

## Release Note for 3GD Windows Driver Version 3.7.1

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<b>Release date</b>	02-Oct-2017
<b>Description</b>	This release note applies to version 3.7.1 of the SW driver package for Napatech Accelerators.
<b>Accelerators supported</b>	NT200A01-2x100 NT200A01-2x40 NT200A01-2x100/40 NT100E3-1-PTP NT80E3-2-PTP NT40E3-4-PTP NT20E3-2-PTP NT40A01-4x1 NT40A01-4x10/1-SLB NT40E2-1 NT40E2-4 NT20E2 NT20E2-PTP NT4E2-4-PTP NT20E NT4E-4 NT4E-4T NT4E-4-STD NT4E-4T-STD
<b>FPGA compatibility</b>	200-9015-42-08 (NT4E) 200-9015-42-14 (NT4E) 200-9017-42-09 (NT4E-STD) 200-9017-42-10 (NT4E-STD) 200-9226-46-12 (NT4E2-4-PTP) 200-9226-46-13 (NT4E2-4-PTP) 200-9226-48-05 (NT4E2-4-PTP) 200-9226-50-03 (NT4E2-4-PTP) 200-9226-50-04 (NT4E2-4-PTP) 200-9226-51-03 (NT4E2-4-PTP) 200-9226-51-04 (NT4E2-4-PTP) 200-9014-42-07 (NT20E) 200-9014-42-12 (NT20E) 200-9220-44-10 (NT20E2) 200-9220-44-12 (NT20E2) 200-9220-45-06 (NT20E2) 200-9220-46-09 (NT20E2) 200-9220-50-03 (NT20E2) 200-9220-50-04 (NT20E2) 200-9220-50-05 (NT20E2) 200-9227-51-04 (NT20E2-PTP) 200-9227-51-03 (NT20E2-PTP) 200-9227-50-03 (NT20E2-PTP) 200-9233-53-01 (NT20E3-2-PTP) 200-9233-52-13 (NT20E3-2-PTP) 200-9501-04-04 (NT20E3-2-PTP) 200-9501-02-16 (NT20E3-2-PTP) 200-9501-06-06 (NT20E3-2-PTP) 200-9501-08-50 (NT20E3-2-PTP) 200-9501-08-06 (NT20E3-2-PTP) 200-9501-09-08 (NT20E3-2-PTP) 200-9232-53-01 (NT40E3-4-PTP) 200-9232-52-13 (NT40E3-4-PTP) 200-9232-51-07 (NT40E3-4-PTP) 200-9232-51-04 (NT40E3-4-PTP) 200-9232-50-04 (NT40E3-4-PTP) 200-9502-04-04 (NT40E3-4-PTP) 200-9502-02-16 (NT40E3-4-PTP) 200-9502-06-06 (NT40E3-4-PTP)

200-9502-06-07 (NT40E3-4-PTP)  
 200-9502-08-06 (NT40E3-4-PTP)  
 200-9502-09-08 (NT40E3-4-PTP)  
 200-9503-04-04 (NT80E3-2-PTP)  
 200-9503-02-16 (NT80E3-2-PTP)  
 200-9503-06-05 (NT80E3-2-PTP)  
 200-9503-08-50 (NT80E3-2-PTP)  
 200-9503-08-06 (NT80E3-2-PTP)  
 200-9503-09-08 (NT80E3-2-PTP)  
 200-9508-05-17 (NT200A01-2x100)  
 200-9508-05-08 (NT200A01-2x100)  
 200-9508-06-06 (NT200A01-2x100)  
 200-9508-07-06 (NT200A01-2x100)  
 200-9608-07-07 (NT200A01-2x100)  
 200-9515-09-02 (NT200A01-2x100)  
 200-9516-09-03 (NT200A01-2x100)  
 200-8002-09-01 (NT200A01-2x100)  
 200-8002-09-02 (NT200A01-2x100)  
 200-9500-06-06 (NT40A01-4x1)  
 200-9500-06-07 (NT40A01-4x1)  
 200-9500-08-06 (NT40A01-4x1)  
 200-9500-09-08 (NT40A01-4x1)  
 200-9504-01-10 (NT100E3-1-PTP)  
 200-9504-01-12 (NT100E3-1-PTP)  
 200-9505-04-04 (NT100E3-1-PTP)  
 200-9505-02-16 (NT100E3-1-PTP)  
 200-9505-06-05 (NT100E3-1-PTP)  
 200-9505-08-03 (NT100E3-1-PTP)  
 200-9505-08-05 (NT100E3-1-PTP)  
 200-9505-08-06 (NT100E3-1-PTP)  
 200-9505-09-08 (NT100E3-1-PTP)  
 200-9222-52-05 (NT40E2-1)  
 200-9221-44-13 (NT40E2-4)  
 200-9221-50-04 (NT40E2-4)  
 200-9512-07-02 (NT200A01-2x40)  
 200-9512-08-05 (NT200A01-2x40)  
 200-9512-08-08 (NT200A01-2x40)  
 200-9512-09-08 (NT200A01-2x40)  
 200-8001-08-00 (NT200A01-2x100/40)  
 200-8001-08-01 (NT200A01-2x100/40)  
 200-8003-09-01 (NT200A01-2x100/40)  
 200-9517-09-08 (NT40A01-4x10/1-SLB)

## XFP compatibility

XFP management is qualified for the following modules:

Further information is found in DN-0244 Pluggable Modules 10 Gbps.

- Avago Technologies AFBF-720XPDZ, 10GBASE-SR
- Avago Technologies AFCT-721XPDZ, 10GBASE-LR
- Cisco XFP-10GLR-OC192SR, 10GBASE-LR
- Finisar FTLX8511D3BTL, 10GBASE-SR
- Finisar FTLX8512D3BCL, 10GBASE-SR
- Finisar FTLX1411D3, 10GBASE-LR
- Finisar FTLX1412D3BCL, 10GBASE-LR
- Finisar FTRX1411D3, 10GBASE-LR
- Finisar FTLX1412M3BTL, 10GBASE-LR
- MergeOptics TRX10GVP2001, 10GBASE-SR
- MergeOptics TRX10GEP0301, 10GBASE-LR
- MergeOptics TRX10GEP0501, 10GBASE-LR
- Picolight PL-XXL-SCS45-22, 10GBASE-SR
- Picolight PLRXXL-SC-S43-C1, 10GBASE-SR
- Picolight JXPR01SWDC2, 10GBASE-SR
- Sumitomo SXP3100SX-M, 10GBASE-SR
- Sumitomo SXP3100SX, 10GBASE-SR
- Sumitomo SXP3100LX, 10GBASE-LR
- Sumitomo SXP3100NV, 10GBASE-LR
- Sumitomo SXP3101LX, 10GBASE-LR
- Sumitomo SXP3101LX-02, 10GBASE-LR
- Sumitomo SXP3103LX, 10GBASE-LR

- Sumitomo SXP3101EX-02, 10GBASE-ER
- Sumitomo SXP3101SV-02, 10GBASE-ER
- Sumitomo SXP3100SV, 10GBASE-ER

## **SFP compatibility**

SFP is qualified for the following modules.

Further information is found in DN-0191 Pluggable Modules 1 Gbps.

- Avago Technologies AFBR-57L5APZ, 1000BASE-SX
- Avago Technologies AFBR-739DMZ, 1000GBASE-LX
- Avago Technologies AFCT-5715PZ, 1000BASE-LX
- Avago Technologies ABCU-5740RZ, 1000Base-T
- Finisar FCLF-8521-3, 10/100/1000 Base-T
- Finisar FCLF8521P2BTL, 10/100/1000 Base-T
- Finisar FTLF1318P2BTL, 1000BASE-LX
- Finisar FTLF1318P3BTL, 1000BASE-LX
- Finisar FTLF1619P1BCL, 1000BASE-ZX
- Finisar FTLX1471D3BCV, 1000BASE-LX
- Finisar FTLX8571D3BCV, 1000BASE-SX
- Picolight/JDSU PLRXPL-VI-S24-22, 1000BASE-SX
- Excelight/Sumitomo SCP6F44-GL-AWH, 1000BASE-LX

SFP is also qualified for the following modules for NT4E-4 and NT4E-4-STD accelerators.

- Avago Technologies HBCU-5710R, 1000BASE-T
- Avago Technologies ABCU-5710RZ, 1000BASE-T
- Eoptolink EOLT-C12-02A, 10/100/1000 Base-T
- Finisar FTLF1318P2BTL, 1000BASE-LX

## **SFP+ compatibility**

SFP+ is qualified for the following modules.

Further information is found in DN-0244 Pluggable Modules 10 Gbps.

