

=====

R E L E A S E N O T E S

=====

QLogic qedentv VMware ESX Driver for FastLinQ QL45xxx and QL41xxx controllers

Copyright (c) 2007-2015 QLogic Corporation
All rights reserved

ESXi 6.0 : Version 3.40.9.0 (Feb 5, 2020)
ESXi 6.5 : Version 3.40.9.0 (Feb 5, 2020)
ESXi 6.7 : Version 3.40.9.0 (Feb 5, 2020)
ESXi 7.0 : Version 3.40.9.0 (Feb 5, 2020)
Internal FW 8.50.12.0
Fixes:

Enhancement:

1. Updating Driver version as ecore is updated.

ESXi 6.0 : Version 3.40.8.0 (Jan 27, 2020)
ESXi 6.5 : Version 3.40.8.0 (Jan 27, 2020)
ESXi 6.7 : Version 3.40.8.0 (Jan 27, 2020)
ESXi 7.0 : Version 3.40.8.0 (Jan 27, 2020)
Internal FW 8.50.12.0
Fixes:

1. Cont00108033: PSOD - Usage error in dlmalloc - eeprom reset in SF mode.

Change: Add workaround to allocate the db_entry heap in qedentv driver context instead of qedrntv to avoid heap access violation.

Relevance: RoCE.

ESXi 6.0 : Version 3.40.6.0 (Jan 14, 2020)
ESXi 6.5 : Version 3.40.6.0 (Jan 14, 2020)
ESXi 6.7 : Version 3.40.6.0 (Jan 14, 2020)
ESXi 7.0 : Version 3.40.6.0 (Jan 14, 2020)
Internal FW 8.50.12.0
Fixes:

1. Cont00107826: PSOD while trigger EDDC_EngineReset command.

Change: Abort the recovery when there are failures during recovery and leave the device in failed state. Ensure that there is no crash and fail driver unload gracefully when device is in failed state. WOL could be affected when in failed state.

Relevance: Error recovery, WOL.

2. Cont00107955 - E4-FCOE-DDV-EILoading fails with PSOD.

Change: Handle the Heap allocation failure for sfp_data_buf_A0 and sfp_data_buf_A0 buffers. Add error handling and protection in qedentv_cache_sfp_data() as well.

Relevance: Error handling, SFP callbacks.

3. Cont00107977: ESX 7.0 PSOD - Corruption in dlmalloc - RDMADetachDevice

Change: In recovery handler, add temporary workaround to bring down the rdma & nic device (skip resetting device) and abort the recovery for NPAR+RDMA config because of memory corruption in roce driver.

Relevance: Error recovery in NPAR+RDMA config.

ESXi 6.0 : Version 3.40.3.0 (Dec 11, 2019)

```

70 ESXi 6.5 : Version 3.40.3.0 (Dec 11, 2019)
71 ESXi 6.7 : Version 3.40.3.0 (Dec 11, 2019)
72 ESXi 7.0 : Version 3.40.3.0 (Dec 11, 2019)
73 Internal FW 8.50.10.0
74 Fixes:
75 -----
76
77 1. Cont00107657 - ESXi7.0-E4+SRIOV: Max VFs supported
78    number got changed due to VF L2 queue limitation.
79
80    Change: Explicitly set num_vf_cnqs to 1 to disable
81          VF RDMA
82
83    Relevance: SRIOV
84
85 Enhancements:
86 -----
87 1. Add support to allow 9190 MTU from ESXi 7.0 onwards.
88
89 ESXi 6.0 : Version 3.40.1.0 (Nov 29, 2019)
90 ESXi 6.5 : Version 3.40.1.0 (Nov 29, 2019)
91 ESXi 6.7 : Version 3.40.1.0 (Nov 29, 2019)
92 ESXi 7.0 : Version 3.40.1.0 (Nov 29, 2019)
93 Internal FW 8.50.10.0
94 Fixes:
95 -----
96
97 1. ESXi 7.0 onwards, disable RSS completely when multi_rss = 0.
98    On ESXi 6.7, when multi_rss = 0 driver falls back to legacy RSS.
99 2. Change queueGetStats callback support to ESXi 7.0 onwards.
100 3. Change vmk_UplinkDCBSetCfg support to ESXi 7.0 onwards.
101
102 ESXi 6.0 : Version 3.40.0.0 (Nov 21, 2019)
103 ESXi 6.5 : Version 3.40.0.0 (Nov 21, 2019)
104 ESXi 6.7 : Version 3.40.0.0 (Nov 21, 2019)
105 ESXi 7.0 : Version 3.40.0.0 (Nov 21, 2019)
106 Internal FW 8.42.4.0
107 Fixes:
108 -----
109
110 1. Cont00107258 - ESX70 PSOD when running init port
111    toggle test with iSCSI traffic
112
113    Change: Introduce an additional Yield to let any
114          pending execution complete before returning timeout.
115
116    Relevance: NIC + iSCSI
117
118 2. Update driver version to 3.40.x.x to sync with VMware requirements.
119
120 Enhancements:
121 -----
122 1. Changes to support PVRDMA namespaces implementation in RDMA driver.
123
124 ESXi 6.0 : Version 3.12.18.0 (Nov 11, 2019)
125 ESXi 6.5 : Version 3.12.18.0 (Nov 11, 2019)
126 ESXi 6.7 : Version 3.12.18.0 (Nov 11, 2019)
127 ESXi 7.0 : Version 3.12.18.0 (Nov 11, 2019)
128 Internal FW 8.42.3.0
129 Fixes:
130 -----
131
132 1. Remove usage of OLD RSS APIs from ESXi 6.7 onwards.
133 2. Disable RSS completely when multi_rss = 0.
134 3. Add queueGetStats callback from ESXi 6.7 onwards.
135 4. Cont00107369: Max VFs support failing for Quad port adapter
136
137    Change: Reduce the number of VFs in case requested VF count is
138          more than VPORTs available after consuming for PF.

```

```

139
140     Relevance: SRIOV
141 5. Cont00107504: ESX iSCSI: Unable to discover LUNs
142
143     Change: Set ilt_page_size as 0x6 to match with storage drivers.
144
145     Relevance: iSCSI
146
147 ESXi 6.0 : Version 3.12.17.0 (Oct 18, 2019)
148 ESXi 6.5 : Version 3.12.17.0 (Oct 18, 2019)
149 ESXi 6.7 : Version 3.12.17.0 (Oct 18, 2019)
150 ESXi 7.0 : Version 3.12.17.0 (Oct 18, 2019)
151 Internal FW 8.42.3.0
152 Enhancement:
153 -----
154 1. Updating driver version as ecore is updated.
155
156 ESXi 6.0 : Version 3.12.16.0 (Oct 02, 2019)
157 ESXi 6.5 : Version 3.12.16.0 (Oct 02, 2019)
158 ESXi 6.7 : Version 3.12.16.0 (Oct 02, 2019)
159 ESXi 7.0 : Version 3.12.16.0 (Oct 02, 2019)
160 Internal FW 8.42.1.0
161 Fixes:
162 -----
163
164 1. Cont00106840: Geneve hardware offload performs poorly in comparison to software
offload.
165
166     Change: Set BD flags to compute outer checksum for encapsulated large packets.
167
168     Relevance: Tunneling.
169
170 2. Call ecore_iov_pci_enable_prolog() only once in the initial stage before all the
171     calls to ecore_iov_init_hw_for_vf() and fix compilation error due to this API change.
172
173 3. Call qedentv_sriov_disable_vf() only when max_vfs in non-zero.
174
175 Enhancements:-
176 -----
177 1. Collect different set of fw debug data in different scenarios.
178 2. Add LRO|RSS feature support from ESXi 7.0 onwards (fixed case 00057352 and 00057663).
179 3. Refactor qedentv_queue_alloc_with_attr() function to parse numAttr completely.
180 4. Fix DefQ_RSS & NetQ_RSS co-existence issue.
181 5. Fix num_rss_eng calculation count during attach when DRSS is disabled.
182 6. Add missing check while refactoring qedentv_queue_alloc_with_attr().
183
184 ESXi 6.0 : Version 3.12.14.0 (Aug 26, 2019)
185 ESXi 6.5 : Version 3.12.14.0 (Aug 26, 2019)
186 ESXi 6.7 : Version 3.12.14.0 (Aug 26, 2019)
187 ESXi 7.0 : Version 3.12.14.0 (Aug 26, 2019)
188 Internal FW 8.42.1.0
189 Fixes:
190 -----
191 1. Cont00106928: PSOD observed after cable disconnect and reconnect
192     from adapter side while running NIC traffic.
193
194     Change: Linkdump buffer was exhausting.
195     Increased the buffer size to 4k from 2k.
196
197 2. Cont00106438: Incorrect behavior of NIC + RDMA setting.
198
199     Change: If driver calls ecore_hw_prepare() with personality set to ROCE,
200     it overwrites NVM setting and goes ahead with driver requested personality.
201     Add changes in driver to claim ROCE devices only if it is enabled in NVM.
202     If it is disabled in NVM and enable_roce=1 is set, reject the request and
203     log a warning.
204
205 Enhancement:-
206 -----

```

```

207 1. Added PHY Dump support similar to that of qediag.
208 2. Added userspace callback for ecore_phy_raw_read. Useful in linkdump.
209 3. Phydump is not supported on BB adapters. Added check to avoid collecting phydump.
210 4. Add support for setting port FEC mode values using esxcli added extension.
211     Possible values are 0(FEC_None), 1(FEC_Firecode), 2(FEC_RS), 3(FEC_Auto).
212
213 ESXi 6.0 : Version 3.12.12.0 (Aug 02, 2019)
214 ESXi 6.5 : Version 3.12.12.0 (Aug 02, 2019)
215 ESXi 6.7 : Version 3.12.12.0 (Aug 02, 2019)
216 ESXi 7.0 : Version 3.12.12.0 (Aug 02, 2019)
217 Internal FW 8.42.0.0
218 Fixes:
219 -----
220
221 1. DCPN 00055855: BlueScreen: ASSERT bora/vmkernel/net/uplink/pt.c:835
222
223     Change: Use vmk_PCISetVFptOpsFunc for VF's passthru ops from 7.0 onwards.
224
225     Relevance: SRIOV.
226
227 2. DCPN 00056369: VFs on a ceratin PF failed to get IPs from dhcp server.
228     DCPN 00056524: Failed at qedentv/ecore/ecore_dev.c:4748 -- VMK_ASSERT(!(1))
229
230     Change: Tx timeout is seen in VF driver. Call ecore_iov_pci_enable_prolog() and
231             ecore_iov_pci_disable_epilog() APIs before creating and after
232             deleting the VFs respectively.
233
234     Relevance: SRIOV.
235
236 Enhancement:
237 -----
238 1. Synced the debugfs code with the latest qed debugfs code.
239 2. Added EDDC Support. EDDC feature contain follwing enhancements.
240     Linkdump support as part of debug data collection using esxcli register dump.
241     Added Support to set MCP debug level on the go using esxcli eeprom write.
242     Added an API to add a specific string to AHS logs.
243
244 ESXi 6.0 : Version 3.12.11.0 (July 01, 2019)
245 ESXi 6.5 : Version 3.12.11.0 (July 01, 2019)
246 ESXi 6.7 : Version 3.12.11.0 (July 01, 2019)
247 ESXi 7.0 : Version 3.12.11.0 (July 01, 2019)
248 Internal FW 8.40.32.0
249 Fixes:
250 -----
251
252 1. Problem: GENEVE/VxLAN rx pkts drop with inner broadcast/multicast MAC.
253     Change: GENEVE/VxLAN rx pkts were dropped because VNI were not programmed.
254             FW added support for any_vni flag. Set any_vni when VxLAN/Geneve
255             filtering is enabled.
256
257     Relevance: Tunelling.
258
259 2. Problem: HW_VLAN_[RX, TX] cap gets disabled after uplink remove & scan operation.
260
261     Change: During remove driver clears udev->hw_vlan and as part of scan driver checks
262             for same udev->hw_vlan to register these caps. Since it was set to zero, it
263             doesn't register that led to this problem. The fix is to check for global
264             hw_vlan module param.
265
266     Relevance: All.
267
268 3. Cont00099485: Incorrect number queue allocation to the NIC partitions in SD mode.
269
270     Change: Change queues calulation logic to same as SI MF mode.
271
272     Relevance: MF mode.
273
274 4. Cont00100516: Link was incorrectly reported.
275

