI_CONFIG=1 means ncsi is disabled. 1 to disable NCSI, 0 to enable NCSI.
- Bug #46694:
    - Partial Fix: Control txq is also per uP core. Firmware code was outdated and did not handle control queue properly on secondary cores.
    - fc_eth->flowc_autoequ_node is now initialized. Leaving it uninitialized caused it to be counted as in-queue, leading to memory corruption.
- Bug #47216: Workaround: Disabling NCSI_XGMAC0_INT_ENABLE and ARB_STARTED interrupts in NCSI.
- Bug #47081: The loopback interface number is now used in cpl_tx_pkt for loopback PTP packets.
- Bug #46881: Workaround: SGE_INT_ENABLE6[silent_drop_tx_coal] disabled.
- Bug #47224: CIM_QUEUE_FEATURE_DISABLE.obq_eom_enable must be set to 1 for CmdMore handling support on FPGA as well as ASIC. Previously this was set only in the ASIC configuration file.
- Bug #47244: Get Version response now includes PCI Device ID and Vendor ID values.
- Bug #47249: Get Parameter response now reports the correct payload length. The checksum now starts from a 4-byte boundary following the start of the NC-SI header.
- Bug #47131: Workaround added: RXIF_RESET is now touched only during initialization.
- Bug #47082
    - The MAC clock value and corresponding PTP offset counts have been corrected for T7.
    - FW_PTP_SC_ADJ_FTIME incorrectly referenced the ptp_cmd->u.ts.ppb field while the driver sends the delta in the c.u.ts.tm field.
- NC-SI code reorganized to reduce code size.
- Bug #47263
    - Configuring the ARP EtherType for NC-SI resolves the issue.
    - Statistics moved out of flowc into buffer memory due to limited flowc space
    - Workaround added and enabled. When the host driver is loaded and NC-SI is enabled, enabling NC-SI broadcast now enables broadcast on the firmware VI, and the firmware forwards broadcast packets to NC-SI. The ARP EtherType in the BMC register is disabled in this case. Without the driver loaded, the BMC register-based EtherType continues to be used to transfer ARP packets to the BMC.
- Bug #47262: NC-SI to BMC MTU set to 9000.
- Bug #47252: The package select register is now reset after T1 time. Previously the deselect response itself was not transmitted on the NC-SI bus.
- Bug #46018: Endian swap applied for the PCIe RC3 NVMe controller.
- Bug #44968: PCIe Root Complex Unsupported Request error reporting disabled.
- Bug #47201: CmdMore handling corrected. CmdMore must be set to 1 when the next command from the same Tensilica core must immediately follow the current one. It must

never be set to 1 when only a single command is sent for the current WR handling in that processing instance.

- Bug #47062: Link tuning changes introduced for the latest adapter revision are now applied only to that revision, as they affected earlier revisions already deployed in the field.
- Bug #47171: Ignore CPL_ROCE_ACK_NAK_REQ if the flow is not in the FLOWC_STATE_ROCEV2_ESTABLISHED state. Removed an unnecessary cache flush of the Ethernet header.
- Bug #47329: Enabled the new loopback (LB) mode credit mechanism in ulptx.
- Bug #47324: Updated the LED_COUNTLO and LED_COUNTHI registers so that the LED blinks at the normal rate instead of appearing solid. The values now match those used on T6 adapters.
- Bug #47295: NC-SI to port channel mapping is not one-to-one in LB2 mode. The NCSI_CH2_SADDR_HIGH/LOW register pair is now used for port 1 in LB2 mode. In LB0 and LB1 modes, the mapping remains one-to-one.
- NC-SI channel reset handler added.
- Bug #47302: Broadcast and unicast forwarding is now enabled only when channel Tx is enabled.
- Bug #47341: MatchBoth bits are no longer set in VLAN mode 2; they are set only in VLAN mode 1. The Get Parameter response now returns the current VLAN mode.
- Bug #47287
    - Fixed an issue where the firmware could get stuck in an infinite loop reading the next pages if the PHY stalled during auto-negotiation (AN). The loop now exits if the PHY reports an error, and an upper limit has been placed on the number of iterations.
    - Partial Fix: Fixed an issue where an ACK/NAK received on a closed RoCEv2 connection caused the peer to crash.
- Bug #47334: ARM: NVMeLength is now filled in units of 1 KB.
- Bug #47323 Related Fix: Fixed a potential host kernel crash when printing firmware device log messages that contain %s format specifiers. Malformed strings or %s usage in the firmware configuration file are now sanitized, and %s is replaced with _.
- Bug #47340: Fixed NC-SI VLAN handling. The MPS treats a single VLAN header on BMC packets as an inner VLAN header, which caused the VLAN match to fail for 802.1Q packets. BMC_VLAN_SEL is now set to 1 so that VLAN matching succeeds and the packets reach the BMC.
- Bug #46877: Updated the PHY firmware to version 0.5.0, which includes a link training fix for NRZ 25G and 100G speeds.
- Bug #47018: If a CMIS module does not support the capability required by the port type, the port capability now defaults to the module's default capability. This helps with spider configurations when a CMIS-compliant DAC does not advertise the spider configuration in its application list.