- Avago Technologies AFBR-703SDZ, 10GBASE-SR
- Avago Technologies AFBR-703SDDZ, 10GBASE-SR
- Avago Technologies AFBR-739DMZ, 10GBASE-LR
- Avago Technologies AFCT-701SDDZ, 10GBASE-LR
- Avago Technologies AFCT-701SDZ, 10GBASE-LR
- CoreTek CT-A000NPP-SB1L-D, 10GBASE-SR
- CoreTek CT-A000TPP-NB4L-D, 10GBASE-LR
- Excelight/Sumitomo SPP5100SR-GL, 10GBASE-SR
- Excelight/Sumitomo SPP5100LR-GL, 10GBASE-LR
- Excelight/Sumitomo SPP5200LR-GL, 10GBASE-LR
- Excelight/Sumitomo SPP5200LR-GL-M, 10GBASE-LR
- Excelight/Sumitomo SPP5100ER-GL, 10GBASE-ER
- Finisar FTLX8571D3BCL, 10GBASE-SR
- Finisar FTLX8571D3BCV, 10GBASE-SR
- Finisar FTLX1471D3BCL, 10GBASE-LR
- Finisar FTLX1471D3BCV, 10GBASE-LR
- JDSU PLRXPL-SC-S43-22-N, 10GBASE-SR
- JDSU PLRXPL-VC-S43-23-N, 10GBASE-SR
- JDSU JSH-01LWAA1, 10GBASE-LR

## **SFP/SFP+ compatibility**

SFP/SFP+ is qualified for the following modules.

Further information is found in DN-0935 Pluggable Modules 1/10 Gbps.

- Avago Technologies AFBR-739DMZ, 10GBASE-LR
- Finisar FTLX8571D3BCV, 10GBASE-SR
- Finisar FTLX1471D3BCV, 10GBASE-LR

## **QSFP+ compatibility**

QSFP+ is qualified for the following modules.

Further information is found in DN-0509 Pluggable Modules 40 Gbps.

- Avago Technologies AFBR-79E4Z, 40GBASE-SR4
- Avago Technologies AFBR-79E4Z-D, 40GBASE-SR4
- Finisar FTL410QE1C, 40GBASE-SR4
- Finisar FTL4C1QE1C, 40GBASE-LR4

## **CFP4 compatibility**

CFP4 is qualified for the following modules.

Further information is found in DN-0860 Pluggable Modules 100 Gbps.

- Sumitomo SFF1400L4LNGG01B, 100GBASE-LR4
- Sumitomo SFF1400L4LNNP01R, 100GBASE-LR4-RX
- JDSU JC4-10LR4AA1, 100GBASE-LR4

<b>Operating systems</b>	<p>The Napatech SW driver version applies to these operating systems:</p> <ul style="list-style-type: none"> <li>Windows Server 2016 (64-bit)</li> </ul>
<b>Test status</b>	Complete test plan.
<b>Notes</b>	None.
<b>Documentation</b>	See the Documentation Portal, WebHelp or DN-0449 for reference documentation on Napatech Software Suite.
<b>Known issues</b>	<p>#38365: The performance of host based transmission may be degraded in the following scenario:</p> <ol style="list-style-type: none"> <li>1. Local retransmit is taking place at full line rate on a subset of the ports of the adapter.</li> <li>2. In parallel with 1., host based transmission is taking place on a separate port of the adapter (i.e. the combined host and local retransmit functionality is not used.)</li> </ol> <p>The performance degradation is seen in synthetic traffic scenarios, in which only small packets (&lt; 80 bytes) are transmitted at full line rate on the ports used for local retransmission and the ports used for host based transmission simultaneously. As soon as a random mix of packet sizes from 64 – 120 bytes (or larger), is transmitted full line rate is achievable.</p> <p>The issue is only related to host-based transmission with simultaneous full-line rate local retransmit and does not affect the performance of the traffic being locally retransmitted.</p> <p>#36501: If NUMA node zero is offline and /opt/napatech3/config/ntservice.ini does not exist, the driver cannot start because it fails to allocate memory for the default host buffer set-up. Workaround: Use an existing ntservice.ini or specify the host buffer set-up on an online NUMA node: '/opt/napatech3/bin/start.sh -o adapter0.BusId=0000:04:00.0 -o adapter0.AdapterType=NT40E3_4_PTP -o adapter0.HostBuffersRx=[4,32,1] -o adapter0.HostBuffersTx=[2,16,1]'. BusId and AdapterType are only required if there are multiple adapters in the server; the BusId can be obtained with 'lspci   grep Napa'.</p> <p>#36499: When using the GlobalSync feature, link down/up events could cause the port to enter 'unknown' state</p> <p>#11368: When using a Cisco DAC pluggable, link is detected even if the other end of the cable is unplugged.</p> <p>#11366: Setting TimeSyncTimeJumpThreshold for OS timesync to values &gt; 0, will enable the time jump feature and results in a jump threshold of 1 second.</p>
<b>Release history</b>	The next pages list the differences between this release and previous releases.

## From version 03.06.06 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

### Resolved issues

#38401: NTAPI optimizations: internal structures reorganized for better cache-population and -utilization.

#38400: DN-0449: Documentation/Files containing info about nested structures and unions are missing (dead links)

#38399: When starting the driver and with a port connected to a link partner it can happen that the link never comes up, that the link goes up and down or that the link comes up but packets with CRC errors are received. This can also have the effect that the link LED is turned on and off in a rather random way.

#38398: (Support-ID 36971) The log will contain entries stating that there was an error during WriteDataAndSetCache. The limits for the QSFP+ sensors are likely to be wrong so that alarms in e.g. the monitoring tool are generated.

#38397: (Support-ID 37119) The NT200A01-2x40 is not able to sync to OSTime. When OSTime is selected, synchronisation is never achieved. The absolute value of the skew reported in monitoring just keeps increasing. This affects all releases where NT200A01-2x40 is supported.

#38396: (Support-ID 37285) 3-speed NIMs do not start up correctly on specific GreenBay FPGA image (NT40E3-4, 200-9232-52-13)

#38389: Data test does not behave the same way on 3GA and 4GA adapters when DynOffset and != operator is used.

#38385: (Support-ID 37067) "Main feature mask defaults to zero (0x00000000 - 0x00000000)" in ntlog output.

This will look like:

```
..
07/18/17 16:51:03.389524 | 18680 | INFO | OSS | 179-02a87 | Adapter 0: Front feature mask defaults to zero
(0x000000001 - 0x000000001)
07/18/17 16:51:03.548446 | 18680 | INFO | OSS | 179-02a87 | Adapter 0: Main feature mask defaults to zero
(0x000000001 - 0x000000001)
..
```

#38384: Warning log issued with SFP-PLUS modules: "manual.speed setting is zero but capability member count > 1"

#38382: (Support-ID 36962) NT\_NetRxGet returns " NT\_ERROR\_HOSTBUFFER\_MERGE" forever, when "timestamp jumps backward" and packet reference remains NULL

#38380: (Support-ID 37008) Unplugging a 1G NIM might on rare occasions lead to a driver crash. This can happen if the link - due to latency - is reported as up after the NIM has been unplugged.

#38378: Doxygen documentation does not explain that the macro is only supported on NT4GA adapters configured to static segment size emulation mode while on NT4GA adapters configured for dynamic segment size this macro will always return 0.

#38376: ntservice TX threads consumes CPU cycles even when no TX hostbuffers are configured.

#38375: (Support-ID 36585) Duplicate key matcher keys causes unexpected matches.

#38374: Resource allocation problem when setting up filter specifying a value list in a data test.

#38373: HW errors that lead to erroneous clock signals might make ntservice hang forever.

## From version 03.06.02 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36762: Inline memory allocation support for dynamic descriptors added.

### Resolved issues

#38401: NTAPI optimizations: internal structures reorganized for better cache-population and -utilization.

#38400: DN-0449: Documentation/Files containing info about nested structures and unions are missing (dead links)

#38398: (Support-ID 36971) The log will contain entries stating that there was an error during WriteDataAndSetCache. The limits for the QSFP+ sensors are likely to be wrong so that alarms in e.g. the monitoring tool are generated.

#38396: (Support-ID 37285) 3-speed NIMs do not start up correctly on specific GreenBay FPGA image (NT40E3-4, 200-9232-52-13)

#38389: Data test does not behave the same way on 3GA and 4GA adapters when DynOffset and != operator is used.

#38385: (Support-ID 37067) "Main feature mask defaults to zero (0x00000000 - 0x00000000)" in ntlog output.