```

276 Change: Apart from changes in MFW, add changes to update OEM specific
277 driver state to MCP.
278
279 Relevance: OEM specific.
280
281 5. Cont00102508: Link speed can't be set to 50Gbps duplex full.
282
283 Change: Add code to handle forced 50G speed.
284
285 Relevance: 50G link speed.
286
287 6. Cont00100800: Link Speed is showing incorrect in nic info for 100G adapter.
288
289 Change: Driver stores the speed value in a vmk_uint16 variable which is not
290 enough to store 100G speed. To avoid backward compatibility issue,
291 add a new mgmt command to supply link speed.
292
293 Relevance: 100G.
294
295 7. Cont00102790: PSOD while collecting grcdump using esxcli utility.
296
297 Change: An osal was defined to 0 which was causing this panic. Defined
298 the osal to ecore_dbg_alloc_user_data().
299
300 Relevance: GrcDump.
301
302 8. Cont00102920: ESXi 6.7 crashes on boot up resulting in PSOD.
303 Cont00102689: ESXi 6.7 Server intermittently PSOD with qedentv_state_test.
304 Cont00102820: PSOD Observed after MBI Upgrade.
305
306 Change: OSAL_MFW_TLV_REQ MFW event reached to driver before it was ready
307 to be processed (i.e. workq_bv was not initialized). Add NULL pointer
308 check for 'workq_bv' and 'state_bv' before accessing them.
309
310 Relevance: All.
311
312 9. Problem: DeviceStateChange IOVP test failed on 100G.
313
314 Change: Driver was marking hidden queues of second hw engine to QUIESED state
315 unconditionally and then during load path when RX queues are started,
316 QUIESED state of hidden queues of second engines are not cleared and driver
317 was dropping the pkts. Add changes to clear the QUIESED state for secondary
318 queues of second hw_engine.
319
320 Relevance: 100G.
321
322 10. DCPN00050966: PSOD while running DDV_EIRandom test.
323
324 Change: Driver tried to access fp 32 which was out of bound and NULL pointer
325 dereference caused this crash. This is because driver didn't clear
326 rss_eng_id_bitmask when it failed to allocate the RSS RXQ. Clear the
327 bit when driver fails to alloc RSS RXQ.
328
329 Relevance: RXQ alloc error handling.
330
331 11. Problem: Record handlers are not included with GRC dump.
332
333 Change: Appropriately read the configured storm selections.
334
335 Relevance: GrcDump.
336
337 12. Cont00104057: ESX65 NIC IOVP scatterGather test fails.
338
339 Change: Fix regression introduced while fixing DeviceStateChange.
340
341 Relevance: L2 queues state.
342
343 13. Cont00105067: IPv6 testing discards packets with Hop limit = 0.
344

345 Change: Configure vport not to drop packets with ttl = 0 or Hop limit = 0.
346
347 Relevance: Rx processing for packets with ttl = 0.
348
349 14. Cont00105286: System crashed with PSOD after performing the NIC reset
350 followed by driver load unload multiple times in parallel.
351 Cont00104082: System crashes with PSOD while running Uplink reset using
352 vsish with RDMA devices clamied in the first iteration.
353
354 Change: Re-implement uplinkReset callback to reset only uplink device
355 instead of full engine reset. Notify RDMA device for link state changes.
356
357 Relevance: Uplink Reset with and without RDMA devices.
358
359 15. Cont00105339: System crashed with PSOD while running DDV test case in 6.7 FCOE IOVP.
360
361 Change: Add error handling for qed_dbg_init.
362
363 Relevance: Error handling.
364
365 16. Cont00105716 - NPAR-EP got PF0 link down with fiber optic 4x25.
366
367 Change: Driver failed to submit qedentv_advert_link_change work to helper
368 queue because it was full. Increase the maxRequests limit from 10
369 to 64 for the helper queue.
370
371 Relevance: All.
372
373 17. Cont00104598: After disabled NIC in ESXi6,the port state doesn't show "unlinked".
374
375 Change: Perfrom link reset during esxcli network nic down in SD mode.
376
377 Relevance: esxcli network nic down in SD mode.
378
379 18. Problem: Assert on BETA build in data path.
380
381 Change: Don't set MSS on pkts with only one segment.
382
383 Relevance: Data path.
384
385 19. DCPN 00054773: PSOD in qedentv_uplink_pause_get.
386
387 Change: Add protection not to access mcp_info when device is under reset.
388
389 Relevance: Get pause info when reset is underway.
390
391 20. Problem: NIC unload fails if the recovery is active.
392
393 Change: Ensure resource free is done during unload.
394
395 Relevance: Error recovery during module unload.
396
397 21. Problem: If NIC driver recovery fails, then NIC module unload causes PSOD.
398
399 Change: Avoid duplicate cleanup.
400
401 Relevance: Error recovery.
402
403 22. DCPN 00054772: PSOD in qedentv/ecore/ecore_spq.c:165 -- VMK_ASSERT.
404
405 Change: Unregister reboot handler in error handling.
406
407 Relevance: Error handling.
408
409 23. Cont00104683: VSAN Connectivity ESXi 6.7u1; Fails VSAN Health Check
410
411 Change: Acknowledge last consumer update before disabling interrupts.
412
413 Relevance: Netqueue add-remove.

```

414
415 24. DCPN 00051885: core/ecore_int.c:1692 -- VMK_ASSERT(!1)
416
417     Change: When DRSS is enabled but there is not enough SB resources, disable defq rss.
418
419     Relevance: DRSS.
420
421 Enhancement:
422 -----
423 1. Implement vmk_DeviceGetParamMaxVfs API to get number of VFs to be
424    configured on each PF for ESX6.7 and above.
425 2. Implemented additional SRIOV checks to avoid number of VFs getting
426    higher than number of VF queues available.
427 3. Integrate few minor changes from inbox driver.
428 4. Enhance support to collect full fw debug dump as part of esxcli network nic register
429    dump.
430 5. Integrate inbox changes to guard against redundant VF registration and error handling
431    in qedentv_dma_alloc.
432 6. Renabling the ANI VNI support in E4. Support is added from fw v8.40.19.0.
433 7. Removed the ecore_mcp_nvm_put_file_begin api. No longer supported in ecore. Was
434    commented out in past to fix the CI build issue.
435 8. Add support to upgrade the mbi via mfw using qllediag.
436 9. Added SFP asynchronous callback to notify user application on SFP state change
437    and callback to retrieve cached SFP EEPROM data.
438 10. Integrate inbox driver fixes in logical device registration.
439 11. Disable setting legacy INTA using module params ESXI 6.7 onwards.
440 12. Added two new OSAL OSAL_IOV_DB_REC_HANDLER & OSAL_IOV_BULLETIN_UPDATE and moved the
441    roce_edpm_mode
442    initialization to qedentv_ecore_probe from qedentv_slowpath_start as this paramter
443    is moved to ecore_hw_prepare_params
444    from ecore_rdma_pf_params.
445 13. Use ecore_mcp_set_bandwidth API to configure bandwidth.
446 14. Add support to get/set HW negotiated DCB config info with upper layers.
447 15. Implement OSAL_READ_ONCE, OSAL_NON_ATOMIC_SET_BIT and modify OSAL_SET_BIT,
448    OSAL_CLEAR_BIT, OSAL_FLIP_BIT as atomic operation.
449 16. Add support for error recovery.
450 17. Add support for RDMA recovery on error.
451 18. VMK_DMA_ENGINE_FLAGS_NONE has been deprecated in VMKAPI 2.6 onwards.
452    Replace it with VMK_DMA_ENGINE_FLAGS_COHERENT.
453 19. Per VMware's recommendation, limit the Tx completion budget to 128.
454 20. Two local variables defined with similar name (tx_compl and txq_compl).
455    qedentv_tx_int() calculates tx completion number using txq_compl, but
456    report the result by tx_compl which was wrong.
457
458 ESXi 6.0 : Version 3.9.17.0 (Apr 10, 2018)
459 ESXi 6.5 : Version 3.9.17.0 (Apr 10, 2018)
460 ESXi 6.7 : Version 3.9.17.0 (Apr 10, 2018)
461 Internal FW 8.33.14.0
462 Fixes:
463 -----
464 1. Cont00100064/Cont00099730: PSOD seen during fast reboot.
465
466     Change: Don't set PCI device state to D3Hot during remove.
467     This is known to be causing issues during subsequent
468     scan.
469
470     Relevance: Fast reboot.
471
472 2. Cont00100568: PSOD observed intermittently after rebooting the server.
473
474     Change: Don't set coalescing parameters if the queue was not started/ready.
475
476     Relevance: All.
477
478 3. Cont00100932 - IOVP TC Random Pkt Inject is failing due to vlan priority issue
479
480     Change: VLAN tag was set incorrectly in the BDs. Fix it.

```

480 Relevance: Packets with non-zero VLAN priority.
481
482 4. Cont00100531: ESX6.7 qedentv_ecore_nic_load Error in ecore_hw_init.
483
484 Change: Driver ran out of filters that resulted a negative value and
485 got assigned to an unsigned variable q_data->maxFilters. Thus,
486 driver tried to allocate significantly large amount of memory
487 which led to out of memory error on 0th PF. As a side effect
488 of this failure, rest of the PF ran it to hw_init failures.
489 The fix is to set filter count from available filters and guard
490 against invalid multi_rx_filters value.
491
492 Relevance: All.
493
494 5. Cont00100763: ESXi 6.7 NPAR: Rules counts exceeded as filters limit reached.
495
496 Change: Reduce the filter per netq to 2 for NPAR. When device max filters limit
497 reached, suppress the apply filter failure error and returns VMK_OK.
498
499 Relevance: NPAR, SRIOV over NPAR.
500
501 6. Cont00100758 - NoVM_DeviceStateChange test fails.
502
503 Change: Free up roce related data structures while unregistering the logical device.
504
505 Relevance: Device state change related tests.
506
507
508 ESXi 6.0 : Version 3.9.13.0 (Mar 16, 2018)
509 ESXi 6.5 : Version 3.9.13.0 (Mar 16, 2018)
510 ESXi 6.7 : Version 3.9.13.0 (Mar 16, 2018)
511 Internal FW 8.33.13.0
512 Fixes:
513 -----
514
515 1. Cont00099722: E4 multiRSS SRIOV over NPAR(16PF's) VFs are getting disabled on
516 first four PFs.
517
518 Change: Disable multi-rss for SRIOV over NPAR configuration and fix vport id
519 and rss engine id supplied to VFs.
520
521 Relevance: SR-IOV over NPAR.
522
523
524 ESXi 6.0 : Version 3.9.12.0 (Mar 08, 2018)
525 ESXi 6.5 : Version 3.9.12.0 (Mar 08, 2018)
526 ESXi 6.7 : Version 3.9.12.0 (Mar 08, 2018)
527 Internal FW 8.33.12.0
528 Fixes:
529 -----
530 1. Cont00098528: System crashed with PSOD after long run of
531 load unload script with Mix traffic (VLAN and Non Vlan)
532
533 Change: Added check to verify driver state before entertaining
534 VI Plugin callbacks.
535
536 Relevance: Driver callback execution by VI Plugin.
537
538 2. Cont00100074: Modifying max BW is not reflected in any tools.
539
540 Change: Implement OSAL_BW_UPDATE.
541
542 Relevance: BW update.
543
544 Enhancements:
545 -----
546 1. Add module parameter for npar_tx_switching.
547
548 ESXi 6.0 : Version 3.9.11.0 (Feb 20, 2018)