- Bug #47322: Fixed an issue where function level reset (FLR) on PF4 hung because the FLR timer was not started when the chip was initialized in firmware wire mode or NC-SI mode. The firmware now keeps the FLR timer running at all times.

4. OptionROM Changelog

- OptionROM version is updated from 3.0.0.10 to 3.0.0.13.
- Bug #46938: Updated copyright for both legacy and uefi.
- Bug #46923: Fixed an issue where garbage values appeared when entering adapter BIOS port settings.
- Bug #47126: Fixed an issue in Legacy mode where the S71400 single-port network card incorrectly displayed two ports in the boot manager.
- Bug #47127: Updated the HII page print to T7 instead of T5/T6/T7. Also updated Chelsio banner in Legacy.
- Bug #47281: Fixed an 8-10 second delay on first device access in the OptionROM, seen on BIOSes that defer initialization until the device is accessed, by removing two fixed delays in the first UNDI Initialize.
- Bug #45569: Increased the receive free list from 16 to 48 buffers to prevent packet drops under load, cutting retransmissions and speeding up PXE/network boot downloads (ported from the T6 bootrom).

5. Fixed Issues

This section lists the fixed issues in this release of Chelsio Unified Wire for Linux.

5.1. RoCEv2

Issue ID	Description/Workaround
46436	**Description**: "EDC0: 1 correctable ECC data error(s)" errors seen while running NVME ROCE traffic.

5.2. iSCSI PDU Offload

Issue ID	Description/Workaround
46054	**Description**: iSCSI PDU Offload is not supported on linux kernel 6.18.x.

5.3. SPDK (user space) iSCSI PDU Offload

Issue ID	Description/Workaround
47094	**Description**: SPDK iSCSI target fails to create RXQ due to memory allocation failure when started with multiple cores.
47121	**Description**: Cannot create IPV6 iSCSI target portal with SPDK 26.01.

5.4. Unified Boot Option ROM

Issue ID	Description/Workaround
46923	**Description:** Garbage values are seen when entering into the adapter BIOS port settings.
47113	Description: The cxgbtool fails to program OptionROMs larger than 512KB.
47126	**Description:** S71400 shows 2 ports instead of 1 port
47127	**Description:** T7 OptionROM banner shows T5/T6/T7, even though it supports only T7

5.5. QUIC TX Offload

Issue ID	Description/Workaround
46880	**Description:** 'Tx ring 0 full while queue awake!' message floods dmesg when QUIC GSO is disabled.

6. Known Issues

This section lists the known issues in this release of Chelsio Unified Wire for Linux.

6.1. Network (NIC/TOE)

Issue ID	Description/Workaround
44910	**Description**: BG drops seen while running traffic with pause disabled.
45440	**Description**: Fail to link up when the first port brought up has DCBX enabled.
45559	**Description**: An incorrect or garbage value is observed for *rx_frames_64* in the ethtool stats output.
45592	**Description**: rx_fcs_errors and rx_jabber errors seen during traffic intermittently.
45594	**Description**: Pause frames received on Port1 are incorrectly populated under Port0 stats.
45605	**Description**: 2x200G Tx bandwidth is not going beyond 329 Gbps.
45645	**Description**: Offload bonding does not transfer traffic from the active slave to the backup slave upon port down.
45697	**Description:** Adapter fails to establish link and devlog reports "hw register operation not completing".
45800	**Description:** STID count is less on T7 as compared to T6.
45824	**Description**: Host machine hibernation is not supported.
45843	**Description**: TX dual port performance does not reach line rate with 1500 MTU
45845	**Description**: On the S series of adapters TX performance does not reach line rate at particular MTU values
45889	**Description**: Filtering: Ethertype 0x88a8(QinQ) and 0x9100 (QinQ) filters are not honored if the rule is configured with IPv6 protocol type.