This will look like:

```
..
07/18/17 16:51:03.389524 | 18680 | INFO | OSS | 179-02a87 | Adapter 0: Front feature mask defaults to zero
(0x000000001 - 0x000000001)
07/18/17 16:51:03.548446 | 18680 | INFO | OSS | 179-02a87 | Adapter 0: Main feature mask defaults to zero
(0x000000001 - 0x000000001)
..
```



#38382: (Support-ID 36962) NT\_NetRxGet returns " NT\_ERROR\_HOSTBUFFER\_MERGE" forever, when "timestamp jumps backward" and packet reference remains NULL

#38380: (Support-ID 37008) Unplugging a 1G NIM might on rare occasions lead to a driver crash. This can happen if the link - due to latency - is reported as up after the NIM has been unplugged.

#38378: Doxygen documentation does not explain that the macro is only supported on NT4GA adapters configured to static segment size emulation mode while on NT4GA adapters configured for dynamic segment size this macro will always return 0.

#38376: ntservice TX threads consumes CPU cycles even when no TX hostbuffers are configured.

#38375: (Support-ID 36585) Duplicate key matcher keys causes unexpected matches.

#38374: Resource allocation problem when setting up filter specifying a value list in a data test.

#38373: HW errors that lead to erroneous clock signals might make ntservice hang forever.

## From version 03.05.01 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

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#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

### Resolved issues

#38401: NTAPI optimizations: internal structures reorganized for better cache-population and -utilization.

#38389: Data test does not behave the same way on 3GA and 4GA adapters when DynOffset and != operator is used.

#38382: (Support-ID 36962) NT\_NetRxGet returns " NT\_ERROR\_HOSTBUFFER\_MERGE" forever, when "timestamp jumps backward" and packet reference remains NULL

#38375: (Support-ID 36585) Duplicate key matcher keys causes unexpected matches.

#38374: Resource allocation problem when setting up filter specifying a value list in a data test.

#38373: HW errors that lead to erroneous clock signals might make ntsservice hang forever.

#36792: (Support-ID 36394) Added support for 4G architecture in ntinfo tool and added documentation.

#36766: PCIe Gen1 adapters reports 0Mbps measured bandwidth during initialization

#36763: Applying NTPL setup commands in-between NTPL assign commands may change the host buffer selection criteria. The result is that host buffers already assigned to streams may now be selected for a wrong reason.

#36757: (Support-ID 36459) Ntsservice crashes when setting up filter specifying a value list in a data test.

#36756: Support for 4k byte alignment added to 4GA FPGAs

#36755: (Support-ID 36332) Misleading bandwidth message in log for NT200A01

#36498: Applying NTPL setup commands in-between NTPL assign commands may change the host buffer selection criteria. The result is that host buffers already assigned to streams may now be selected for a wrong reason.

## From version 02.11.10 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.

#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.



#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#### **Resolved issues**

#36510: (Support-ID 36221) NT4E2-4-PTP adapter reacts to pause frames even though flow control is not supported.

## From version 02.11.05 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

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#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.

#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

## Resolved issues

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.

#36741: (Support-ID 36663) /D=<path> option is not working properly

Additionally, due to name clash, installer option /NODRV is set every time /NODRVTOOLS is specified causing no drivers to be installed.

Option /NODRV should be renamed to /NODRIVER to avoid name clash.

#36510: (Support-ID 36221) NT4E2-4-PTP adapter reacts to pause frames even though flow control is not supported.

## From version 02.11.03 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.



#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

## **Resolved issues**

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.

#36510: (Support-ID 36221) NT4E2-4-PTP adapter reacts to pause frames even though flow control is not supported.

#31612: When installing the driver it sometimes pops up with an error message:

"WARNING. Microsoft Visual C++ redistributable package installation completed with non-zero exit code. You will need to re-boot your system or reinstall the package."

The error code is: 0x666.

## From version 02.11.02 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2.  
Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.

#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

#33242: Doxygen documentation updated in NTPL data section

#33216: (Support-ID 30301) Updated description of streams in doxygen

#33212: Doxygen documentation updated on Global time sync clock in the Coordinated Time-Synchronized Transmit section

## Resolved issues

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.

#33229: (Support-ID 32998) Using a filter with a combination of AND and OR expressions could trigger an NTPL conflicting filter error

#33227: Packets received which is same size or smaller than DiscardSize, where counted in "Drop events" under "RX RMON1 counters" and "Mac bandwidth" under "RX extended drop counters".  
Now only "Drop events" will be counted.

#33222: Filtering behavior is different when two expressions are applied separately or combined using OR

#31612: When installing the driver it sometimes pops up with an error message:

"WARNING. Microsoft Visual C++ redistributable package installation completed with non-zero exit code. You will need to reboot your system or reinstall the package."

The error code is: 0x666.



## From version 02.11.00 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.

#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

#33242: Doxygen documentation updated in NTPL data section

#33216: (Support-ID 30301) Updated description of streams in doxygen

#33212: Doxygen documentation updated on Global time sync clock in the Coordinated Time-Synchronized Transmit section

#31574: NDA reference in include files has been replaced with reference to Napatech Software License Agreement.

## Resolved issues

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.

#33227: Packets received which is same size or smaller than DiscardSize, where counted in "Drop events" under "RX RMON1 counters" and "Mac bandwidth" under "RX extended drop counters".  
Now only "Drop events" will be counted.

#33222: Filtering behavior is different when two expressions are applied separately or combined using OR

#31601: No link on a NT40E3-4-PTP adapter when used with FPGA 51-07 or older FPGAs.

#31572: (Support-ID 30201) Enabling global sync causes "Link state error" on all ports if one or more ports has link down.

#30535: (Support-ID 30471) Sometimes the VC++ 2015 redistributables are not installed when installing the driver.

#30492: Sometimes a warning message "Unmapped leftover mapped DMA memory" can be logged in the log.



## From version 02.09.03 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.

#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

#33242: Doxygen documentation updated in NTPL data section

#33216: (Support-ID 30301) Updated description of streams in doxygen

#33212: Doxygen documentation updated on Global time sync clock in the Coordinated Time-Synchronized Transmit section

#31574: NDA reference in include files has been replaced with reference to Napatech Software License Agreement.

#30371: Avago ABCU-5740RZ SFP has been qualified with this driver

#30342: (Support-ID 28663) Adapter Merge section of DN-0449 updated with information about required time synchronization between adapters when merging data between different adapters.

#30319: It has been made possible to use NTPL to classify both outer and inner IP fragments as "unmatched", thus directing such fragments to a certain stream (or set of streams). This feature relieves an application from identifying IP fragments.

For additional information, please refer to the description of the NTPL IPFMode command in the DN-0449 document. This functionality depends on FPGA support for the feature.

#28816: General pcap and pcap-ng feature added to NTAPI NetFile API.

#28794: Support for Windows 10 has been added.

## Resolved issues

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.



#33227: Packets received which is same size or smaller than DiscardSize, where counted in "Drop events" under "RX RMON1 counters" and "Mac bandwidth" under "RX extended drop counters".  
Now only "Drop events" will be counted.

#33222: Filtering behavior is different when two expressions are applied separately or combined using OR

#31572: (Support-ID 30201) Enabling global sync causes "Link state error" on all ports if one or more ports has link down.

#30427: (Support-ID 11947) Spelling error throughout Warnings and Errors

#30356: (Support-ID 30090) Unable to switch off autonegotiation for SFP-TRI on the adapter NT4E-STD.

#30354: (Support-ID 27519) Sometimes the link can be stuck in disabled state on the adapter NT4E2-4-PTP.

#30350: (Support-ID 9691) The config tool cannot configure triple speed copper SFPs on a NT4E-4 adapter.

#30336: (Support-ID 28916) FCS errors seen in Wireshark on PTP Delay Response packages sent from PTP stack on adapter in master mode.

#30316: (Support-ID 20358) HashMask options HASHWORD8\_HI and HASHWORD8\_LO used in combination gives wrong hash mask. Workaround it to use HASHWORD8.  
Does not affect NT100E3-1-PTP with an FPGA in the 200-9504-series loaded.

#30314: "Port number out of range" error when enabling IPFMode

#30289: (Support-ID 30270) The returned value for flow control: port\_v7.data.flow is undefined, and may not return 0 despite flow control is not supported.

#30261: Host loopback doesn't work in ports where modules are not plugged in.

#30258: (Support-ID 25306) NT100E3-1 hardware failure - "Si5338: Timeout waiting for LOS\_CLKIN to clear" - Requires cold boot

#30256: (Support-ID 22900) ntservice.ini file location does not appear in ntlog.

#30254: Calling supportinfo triggers "\_DumpCommand called with illegal action." message in syslog.

#30252: Color statistics in the monitoring tool does not display properly. When packets are received, sometimes color statistics displays packets and bytes in the monitoring tool, sometimes it is zero.

#30247: Protocol filter "Layer3Protocol" could not take a list of protocols as described in the documentation DN-0449.

#30083: The driver may fail to start up if the system time jumps while the driver is initializing. The system time may jump if ntpdate runs while the driver is initializing.