549 ESXi 6.5 : Version 3.9.11.0 (Feb 20, 2018)
550 ESXi 6.7 : Version 3.9.11.0 (Feb 20, 2018)
551 Internal FW 8.33.11.0
552 Fixes:
553 -----
554 1. Cont00098919: MultiRSS Got PSOD after running vmk traffic (6vmk on one PF).
555
556 Change: Driver ran out of CIDs because of hardcoded value QEDENTV_MAX_NUM_RXQ_100G
557 in driver. Use recommended method to get available CIDs.
558
559 Relevance: All.
560
561 2. Cont00099758: ESXCLI link up fail.
562
563 Change: When autoneg is not advertised for 40/100G, in esxcli link up callback speed
564 params comes
565 with fix speed and we don't support changing speed on these devices and
566 return error which
567 caused this. Fix it.
568
569 Relevance: Esxcli link/up down on 40/100G.
570
571 Enhancements:
572 -----
573 1. Revert back the string num_queues_per_rss_eng to max_rss.
574 2. Added esxcli mgmt compilation fixes occurred with ESXi6.7.
575 3. Increase default value of multi_rx_filters to 4 only when multi-RSS
576 is enabled otherwise set to 2 by default.
577 4. Allow setting DRSS to max 8 when multi-RSS is disabled.
578 5. Add support to retrieve actual advertised/supported link modes instead of hardcoded.
579
580 ESXi 6.0 : Version 3.0.9.8 (Jan 18, 2018)
581 ESXi 6.5 : Version 3.0.9.8 (Jan 18, 2018)
582 ESXi 6.7 : Version 3.0.9.8 (Jan 18, 2018)
583 Internal FW 8.33.8.0
584 Fixes:
585 -----
586 1. Cont00098919 - NPAR: getting PSOD after running uplink reset.
587
588 Change: qedentv_get_cable_type/qedentv_get_supported_ctypes operations
589 may get invoked during reset. Add a check to return if reset
590 underway.
591
592 Relevance: Uplink reset.
593
594 Enhancements:
595 -----
596 1. Request: Add Multi-RSS feature support (ESXi 6.7 onwards).
597 2. Request: Increase multi_rx_filters to 4 by default.
598
599 ESXi 5.5 : Version 1.0.9.6 (Jan 09, 2018)
600 ESXi 6.0 : Version 2.0.9.6 (Jan 09, 2018)
601 ESXi 6.5 : Version 3.0.9.6 (Jan 09, 2018)
602 Internal FW 8.33.8.0
603 Fixes:
604 -----
605 1. Cont00097937: Incorrect netqueue allocation for NPAR mode.
606
607 Change: MFW sets prototype for NPAR Functions as Ecore_Pci_Eth_Rdma now and not
608 Ecore_Pci_Eth_Roce. Because of which we were getting zero count for total_func,
609 and hence driver was assuming it is SF mode and calculating queues according
610 to SF mode.
611 Now Considering Ecore_Pci_Eth_Rdma to count NPAR functions.
612
613 Relevance: NPAR.
614
615 2. Cont00097255: win2k12 crashed while disabling VF
616
617 Change: Update VF's Bulletin Board when setting Forced MAC from PF.

```

615
616     Relevance: SRIOV
617
618 Enhancements:
619 -----
620     1. Request:    Ecore has removed API for obsolete DRV_MSG_CODE_SET_SECURE_MODE command,
621                   hence removed from qedentv src code.
622
623
624 ESXi 5.5 : Version 1.0.9.4 (Dec 15, 2017)
625 ESXi 6.0 : Version 2.0.9.4 (Dec 15, 2017)
626 ESXi 6.5 : Version 3.0.9.4 (Dec 15, 2017)
627 Internal FW 8.33.7.0
628 Fixes:
629 -----
630     1. Cont00097291: Enabled NPAR on 2(10G and 25G) AH Cards caused PSOD.
631
632     Change: Increase the heap max size to 512 Mb from 256 Mb because it
633             was running out of heap.
634
635     Relevance: Multiple adapters with NPAR config in a system.
636
637     2. Cont00094145: PSOD seen while trying to take GrcDump using qediag.
638
639     Change: Added support to mask parities using qediag. Also added support
640             to halt and resume MCP using qediag. And also, in case attentions
641             occur do not flood the logs, just warn once that attentions has
642             occurred.
643
644     3. Cont00097367: Server crashed while unload of qedentv driver with multiple
645                   adapters with NPAR+SRIOV
646
647     Change: Added error handling in debugfs code when debugfs handler
648             registration is unsuccessful.
649
650     4. Cont00097291: Enabled NPAR on 2(10G and 25G) AH Cards caused PSOD.
651
652     Change: Increase the heap max size to 512 Mb from 256 Mb because it
653             was running out of heap.
654
655     Relevance: Multiple adapters with NPAR config in a system.
656
657     5. Cont00094145: PSOD seen while trying to take GrcDump using qediag.
658
659     Change: Added support to mask parities using qediag. Also added support
660             to halt and resume MCP using qediag. And also, in case attentions
661             occur do not flood the logs, just warn once that attentions has
662             occurred.
663
664     6. Cont00097367: Server crashed while unload of qedentv driver with multiple
665                   adapters with NPAR+SRIOV
666
667     Change: Added error handling in debugfs code when debugfs handler
668             registration is unsuccessful.
669 Enhancements:
670 -----
671     1. Fix error handling found during DDV test.
672     2. Retrieve VF numbers using newly added VMKAPI vmk_DeviceGetParamMaxVfs from 6.7
673        onwards.
674     3. Fix build failing due to recent changes in code.
675     4. Added 100G NPAR changes.
676     5. Revert vmk_DeviceGetParamMaxVfs changes.
677     6. Fix error handling found during DDV test.
678     7. Retrieve VF numbers using newly added VMKAPI vmk_DeviceGetParamMaxVfs from 6.7
679        onwards.
680     8. Fix build failing due to recent changes in code.
681     9. Added 100G NPAR changes.
682     10. Revert vmk_DeviceGetParamMaxVfs changes.
683

```

682 ESXi 5.5 : Version 1.0.8.6 (Oct 06, 2017)
683 ESXi 6.0 : Version 2.0.8.6 (Oct 06, 2017)
684 ESXi 6.5 : Version 3.0.8.6 (Oct 06, 2017)
685 Internal FW 8.30.16.0
686 Fixes:
687 -----
688 1. Cont00096284: After VF Driver load/unload Ping stops
689 and VF interface MAC changes to 00:00:00.
690
691 Change: Prevent PF to Force NULL MAC for VF when vmkernel
692 fails to send SET MAC Callback after VF driver unload.
693
694 Relevance: SRIOV
695
696 2. Cont00091847: Error occurs trying to get VF stats.
697
698 Change: Implemented VMK_NETPTOP_VF_GET_QUEUE_STATS this vmkernel callback operation.
699
700 Relevance: SRIOV
701
702 3. Cont00096580: BB NIC driver description update.
703
704 Change: Update the speed string to display generic string.
705
706 Relevance: BB devices only.
707
708 4. Cont00097217: AHS logs for displayed wrong LSO maximum offload size.
709
710 Change: Supply correct size.
711
712 Relevance: OEM specific.
713
714 ESXi 5.5 : Version 1.0.8.5 (SEP 15, 2017)
715 ESXi 6.0 : Version 2.0.8.5 (SEP 15, 2017)
716 ESXi 6.5 : Version 3.0.8.5 (sep 15, 2017)
717 Internal FW 8.30.16.0
718
719 Enhancements:
720 -----
721 1. Add 20G support.
722
723 Fixes:
724 -----
725 1. Case00045934: Low interrupt rate compared with 6.5 GA driver.
726
727 Change: After CL304240 in ecore, coalescing values configured to HW
728 is doubled which introduced performance regression. Configure
729 Rx 12 and Tx 24 same as earlier.
730
731 Relevance: All.
732
733 2. Cont00095992: Setting RSS value to 4 - reduces the rx queue count in NPAR mode.
734
735 Change: For first four NPAR interfaces, by default driver will set queues to 6
736 even if RSS is not set to default value.
737
738 Relevance: NPAR.
739
740 ESXi 5.5 : Version 1.0.8.4 (SEP 01, 2017)
741 ESXi 6.0 : Version 2.0.8.4 (SEP 01, 2017)
742 ESXi 6.5 : Version 3.0.8.4 (SEP 01, 2017)
743 Internal FW 8.30.15.0
744
745 Enhancements:
746 -----
747 1. Add support for enhanced periodic statistics.
748
749 ESXi 5.5 : Version 1.0.8.3 (AUG 25, 2017)
750 ESXi 6.0 : Version 2.0.8.3 (AUG 25, 2017)

```

751 ESXi 6.5 : Version 3.0.8.3 (AUG 25, 2017)
752 Internal FW 8.30.13.0
753
754 Enhancements:
755 -----
756 1. Add support for asynch Handler for GRCDump Collection.
757
758 ESXi 5.5 : Version 1.0.8.1 (Aug 02, 2017)
759 ESXi 6.0 : Version 2.0.8.1 (Aug 02, 2017)
760 ESXi 6.5 : Version 3.0.8.1 (Aug 02, 2017)
761 Internal FW 8.30.11.0
762
763 1. Update driver version as ecore/fw has been updated.
764
765 ESXi 5.5 : Version 1.0.8.0 (Jul 14, 2017)
766 ESXi 6.0 : Version 2.0.8.0 (Jul 14, 2017)
767 ESXi 6.5 : Version 3.0.8.0 (Jul 14, 2017)
768 Internal FW 8.30.10.0
769
770 Enhancements:
771 -----
772 1. Added compilation fixes due to ecore change CL#324211.
773 2. Added compilation fixes due to ecore change CL#324458 & CL#324583.
774 3. Added support for default queue RSS(support includes NPAR and 100G.)
775 4. Reduce the work being done in reboot handler.
776 5. Mark link down to udev->link_info.state as same is used to determine
777    link state in qedentv_scan.
778 6. 'pf_num' can exceed MAX_NUM_PFS, if we detach/atta continuously. Once exceeded,
779    driver can get grabage value. Fix this by checking for MAX_NUM_PFS boundary and
780    as soon as it exceeds, set to its default value.
781 7. Added Uplink Supported modes for AH.
782 8. According to HSI spec, set ETH_TX_DATA_1ST_BD_PKT_LEN bit only for non lso packets.
783 9. Clear __QEDENTV_SET_RING_PARAMS as it can lead to PSOD in specific test like pciDev
784    remove/quiesce using vsish after ring params change.
785 10. Use PTT provided by ecore instead of main_ptt.
786 11. Avoid recursive PSOD while collecting debug data.
787 12. Perform LINK RESET only during driver unload and uplink reset.
788 13. Don't allow admin changing speed using esxcli for 40G devices.
789 14. Don't set txq coalesce if not allocated.
790 15. Don't acquire/release osal_mutex when in panic state to avoid recursive PSOD.
791 16. Added compilation fixes due to CL#327994.
792 17. Refactor qedentv_linkstatus_set function according to vmkernel requirements.
793    Currently, qedentv_linkstatus_set doesn't clear __QEDENTV_ESXCLI_LINK_DOWN bit
794    which will lead that when set link speed after NIC down/up operations via
795    esxcli twice, the second time, qedentv_activate_dev will be called though
796    current NIC is already up.
797 18. Add workaround to finish in-flight helper work before disassociating uplink.
798 19. Specify geneve offload constrains and vxlan offload flags added in ESXi 6.6.
799 20. Add support to collect full set of debug data as part of zdump.
800 21. Currently, pkt parse could fail because stress option, so if driver only
801    assert ret value was VMK_NOT_SUPPORT, it will trigger PSOD on BETA build if this
802    failure was induced by stress option from ESXi 6.6 onwards.
803 22. Fixed compilation errors and some function issues due to ecore changes.
804 23. Add support to log warning when adapter temperature reaches threshold high.
805 24. Add support to get SmartAN capability/state API.
806 25. Add support to use doorbell overflow recovery mechanism.
807 26. Set mfw_timeout_val to infinite.
808 27. Restrict features for 1G port in 2x10G+2x1G Arrowhead adapters.
809 28. Disable the workaround for Cont00084548 from driver because it is not required after
810    adding ecore_recovery_prolog.
811 29. Add driver version dependency check for storage and rdma drivers.
812 30. Add support for SRIOV 100G.
813 31. Add support for all SFP related operations under management interface.
814 32. Add support to collect record handlers (limited support).
815
816 Fixes:
817 -----
818 1. Problem: Cont00090749: AH A2:10BaseT:ESXi6.5:"[qedentv_uplink_pause_get:2135(vmnic5)]
819    Inside qedentv_uplink_pause_get" message getting flooded in vmkernel logs.