45890	**Description**: [RHEL 10]: Loading the **t4_tom driver** results in a kernel panic when the adapter is placed in a PCIe Gen5 slot.
	Workaround:
	1. Disable **ibt**.
	`[root@host ~]# grubby --update-kernel=<kernel path> --args="ibt=off"`
	2. Reboot the system.
	`[root@host ~]# reboot`
	3. Load the **t4_tom** module.
	`[root@host ~]# modprobe t4_tom`

45918	**Description**: 4 port adapters do not come up at PCIe x16 link speed on AMD machine when placed in PCIe5.0 x16 slot.
45923	**Description**: Port speed of 1G not supported with the 10G/25G/50G modules.
45940	**Description**: "Attempt to update new Transceiver Module settings failed" is seen in dmesg when DAC cables are used.

Issue ID	Description/Workaround
45948	**Description:** The ethtool does not report all supported link modes.
46002	**Description:** Driver load on PCIe Gen 3 is not supported.
46034/46082	**Description:** "Device did not become ready for access, whoami = 0xffffffff" message or “can't ioremap BAR 0: [??? 0x00000000 flags 0x0]" error observed intermittently in dmesg while loading driver on AMD based machines.
46037	**Description:** Intermittent IO stall seen during traffic due to link quality.

46047	**Description:** Flashing of Init/VPD files gets stuck when a jumper is connected after the system stays idle for some time.
	Workaround:
	
	Run below script and reattempt flashing of init/VPD:
	
	`[root@host ~]# PCIE_BUS=<bus_id>`
	`[root@host ~]# setpci -s $PCIE_BUS COMMAND`
	`[root@host ~]# setpci -s $PCIE_BUS COMMAND=$(printf "%x" $((0x`setpci -s $PCIE_BUS COMMAND` | 0x2)))`
	`[root@host ~]# cxgbtool /sys/bus/pci/devices/<bus_id>/ reg 0x05720=0x0`
	`[root@host ~]# setpci -s $PCIE_BUS COMMAND`
	
	Example –
	`[root@host ~]# PCIE_BUS=c7:00.0`
	`[root@host ~]# setpci -s $PCIE_BUS COMMAND`
	`[root@host ~]# setpci -s $PCIE_BUS COMMAND=$(printf "%x" $((0x`setpci -s $PCIE_BUS COMMAND` | 0x2)))`
	`[root@host ~]# cxgbtool /sys/bus/pci/devices/0000\:c7\:00.0/ reg 0x05720=0x0`
	`[root@host ~]# setpci -s $PCIE_BUS COMMAND`

46078	**Description:** 400G speed with FS.com optics is not supported on S71400 link.
46111	**Description:** [cxgbtool] Firmware flashing via cxgbtool blocks SSH access until completion.
46127	**Description:** Network offload transmit traffic is not supported on 6.12.x kernel if kernel is compiled on RHEL 9.6 on AMD setup with iommu enabled.
46134	**Description:** Data corruption seen while running TOE traffic.
46246	**Description:** One of the adapters fails to initialize when multiple T7 adapters are placed in the system. **Workaround:** Known HW issue with respect to farthest PCI slot. Based on the motherboard schematics (refer below link), slot 1 and 3 are the farthest slots from the corresponding CPU sockets. Slots 2 and 4 are the closest ones where we do not see the failure. Refer: https://www.pugetsystems.com/parts/Motherboard/Gigabyte-MZ73-LM0-Rev-2-0-15236/ https://download.gigabyte.com/FileList/DataSheet/MZ73-LM0_datasheet_v2.0.pdf?v=238f7cfa14aa26cc84d567005d1e7b39
46257	**Description:** Data corruption is seen while running TOE DDP traffic with IOMMU enabled.
46341	**Description:** Link flap is seen when 50G optics are connected using QSA modules.

Issue ID	Description/Workaround
46363	**Description:** SGE stuck observed intermittently when T72200-FH is placed in a PCI-e Gen-3 machine.
47028	**Description:** Ping failure is observed with UDP Bi-directional traffic.
47136	**Description:** On the T7450, cxgbtool clearstats does not clear the statistics on Port 1 and Port 3.
47180	**Description:** IPv6 TID usage is different in memory and memfree modes.
47212	**Description:** The T7 IPv6 CLIP table is limited to 320 entries.
47286	**Description:** Data corruption is seen while running TOE traffic. This is a regression.
47342	**Description:** STIDs, ATIDs and TIDs remain stuck and active, and open connections remain in SYN-SENT, after the iperf3 clients and servers are killed. This is a regression.