#28913: (Support-ID 28834) The driver is leaking handles when the monitoring tool is used and if SDRAMFillLevel is enabled in the ini-file.

#25272: Data test does not work when target field were not fully located within offset 1023

#21228: Running the tool "supportinfo" repeatedly and at the same time using the driver in a normal scenario, may make the driver crash.



#20416: (Support-ID 20199) Wrong conflicting filter error when using Data tests

## From version 02.09.01 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.

#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

#33242: Doxygen documentation updated in NTPL data section

#33216: (Support-ID 30301) Updated description of streams in doxygen

#33212: Doxygen documentation updated on Global time sync clock in the Coordinated Time-Synchronized Transmit section

#31574: NDA reference in include files has been replaced with reference to Napatech Software License Agreement.

#30371: Avago ABCU-5740RZ SFP has been qualified with this driver

#30342: (Support-ID 28663) Adapter Merge section of DN-0449 updated with information about required time synchronization between adapters when merging data between different adapters.

#30319: It has been made possible to use NTPL to classify both outer and inner IP fragments as "unmatched", thus directing such fragments to a certain stream (or set of streams). This feature relieves an application from identifying IP fragments.

For additional information, please refer to the description of the NTPL IPFMode command in the DN-0449 document. This functionality depends on FPGA support for the feature.

#28816: General pcap and pcap-ng feature added to NTAPI NetFile API.

#28794: Support for Windows 10 has been added.

#28642: Included support for new fan and fan-ranges on NT100E3-1, to support improved thermal solution.

## Resolved issues

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.

#33227: Packets received which is same size or smaller than DiscardSize, where counted in "Drop events" under "RX RMON1 counters" and "Mac bandwidth" under "RX extended drop counters".  
Now only "Drop events" will be counted.

#33222: Filtering behavior is different when two expressions are applied separately or combined using OR

#31572: (Support-ID 30201) Enabling global sync causes "Link state error" on all ports if one or more ports has link down.

#30427: (Support-ID 11947) Spelling error throughout Warnings and Errors

#30356: (Support-ID 30090) Unable to switch off autonegotiation for SFP-TRI on the adapter NT4E-STD.

#30354: (Support-ID 27519) Sometimes the link can be stuck in disabled state on the adapter NT4E2-4-PTP.

#30350: (Support-ID 9691) The config tool cannot configure triple speed copper SFPs on a NT4E-4 adapter.

#30336: (Support-ID 28916) FCS errors seen in Wireshark on PTP Delay Response packages sent from PTP stack on adapter in master mode.

#30316: (Support-ID 20358) HashMask options HASHWORD8\_HI and HASHWORD8\_LO used in combination gives wrong hash mask. Workaround it to use HASHWORD8.  
Does not affect NT100E3-1-PTP with an FPGA in the 200-9504-series loaded.

#30314: "Port number out of range" error when enabling IPFMode

#30289: (Support-ID 30270) The returned value for flow control: port\_v7.data.flow is undefined, and may not return 0 despite flow control is not supported.

#30261: Host loopback doesn't work in ports where modules are not plugged in.

#30258: (Support-ID 25306) NT100E3-1 hardware failure - "Si5338: Timeout waiting for LOS\_CLKIN to clear" - Requires cold boot

#30256: (Support-ID 22900) ntservice.ini file location does not appear in ntlog.

#30254: Calling supportinfo triggers "\_DumpCommand called with illegal action." message in syslog.

#30252: Color statistics in the monitoring tool does not display properly. When packets are received, sometimes color statistics displays packets and bytes in the monitoring tool, sometimes it is zero.

#30247: Protocol filter "Layer3Protocol" could not take a list of protocols as described in the documentation DN-0449.

#30083: The driver may fail to start up if the system time jumps while the driver is initializing. The system time may jump if ntpdate runs while the driver is initializing.

#28913: (Support-ID 28834) The driver is leaking handles when the monitoring tool is used and if SDRAMFillLevel is enabled in the ini-file.

#25272: Data test does not work when target field were not fully located within offset 1023



#21228: Running the tool "supportinfo" repeatedly and at the same time using the driver in a normal scenario, may make the driver crash.

#20416: (Support-ID 20199) Wrong conflicting filter error when using Data tests

## From version 02.08.09 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

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#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

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#31574: NDA reference in include files has been replaced with reference to Napatech Software License Agreement.

#30371: Avago ABCU-5740RZ SFP has been qualified with this driver

#30342: (Support-ID 28663) Adapter Merge section of DN-0449 updated with information about required time synchronization between adapters when merging data between different adapters.

#30319: It has been made possible to use NTPL to classify both outer and inner IP fragments as "unmatched", thus directing such fragments to a certain stream (or set of streams). This feature relieves an application from identifying IP fragments.

For additional information, please refer to the description of the NTPL IPFMode command in the DN-0449 document. This functionality depends on FPGA support for the feature.

#28816: General pcap and pcap-ng feature added to NTAPI NetFile API.

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#28642: Included support for new fan and fan-ranges on NT100E3-1, to support improved thermal solution.

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#19860: MPLS Decapsulation:

Purpose MPLS decapsulation enables MPLS-unaware applications to monitor MPLS networks by stripping the frames of all MPLS labels and delivering valid Ethernet frames.

#16276: Retransmit from one port to multiple ports is now supported for the NT40E3-4-PTP and the NT20E3-2-PTP accelerators .

#16031: Optimized IPMatchlist filter configuration time when using masks. Before optimization an additional 4.5ms per byte masked was consumed. This has been optimized to 100us per byte masked.

#15717: The IPMatchList capacity has been extended and can for adapters with feature set N-ANL3 contain 864 IPv4 addresses and 216 IPv6 addresses.

#14322: NTPL IPMatchlist has been optimized when adding/deleting entries using masks by reusing previously used masks.

#14152: New adapter NT20E3-2-PTP and the NEBS version of NT20E3-2-PTP are supported.

#14148: Optimized deletion of single IPMatchList entries using the NTPL "delete" command. Deletion of one IPv4 entry is now approx. 400us. per adapter.

#14110: Option to not install shortcuts has been added to the installer both in GUI mode and command line mode.. Command line option /NOSHORTCUTS.

#13804: Support for the NEBS version of NT100E3-1-PTP.

#13781: Support for the NEBS version of NT40E3-4-PTP.

### **Resolved issues**

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.

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Now only "Drop events" will be counted.

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#30316: (Support-ID 20358) HashMask options HASHWORD8\_HI and HASHWORD8\_LO used in combination gives wrong hash mask. Workaround it to use HASHWORD8.  
Does not affect NT100E3-1-PTP with an FPGA in the 200-9504-series loaded.

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## From version 02.08.08 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

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#38388: Added support for transmit on time stamp.

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## From version 02.08.07 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

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#14148: Optimized deletion of single IPMatchList entries using the NTPL "delete" command. Deletion of one IPv4 entry is now approx. 400us. per adapter.

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#21228: Running the tool "supportinfo" repeatedly and at the same time using the driver in a normal scenario, may make the driver crash.

#20449: When running pktgen at full speed, the transmitted traffic is sent at 10M despite that the link speed indicated is 1G. Also diagnostics tool indicates that no packets were received.

#20447: When plugging a JDSU CFP4 module "JC4-10LR4AA1" it will manifest itself as a RxOnly module while it in fact is Rx/Tx

#20416: (Support-ID 20199) Wrong conflicting filter error when using Data tests

#20214: (Support-ID 14231) When using the PTP module, running in PTP master mode, the sync UDP messages contained invalid UDP checksum.

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## From version 02.08.05 to version 03.07.01 (this release)

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Purpose MPLS decapsulation enables MPLS-unaware applications to monitor MPLS networks by stripping the frames of all MPLS labels and delivering valid Ethernet frames.

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#16031: Optimized IPMatchlist filter configuration time when using masks. Before optimization an additional 4.5ms per byte masked was consumed. This has been optimized to 100us per byte masked.

#15934: (Support-ID 15985) The driver installer is now signed.

#15717: The IPMatchList capacity has been extended and can for adapters with feature set N-ANL3 contain 864 IPv4 addresses and 216 IPv6 addresses.

#14322: NTPL IPMatchlist has been optimized when adding/deleting entries using masks by reusing previously used masks.

#14279: A new parameter HostBufferSegmentSizeRx has been introduced to select between segment sizes of 1,2,4 MB.

The HostbufferSegmentTimeout value range has been extended to include 10000, 25000, 50000, 100000 us.

If the HostBufferSegmentSizeRx is changed and HostBufferSegmentTimeout is kept default the segment timeout will be calculated based on the HostBufferSegmentSizeRx

#14152: New adapter NT20E3-2-PTP and the NEBS version of NT20E3-2-PTP are supported.

#14148: Optimized deletion of single IPMatchList entries using the NTPL "delete" command. Deletion of one IPv4 entry is now approx. 400us. per adapter.