```

820
821 Change: Change log level from info to verbose for some prints in driver,
822 so that it won't flood vmkernel logs.
823
824 Relevance: Log Level.
825

826 2. Problem: Rank lock violation seen on BETA build.
827
828 Change: Ecore is modified to acquire link_lock prior to calling OSAL_LINK_UPDATE
829 where we again try to acquire another lock on same Rank. Use UNRANKED
830 lock in ecore.
831
832 Relevance: All.
833

834 3. Problem: Cont00091610 : When Configuring module parameters for Default queue RSS
835 feature,
836 it is only applying on First 2 claimed ports while loading driver.
837
838 Change: In SF mode as well as MF mode, only NIC functions 0 & 1 will get configured
839 with 'rss_on_defq' module parameter setting.
840
841 Relevance: RSS on default queue support.
842

843 4. Problem: Cont00091800 - Physical NIC was down after a firmware reset from vsish while
844 running vxlan traffic and system was rebooted it crashed with PSOD.
845
846 Change: Issue link reset prior to sending UNLOAD REQ in unload flow.
847
848 Relevance: Unload flow.
849

850 5. Problem: Cont00091838 : AH A2:RSS On Default Queue: RSS Hidden Queues for
851 default Queue not getting created when "num_defq_rss_count" set to 1.
852
853 Change: Changed the range of "num_defq_rss_count" from 2 to 8, so with minimum
854 value:2
855 at least we will get 1 hidden RSS queue + one leading default queue.
856
857 Relevance: RSS on default queue support.
858

859 6. Problem: Cont00091711: AH A2:RSS On Default Queue: PSOD is seen while running RSS
860 traffic with disruptive operations.
861
862 Change: As per VMware(case#43723), not calling 'vmk_PktRssHashSet()' this API for
863 default rss queue.
864
865 Relevance: RSS on default queue support.
866

867 7. Problem : Cont00092393 - ESXi 6.5 E4 [IOVP] : DefaultQ_RSS failing due to
868 unsupported module parameter.
869
870 Change: Implemented module parameter named 'DRSS' to support DefaultQ_RSS this IOVP
871 test case.
872
873 Relevance: RSS on default queue support.
874

875 8. Cont00091440: [Vxlan]: IPV6 Jumbo traffic fails intermittently.
876
877 Change: Program VNI filter on default queue while creating netqueue and remove
878 the same for filter delete. VNI filter is must for multicast.
879
880 Relevance: Tunneling.
881

882 9. Cont00090637: VF devices not working for ESXi SRIOV
883
884 Change: Check for VF FLR in progress before issuing set MAC/PVLAN
885 to adapter or VF bulletin board.
886
887 Relevance: SRIOV
888

884 10.Cont00091787: NVM commands fail in secure mode.
885
886 change: Added support to perform nvm read/write operations in secure mode.
887
888 Relevance: qediag
889

890 11.Cont00092467: PSOD during nic up down with AH adapter.
891
892 Change: Let esxcli down flow complete so as to keep the state machine correct.
893
894 Relevance: esxcli down-up in loop.
895

896 12.Cont00092190: Add QL41xxx 10/25 GbE to the description string.
897
898 Change: Remove incorrect speeds from the description string.
899
900 Relevance: lspci, esxcfg-nics output.
901

902 13.Cont00092811: Discrepancies with respect to Driver Version.
903
904 Change: Add support to send driver version to MFW.
905
906 Relevance: OEM specific.
907

908 14.Case00043937: core_spq_overflow_assert during detach/attach test.
909
910 Change: PF_UNPDATE (issued after attach) received after PF_STOP (during detach)
911 because of race. Implement OSAL_DPC_SYNC with 100 ms followed by IntrSync
912 to make sure there won't be any in-flight interrupt from MFW after this.
913
914 Relevance: Aggressive device detach/attach operations in a loop.
915

916 15.Cont00093589: The system got PSOD when tried to access the host from Vi_Plugin.
917
918 Change:Driver tried to access stats array beyond qedentv_statistics_t array size
919 which caused crash. Driver will now access the queue statistics upto size
920 of array i.e. QEDENTV_MAX_NO_QUEUES.
921
922 Relevance: 100G stats.
923

924 16.Case00044154: LINT1/NMI during vsish pci dev Remove/Scan on specific server.
925
926 Change: Work around the problem by not setting power state to D3_hot in inbox driver.
927
928 Relevance: vsish pci dev Remove/Scan test.
929

930 17.Cont00094107: FW Assertion during uplink reset along with traffic in a loop.
931
932 Change: Don't alloc rxq with attr when reset underway.
933
934 Relevance: Uplink reset along with traffic in a loop.
935

936 18.Cont00094154: AH A2 Getting wrong speed description for 1G ports.
937
938 Change: Added 1G speed to description string.
939
940 Relevance: lspci, esxcfg-nics output.
941

942 19. Cont00094330: System crashes with PSOD as E4 Driver qedentv tries to claim a card
that
943 it doesn't support in NPAR EP mode.
944
945 Change: Removed unsupported vendor id & device id from driver file.
946
947 Relevance: none.
948

949 20. Cont00094121: AH A2 SRIOV over NPAR(EP mode enable): getting zero MAC address for
VF when assigned 9VF's to VM.
950
951

952 Change: In qedentv_set_vf_mac() callback driver was not saving MAC in bulletin when
 953 flr is
 954 underway. Now made change to set VF MAC in bulletin and return from callback.
 955 Relevance: SRIOV.
 956

957 21. Case00044967: PSOD seen with VMK_ASSERT(sw_tx_data->out_pkt).
 958
 959 Change: When setting tx_ring_size to 128(MIN), sw_tx_ring may be overflowed when
 960 freeing tx pkts. That is because in current ecore_chain_get_elem_left,
 961 p_chain->capacity can be a minimum of 256, which is bigger than 128. So
 962 it is able to run out of sw_tx_ring when freeing tx pkts, i.e. when free
 963 sw_tx_data(entry of sw_tx_ring) twice, then driver will hit PSOD in
 964 the second time. Implement AVAIL_TXBD.
 965
 966 Relevance: Data path when tx ring size < 256.
 967

968 22. Cont00094385: Vmware qeddiag fails to load ext_phy fw.
 969
 970 Change: When qeddiag tried to load ext_phy fw it failed, as there was no API
 971 available to handle this request in vmware driver. Added new API to
 972 handle this request.
 973
 974 Relevance: Qeddiag
 975

976 23. Cont00094565: Less number of net queues calculated for the first four function
 977 of the 2nd adapter in NPAR EP mode.
 978
 979 Change: Using absolute PF ID instead of relative PF ID/pf_num while checking
 980 for first four PFs during queue assignment.
 981
 982 Relevance: NPAR.
 983

984 24. Cont00094565: VF of extended PF's are not coming UP in VM.
 985
 986 Change: It was because of insufficient vports available. Now calculating PF queues
 987 based on total VFs enabled on that PF.
 988
 989 Relevance: SRIOV+NPAR.
 990

991 25. Cont00094762: (4x10Gb):NPAR: PSOD seen during vsish reset on WOL enabled system.
 992
 993 Change: Don't attempt WOL get/set ops when reset underway.
 994
 995 Relevance: Uplink reset with WOL enabled.
 996

997 26. Cont00094340: Adapter should show correct link speed/cable type for 1G ports.
 998
 999 Change: Using ecore API ecore_mcp_get_media_type() to get correct
 1000 cable type for all type of ports.
 1001
 1002 Relevance: All.
 1003

1004 27. Cont00094341: Stats show non-zero value for 'Late collisions' even if Link is down.
 1005
 1006 Change: Collision parameter is provided only for BB by ecore stats, but in driver we
 1007 were using same collision value for both AH & BB. Made it zero for AH.
 1008
 1009 Relevance: stats.
 1010

1011 28. Cont00090278: QCC/QCS Apps: Need method to read SFP data from host based
 application.
 1012
 1013 Change: Added management callback for SFP read operation.
 1014
 1015 Relevance: mgmt interface.
 1016

1017 29. Problem: Recursive PSOD while collecting netdump on AH devices.
 1018

1019 Change: Don't configure grcDump -crash option on all the PFs sharing same
1020 engine which is being used for netdump.
1021
1022 Relevance: Netdump.
1023
1024 30. Cont00095219: VlanGuesttagging IOVP test fails on esxi6.0U2.
1025
1026 Change: Vport configuration 'remove_inner_vlan' was not getting updated for
1027 all queue's vports because we were checking for rxqueue state instead
1028 of vport state. The fix is to replace the rxq state check with vport
1029 state check.
1030
1031 Relevance: Traffic with VlanGuesttagging.
1032
1033 ESXi 5.5 : Version 1.0.6.4 (Jan 12, 2017)
1034 ESXi 6.0 : Version 2.0.6.4 (Jan 12, 2017)
1035 ESXi 6.5 : Version 3.0.6.4 (Jan 12, 2017)
1036 Internal FW 8.18.9.0
1037
1038 Fixes:
1039 -----
1040 1. Problem: Cont00089518: VXLAN RSS Test case failed in 100 G IOVP Workbench.
1041
1042 Change: VXLAN/GENEVE udp port was not getting updated by ecore in PF START ramrod.
1043 Set the flag 'b_update_port' for both VXLAN and GENEVE.
1044
1045 Relevance: Tunneling.
1046
1047 ESXi 5.5 : Version 1.0.6.3 (Dec 30, 2016)
1048 ESXi 6.0 : Version 2.0.6.3 (Dec 30, 2016)
1049 ESXi 6.5 : Version 3.0.6.3 (Dec 30, 2016)
1050 Internal FW 8.18.9.0
1051 1. Add Driver Load Time Timestamp to MFW Crashdump.
1052 2. Added compilation fixes due ecore changes(CL320180).
1053 3. Integrate restructured ecore APIs for tunneling.
1054 4. Enhancement w.r.t. Engine reset for proper hands on
1055 from previous driver unload condition.
1056 5. Added compilation fixes due to ecore changes(CL322061).
1057 6. Remove vmk_ModuleRegister and vmk_ModuleUnregister as these APIs are deprecated ESXi
1058 6.6 onwards.
1059 7. Added compilation fixes due to ecore changes for rx/tx coalesce(CL322750).
1060 8. Add link configuration support for QL4lxxx devices.
1061 9. Add support for handling OEM specific TLVs.
1062
1062 Fixes:
1063 -----
1064 1. Problem: DCPN00042857: Panic on Error !! type - 5(another hardware error, type 5).
1065
1066 Change: The change to fix DCPN00042443 caused this bug. Clear is_rss_leading flag
1067 queue is of Rx type & RSS.
1068
1069 Relevance: All.
1070
1071 2. Problem: Cont00089901: Traffic halts on execution of "esxcli network nic
1072 register dump" command.
1073
1074 Change: Reset to default GRC params correctly after configuring DBG_GRC_PARAM_CRASH
1075 option
1076 after allocation of FW dump buffer.
1077
1078 Relevance: Non-crash Grcdump.
1079
1080 3. Problem: Cont00090539 - After change of RSS parameter in driver, loading of driver
1081 fails
1082
1083 Change: If autoneg is supported, 'max_num_fp_msix' was not not initialized and was set
1084 to zero. Add to change to initialize properly.
1085
1086 Relevance: 10G devices.

```

1085
1086 ESXi 5.5 : Version 1.0.6.2 (Nov 23, 2016)
1087 ESXi 6.0 : Version 2.0.6.2 (Nov 23, 2016)
1088 ESXi 6.5 : Version 3.0.6.2 (Nov 23, 2016)
1089 Internal FW 8.18.4.0
1090
1091 1. Fix debugfs compilation errors and define OSAL_STRTOUL.
1092
1093 ESXi 5.5 : Version 1.0.6.1 (Nov 21, 2016)
1094 ESXi 6.0 : Version 2.0.6.1 (Nov 21, 2016)
1095 ESXi 6.5 : Version 3.0.6.1 (Nov 21, 2016)
1096 Internal FW 8.18.3.0
1097 1. Problem: Cont00089634: Getting 50G speed in lspci for 10G device.
1098
1099     Change: Changed device description to be more generic.
1100
1101     Relevance: DID 0x8070
1102
1103 2. Problem: Cont00089125: User configured queues are not taking
1104     effect in driver.
1105
1106     Change: Limit number of queues based on MAX supported.
1107
1108     Relevance: Netqueues.
1109
1110 3. Problem: PSOD with heavy traffic along with driver load/unload.
1111
1112     Change: Since qedentv_rx_int() returns 0 when queue is in quiescent state,
1113         while(1) loop in netpoll handler will keep processing the packets
1114         unless hw_comp_cons == sw_comp_cons. In this case while qedentv_unload()
1115         thread is waiting in qedentv_drain_txq (there is a vmk_WorldSleep(2000);),
1116         netpoll thread gets scheduled on same CPU and keep processing the
1117         packets till hw_comp_cons != sw_comp_cons and it seems netpoll handler
1118         doesn't yield the CPU which causes heartbeat NMI. The fix is to return
1119         'rx_pkts' instead of 0 which would cause 'if (work_done >= budget)' TRUE
1120         and break the while(1) loop. This in turn would cause CPU yielding and
1121         qedentv_unload gets scheduled and move ahead to stop the queue, netpoll etc.
1122
1123     Relevance: All.
1124
1125 4. Problem: Cont00089620: Unable to get vmnic register dump from OS.
1126
1127     Change: Command not supported on ESX5.5 because of OS constraints on buffer size.
1128
1129     Relevance: All.
1130
1131 5. Problem: Cont00089057: Incorrect queue allocation to some
1132     of the PF functions in NPAR mode.
1133     Change: Fixed resource adjustment for NPAR with SRIOV enabled.
1134
1135     Relevance: NPAR + SRIOV
1136
1137 6. Problem: Cont00087983 : Update max_vfs description.
1138
1139     Change: Updated max_vfs description to reflect that max no. of VFs
1140         supported may vary for each adapter model.
1141
1142     Relevance: SRIOV
1143
1144 7. Problem: DCPN00042358: IommuPageFaultDoOne:162:DMAR Fault IOMMU Unit #1: R/W=W, Device
1145     0000:04:00.1 Faulting addr = 0x15635f000 Fault Reason = 0x5 -> PTE
1146     not set to allow Write.
1147
1148     Change: Mark hidden RSS queues as BUSY while allocation, otherwise while freeing txq,
1149         qedentv_is_last_queue_to_free will always return 1 for hidden rss queue and
1150         driver will free hidden queues while adapter will still try to update SB,
1151         which
1152         can lead to IOMMU fault specially when load balancer request TxQ free prior
1153         to RX.