6.2. NC-SI

Issue ID	Description/Workaround
47182	**Description**: A mailbox timeout occurs when unloading the cxgb4 driver after a firmware flash.
47216	**Description**: Parity errors are observed on the NC-SI interface.
47246	**Description**: Pass-through statistics counters are not reset when they are read again.
47248	**Description**: The transmit and receive packet counts under NC-SI Statistics show 0.
47253	**Description**: Channel commands are accepted while the channel is still in the Initial state.
47260	**Description:** The Thermal Shutdown Event AEN is not supported, even though the Thermal Shutdown capability is advertised.
47261	**Description**: Link Status Change AENs are not sent.
47263	**Description**: ARP broadcast packets are not forwarded to the BMC.
47266	**Description**: UCASTHASHEN and MCASTHASHEN cannot be set per channel. Per-channel support is required.
47295	**Description**: ARP packets do not reach the peer when Port 1 is used for NC-SI.
47300	**Description**: DPDK Pktgen initialization fails with the NC-SI VPD change.
47301	**Description**: Packet drops are seen for BMC receive traffic.

Issue ID	Description/Workaround
47302	**Description**: Port 1 forwards unicast and broadcast ARP packets to the BMC even when it is not the selected port.
47303	**Description**: Channel-level commands are accepted for invalid channel IDs.
47304	**Description**: Package-level commands are accepted even when the channel ID is not 1F.
47305	**Description**: Channel configuration Disable commands do not take effect.
47306	**Description**: An MTU larger than 1500 bytes cannot be set on the BMC interface.
47307	**Description**: An MTU issue is seen on the host interface.
47308	**Description**: The BMC is not notified when the host reboots.
47310	**Description**: A board change is required to connect the NC-SI package ID bits.
47319	**Description**: Broadcast ARP from the peer does not reach the BMC when the interface is brought up on the host first.
47322	**Description**: With vfio-pci, DPDK testpmd initialization hangs with the NC-SI VPD changes.
47323	**Description**: A kernel crash occurs after unloading cxgb4 with SR-IOV enabled and the NC-SI VPD changes applied.
47325	**Description**: Firmware Wire Mode packet forwarding fails with the NC-SI VPD change.
47337	**Description**: Set Link parameters are ignored.
47338	**Description**: Host Driver Operational Status is reported incorrectly.
47339	**Description**: Reserved bits are set in the Get Link Status response.
47340	**Description**: The Set VLAN Filter command does not work.
47341	**Description**: The T7 adapter stops forwarding packets to the BMC after the Enable VLAN command is run.

6.3. vNIC

Issue ID	Description/Workaround
46529	**Description**: VF traffic mapping on T7450 adapters is incorrect—VFs created on PF2 and PF3 are mapped to the wrong ports.
46809	**Description**: [T72200-FH]: Ping failure was observed while running traffic between VMs with attached VFs, as well as between the VMs and the peer system.

Issue ID	Description/Workaround
47344	**Description**: A mailbox timeout ("Command 0x12 in mailbox timed out") occurs during VF bring-up after the cxgb4vf driver is reloaded.

6.4. iWARP

Issue ID	Description/Workaround
46432	**Description**: Trivial interrupt messages are observed in dmesg with RDMA or PXE traffic.
46547	**Description**: netstat/ethtool RX counters do not increment while running rping/iperf over IPv6.
46581	**Description**: iWARP RDMA file i/o error with the latest Chelsio cards @ 25G.
46992	**Description**: Interrupt messages flood in dmesg while running iwarp traffic.
47069	**Description**: EDC1 errors and SGE stall observed on initiator during IOzone traffic, leading to RDMA device failure.
47072	**Description**: NVMe-oF RDMA discovery fails when iw_cxgb4 is loaded with markers_enabled=1.
47176	**Description**: I/O errors are observed during iozone traffic when the switch port links are repeatedly toggled (shut and no-shut).
47191	**Description**: On the T72200, the "tp_stats" RDMA counters map incorrectly. Traffic on physical Port 0 updates the statistics for both Port 0 and Port 1, and traffic on physical Port 1 updates the statistics for both Port 2 and Port 3.
47226	**Description**: On the T72200-FH with the custom kernel, discovery and connect fail when VLAN priority is enabled with iWARP/RoCE.

6.5. RoCEv2

Issue ID	Description/Workaround
46057	**Description**: "rdma statistic show" type of stats not available for RoCEv2.
46109/46115	**Description**: Certain rdma tools terminate abruptly with multiple connections.
46112	**Description**: Intermittent ping failure seen with NVME-RDMA initiator with multiple targets.
46116	**Description**: Reconnects seen with NVME-RDMA target.