#14110: Option to not install shortcuts has been added to the installer both in GUI mode and command line mode..  
Command line option /NOSHORTCUTS.

#13804: Support for the NEBS version of NT100E3-1-PTP.

#13781: Support for the NEBS version of NT40E3-4-PTP.

## **Resolved issues**

#36945: Documentation incorrectly states that the "TxPort" parameter is optional in in-line scenarios.

#33227: Packets received which is same size or smaller than DiscardSize, where counted in "Drop events" under "RX RMON1 counters" and "Mac bandwidth" under "RX extended drop counters".  
Now only "Drop events" will be counted.

#30427: (Support-ID 11947) Spelling error throughout Warnings and Errors

#30350: (Support-ID 9691) The config tool cannot configure triple speed copper SFPs on a NT4E-4 adapter.

#30336: (Support-ID 28916) FCS errors seen in Wireshark on PTP Delay Response packages sent from PTP stack on adapter in master mode.

#30316: (Support-ID 20358) HashMask options HASHWORD8\_HI and HASHWORD8\_LO used in combination gives wrong hash mask. Workaround it to use HASHWORD8.  
Does not affect NT100E3-1-PTP with an FPGA in the 200-9504-series loaded.

#30314: "Port number out of range" error when enabling IPFMode

#30256: (Support-ID 22900) ntservice.ini file location does not appear in ntlog.

#30247: Protocol filter "Layer3Protocol" could not take a list of protocols as described in the documentation DN-0449.

#30083: The driver may fail to start up if the system time jumps while the driver is initializing. The system time may jump if ntpdate runs while the driver is initializing.

#25272: Data test does not work when target field were not fully located within offset 1023

#21729: (Support-ID 21639) When using PCAP\_NS timestamp format and using TimeSyncTimeOffset parameter to account for a PPS signals propagation delay, you may see that the in-sync state occasionally gets out-of-sync, when using PPS timesync. This issue is only related to NT4E adapters.

#21228: Running the tool "supportinfo" repeatedly and at the same time using the driver in a normal scenario, may make the driver crash.

#20449: When running pktgen at full speed, the transmitted traffic is sent at 10M despite that the link speed indicated is 1G. Also diagnostics tool indicates that no packets were received.

#20447: When plugging a JDSU CFP4 module "JC4-10LR4AA1" it will manifest itself as a RxOnly module while it in fact is Rx/Tx

#20416: (Support-ID 20199) Wrong conflicting filter error when using Data tests

#20214: (Support-ID 14231) When using the PTP module, running in PTP master mode, the sync UDP messages contained invalid UDP checksum.

#19906: (Support-ID 19897) Fails to detect missing or invalid VS2012 redistributable package.

#19868: (Support-ID 14231) When using the PTP module, running in PTP master mode, the sync UDP messages contained invalid UDP checksum.

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#15725: If having more than one NT100E3-1 adapter in a server, all FPGA temperatures and the power measurements for all adapters, will be from the adapter with the highest adapter number.  
It is not possible to see these measurement for the other adapters.

#15721: If having more than one NT40E3-4 adapter and/or NT20E3-2 adapter in a server, all FPGA temperatures and the power measurements for all adapters, will be from the adapter with the highest adapter number.  
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## From version 02.08.04 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

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#36773: Added NVGRE support.

#36772: Added VXLAN support.

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#36765: Line loopback on NT200A01-2x100 does now work correctly.

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#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

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#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.



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## From version 02.08.03 to version 03.07.01 (this release)

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Command line option /NOSHORTCUTS.

#13804: Support for the NEBS version of NT100E3-1-PTP.

#13781: Support for the NEBS version of NT40E3-4-PTP.

#13759: (Support-ID 13351) A new ini-file parameter "OnBoardMemorySplit" has been added. It controls the on-board SDRAM splitting among all hostbuffers. When set to Even, it evenly splits the SDRAM into all hostbuffers. When set to Proportional, the hostbuffer size relative to the total hostbuffer allocated specifies the relative amount of SDRAM it will allocate.

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## From version 02.07.04 to version 03.07.01 (this release)

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If the HostBufferSegmentSizeRx is changed and HostBufferSegmentTimeout is kept default the segment timeout will be calculated based on the HostBufferSegmentSizeRx

#14152: New adapter NT20E3-2-PTP and the NEBS version of NT20E3-2-PTP are supported.

#14148: Optimized deletion of single IPMatchList entries using the NTPL "delete" command. Deletion of one IPv4 entry is now approx. 400us. per adapter.

#14110: Option to not install shortcuts has been added to the installer both in GUI mode and command line mode..  
Command line option /NOSHORTCUTS.

#13804: Support for the NEBS version of NT100E3-1-PTP.

#13781: Support for the NEBS version of NT40E3-4-PTP.

#13759: (Support-ID 13351) A new ini-file parameter "OnBoardMemorySplit" has been added. It controls the on-board SDRAM splitting among all hostbuffers. When set to Even, it evenly splits the SDRAM into all hostbuffers. When set to Proportional, the hostbuffer size relative to the total hostbuffer allocated specifies the relative amount of SDRAM it will allocate.

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#13065: Statistics can now be delivered every 100ms or every 500ms

#13048: New feature added to give a better time synchronization performance overview. The feature is called Timesync Statistics and includes counter for signal loss, synchronization loss and calculated statistical numbers of the time synchronization performance. See DN-0428 for more detailed description.

Supported by following adapters and FPGAs:

NT20E2-PTP: 51.03

NT4E2-4-PTP: 51.03

NT40E2-1: 51.03

NT40E3-4-PTP:51.04  
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#13042: This release provides a C language utility library named libntutil that contains software implementations of the hashing functionality used by Napatech adapters. Please refer to DN-0449 "Napatech Software Suite Reference Documentation" in the section named "Utility Library libntutil" for additional information.

#12989: The NTPL Setup command option MinHostBufferSize now ensures that the smallest HostBuffer which is larger than or equal to MinHostBufferSize is chosen.

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#12975: An explicit error entry will appear in the log if an adapter is not of the expected type

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#12943: Added new 'OuterOnlyIP' and 'InnerOnlyIP' arguments to the 'ListType' option in the NTPL command 'IPMatchList'. Using the new arguments to 'ListType' enables matching 288 IPv4 addresses and 72 IPv6 addresses on either outer IP addresses or inner tunnel IP addresses.

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#30314: "Port number out of range" error when enabling IPFMode

#30083: The driver may fail to start up if the system time jumps while the driver is initializing. The system time may jump if ntpdate runs while the driver is initializing.

#15721: If having more than one NT40E3-4 adapter and/or NT20E3-2 adapter in a server, all FPGA temperatures and the power measurements for all adapters, will be from the adapter with the highest adapter number. It is not possible to see these measurement for the other adapters.

#14000: (Support-ID 13958) Offline NUMA nodes may prevent the driver from starting up. A NUMA node is either online or offline; a NUMA node is usually offline when it has no memory assigned. The driver will not start when at least one offline NUMA node creates a hole in the sequence of NUMA nodes. For instance, in a server with two NUMA nodes, where NUMA node zero is offline and NUMA node one is online, the driver will not start.

#13368: Setting user defined VPD section with the vpd tool caused certain VPD sections to become invalid.

#13365: Setting user defined VPD section with the vpd tool caused certain VPD sections to become invalid.

#13341: (Support-ID 13149) On Napatech Gen2 adapters loaded with an AVR version below 2.0, the diagnostics tool with the --idd option sometimes report Intf-SM errors, where it actually is not an error.

#13339: (Support-ID 12708) The OS timesync algorithm indicates "in-sync" too early before the system is stable

#13337: Dead links for nested C structures/unions in Doxygen/WebHelp output.

#13108: (Support-ID 11627) FAN speed values can be wrong when server CPU load is high. In cases of high CPU load a percentage of the FAN speed measurements ought to be skipped.

#13063: Unfair round-robin algorithm when running with multiple TX host buffers.

#13051: It is not possible to deactivate streams for IPF mode unmatched fragments using NTPL.

#13044: This release provides a C language utility library named libntutil that contains software implementations of the hashing functionality used by Napatech adapters. Please refer to DN-0449 "Napatech Software Suite Reference Documentation" in the section named "Utility Library libntutil" for additional information.

#13007: Although it is possible to define TX host buffers that are two gigabytes or larger in the ntservice.ini file, it is impossible to request a TX host buffer that is two gigabytes or larger via NTAPI.

#13005: The driver sets the default interframe-gap maximum (ifgmax) value to 23 milli-seconds for the NT40E2-1 adapter, which is less than the intended value (which is approximately 2.6 seconds). It is possible to use the config tool to set the interframe-gap maximum value after the driver has started. Please refer to the help text available with /opt/napatech3/bin/config -h.