```

1152
1153 Relevance: RSS traffic along with load/unload.
1154
1155 8. Problem: DCPN00042443:[OSAL_HW_ERROR_OCCURRED:952(vmnic5)]HW error occurred [error
type 5].
1156
1157 Change: Clearing 'is_rss_leading' unconditionally can cause driver to stop only
 leading
1158 queue instead of stopping leading + hidden queues in unload path. Therefore,
1159 clear this flag only when 'is_last' is set to 1.
1160
1161 Relevance: RSS traffic along with load/unload.
1162
1163 Enhancements:
1164 -----
1165 1. Add support for OS controlled WoL (Magic packet).
1166 2. Add support for 10GBase-T external PHY firmware upgrade.
1167 3. Add psod_on_error support controlled with module param.
1168
1169 ESXi 5.5 : Version 1.0.5.2 (Sept 21, 2016)
1170 ESXi 6.0 : Version 2.0.5.2 (Sept 21, 2016)
1171 ESXi 6.5 : Version 3.0.5.2 (Sept 21, 2016)
1172 Internal FW 8.14.7.0
1173 Fixes:
1174 -----
1175 1. Problem: Cont00088874: PSOD while powering on VM after doing reset of PF.
1176
1177 Change: Avoid enabling and disabling VFs in vmkernel during PF reset.
1178
1179 Relevance: SRIOV.
1180
1181 2. Problem: Cont00089059: Driver is not claiming Adapter & throwing error
1182 saying "device not supported by driver"
1183
1184 Change: Allow claiming QL4lxxx based devices.
1185
1186 Relevance: QL4lxxx support.
1187
1188
1189 ESXi 5.5 : Version 1.0.5.1 (Sep 09, 2016)
1190 ESXi 6.0 : Version 2.0.5.1 (Sep 09, 2016)
1191 ESXi 6.5 : Version 3.0.5.1 (Sep 09, 2016)
1192 Internal FW 8.14.6.0
1193 1. Change: Remove vmk_PktHeaderEncapFind() from regular path as it will cause
1194 packets drop.
1195
1196 2. Problem: Cont00087469 - Less number of NetQueues --> 100 G testing
1197
1198 Change: In case of autoneg,set number of netqs as per highest possible speed.
1199
1200 Relevance: Autoneg.
1201
1202 3. Merge fix for memory leak in txq drain path from inbox and add some debug logs.
1203
1204 4. Problem: Cont00086983 - NIC disappears after installing for iPXE.
1205
1206 Change: Implemented PF FLR
1207
1208 Relevance: iPXE
1209
1210 5. Problem: Cont00087983 : Update max_vfs description.
1211
1212 Change: Updated max_vfs description to reflect that max no. of VFs
1213 supported may vary for each adapter model.
1214
1215 Relevance: SRIOV
1216
1217 6. Problem: Cont00082113 :- E4 Samples 5:SRIOV: Changing MTU on base
1218 interface inside the VM makes Gvln interface fails to ping.

```

1219
1220     Change: Clear requested gvlan bitmap, so that when VF requests for re-configure
1221           same gvlans at that time we will configure them again.
1222
1223     Relevance: SRIOV GVLAN.
1224
1225 7. Integrate the inbox fix race of bit vector manipulation of fp state.
1226
1227 8. Problem: Cont00088665 : 1*100Gb:mfw 8.10.15.101: Getting stats info
1228           using esxcli commands fails.
1229
1230     Change: Limited display of stats by allowing only first 11 rx/tx queues to be shown
1231           in o/p
1232           of esxcli qlogic command.
1233
1234     Relevance: esxcli extension stats.
1235
1236 9. Problem: Cont00086754 - IOVP- Static MAC test failed.
1237
1238     Change: Added module Parameter to allow VF MAC change.
1239
1240     Relevance: SRIOV.
1241
1242 Enhancements:
1243 -----
1244 1. Add QL41xxx device IDs.
1245
1246 ESXi 5.5 : Version 1.0.4.8 (July 28, 2016)
1247 ESXi 6.0 : Version 2.0.4.8 (July 28, 2016)
1248 ESXi 6.5 : Version 3.0.4.8 (July 28, 2016)
1249 Internal FW 8.14.0.0
1250
1251 Fixes:
1252 -----
1253 1. Disable loopback packet polling in failure case and rename "loopback"
1254    test to "internal_loopback" in esxcli and management interface.
1255
1256 2. Reduce the threshold size to start & continue TPA when MTU > 1600.
1257
1258 3. Problem: Cont00087136: RX: Invalid checksum error in NPAR.
1259
1260     Change: Got fixed in latest ecore/FW.
1261
1262     Relevance: Tunneling.
1263
1264 4. Problem: Cont00086677 : VxLAN traffic getting failed due to
1265    "RX: Invalid checksum".
1266
1267     Change: Got fixed in latest ecore/FW.
1268
1269     Relevance: Tunneling.
1270
1271 Enhancements:
1272 -----
1273 1. Add support for physical identification of port with LED blink.
1274 2. Add support for GENEVE offloads (CKO, TSO, LRO, RSS) and GENEVE filtering.
1275
1276 ESXi 5.5 : Version 1.0.4.7 (July 04, 2016)
1277 ESXi 6.0 : Version 2.0.4.7 (July 04, 2016)
1278 ESXi 6.5 : Version 3.0.4.7 (July 04, 2016)
1279 Internal FW 8.10.7.0
1280
1281 Enhancements:
1282 -----
1283 1. Support for loopback test on esxcli & management interface.
1284
1285 Fixes:
1286 -----
1287 1. Use vmk_bool instead of defining it as int. It causes size mismatch of
1288    struct in driver and user (mgmt).

```

1287 ESXi 5.5 : Version 1.0.4.6 (June 22, 2016)
 1288 ESXi 6.0 : Version 2.0.4.6 (June 22, 2016)
 1289 ESXi 6.5 : Version 3.0.4.6 (June 22, 2016)
 1290 Internal FW 8.10.7.0
 1291 Fixes:
 1292
 1293 1. Problem: Cont00084548: PSOD on executing "reset" vmnic from vsish.
 1294
 1295 Change: Delay hardware initialization so as to allow MCP to initialize
 1296 fully before a load request can be sent.
 1297
 1298 Relevance: Reset recovery.
 1299
 1300 2. Problem: Cont00086826: The NIC driver fails to claim, due to ILT overflow error, in
 1301 NPAR mode.
 1302
 1303 Change: Limit number of MRs, to avoid resource allocation in NPAR mode.
 1304
 1305 Relevance: NIC driver load in NPAR mode.
 1306
 1307 3. Problem: Cont00086677: 2*25Gb - ESXi6.1: VxLAN traffic getting failed due to
 1308 "RX: Invalid checksum".
 1309
 1310 Change: Set tunn_flg (introduced in FW 8.10.4.0) for encapsulated pks.
 1311
 1312 Relevance: Tunneling.
 1313
 1314 4. Problem: Cont00086805 - 2*25Gb: ESXi6.1: VxLAN filtering is broken (traffic
 1315 is flowing through only default Queue instead of its corresponding)
 1316
 1317 Change: Fixed in ecore by configuring PRS_REG_MSG_INFO correctly.
 1318
 1319 Relevance: Rx classification.
 1320
 1321 5. Problem: Cont00087033 - (E4 4x10 NIC) interface is not listed in lspci.
 1322
 1323 Change: Add the 10G device ID.
 1324
 1325 Relevance: 10G configuration.
 1326
 1327 ESXi 5.5 : Version 1.0.4.5 (May 26, 2016)
 1328 ESXi 6.0 : Version 2.0.4.5 (May 26, 2016)
 1329 ESXi 6.5 : Version 3.0.4.5 (May 26, 2016)
 1330 Internal FW 8.10.5.0
 1331 Fixes:
 1332
 1333 1. Problem: Cont00085043: Ramrod stuck & F/W Assert during load/unload in INTx mode.
 1334
 1335 Change: Counters are used to track the received interrupts, to avoid missing
 1336 interrupts leading to ramrod stuck errors. The changes are also made
 1337 to continue with stop queue operation, when any of the ramrod commands
 1338 fail. This will avoid F/W assertion.
 1339
 1340 Relevance: Any control or data path operations in INTx mode.
 1341 For ex: Driver load/unload operations with/without traffic.
 1342
 1343 ESXi 5.5 : Version 1.0.4.4 (Apr 15, 2016)
 1344 ESXi 6.0 : Version 2.0.4.4 (Apr 15, 2016)
 1345 ESXi 6.5 : Version 3.0.4.4 (Apr 15, 2016)
 1346 Internal FW 8.10.4.0
 1347 Fixes:
 1348
 1349 1. Problem: Cont00085384 - E4 - 2*25 SRIOV over NPAR - ramrod stuck when linux VM
 1350 with pvid set is powered off/on.
 1351
 1352 Change: In case of when PVID is configured, if we do VM power off and power on,
 1353 ecore sends ETH_RAMROD_RX_QUEUE_UPDATE ramrod without
 ETH_RAMROD_RX_QUEUE_START

1354 because 'rxq_active' flag is not cleared during FLR and ecore checks for the
1355 same.
1356 Clear this flag as part of FLR cleanup.

1357 Relevance: SRIOV along with PVID.

1358

1359 2. Problem: Cont00085908: E4 - 25*2 - scheduler capability not supported by driver.
1360

1361 Change: Remove VMK_UPLINK_CAP_NO_SCHEDULER. With TX coalescing configuration
1362 implemented,
1363 driver no longer needs to claim it as it should be compatible with NetIOC now.

1364 Relevance: NetIOC.

1365

1366 3. Problem: Cont00085984: PSOD and Ramrod is Stuck Error with debugfs Read Operation.
1367

1368 Change: Set grcdump configuration to not crash dump the firmware.

1369

1370 Relevance: GrcDump.

1371

1372 4. Problem: Cont00086073 : 25x4 - Failed to create maximum VF's 56 per port - Esxi6.0u2
1373

1374 Change: Corrected no. of rx queues requested for VFs.

1375

1376 Relevance: SRIOV.

1377

1378 5. Problem: Cont00086309 : PSOD in ecore_start_queue for NIC ESX 5.5
1379

1380 Change: Fixed PSOD in sriov path.

1381

1382 Relevance: SRIOV.

1383

1384 Enhancements:
1385 -----

1386 1. Merged below changes from inbox driver:
1387 a. Make irq_array_idx as unsigned.
1388 b. Use rv[hw_fn] to check the return value instead if rv because
1389 return values are stored in rv[hw_fn].
1390 c. Allocate contiguous memory from mempool. Currently driver allocates
1391 contiguous memory from heap and it also specifies NONBLOCKING allocation,
1392 which is not ideal. As when the heap is overly framgmented, vmk_HeapAlign
1393 will fail to trigger the assertation which leads to psod.
1394 d. Empty qedentv_coalesce_get() code for now as it may overrun the buffer but
1395 should be fixed later.