Issue ID	Description/Workaround
46135	**Description**: Reconnects seen with NVME-RDMA target and third-party adapter as initiator.
46229	**Description**: mbw tool error outs intermittently with "cqe error status 19" with bidirectional read/write test or terminates abruptly.
46327	**Description**: iozone fails and ping fails with NFSoRDMA as a client with multiple connections (nconnect).
46482	**Description**: NAK_INVALID observed for valid PSN while running RoCE with drop.
46551	**Description:** [SPDK NVME-oF ROCE] I/O errors and reconnects observed while running iozone traffic.
47114	**Description**: The ibv_devinfo reports incorrect port state (PORT_ACTIVE) for RDMA device when the corresponding netdev interface link is down.
47016	**Description:** Ping failure seen with mbw traffic.
47194	**Description:** With the mbw client, the T7 adapter enters an error state with DMA map failures (in chrd_write_mem_dma_aligned) during concurrent tests.
47231	**Description:** On the T72200-FH with the custom kernel, the iSER RoCE target hits a panic while running iozone traffic overnight.
47243	**Description:** On the T72200-FH with the custom kernel, the kernel NVMe RDMA RoCE target hits a panic after one hour of traffic.
47250	**Description:** With the custom kernel, ping fails on a particular port, and "c4iw_ofld_send - device in error state - dropping" messages are seen after running iSER initiator traffic.
47256	**Description:** In a T7450-to-T7450 setup with a single port at 25G, the adapter goes to an error state (in rdma_roce_init) when running concurrent mbw write instances on that port.
47283	**Description:** On the T7 server, the write_w_imm test reports an immediate data mismatch: received 0x8008, expected 0x40.

6.6. NVMe-oF iWARP

Issue ID	Description/Workaround
43201	**Description**: IO errors seen while running iSCSI + iWARP + TOE traffic.
45183	**Description**: OpenMPI versions < 5.x are not supported.
45736	**Description**: A memory leak is observed sporadically.
45933	**Description**: Errors observed when iWARP and NVMe-RDMA target traffic are run together.
46020	**Description**: Only one queue is used during NVMe/RDMA Initiator traffic.

Issue ID	Description/Workaround
46077	**Description**: [MTU: 1500/9000]: Dual port NVMe iWARP target perf is not reaching line rate.
47078	**Description**: [RoCE] NVMe connection fails with NVMe RoCE target on “TOT sw repo”. **Workaround**: Enable IOMMU before proceeding.

6.7. NVMe-oF/TCP PDU Offload

Issue ID	Description/Workaround
44963	**Description**: An intermittent kernel panic is observed during the unload of driver following the cessation of PDU NVMe/TCP traffic.
45399	**Description**: The ‘enable_h2c_data_zcopy’ option is not supported.
45743	**Description**: Connections hang during negative header/digest error tests.
45755	**Description**: ISO counter not supported for Initiator.
46435	**Description**: Softlockup is observed intermittently.
46648	**Description**: Trace seen with cnvme_tcp initiator.
47137	**Description**: The error "I/O Cmd(0x1) @ LBA 40273, 1 blocks, I/O Error (sct 0x0 / sc 0x6) MORE DNR" is seen on the initiator while running fio traffic on null disks.
47140	**Description**: The message "got neg advise 35 on tid 17236" is seen while running fio traffic on 2 targets.
47149	**Description**: LRO continues to happen even when the parameter "cnvme_enable_lro" is set to false.
47271	**Description**: The messages "queue 22 tag 0x0 unexpected data" and "starting error recovery" are seen on the initiator when logging in to the target with a queue size greater than 513.
47279	**Description**: A flood of "cnvme_tcp: cnvme_get_ccid REG MR failed, data_len" messages is seen while running fio traffic with non-default read and write queues and queue size.

6.8. iSCSI PDU Offload

Issue ID	Description/Workaround
45519	**Description**: [T7 CXGBIT]: High Target and initiator CPU usage is seen with cxgbit when compared with cxgb4.
46070	**Description**: iSCSI PDU Offload target, dual port write numbers are not reaching line rate.
46110	**Description**: Multi-portal target discovery incorrectly assigns an invalid portal to one target, resulting in login connection timeouts.
46959	**Description**: Ping failure observed on one or more ports while running iSCSI/TOE traffic with IOMMU enabled.