#12966: (Support-ID 11495) When compiling the capture\_example file and having the adapter configured for packet descriptor PCAP and time stamp method PCAP\_NS, the generated output file cannot be read by e.g. wireshark.

#12792: When using the autostart feature NTService -A an error "Failed to open startup event: Global\\\_\_3GStartUpEvent\_\_" is logged at every start.

#12612: (Support-ID 12601) Using many concurrent running NTAPI applications, calling NT\_NetRxOpen and NT\_NetRxClose continuously may lead to a driver crash

#12431: Detailed Stream Info in Profiling shows the ID as xxx?^

#12281: (Support-ID 12492) Running a large number of NTPL commands could cause NtService to crash and become unresponsive.

#11994: Unfair round-robin algorithm when running with multiple TX host buffers.

#9459: (Support-ID 9825) If an adapter found in the system is missing from the .ini file a warning entry is given in the log

## From version 02.07.03 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.



#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

#33242: Doxygen documentation updated in NTPL data section

#33216: (Support-ID 30301) Updated description of streams in doxygen

#33212: Doxygen documentation updated on Global time sync clock in the Coordinated Time-Synchronized Transmit section

#31574: NDA reference in include files has been replaced with reference to Napatech Software License Agreement.

#30371: Avago ABCU-5740RZ SFP has been qualified with this driver

#30342: (Support-ID 28663) Adapter Merge section of DN-0449 updated with information about required time synchronization between adapters when merging data between different adapters.

#30319: It has been made possible to use NTPL to classify both outer and inner IP fragments as "unmatched", thus directing such fragments to a certain stream (or set of streams). This feature relieves an application from identifying IP fragments.

For additional information, please refer to the description of the NTPL IPFMode command in the DN-0449 document. This functionality depends on FPGA support for the feature.

#28816: General pcap and pcap-ng feature added to NTAPI NetFile API.

#28794: Support for Windows 10 has been added.

#28642: Included support for new fan and fan-ranges on NT100E3-1, to support improved thermal solution.

#20441: Splash screen is now removed from the driver installer.

#20222: Each port on the NT40E3-4 and NT20E3-2 can now be configured to either 1Gbit/s or 10Gbit/s.

#19860: MPLS Decapsulation:

Purpose MPLS decapsulation enables MPLS-unaware applications to monitor MPLS networks by stripping the frames of all MPLS labels and delivering valid Ethernet frames.

#16276: Retransmit from one port to multiple ports is now supported for the NT40E3-4-PTP and the NT20E3-2-PTP accelerators .

#16031: Optimized IPMatchlist filter configuration time when using masks. Before optimization an additional 4.5ms per byte masked was consumed. This has been optimized to 100us per byte masked.

#15934: (Support-ID 15985) The driver installer is now signed.

#15717: The IPMatchList capacity has been extended and can for adapters with feature set N-ANL3 contain 864 IPv4 addresses and 216 IPv6 addresses.

#14322: NTPL IPMatchlist has been optimized when adding/deleting entries using masks by reusing previously used masks.

#14279: A new parameter HostBufferSegmentSizeRx has been introduced to select between segment sizes of 1,2,4 MB.

The HostbufferSegmentTimeout value range has been extended to include 10000, 25000, 50000, 100000 us.

If the HostBufferSegmentSizeRx is changed and HostBufferSegmentTimeout is kept default the segment timeout will be calculated based on the HostBufferSegmentSizeRx

#14152: New adapter NT20E3-2-PTP and the NEBS version of NT20E3-2-PTP are supported.

#14148: Optimized deletion of single IPMatchList entries using the NTPL "delete" command. Deletion of one IPv4 entry is now approx. 400us. per adapter.

#14110: Option to not install shortcuts has been added to the installer both in GUI mode and command line mode..  
Command line option /NOSHORTCUTS.

#13804: Support for the NEBS version of NT100E3-1-PTP.

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#12431: Detailed Stream Info in Profiling shows the ID as xxx?^

#12281: (Support-ID 12492) Running a large number of NTPL commands could cause NtService to crash and become unresponsive.

#11994: Unfair round-robin algorithm when running with multiple TX host buffers.

#11735: In some situations, when establishing link between two NT40E2-1 adapters, the port can be set in errorstate and the error message "ERROR: FPGA submld link NOT OK! - NT\_REG\_SUBMLD\_40G\_PCS\_STAT\_1 reg: 00000000" is submitted to the ntlog.

#9459: (Support-ID 9825) If an adapter found in the system is missing from the .ini file a warning entry is given in the log

## From version 02.07.02 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

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#38388: Added support for transmit on time stamp.

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Command line option /NOSHORTCUTS.

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#11875: New feature added to give a better time synchronization performance overview. The feature is called Timesync Statistics and includes counter for signal loss, synchronization loss and calculated statistical numbers of the time synchronization performance. See DN-0428 for more detailed description.

#11670: The busID is not used anymore if there is only one adapter present. Neither is it generated in the ini-file.

#11517: Added support for NT4E2-4-PTP FPGA image: 200-9226-50-04

## **Resolved issues**

#30427: (Support-ID 11947) Spelling error throughout Warnings and Errors

#30350: (Support-ID 9691) The config tool cannot configure triple speed copper SFPs on a NT4E-4 adapter.

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#30083: The driver may fail to start up if the system time jumps while the driver is initializing. The system time may jump if ntpdate runs while the driver is initializing.

#15721: If having more than one NT40E3-4 adapter and/or NT20E3-2 adapter in a server, all FPGA temperatures and the power measurements for all adapters, will be from the adapter with the highest adapter number. It is not possible to see these measurement for the other adapters.

#14000: (Support-ID 13958) Offline NUMA nodes may prevent the driver from starting up. A NUMA node is either online or offline; a NUMA node is usually offline when it has no memory assigned. The driver will not start when at least one offline NUMA node creates a hole in the sequence of NUMA nodes. For instance, in a server with two NUMA nodes, where NUMA node zero is offline and NUMA node one is online, the driver will not start.

#13368: Setting user defined VPD section with the vpd tool caused certain VPD sections to become invalid.

#13341: (Support-ID 13149) On Napatech Gen2 adapters loaded with an AVR version below 2.0, the diagnostics tool with the --idd option sometimes report Intf-SM errors, where it actually is not an error.

#13339: (Support-ID 12708) The OS timesync algorithm indicates "in-sync" too early before the system is stable

#13337: Dead links for nested C structures/unions in Doxygen/WebHelp output.

#13108: (Support-ID 11627) FAN speed values can be wrong when server CPU load is high. In cases of high CPU load a percentage of the FAN speed measurements ought to be skipped.

#13063: Unfair round-robin algorithm when running with multiple TX host buffers.

#13044: This release provides a C language utility library named libntutil that contains software implementations of the hashing functionality used by Napatech adapters. Please refer to DN-0449 "Napatech Software Suite Reference Documentation" in the section named "Utility Library libntutil" for additional information.

#13007: Although it is possible to define TX host buffers that are two gigabytes or larger in the ntservice.ini file, it is impossible to request a TX host buffer that is two gigabytes or larger via NTAPI.

#13005: The driver sets the default interframe-gap maximum (ifgmax) value to 23 milli-seconds for the NT40E2-1 adapter, which is less than the intended value (which is approximately 2.6 seconds). It is possible to use the config tool to set the interframe-gap maximum value after the driver has started. Please refer to the help text available with /opt/napatech3/bin/config -h.

#12966: (Support-ID 11495) When compiling the capture\_example file and having the adapter configured for packet descriptor PCAP and time stamp method PCAP\_NS, the generated output file cannot be read by e.g. wireshark.

#12792: When using the autostart feature NTService -A an error "Failed to open startup event: Global\\\_3GStartupEvent\_" is logged at every start.

#12612: (Support-ID 12601) Using many concurrent running NTAPI applications, calling NT\_NetRxOpen and NT\_NetRxClose continuously may lead to a driver crash

#12431: Detailed Stream Info in Profiling shows the ID as xxx?^

#12281: (Support-ID 12492) Running a large number of NTPL commands could cause NtService to crash and become unresponsive.

#11994: Unfair round-robin algorithm when running with multiple TX host buffers.

#11735: In some situations, when establishing link between two NT40E2-1 adapters, the port can be set in errorstate and the error message "ERROR: FPGA submld link NOT OK! - NT\_REG\_SUBMLD\_40G\_PCS\_STAT\_1 reg: 00000000" is submitted to the ntlog.

#9459: (Support-ID 9825) If an adapter found in the system is missing from the .ini file a warning entry is given in the log

## From version 02.06.03 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.



#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

#33242: Doxygen documentation updated in NTPL data section

#33216: (Support-ID 30301) Updated description of streams in doxygen

#33212: Doxygen documentation updated on Global time sync clock in the Coordinated Time-Synchronized Transmit section

#31574: NDA reference in include files has been replaced with reference to Napatech Software License Agreement.