1396

1397 ESXi 5.5 : Version 1.0.4.2 (Mar 17, 2016)
1398 ESXi 6.0 : Version 2.0.4.2 (Mar 17, 2016)
1399 Internal FW 8.10.3.0

1400 Fixes:

1401

1402 1. Problem: a.Cont00084001 :- Getting incorrect speed in Linux VM
1403

1404 Change: Modified qedentv_inform_vf_link_state to update VF Speed
1405 settings according to PF Speed.

1406

1407 Relevance: SRIOV.

1408

1409 2. Problem: Cont00085713 - E4 - 2*25 SRIOV over NPAR - incorrect mtu
1410 value when VF is powered on.

1411

1412 Change: Modified print statement where we are getting incorrect MTU value.

1413

1414 Relevance: SRIOV.

1415

1416 3. Problem: Cont00085268 - PSOD -While running IOVP on ESXi6.0.
1417

1418 Change: Initialize memory after allocation to avoid freeing unitialized pointer
1419 in error path.

1420

1421 Relevance: IOVP.
1422
1423 ESXi 5.5 : Version 1.0.4.1 (Mar 03, 2016)
1424 ESXi 6.0 : Version 2.0.4.1 (Mar 03, 2016)
1425 Internal FW 8.10.1.0
1426
1427 1. Change the driver version 1.0.3.xx to 1.0.4.x to sync with other components.
1428
1429 ESXi 5.5 : Version 1.0.3.25 (Feb 29, 2016)
1430 ESXi 6.0 : Version 2.0.3.25 (Feb 29, 2016)
1431 Internal FW 8.8.0.0
1432 Fixes:
1433 -----
1434 1. Problem: a.Cont00084103 :- 4x25G: guest os allowed to change MTU despite
1435 policy set to disallow
1436 b.Cont00084946 :- (25x2 SRIOV) Getting Ramrod stuck while changing MTU on
1437 guest VF (linux) when MTU change policy on guest is set to disallow.
1438
1439 Change: Modified the behavior for VMK_NETPTOP_VF_SET_MTU callback function.
1440
1441 Relevance: SRIOV.
1442
1443 2. Problem: Cont00085131 - (25x2)Ramrod stuck while unloading driver after
1444 injecting fan failure error.
1445
1446 Change: Don't disable bus master in qedentv_unload in case of fan failure.
1447
1448 Relevance: Fan failure or over temp.
1449
1450 Enhancements:
1451 -----
1452 1. Merged below changes from inbox driver:
1453 a. Refactor logging format and support per device debug level set.
1454 b. Workaround for stale Rx PI value after RX queue start.
1455 c. Add explicit memory barriers for bitvector operations as part
1456 of state refactoring of the driver.
1457 d. Fix driver unload PSOD.
1458
1459 ESXi 5.5 : Version 1.0.3.24 (Feb 17, 2016)
1460 ESXi 6.0 : Version 2.0.3.24 (Feb 17, 2016)
1461 Internal FW 8.7.9.0
1462 Fixes:
1463 -----
1464 1. Problem: Cont00084962: QL45212-DE Product description string shows QL45604 for
1465 ESXi6.0u2.
1466
1467 Change: Change the description string to QL45xxx instead of QL45604.
1468
1469 Relevance: Device description string.
1470
1471 2. Problem: Cont00084521: Getting Ramrod stuck while running traffic with
1472 esxcli up/down.
1473
1474 Change: Don't disable bus master in qedentv_unload.
1475
1476 Relevance: MTU change, esxcli up/down.
1477
1478 3. Problem: Cont00084619: PSOD -While running 40G IOVP on ESXi6.0.
1479
1480 Change: Avoid a double free during error path handling.
1481
1482 Relevance: Error path handling.
1483
1484 4. Problem: Cont00084975 - E4 - 2*25 - change of ring size on PF causes
1485 tx-switching ping failure.
1486
1487 Change: During qedentv_load/qedentv_unload, filters were not getting
1488 cleared/programmed properly. Fixed them.

1489 Relevance: Ring size parameters setting.
1490
1491 5. Problem: Cont00085004 - 2*25Gb:Ring Size:Able to set ring size more than
1492 the allowed Ring Size(4096) for Jumbo.
1493
1494 Change: Keep ring size max limit same for both 1500 & jumbo mtu to avoid
1495 unnecessary complexities.
1496
1497 Relevance: Ring size parameters setting.
1498
1499 Enhancements:
1500 -----
1501 1. Merged below changes from inbox driver.
1502 a. Added stats related to interrupt and netpoll.
1503 b. Fixed race condition between netpoll handler and Rx Q free.
1504 c. Changed Rx Q stop completion to slowpath.
1505 d. Correctly implement txq drain logic.
1506
1507 ESXi 5.5 : Version 1.0.3.23 (Feb 3, 2016)
1508 ESXi 6.0 : Version 2.0.3.23 (Feb 3, 2016)
1509 Internal FW 8.7.9.0
1510 Fixes:
1511 -----
1512 1. Problem: Cont00084089: 4x25G: Ramrod stuck while reload of VF driver
1513 when multiple VFs assigned to VM.
1514
1515 Change: Modified backchannel infrastructure to handle multiple incoming
1516 requests from VFs simultaneously.
1517
1518 Relevance: SRIOV.
1519
1520 2. Problem: Cont00084103: 4x25G: guest os allowed to change MTU despite
1521 policy set to disallow.
1522
1523 Change: Implemented VMK_NETPTOP_VF_SET_MTU callback operation in PF driver to
1524 check MTU set policy.
1525
1526 Relevance: SRIOV.
1527
1528 Enhancements:
1529 -----
1530 1. Diagnostic test support in driver, esxcli / management interface.
1531
1532
1533 ESXi 5.5 : Version 1.0.3.22 (Jan 28, 2016)
1534 ESXi 6.0 : Version 2.0.3.22 (Jan 28, 2016)
1535 Internal FW 8.7.6.0
1536 Fixes:
1537 -----
1538 1. Problem: Ecore assert seen while running nicstest.
1539
1540 Change: Release PTT properly after acquiring it.
1541
1542 Relevance: Nicstest.
1543
1544 2. Problem: Cont00084318: 1 x 100G: link doesnt come up after changing MTU to 9000.
1545 Cont00084362: Link is not coming up after esxcli down followed by esxcli up
1546 in 1x100G.
1547
1548 Change: Set/Get link status only for first hardware engine.
1549
1550 Relevance: 100G link status.
1551
1552 3. Problem: Cont00083927: E4:After Down, unable to up Ethernet Adapter (vmnic)
1553
1554 Change: Add Support for esxcli link down/up and speed change on ESX5.5 U3 and beyond.
1555
1556 Relevance: esxcli command for Link Down/UP on ESX5.5

```

1557 Enhancement:
1558 -----
1559 1. Merge inbox driver changes to main branch which mainly includes below:
1560     a. Using latest API definition in new 6.1 devkits.
1561     b. Avoid using vmk_UplinkQueueInvalidate callback, since there is a bug with it.
1562     c. Only register-unregister uplink device for hidden queue netpolls.
1563     d. Remove code for unimplemented vmkernel callbacks and dead code.
1564 2. Add support to handle fan failure or over temperature.
1565 3. Add support for rx and tx coalescing to support netioc.
1566 4. Add support for 25G Speed settings using esxcli command.
1567
1568 ESXi 5.5 : Version 1.0.3.21 (Jan 11, 2016)
1569 ESXi 6.0 : Version 2.0.3.21 (Jan 11, 2016)
1570 Internal FW 8.7.5.0
1571 Fixes:
1572 -----
1573 1. Problem: Cont00083483: E4: NPAR over SRIOV esx fail to claim all 64 VF's in 8 VF per
1574 PF.
1575     Change: Calculating number of SBs per VF by considering free SBs.
1576
1577     Relevance: SRIOV.
1578
1579 2. Problem: VMware PR1544105: [qedentv]Failed at
1580 vmkdrivers/native/Proprietary/Network/qedentv/
1581     qedentv_drv.c:1622 -- VMK_ASSERT(0)
1582     Change: Fixed all the error paths for qedentv_dma_map().
1583
1584     Relevance: Driver load, mtu change, reset recovery and data path.
1585
1586 Enhancement:
1587 -----
1588 1. VMware 1546979 : Add support for get/set ring param operations using esxcli.
1589 2. Disable dynamic netq support if rx filter < 2 per netqueue.
1590 3. Add support for enable/disable of vlan offload through vsish.
1591 4. Done code reorganization to streamline file size and arrange code in different
1592     files as per functionality.
1593 5. Advertize 25G and 50G speeds as well.
1594 6. Add some build enhancements.
1595 7. Disable WOL support.
1596 8. Claim lockless TX support for 6.1 onwards.
1597 9. Add Rx and Tx netqueue stats to default queue stats.
1598 10. Add qedentv_advertised_modes_ops to report advertised media types using esxcli
1599     from 6.1 onwards.
1600 11. Reorganized tx and rx path code to have common functions for regular and netdump
1601     Tx and Rx.
1602 12. Added code to check hardware constraints for tx path.
1603
1604 ESXi 5.5 : Version 1.0.3.20 (Nov 24, 2015)
1605 ESXi 6.0 : Version 2.0.3.20 (Nov 24, 2015)
1606 Internal FW 8.7.2.0
1607 Fixes:
1608 -----
1609 1. Problem: Cont00083376 : Message level to be changed.
1610
1611     Change: Changed message level to INFO properly.
1612
1613     Relevance : Logging.
1614
1615 2. Problem: VMware 1543380 : [qedentv]Current Message Level is not correct on vmnic
1616 status.
1617     Change: Added support for VMK_UPLINK_CAP_MESSAGE_LEVEL for 6.0 onwards.
1618
1619     Relevance : Debug level get and set.
1620
1621 3. Problem: VMware 1543380 : [qedentv]/net/pNics/vmnic5/stats output includes uncertain
1622 characters "~".

```

1622
1623 Change: Removed "~" character from stats output.
1624
1625 Relevance : Private stats print.
1626
1627 4. Problem: VMware 1552113 : [qedentv]link status can not be brought back after esxcli
command opeartion.
1628
1629 Change: Retry pkt allocation one more time.
1630
1631 Relevance : esxcli vmnic up on beta build, forced packet alloc error.
1632
1633 5. Problem: Cont00083405 - E4 SRIOV - Vf base interface isn't pinging once gvlan is
configured to that VF.
1634
1635 Change: Add vlan0 to VF after configuring gvlan.
1636
1637 Relevance : SRIOV GVLAN.
1638
1639 6. Problem: VMware 1552236 : [qedentv]Failed at qedentv_main.c:2479 --
VMK_ASSERT(mapped_len <= 0xffff)
1640
1641 Change: Add TSOConstraints capability for vsphere 2016 release. For ESX 5.5/6.0, it
still needs to handled.
1642
1643 Relevance : Huge TSO packets (> 64K) on vsphere 2016.
1644
1645 ESXi 5.5 : Version 1.0.3.19 (xxx xx, 2015)
1646 ESXi 6.0 : Version 2.0.3.19 (xxx xx, 2015)
1647 Internal FW 8.7.1.0
1648 Fixes:
1649 -----
1650 1. Problem: Cont00081749 E4 Samples 5:SRIOV-GVlan:ESXi5.5: "Ramrod is stuck"
1651 is seen while trying to set Vlan id to All(4095) to Portgroup.
1652
1653 Change: Fix is to check if ecore has shadow copy of gvlan which PF driver wants to
configure,
1654 if it has then skip or return from that function without configuring that
gvlan as
1655 ecore already configured/handled it before PF driver.
1656
1657 Relevance: SRIOV.
1658
1659 Enhancement:
1660 -----
1661 1. Implemented TX and RX Queue Based Stats
1662 2. PF Bandwidth Get/Set and esxcli extension for PF Bandwidth and SRIOV get.
1663
1664 ESXi 5.5 : Version 1.0.3.17 (Nov 04, 2015)
1665 ESXi 6.0 : Version 2.0.3.17 (Nov 04, 2015)
1666 Internal FW 8.6.1.0
1667 Fixes:
1668 -----
1669 1. Problem: Cont00083027: Small bytes message size vmknic Ipv6 traffic causes
1670 Fatal Attention
1671
1672 Change: Pull extra frags in 18th fragment if packet contains more than 18
1673 fragments.
1674
1675 Relevance: TSO.
1676
1677 ESXi 5.5 : Version 1.0.3.16 (xxx xx, 2015)
1678 ESXi 6.0 : Version 2.0.3.16 (xxx xx, 2015)
1679 Internal FW 8.6.1.0
1680 Fixes:
1681 -----
1682 1. Problem: Cont00083072 : E4-4*25-netq allocation to base functions with RSS disabled
is incorrect
1683