6.9. SPDK (user space) NVMe/TCP PDU Offload

Issue ID	Description/Workaround
45702	**Description**: Reconnects were observed intermittently with heavy stress.
45812	**Description**: Initiator reports "cstor_cm.c:2483: _cstor_sock_disconnect: tid 11120, invalid state: aborting (6)" with stress.
46114	**Description**: Error messages seen on nvmf_tgt application.
46356	**Description**: SPDK version 26.01 is not supported. Only spdk version 24.05 is supported.
46512	**Description**: [MTU 9000]: "ctrlr.c: 827:nvmf_qpair_access_allowed: *ERROR*" observed while running fio traffic on nvme spdk lun.
46639	**Description**: Unable to start nvmf_tgt in non-offload mode, when using chspdk.
46700	**Description**: nvmf_tgt application crashes when querying nvmf_get_transports.
46762	**Description**: Trace seen while creating PDU SPDK NVMe target with >20 CPU's.
46564	**Description**: Nvme reconnect messages and "cstor: 0000:c7:00.4: cstor_cm.c: 1256: rx_data: tid 127 state qp_mode (5) status 0 - unexpected streaming data" messages seen while running iozone traffic.
46619	**Description**: [SPDK NVMe TCP PDU INITIATOR] I/O errors and 'Nvme reconnect' messages observed while running iozone traffic.
46710	**Description**: Stuck TIDs are seen if the nvmf_tgt application is terminated during traffic.
46785	**Description**: Ping failure seen while running dual-port SPDK NVMe/TCP traffic.
46901	**Description**: DMAR: [DMA Write NO_PASID] error occurs during cxgb4 unload after running the test.
47177	**Description**: [Memfree] On the S72200, the message "src/cstor_uqp.c: 1096: cstor_post_send: QP is in error state" is seen while running iozone traffic with the SPDK NVMe/TCP PDU target.

Issue ID	Description/Workaround
47197	**Description**: [Memfree] On the S72200, the message "cstor_cm.c: 1124: disconnected_upcall: tid 66, invalid flag" is seen while running iozone traffic with a link toggle on the SPDK NVMe/TCP PDU target.

6.10. SPDK (user space) NVMe/TCP over Memfree TOE

Issue ID	Description/Workaround
46162	**Description**: Warning messages are observed on the initiator while running traffic.
46258	**Description:** Debug messages are observed on the initiator while connecting to the target.
46259/46268	**Description:** Harmless "Nvme reconnect" messages are observed while running traffic.

6.11. SPDK (user space) iSCSI PDU Offload

Issue ID	Description/Workaround
45894	**Description**: Ping failures and I/O errors are seen intermittently when traffic is run for longer duration.
46606	**Description**: Adapter crash is seen while running iozone traffic for 2 hours.
46636	**Description**: Ping failure and I/O errors were seen while running iozone traffic for 3 hours.
46820	**Description**: I/O errors observed while formatting LUNs when interfaces are configured with MTU 9000.
47117	**Description**: Adapter goes into a bad state while running I/O, resulting in ping failure.
47122	**Description**: Multiple "disconnected_upcall: invalid flag" messages are reported for different TIDs during a link toggle with I/O running.
47239	**Description**: With SPDK v26.01 (from git), connection errors are seen on the initiator while logging in to the target.
47289	**Description**: cstor reports ARP failure messages during IPv6 iSCSI discovery and login when the target interface has no IPv6 link-local address.
47155	**Description**: [Memfree] The SPDK iSCSI target reports repeated SCSI target resets and a segmentation fault, and the peer initiator experiences iSCSI connection timeouts and reconnects.

Issue ID	Description/Workaround
47164	**Description**: [Memfree] iSCSI target discovery fails with a login response timeout when the MTU is set to 88.
47333	**Description**: [Memfree] A "CIM TIMER0" interrupt followed by a firmware crash occurs on a Port 1 link toggle during iozone traffic.

6.12. SPDK (user space) NVMe/RoCEv2

Issue ID	Description/Workaround
47183	**Description**: On the T72200-FH with a custom kernel, the message "cxgb4 0000:17:00.4: device IRD resources exhausted" is seen and traffic stops with the SPDK NVMe target.
47190	**Description:** Reconnects are observed while running fio traffic.
47200	**Description:** Data corruption is seen with iozone traffic.
47247	**Description:** LUNs get disconnected when the MTU is downgraded from 9000 to 1500 during fio traffic.
47297	**Description:** Reconnects and fatal errors are observed while running iozone traffic.

6.13. SPDK (user space) iSCSI over Memfree TOE (Target)

Issue ID	Description/Workaround
46168	**Description**: Trivial "_scsi_lun_execute_mgmt_task: *NOTICE*: Bdev scsi reset on target reset" messages are observed while running iozone traffic.
46163	**Description:** Warning messages observed during iSCSI discovery.

46349	**Description:** Ping failure observed with traffic on linux-6.18.16.
	
	Workaround:
	Enabled iommu as shown below, reboot the host and run traffic again:
	
	`[root@host~]# grubby --args "iommu=on intel_iommu=on" --update-kernel /boot/vmlinuz-6.18.16`
	`[root@host~]# reboot`

46364	**Description:** Link toggle while running traffic is not supported.