#30371: Avago ABCU-5740RZ SFP has been qualified with this driver

#30342: (Support-ID 28663) Adapter Merge section of DN-0449 updated with information about required time synchronization between adapters when merging data between different adapters.

#30319: It has been made possible to use NTPL to classify both outer and inner IP fragments as "unmatched", thus directing such fragments to a certain stream (or set of streams). This feature relieves an application from identifying IP fragments.

For additional information, please refer to the description of the NTPL IPFMode command in the DN-0449 document. This functionality depends on FPGA support for the feature.

#28816: General pcap and pcap-ng feature added to NTAPI NetFile API.

#28794: Support for Windows 10 has been added.

#28642: Included support for new fan and fan-ranges on NT100E3-1, to support improved thermal solution.

#20441: Splash screen is now removed from the driver installer.

#20222: Each port on the NT40E3-4 and NT20E3-2 can now be configured to either 1Gbit/s or 10Gbit/s.

#19860: MPLS Decapsulation:

Purpose MPLS decapsulation enables MPLS-unaware applications to monitor MPLS networks by stripping the frames of all MPLS labels and delivering valid Ethernet frames.

#16276: Retransmit from one port to multiple ports is now supported for the NT40E3-4-PTP and the NT20E3-2-PTP accelerators .

#16031: Optimized IPMatchlist filter configuration time when using masks. Before optimization an additional 4.5ms per byte masked was consumed. This has been optimized to 100us per byte masked.

#15934: (Support-ID 15985) The driver installer is now signed.

#15717: The IPMatchList capacity has been extended and can for adapters with feature set N-ANL3 contain 864 IPv4 addresses and 216 IPv6 addresses.

#14322: NTPL IPMatchlist has been optimized when adding/deleting entries using masks by reusing previously used masks.

#14279: A new parameter HostBufferSegmentSizeRx has been introduced to select between segment sizes of 1,2,4 MB.

The HostbufferSegmentTimeout value range has been extended to include 10000, 25000, 50000, 100000 us.

If the HostBufferSegmentSizeRx is changed and HostBufferSegmentTimeout is kept default the segment timeout will be calculated based on the HostBufferSegmentSizeRx

#14152: New adapter NT20E3-2-PTP and the NEBS version of NT20E3-2-PTP are supported.

#14148: Optimized deletion of single IPMatchList entries using the NTPL "delete" command. Deletion of one IPv4 entry is now approx. 400us. per adapter.

#14110: Option to not install shortcuts has been added to the installer both in GUI mode and command line mode..  
Command line option /NOSHORTCUTS.

#13804: Support for the NEBS version of NT100E3-1-PTP.

#13781: Support for the NEBS version of NT40E3-4-PTP.

#13759: (Support-ID 13351) A new ini-file parameter "OnBoardMemorySplit" has been added. It controls the on-board SDRAM splitting among all hostbuffers. When set to Even, it evenly splits the SDRAM into all hostbuffers. When set to Proportional, the hostbuffer size relative to the total hostbuffer allocated specifies the relative amount of SDRAM it will allocate.

#13357: The IPMatchList NTPL command has been optimized to consume approximately 1ms for simple IPMatchList expressions (no IP masks or IP ranges).

#13065: Statistics can now be delivered every 100ms or every 500ms

#13048: New feature added to give a better time synchronization performance overview. The feature is called Timesync Statistics and includes counter for signal loss, synchronization loss and calculated statistical numbers of the time synchronization performance. See DN-0428 for more detailed description.

Supported by following adapters and FPGAs:

NT20E2-PTP: 51.03

NT4E2-4-PTP: 51.03

NT40E2-1: 51.03

NT40E3-4-PTP:51.04  
NT100E3-1-PTP: 51.16

#13042: This release provides a C language utility library named libntutil that contains software implementations of the hashing functionality used by Napatech adapters. Please refer to DN-0449 "Napatech Software Suite Reference Documentation" in the section named "Utility Library libntutil" for additional information.

#12989: The NTPL Setup command option MinHostBufferSize now ensures that the smallest HostBuffer which is larger than or equal to MinHostBufferSize is chosen.

#12977: More explicit error output when AdapterType is mis-spelled or wrong

#12975: An explicit error entry will appear in the log if an adapter is not of the expected type

#12964: HostBufferPollInterval values 50, 750 and 2000 removed as they were only used for debugging purposes and did return an error if used with a released driver.

#12943: Added new 'OuterOnlyIP' and 'InnerOnlyIP' arguments to the 'ListType' option in the NTPL command 'IPMatchList'. Using the new arguments to 'ListType' enables matching 288 IPv4 addresses and 72 IPv6 addresses on either outer IP addresses or inner tunnel IP addresses.

#12592: SofLinkSpeed parameter has been added to ntservice.ini to support link speeds other than 1G when SOF timestamp mode is enabled.

#11875: New feature added to give a better time synchronization performance overview. The feature is called Timesync Statistics and includes counter for signal loss, synchronization loss and calculated statistical numbers of the time synchronization performance. See DN-0428 for more detailed description.

#11670: The busID is not used anymore if there is only one adapter present. Neither is it generated in the ini-file.

#11517: Added support for NT4E2-4-PTP FPGA image: 200-9226-50-04

#11193: Added new command line option (-l, --logmsg) to ntlog tool to write a custom line of text to the ntservice log system.

#11032: A screen dump feature is added to the tools monitoring and profiling. By hitting the key 'F' a copy of the screen is saved to disk. The screen dump is appended to the saved screen dumps. The name of the screen dump files is either monitoring.scn and profiling.scn.

#10983: An Info log has been added for each adapter that has PpsIn defined and where it should be used to do PPS time sync. The log is not written if the PpsIn are only used for sampling.  
Info text: Adapter 0: PpsIn is defined for this adapter. Use an external PPS tool or application to start PPS time sync.

#10910: (Support-ID 10551) FPGA feature level can now be read using the API. It is a part of the NtInfoAdapter\_v5\_s structure and can be read using the info stream.

#10812: Wis mode can now be enabled pr port by using the wisModeMask parameter which has been added to ntservice.ini

#10689: Added the ability to filter on inner tunnel layer 3 and layer 4 though the NTPL Data filter. This feature requires matching FPGA feature set. See filter documentation for details.

#10686: Added the ability to slice packets within a tunnel though the NTPL assign command. This feature requires matching FPGA feature set. See filter documentation for details.



#9588: Alarms are now generated when the status of an external NT-TSU or NT-TSE loses the synchronization signal, synchronization or Time of Day information. The alarms are sent as events:  
NT\_EVENT\_TIMESYNC\_EXTERNAL\_DEVICE\_LOST\_SYNC\_SIGNAL  
NT\_EVENT\_TIMESYNC\_EXTERNAL\_DEVICE\_OUT\_OF\_SYNC  
NT\_EVENT\_TIMESYNC\_EXTERNAL\_DEVICE\_LOST\_TIME\_OF\_DAY  
This information is still logged as INFO in the ntlog.

## Resolved issues

#30427: (Support-ID 11947) Spelling error throughout Warnings and Errors

#30350: (Support-ID 9691) The config tool cannot configure triple speed copper SFPs on a NT4E-4 adapter.

#30336: (Support-ID 28916) FCS errors seen in Wireshark on PTP Delay Response packages sent from PTP stack on adapter in master mode.

#30314: "Port number out of range" error when enabling IPFMode

#14000: (Support-ID 13958) Offline NUMA nodes may prevent the driver from starting up. A NUMA node is either online or offline; a NUMA node is usually offline when it has no memory assigned. The driver will not start when at least one offline NUMA node creates a hole in the sequence of NUMA nodes. For instance, in a server with two NUMA nodes, where NUMA node zero is offline and NUMA node one is online, the driver will not start.

#13341: (Support-ID 13149) On Napatech Gen2 adapters loaded with an AVR version below 2.0, the diagnostics tool with the --idd option sometimes report Intf-SM errors, where it actually is not an error.

#13339: (Support-ID 12708) The OS timesync algorithm indicates "in-sync" too early before the system is stable

#13337: Dead links for nested C structures/unions in Doxygen/WebHelp output.

#13108: (Support-ID 11627) FAN speed values can be wrong when server CPU load is high. In cases of high CPU load a percentage of the FAN speed measurements ought to be skipped.

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#13007: Although it is possible to define TX host buffers that are two gigabytes or larger in the ntservice.ini file, it is impossible to request a TX host buffer that is two gigabytes or larger via NTAPI.

#12966: (Support-ID 11495) When compiling the capture\_example file and having the adapter configured for packet descriptor PCAP and time stamp method PCAP\_NS, the generated output file cannot be read by e.g. wireshark.