1684
1685 ESXi 5.5 : Version 1.0.3.15 (Oct 30, 2015)
1686 ESXi 6.0 : Version 2.0.3.15 (Oct 30, 2015)
1687 Internal FW 8.6.1.0
1688
1689 Enhancement:
1690 -----
1691 1. Take FW version 8.6.1.0.
1692
1693 ESXi 5.5 : Version 1.0.3.14 (Oct 26, 2015)
1694 ESXi 6.0 : Version 2.0.3.14 (Oct 26, 2015)
1695 Internal FW 8.6.0.0
1696
1697 Enhancement:
1698 -----
1699 1. Modified esxcli eeprom support for qedentv driver to provide an option to
intentionally execute
1700 firmware reset recovery for offset >= 524288.
1701
1702 2. Add support for NCSI LAN statistics.
1703
1704 3. Modified Queue Assignment for 4Port 25G Adapters.
1705
1706 ESXi 5.5 : Version 1.0.3.13 (Oct 13, 2015)
1707 ESXi 6.0 : Version 2.0.3.13 (Oct 13, 2015)
1708 Internal FW 8.5.6.0
1709 Fixes:
1710 -----
1711 1. Problem: Cont00082489 : E4-SRIOV over NPAR - Driver unload reload fails
1712
1713 Change: Enable bus master before device remove, if not already enabled.
1714
1715 Relevance: esxcli down followed by driver unload.
1716
1717 2. Problem: Cont00082354 : LRO is not working for VxLAN traffic with latest
1718 driver version 2.0.3.10.
1719
1720 Change: Correctly set frag mapped length of first frag of LRO packet.
1721
1722 Relevance: LRO traffic.
1723
1724 Enhancement:
1725 -----
1726 1. Implemented SRIOV Get Callback for Management Application
1727
1728 2. Change description string to FastLinQ.
1729
1730 ESXi 5.5 : Version 1.0.3.12 (Oct 06, 2015)
1731 ESXi 6.0 : Version 2.0.3.12 (Oct 06, 2015)
1732 Internal FW 8.5.6.0
1733 Fixes:
1734 -----
1735 1. Problem: Cont00081893 : E4:Sample-5 : PSOD while running the changeMTU testcase.
1736
1737 Change: Remove manual invocation of netpoll handler.
1738
1739 Relevance: Change MTU along with traffic.
1740
1741 2. Problem: Cont00082356 : VxLAN traffic still flows through default queue even
1742 netqueue got created for specific VM.
1743
1744 Change: Program Outer MACs in LLH regardless of NPAR or Non-NPAR configuration
1745 as ecore has removed SF mode and MF mode is the default mode.
1746
1747 Relevance: VxLAN traffic along with VxLAN filter enabled.
1748
1749 3. Problem: Cont00082036 : E4-PSOD-ESX6.0-2.0.3.10
1750
1751 Change: On ESXi 6.0 netpoll routine is invoked while disabling the netpoll.

1752 If adapter has a NULL MAC, vmkernel doesn't allow to start the device.
1753 During driver unload netpoll routing is invoked which tries to access
1754 status block which was not allocated. Add check for NULL before access.
1755
1756 Relevance: ESXi 6.0 only with NULL MAC.
1757
1758 ESXi 5.5 : Version 1.0.3.11 (Sep 29, 2015)
1759 ESXi 6.0 : Version 2.0.3.11 (Sep 29, 2015)
1760 Internal FW 8.5.6.0
1761 Fixes:
1762 -----
1763 1. Problem: Cont00081980: Fix for PSOD when h/w init fails in MSI mode.
1764
1765 Change: Avoid NULL pointer reference during cleanup.
1766
1767 Relevance: Load failure in MSI/INTx node.
1768
1769 ESXi 5.5 : Version 1.0.3.10 (Sep 07, 2015)
1770 ESXi 6.0 : Version 2.0.3.10 (Sep 07, 2015)
1771 Internal FW 8.5.5.0
1772 Enhancement:
1773 -----
1774 1. Changes to support new TPA HSI changes.
1775 2. Reenabled dynamic netq support even with only 1 filter per netqueue.
1776
1777 Fixes:
1778 -----
1779 1. Problem: CQ81829: Beta Build - Vswitch Mtu change caused PSOD.
1780
1781 Change: Process the packet only if netpoll state is active.
1782
1783 2. Problem: CQ81743: Beta Build - PSOD on "Header Error doing TSO"
1784
1785 Change: Added function to validate the packet corruptness before processing.
1786
1787 ESXi 5.5 : Version 1.0.3.9 (Sep 07, 2015)
1788 ESXi 6.0 : Version 2.0.3.9 (Sep 07, 2015)
1789 Internal FW 8.5.5.0
1790 Enhancement:
1791 -----
1792 1. Add support for PF level granularity for VXLAN offload and
1793 VXLAN filter module parameters.
1794 2. Add support for setting RSS hash and type for RSS packets only for ESXi 6.0.
1795 3. Added support for esxcli Link speed change command on E4 QLE35xx adapter for
1796 10G and 25G on ESX6.0.
1797
1798 ESXi 5.5 : Version 1.0.3.8 (Aug 19, 2015)
1799 ESXi 6.0 : Version 2.0.3.8 (Aug 19, 2015)
1800 Internal FW 8.5.3.0
1801 Enhancement:
1802 -----
1803 1. Added support to notify Speed modification not supported from
1804 esxcli command.
1805
1806 ESXi 5.5 : Version 1.0.3.7 (Aug 18, 2015)
1807 ESXi 6.0 : Version 2.0.3.7 (Aug 18, 2015)
1808 Internal FW 8.5.3.0
1809 Fixes:
1810 -----
1811 1. Problem: CQ76933 - Beta build - PSOD after reboot host.
1812 CQ77778 - Beta build - Driver unload clean failed PSOD.
1813
1814 Change: RSS_DYN is not supported on ESXi 5.5 GA, restricted to 6.0 and added
1815 check to enable DYNAMIC netqueue feature only if max_rx_filters > 1.
1816
1817 Relevance: Beta build.
1818
1819 Enhancement:
1820 -----

1821 1. Enable LRO for VXLAN.
1822
1823 ESXi 5.5 : Version 1.0.3.6 (Aug 13, 2015)
1824 ESXi 6.0 : Version 2.0.3.6 (Aug 13, 2015)
1825 Internal FW 8.5.3.0
1826 Fixes:
1827 -----
1828
1829 1. Problem: CQ81278 - E4 - Sample 5 - incorrect netq assignment to the Ethernet
functions.
1830
1831 Change: Changed according to ecore API Changes
1832
1833 Relevance: NPAR resource allocation
1834
1835 ESXi 5.5 : Version 1.0.3.5 (Aug 05, 2015)
1836 ESXi 6.0 : Version 2.0.3.5 (Aug 05, 2015)
1837 Internal FW 8.5.2.0
1838 Fixes:
1839 -----
1840
1841 1. Problem: CQ80306 - E4 Sample 5: SRIOV: PVID: Changing PVID periodically makes
inconsistent behavior in pinging.
1842 CQ80330 - E4 Sample 5: SRIOV: PVID: Windows: VFs (having no vlan id) fails
to ping after removing PVID.
1843
1844 Change : Add vlan0 to VFs when PVID is set to 0 by hypervisor.
1845
1846 Relevance: SRIOV PVID.
1847
1848 2. Problem: Cont00080600 - INTx mode causes PSOD, in NPAR mode.
1849
1850 Change: Fixed the interrupt acknowledgement code.
1851
1852 Relevance: INTx mode in NPAR configuration.
1853
1854 Enhancement:
1855 -----
1856 1. Add support for auto firmware recovery (Phase 1 : Parity error and tx_timeout
recovery).
1857
1858 ESXi 5.5 : Version 1.0.3.4 (Jul 23, 2015)
1859 ESXi 6.0 : Version 2.0.3.4 (Jul 23, 2015)
1860 Internal FW 8.5.1.0
1861 Fixes:
1862 -----
1863 1. Problem: Cont00079972 - E4 Samples 4: SRIOV: Windows VF: GVLAN VFs ping successfully
eventhough
1864 Default vlanid (None(0)) configured on Port
Group.
1865
1866 Change : Set 'untagged_only' flag given by ecore, to receive only untagged packets
when no vlan is applied on Port group.
1867
1868 Relevance: SRIOV GVLAN.
1869
1870 ESXi 5.5 : Version 1.0.3.3 (Jul 15, 2015)
1871 ESXi 6.0 : Version 2.0.3.3 (Jul 15, 2015)
1872 Internal FW 8.5.1.0
1873 Fixes:
1874 -----
1875 1. Problem: Cont00079993 - E4 - Sample 4 - firmware assertion when vswitch mtu is lower
than VMs mtu settings
1876
1877 Change: Don't allow higher than MTU packets to be sent to firmware.
1878
1879 Relevance: MTU Change.
1880
1881 Enhancement:

```

1882 -----
1883 1. Add support for VXLAN netqueue filter for NPAR 1.0.
1884
1885 ESXi 5.5 : Version 1.0.3.2 (June 29, 2015)
1886 ESXi 6.0 : Version 2.0.3.2 (June 29, 2015)
1887 Internal FW 8.4.2.0
1888 Fixes:
1889 -----
1890 1. Problem: Cont00080291 - E4 - Sample 5 - Unable to power on SRIOV VM ( linux )
1891
1892     Change: Change number of msix vectors per VF from hardcoded value(2) to dynamicaly
           calculating value.
1893
1894     Relevance: SRIOV.
1895
1896 2. Problem: E4 - Cont00079777 - Sample 4 : VXLAN-RSS queues not used when
           unidirectional traffic is started.
1897
1898     Change: After upgrading storm FW from 8.3.8.0 to 8.4.2.0, it got fixed.
1899
1900 Enhancement:
1901 -----
1902 1. MSI/INTx support for 40G.
1903 2. Apply MAC+VLAN filter for Multi-Function Configurations on netqueues.
1904 3. Add support for VXLAN.
1905
1906 ESXi 5.5 : Version 1.0.3.1 (June 12, 2015)
1907 ESXi 6.0 : Version 2.0.3.1 (June 12, 2015)
1908 Internal FW 8.3.8.0
1909 Fixes:
1910 -----
1911 1 Problem: Cont00079746-E4-100G:PSOD on Esxi6.0 while running Rx stress traffic and
           executing esxcli nic
1912             up & down on the peer server
1913
1914     Change: Free the packet in case we are getting error in handing off it to
           netpoll/stack.
1915
1916             Also added additional error statistics.
1917
1918     Relevance: UDP traffic and esxcli up/down operation.
1919
1920 Enhancement:
1921 -----
1922 1.Added support for PVID.
1923 2.Added spoof check support.
1924 3.Reverted to using MAC only filter for Multi-Function Configurations to provide a
           temporary
1925     work around for issues observed with MAC+VLAN filter.
1926
1927 ESXi 5.5 : Version 1.0.2.7 (May 28, 2015)
1928 ESXi 6.0 : Version 2.0.2.7 (May 28, 2015)
1929 Internal FW 8.3.8.0
1930 Fixes:
1931 -----
1932 1 Problem: Cont00079255-E4 - PSOD on change_mtu while traffic is running
1933
1934     Change: As per VMware, driver can only copy upto 4K length of private stats in vsish
           buffer.
1935
1936             Added change to take care of this.
1937
1938     Relevance: Driver private stats.
1939
1940 2 Problem Cont00079719 - Base VF interface is not pinging once GVLAN is configiured on
           that.
1941
1942     Change: Allow vlan0 to get configured and removed by PF driver as per VF request.
1943
1944     Relevance: SRIOV.