6.14. Crypto Offload

Issue ID	Description/Workaround
45342	**Description**: ccm not supported in user-mode.
45344	**Description**: NULL encryption and AES-GMAC authentication not supported.
45372	**Description:** UDP receive tests over IPsec tunnels configured via ip xfrm results in drop counters increment.
45421	**Description**: IPsec tunnel creation on inactive interfaces are not supported using ip xfrm.
45465	**Description**: GRO, TSO, and checksum counters are not supported for ESP packets.
45467	**Description**: Connection errors are seen with the cxgb4i initiator.
46027	**Description**: Bandwidth impact observed due to ESP checksum–segmentation dependency.
46048	**Description**: Single port inline ipsec does not reach line rate with MTU value of 1500.
46394	**Description**: Per-Port IPsec and TOE-TLS counters incorrectly increment across multiple ports.
45820	**Description:** Kernel panic is observed with wrk application traffic if openssl 3.5.4 or openssl 3.6.0 is used.
46274	**Description:** Traces observed during OpenSSL traffic followed by ping failure.
46807	**Description**: [RHEL9.8 Outbox] Kernel panic triggered by libkcapi asynchronous cipher tests.

6.15. QUIC TX Offload

Issue ID	Description/Workaround
46846	**Description**: Connections time out while running QUIC offload traffic.
46854	**Description**: Stream mode is currently not supported.
46882	**Description:** Long-duration QUIC offload testing fails.
46895	**Description:** Long-duration QUIC offload testing fails.
46922	**Description:** http3_stream_buffer_size above 255 KB is not supported.
46949	**Description:** IPv6 connections are not supported when QUIC offload is enabled.
46971	**Description:** TLS_CHACHA20_POLY1305_SHA256 or TLS_AES_128_CCM_SHA256 TLS v1.3 ciphers are not supported.
46981	**Description:** QUIC offload is currently not supported on multiple adapters.
46987	**Description:** Connection does not resume after toggling server link.

Issue ID	Description/Workaround
46998	**Description:** Connection stalls and times out, when key update is initiated.
46999	**Description:** Connections fail when quic_bpf is on in nginx.conf.
47007	**Description:** Kernel panic seen while trying to connect over vLAN interface.
47010	**Description:** Stuck connections seen, if nginx server is stopped during IO.
47012	**Description:** Ping failure seen on one of the ports, while running traffic with packet drop.
47027	**Description:** Some connections fail to establish when quic_retry is on in nginx.conf.

6.16 Inline IPSec

Issue ID	Description/Workaround
45332	**Description**: [MTU 1500]: ch_ipsec counters do not increment for udp payload size as 1419.
46582	**Description**: Ping failure seen while running iperf3 udp traffic over ipsec.
47068	**Description**: Reconnects observed with traffic; target reports high value for "NEG_ADV_RCVD".
47192	**Description**: On the T72200, the "tp_stats" IPSec counters map incorrectly. Traffic on physical Port 0 updates the statistics for both Port 0 and Port 1, and traffic on physical Port 1 updates the statistics for both Port 2 and Port 3.
47214	**Description**: iSCSI discovery over IPv6 fails when an IPSec tunnel is active.
47228	**Description**: A fatal adapter error occurs on Inline IPSec tunnel teardown after sustained Uwire traffic (IPSec-iSCSI + NIC + iWARP).
47288	**Description**: A soft lockup / RCU stall occurs when establishing the 513th Inline IPSec tunnel.

6.17 iSER

Issue ID	Description/Workaround
47181	**Description**: The message "unimplemented page/subpage: 0x0a/0x05" is seen continuously, and fio traffic fails for iSER.

6.18 UDP Offload

Issue ID	Description/Workaround
45759	**Description**: UOTIDS stuck issue observed and connection loss occurred while running UDP_SO traffic in a loop without pacing rules.

6.19 Bonding

Issue ID	Description/Workaround
47057	**Description**: The **unregister_netdevice** messages seen while unloading the bonding driver.
47058	**Description**: Intermittent TIDs stuck observed during bonding failover testing.
47059	**Description**: Active connection on port0 becomes dependent on port1 after bonding failover.

6.20. Performance

Issue ID	Description/Workaround
45852	**Description**: Transmit (TX) and Receive (RX) throughput is lower when using small I/O sizes.
45852/45957	**Description**: Improvement needed for iSCSI PDU Offload target single/dual port bidi numbers.
46029	**Description**: Read performance is less for lower IO sizes compared with write.

6.21 Filtering

Issue ID	Description/Workaround
46624	**Description**: [MTU 9000]: Throughput drop observed after mapping connections to specific TX queues.
46797	**Description**: [tp_loopback]: Bidirectional port switching (P0→P1 and P1→P0) does not reach line rate.
46891	**Description**: dmesg is flooded with PL_INT_CAUSE: CIM interrupt messages after filter rule configuration.
46955	**Description**: Interrupt handler messages are seen during driver unload when hash filters exist.

6.22. Traffic Management

Issue ID	Description/Workaround
43357	**Description**: UDP throughput drop observed when rate limit is configured.
45657	**Description**: Throughput drop observed with flow-based TM as the number of connections increases.
46625	**Description**: TM sched-class rate configuration on T7 adapter restricts max-rate to 100000000, preventing configuration above 100Gbps.
46952	**Description**: Ping failure observed when starting traffic.
46957	**Description**: TID gets stuck during flow-based Traffic Management.
47073	**Description**: Unable to configure the 16th TM class (class number 15).

6.23. Unified Boot Option ROM

Issue ID	Description/Workaround
45802	**Description**: iSCSI is not supported.
46432	**Description**: Trivial interrupt messages are observed in dmesg with RDMA or PXE traffic.
46433	**Description:** Harmless interrupt messages observed in dmesg during debug log collection.
47085	**Description:** HII shows 4 port for 2 port adapter T72200.
47326	**Description**: Unable to do Legacy PXE boot when both T7 and T6 are present in the system.

6.24. Installer

Issue ID	Description/Workaround
46160	**Description:** cxgb4i (iSCSI PDU Offload Initiator driver) fails to compile on Rocky10.0 with imprecise kernel source. **Workaround**: Compilation must be attempted with KSRC and KOBJ options with the exact kernel source version. Follow the step below: 1. Download the exact Kernel source matching the kernel version: `[root@host ~]# make KSRC=/<path_to_kernel_source_directory>/ KOBJ=/lib/modules/<kernel_version>/build/`
46420	**Description**: SPDK (user space) tool binaries (nvmf_tgt and iscsi_tgt) do not get installed with RPM package.

6.25. Bring-up/PCIe

Issue ID	Description/Workaround
47017	**Description:** T72200 adapter comes up as Gen5 x8 instead of Gen5 x16 on Slot 3 (near CPU) on a specific AMD-based machine.
47161	**Description:** Intermittent PCIe link speed degradation is observed on T7 adapters (T72200-FH, S71400 and T7450) when multiple adapters are installed in the system.
47165	**Description:** An SGE stuck condition is seen when loading the driver on the T72200-FH.

6.26. Link

Issue ID	Description/Workaround
47023	**Description:** Link fails to come up on the S71400 with the VPD file "s71400_vpd_mfg_spider200.txt" flashed.
47033	**Description:** Intermittent Link flap is observed on one of the port during traffic when using 40G Optical Modules.
47147	**Description:** Link flap is observed on the T72200-FH with 200G PAM4 optics when connected to a switch. This is a regression.
47158	**Description:** On the S71400, the link intermittently fails to come up in a back-to-back setup with SM 400G-LR PAM4 optics.
47264	**Description:** Link flap is observed on one of the ports of the T72200-FH/T72200 with 200G PAM4 optics, when connected to a switch and in a back-to-back setup.
47274	**Description:** On the T72200-FH/T72200, the 200G link fails to come up when connected back-to-back (B2B).
47275	**Description:** On the T72200/T72200-FH, a 200G link comes up on a 100G DAC port in a back-to-back setup that mixes 100G and 200G DAC cables.
47299	**Description:** On the S71400, the link intermittently fails to come up in a back-to-back setup with PAM4 CR8 (400G) DAC cables.
47324	**Description:** On the T72200, the LED stays solid and does not blink while network traffic is running.
47331	**Description:** The T7 adapter reports link up when a 1G RJ-45 module is connected without a cable.

6.27. Unified Wire

Issue ID	Description/Workaround
47173	**Description:** The message "nvmet_rdma: received IB QP event: QP access error (3)" is seen and leads to a target machine panic while running NVMe TCP and NVMe iWARP traffic.
47201	**Description:** SOP-EOP mismatch and interrupt messages are observed with NVMe/RoCEv2 and NIC traffic inside Inline IPSec tunnels on the T72200.
47215	**Description:** On the T72200-FH with the custom kernel, the system runs out of memory while running SPDK NVMe target and NIC traffic.

6.28. General

Issue ID	Description/Workaround
	Description: The latest versions of the LTS kernels (6.18.55, 6.12.112, 6.6.158 and Ubuntu 6.8.0-146) do not work with this release package.