```

1944 3 Problem Cont00079803 - E4 - Sample 4: NPAR - Failed to configure ecore dump.
1945
1946 Change: Invoke ecore_dbg_set_app_ver() with the value returned by
ecore_dbg_get_fw_func_ver()
1947
1948 Relevance: GRC dump collection on system crash.
1949
1950 ESXi 5.5 : Version 1.0.2.6 (May 19, 2015)
1951 ESXi 6.0 : Version 2.0.2.6 (May 19, 2015)
1952 Internal FW 8.3.8.0
1953 Fixes:
1954 -----
1955 1 Problem: Cont00079388-E4 Sample4 sriov- max_vfs fails to accept more than 8 parameters.
1956
1957 Change: Increased limit for max_vfs module para for ESX6.0 to 16.
1958
1959 Relevance: SRIOV
1960
1961 Enhancements:
1962 -----
1963 1) Added support for E4 10G, 25G and 100G Devices.
1964 2) Added support for MAC+VLAN filter in Multi Function Configuration
1965 3) Resource adjustment in Multi Function Configuration.
1966 4) Modify RSS and num_queues Driver Module parameters.
1967
1968
1969 ESXi 5.5 : Version 1.0.2.4 (April 30, 2015)
1970 ESXi 6.0 : Version 2.0.2.4 (April 30, 2015)
1971 Internal FW 8.3.5.0
1972 Fixes:
1973 -----
1974 1. Problem: Cont00079303 - E4-Sample 4 - debug messages turned on default
1975
1976 Change: Reverted to default log level.
1977
1978 Relevance: System log file.
1979
1980 Enhancements:
1981 -----
1982 1) Added support for 100G.
1983
1984
1985 Version 1.0.2.2 (April 23, 2015)
1986 Internal FW 8.3.5.0
1987 Fixes:
1988 -----
1989 1. Problem: Cont00079263 - E4 Samples:QLE3552: SRIOV: VFs are not
1990 getting created in ESXi 6.0
1991
1992 Change: Added additional parameters to vmk_WorldProps structure
1993 due to change in ESX6.0 DDK
1994
1995 Relevance: SRIOV
1996
1997 Enhancements:
1998 -----
1999 1)Added suport for GVLAN for SRIOV.
2000 2)Added check for NULL before freeing the heap memory.
2001
2002 Version 1.0.2.1 (April 16, 2015)
2003 Internal FW 8.3.5.0
2004 Fixes:
2005 -----
2006 1. Problem: Cont00078411, Cont00078501, Cont00078594: PSOD when LRO flow
2007 is started.
2008
2009 Change: Update LRO and SGE settings in vport according to the sequence
2010 desired by firmware.
2011

2012 Relevance: LRO.
2013
2014 2. Problem: Cont00078527: FW assert seen in NPAR when VM and vmknics traffic
2015 are involved in specific pattern.
2016
2017 Change: Update vport explicity for SGE settings while disabling LRO.
2018
2019 Relevance: LRO.
2020
2021 3. Problem: Cont00078554: [E4-Brussels] Hit PSOD after configuring
2022 NPAR using nvm cfg command
2023 Change: API Call to notify Link State change should not be done
2024 in interrupt context on ESX6.0. Implemented Kernel Helper
2025 queue to notify Link State.
2026 Relevance: ESX6.0
2027
2028 4. Problem: Cont00078558: E4 Sample III - 9K mtu on NPAR causes
2029 rx_alloc failures
2030 Change: Adjust rx and tx queue size to 4K for Jumbo MTU
2031 Relevance: Jumbo MTU
2032
2033 5. Problem: Cont00078374: E4: ESX 6.0: PSOD during ipv6 netperf
2034 traffic + switch port toggle test
2035 Change: Changes to Back Channel Spin lock and Unlock
2036 Relevance: SRIOV
2037
2038 6. Problem: Cont00078681: Misleading event logs when Tx queue becomes full.
2039 Change: Corrected event log.
2040 Relevance: Tx fast path.
2041
2042
2043 Enhancements:
2044 -----
2045 1) Added Debug Structure for SRIOV Back Channel
2046
2047
2048 Version 1.0.1.5 (March XX, 2015)
2049 Internal FW 8.2.11.0
2050 Fixes:
2051 -----
2052 1. Problem: Cont00078341 - E4: IPv6 ping from VF->PF fails in SRIOV configuration.
2053
2054 Change: Updated PF vport with multicast filter configured.
2055
2056 Relevance: SRIOV and NPAR tx-switching.
2057
2058 2. Problem: Cont00077273: ecore_int_deassertion_aeu_bit:724, failed to
2059 start VPORT, Unable to find empty Tx queue.
2060 Cont00077188: qedentv_multictx_set_rx_rule:866(vmnics4)]
2061 Either ctx:0 is freed or firmware is resetting.
2062 Cont00077939: ecore_fw_assertion:377(0:3:0:0-0)]FW assertion!
2063
2064 Change: Avoid unnecessary TxQ start in Tx completion path. Also check
2065 correct netqueue state before returning from txq_has_work.
2066 Relevance: Multiple Tx queues and TSO.
2067
2068 3. Problem: Cont00077831: PSOD on NPAR system when peer link goes down.
2069
2070 Change: Set Rx netqueue state to DISABLED before freeing Rx resources.
2071 When Rx netqueue allocation fails set queue state to DISABLED.
2072
2073 Relevance: Multiple Rx queues.
2074
2075
2076 Version 1.0.1.4 (Feb 27, 2015)
2077 Internal FW 8.2.7.0
2078 Enhancements:
2079 -----
2080 1) Added support for RSS, dynamic RSS and dynamic netqueues.

2081 2) Added "esxcli qlogic" management interface extension.
2082 Including idlechk and grcdump.
2083
2084 Fixes:
2085 -----
2086 1. Problem:
2087 a) Cont00077440: E4 sample-2 MTU change PSOD : EtherswitchPortDispatch@<None>
2088 b) Cont00076551: E4 : PSOD PktList_SplitBySrcPort@vmkernel.
2089 c) Cont00075996 : E4 : MTU change - "vmnicX packets completion seems stuck, issuing
2090 reset, vmxnet3 panic
2091 d) Cont00077435 : E4 Brussels adapter: PSOD during MTU change
2092
2093 Change: Properly handle netqueues when MTU is changed or esxcli down/up is invoked.
2094
2095 Relevance: MTU change and esxcli down/up in loop, while traffic is running.
2096
2097 2. Problem: Cont00077934: E4 netqueues : tweaking required in num_queues logs message
2098 for
2099 incorrect value
2100
2101 Change: Print proper error message with error level set.
2102
2103 Relevance: Changing number of netqueues using module param.
2104
2105 3. Problem: Cont00078047: ESX Driver fails to claim NPAR interfaces
2106
2107 Change: Added Sub Device ID for NPAR i.e 0x1636
2108
2109 Relevance: NPAR Only
2110
2111 4. Problem: Cont00077721: FW assertion and interface hang seen at 9K MTU
2112
2113 Change: Avoid overlap between VF and PF netqueue vports
2114
2115 Relevance: SRIOV
2116
2117 Version 1.0.1.3 (Feb 26, 2015)
2118 Internal FW 8.2.4.0
2119 Fixes:
2120 -----
2121 1. Problem: Cont00078032 - E4: Connectivity between VF-PF of same PF fails
2122 in SRIOV configuration.
2123 Change: Enable tx-switching on PF when sriov is enabled.
2124
2125 Relevance: SRIOV.
2126
2127 Version 1.0.1.2 (Feb 12, 2015)
2128 Internal FW 8.2.4.0
2129 Enhancements:
2130 -----
2131 1) Added support for NPAR tx-switching
2132 Fixes:
2133 -----
2134 1. Problem: Cont00077317: E4 NPAR PSOD : PCPU halt/panic,
2135 Net_AcceptRxList@vmkernel.
2136 Change: Do not process packets in Rx path if Rx queue is stopped.
2137
2138 Relevance: Driver load.
2139
2140 2. Problem: Cont00077333: E4 : [qedentv_uplink_tx:136(vmnic2)]link down in
2141 uplink tx, vmk_PktSetEncapCsumVfd.
2142
2143 Change: Workaround : Verify pkt pointer before procesing packet in Tx
2144 path.
2145
2146 Relevance: Tx path.
2147
2148 3. SRIOV implemented.

```

2149
2150 Version 1.0.1.1 (Jan 21, 2015)
2151 Internal FW 8.2.2.0
2152 Enhancements:
2153 -----
2154     1) Added HW_LRO support for IPv4 and IPv6.
2155     2) Added additional TSO statistics.
2156     3) Reduced no of filters per Rx queue to 1.
2157
2158 Version 1.0.1.0 (Jan 20, 2015)
2159 Internal FW 8.1.11.0
2160 Fixes:
2161 -----
2162 1. Problem: Cont00077594: E4 MTU change PSOD : qedentv_apply_rx_filter
2163
2164     Change: Add check to ensure the add filter operation is aborted when the device is
           in closed state.
2165
2166     Relevance: MTU change in loop, while traffic is running.
2167
2168 2. Problem: Cont00077584: E4 MTU change PSOD : qedentv_multictx_remove_rx_rule.
2169
2170     Change: A check is added to abort remove filter request when the device is closed.
2171
2172     Relevance: MTU change in loop, while traffic is running.
2173
2174 Version 1.0.0.5 (Dec. XX, 2014)
2175 Internal FW 8.1.7.0
2176
2177 Fixes:
2178 -----
2179 1. Problem: Cont00077098 : E4 : queue restriction "< 4", no CID available for
           protocol 4
2180
2181     Change: Increased the no of total cids.
2182
2183     Relevance: Netqueue allocation.
2184
2185 Version 1.0.0.4 (Dec. 05, 2014)
2186 Internal FW 8.1.5.0
2187
2188 Fixes:
2189 -----
2190 1. Problem: Cont00076493 : Bad direction (None) 0 given for DMA elem unmap on
           'qedentv'
2191
2192     Change: Fixed incorrect usage while unmapping packets at some places.
2193
2194     Relevance: Tx path.
2195
2196 2. Problem: Cont00075957: E4 : esxcli network stat are incorrect.
2197
2198     Change: Corrected the supported stats.
2199
2200     Relevance: esxcli network nic get operation.
2201
2202 3. Problem: Cont00076177: E4 : hw_vlan module parameter enable/disable support.
2203
2204     Change: Added support for "hw_vlan" module parameter.
2205
2206     Relevance: Hardware vlan enable/disable.
2207
2208 Enhancements:
2209     1) Added support for Tx/Rx netqueues in driver.
2210
2211 Version 1.0.0.3 (Oct. 31, 2014)
2212 =====
2213 Internal FW 8.1.2.0
2214

```

2215 Fixes:
2216 -----
2217 1. Problem: Cont00076219 : E4 : ESX 55 - PSOD - Net_AcceptRxList@vmkernel#nover
2218
2219 Change: Added netpoll sync before freeing the resources.
2220
2221 Relevance: esxcli up/down with traffic.
2222
2223 Enhancements:
2224 1) Changes in driver for ecore changes to support separate control for rx/tx
enablement
2225 for vport.
2226
2227
2228 Version 1.0.0.2 (Oct. 27, 2014)
2229 =====
2230 Internal FW 8.0.1.0
2231
2232 Fixes:
2233 -----
2234 1. Problem: Cont00076230: E4 : ALERT: [qedentv_request_irq:1040(vmnic4)]Failed to
2235 register interrupt (Failure)
2236
2237 Change: Allow esxcli up even when it hasn't been made down previously using
esxcli down.
2238
2239 Relevance: esxcli up operation.
2240
2241 Enhancements:
2242 1) Added changes to handle Tx HSI changes introduced in firmware version 8.0.1.0.
2243
2244
2245 Version 1.0.0.1 (Oct. 7, 2014)
2246 =====
2247 Internal FW 8.0.1.0
2248
2249 Fixes:
2250 -----
2251 1. Problem: Cont00075956:E4 : VIB Installation results says "Reboot Required:
false", but
2252 to get the driver working reboot required.
2253
2254 Change: Made change : vib install : reboot required, vib removal : reboot not
required.
2255
2256 Relevance: vib installation.
2257
2258
2259 Version 1.0.0.0 (Sept. 25, 2014)
2260 =====
2261 Internal FW 8.0.0.7
2262
2263 Fixes:
2264 -----
2265 1. Problem: CQ75906 : E4 - Installing E4 driver changes the lspci description for
NX-I/II cards
2266
2267 Change: Changed the vendor name back to Broadcom.
2268
2269 Relevance: vib installation.
2270