#12612: (Support-ID 12601) Using many concurrent running NTAPI applications, calling NT\_NetRxOpen and NT\_NetRxClose continuously may lead to a driver crash

#12281: (Support-ID 12492) Running a large number of NTPL commands could cause NtService to crash and become unresponsive.

#11994: Unfair round-robin algorithm when running with multiple TX host buffers.



#11735: In some situations, when establishing link between two NT40E2-1 adapters, the port can be set in errorstate and the error message "ERROR: FPGA submld link NOT OK! - NT\_REG\_SUBMLD\_40G\_PCS\_STAT\_1 reg: 00000000" is submitted to the ntlog.

#10978: (Support-ID 10916) Error when using port lists in dedup NTPL on port adapter.  
"Deduplication[Timeout = 10; DynOffset = Layer2HeaderSize; Offset = 12] = Port == 0,1,2,3,4,5,6,7" will fail with error  
Error: 0x2000100A  
Ports not on same adapter

#10893: In the list of Programs and Features in Control Panel in Windows there are Napatech 3G Driver and Napatech 3G Tools uninstallers elements shown with Napatech uninstaller-style icon, instead of installer-style icon, which is more common style for the Programs and Features list.

#10852: Version-id in Napatech 3G Driver & Tools installers windows titles and in the uninstallers file names contains build-id with hexadecimal tag, but only the 3 first digits relate to the Napatech release-id (fx 2.7.2).  
There is abbreviation NT used instead of the full name of the product in Napatech 3G Driver & Tools installers windows titles.

#10629: Running NTService.exe as non-admin user with UAC turned off, results in an infinite loop where NTService asks for admin access.

#10621: Max 255 TX hostbuffers are supported despite documentation says 4096.  
Specifying more than 255 TX hostbuffers will most likely result in less than 255 TX hostbuffers being available.

#9459: (Support-ID 9825) If an adapter found in the system is missing from the .ini file a warning entry is given in the log

## From version 02.06.01 to version 03.07.01 (this release)

### New features

#38395: Added support for CPU socket load balancer on NT40A01-4x10/1-SLB.

#38394: PTP support added on NT200A01

#38392: Added support for local retransmit

#38388: Added support for transmit on time stamp.

#38387: Supportinfo default behaviour has changed. Binary files are no longer by default included into the supportinfo tar-ball archive. Previous behaviour can be selected by invoking supportinfo with option -b

#38379: Enable the capfileconvert tool to write output to stdout via a "-o -" option.

#38377: Macros can now also be constructed using the NTPL "Define" command.

#38371: MPLS documentation in NTPL. protocol tests section has been updated with examples and new macros. FilterMacros.txt has been updated with documented macros.

#36825: /NOHEADERS option added to windows installer. Using this option prevents include files and libs to be installed.

#36773: Added NVGRE support.

#36772: Added VXLAN support.

#36770: Added full throughput in-line support

#36767: Added support for time stamp clock sampled on software generated PPS on NT40E3-4, NT80E3-2, and NT100E3-1.

#36765: Line loopback on NT200A01-2x100 does now work correctly.

#36764: Added support for ClassifyUnmatched=All option to the IPFMode command.

#36762: Inline memory allocation support for dynamic descriptors added.

#36761: Capture can now utilize the packet interface, allowing it to capture from more advanced stream configurations. The packet interface is activated by the "-P" option.

#36752: (Support-ID 33352) Added a new mode to the "FilterInfo" NTPL command that shows filter resource usage.

#36742: All kernel mode drivers are now signed with SHA256 certificate.

#36509: Updated NtNetBuf\_s structure definition, and increased NTAPI\_VERSION to 2. Application code will need to be recompiled, and tools from earlier driver releases will no longer work. If the NtNetBuf\_s structure is accessed directly from an application code (not utilizing the provided macros), an update to the application code may be needed.



#36508: Added Timestamp sampling executed by application. By writing an Event and then read Timesync information from infostream. Timestamp samples can be read in combination with CPU tsc values before and after sampling event.

#36507: New statistic command NT\_STATISTICS\_READ\_CMD\_USAGE\_DATA\_V0 added. The command will return information about hostbuffer, streamid and SDRAM usage.

#36506: Time skew added to log message when adapter goes out of sync

#36504: Each port can be configured to 100Mbit/s, 1Gbit/s or 10Gbit/s.

#36503: NT\_NetRxRead has been extended with the command NT\_NETRX\_READ\_CMD\_PCAP\_FCS. The command will tell whether or not there is FCS included in a PCAP packet (descriptor=PCAP and Timestampformat=PCAP | PCAP\_NS).

Note: The command must be called after NT\_NetRxOpen is called and after the first packet is fetched (NT\_NetRxGet is called).

This is necessary as all filters must be assigned before calling the command.

#36502: The driver now supports both 4GA and 3GA accelerators and accelerators with PCIe Gen 1, 2, and 3.

#36488: Driver, Tools and ImgCtrl components are now combined into one common install package

#36486: Added support for Windows Server 2016

#36110: The driver and tools is now signed with a SHA256 certificate.

#33242: Doxygen documentation updated in NTPL data section

#33216: (Support-ID 30301) Updated description of streams in doxygen

#33212: Doxygen documentation updated on Global time sync clock in the Coordinated Time-Synchronized Transmit section

#31574: NDA reference in include files has been replaced with reference to Napatech Software License Agreement.

#30371: Avago ABCU-5740RZ SFP has been qualified with this driver

#30342: (Support-ID 28663) Adapter Merge section of DN-0449 updated with information about required time synchronization between adapters when merging data between different adapters.

#30319: It has been made possible to use NTPL to classify both outer and inner IP fragments as "unmatched", thus directing such fragments to a certain stream (or set of streams). This feature relieves an application from identifying IP fragments.

For additional information, please refer to the description of the NTPL IPFMode command in the DN-0449 document. This functionality depends on FPGA support for the feature.

#28816: General pcap and pcap-ng feature added to NTAPI NetFile API.

#28794: Support for Windows 10 has been added.

#28642: Included support for new fan and fan-ranges on NT100E3-1, to support improved thermal solution.

#20441: Splash screen is now removed from the driver installer.

#20222: Each port on the NT40E3-4 and NT20E3-2 can now be configured to either 1Gbit/s or 10Gbit/s.

#19860: MPLS Decapsulation:

Purpose MPLS decapsulation enables MPLS-unaware applications to monitor MPLS networks by stripping the frames of all MPLS labels and delivering valid Ethernet frames.

#16276: Retransmit from one port to multiple ports is now supported for the NT40E3-4-PTP and the NT20E3-2-PTP accelerators .

#16031: Optimized IPMatchlist filter configuration time when using masks. Before optimization an additional 4.5ms per byte masked was consumed. This has been optimized to 100us per byte masked.

#15934: (Support-ID 15985) The driver installer is now signed.

#15717: The IPMatchList capacity has been extended and can for adapters with feature set N-ANL3 contain 864 IPv4 addresses and 216 IPv6 addresses.

#14322: NTPL IPMatchlist has been optimized when adding/deleting entries using masks by reusing previously used masks.

#14279: A new parameter HostBufferSegmentSizeRx has been introduced to select between segment sizes of 1,2,4 MB.

The HostbufferSegmentTimeout value range has been extended to include 10000, 25000, 50000, 100000 us. If the HostBufferSegmentSizeRx is changed and HostBufferSegmentTimeout is kept default the segment timeout will be calculated based on the HostBufferSegmentSizeRx

#14152: New adapter NT20E3-2-PTP and the NEBS version of NT20E3-2-PTP are supported.

#14148: Optimized deletion of single IPMatchList entries using the NTPL "delete" command. Deletion of one IPv4 entry is now approx. 400us. per adapter.

#14110: Option to not install shortcuts has been added to the installer both in GUI mode and command line mode.. Command line option /NOSHORTCUTS.

#13804: Support for the NEBS version of NT100E3-1-PTP.

#13781: Support for the NEBS version of NT40E3-4-PTP.

#13759: (Support-ID 13351) A new ini-file parameter "OnBoardMemorySplit" has been added. It controls the on-board SDRAM splitting among all hostbuffers. When set to Even, it evenly splits the SDRAM into all hostbuffers. When set to Proportional, the hostbuffer size relative to the total hostbuffer allocated specifies the relative amount of SDRAM it will allocate.

#13357: The IPMatchList NTPL command has been optimized to consume approximately 1ms for simple IPMatchList expressions (no IP masks or IP ranges).

#13065: Statistics can now be delivered every 100ms or every 500ms

#13048: New feature added to give a better time synchronization performance overview. The feature is called Timesync Statistics and includes counter for signal loss, synchronization loss and calculated statistical numbers of the time synchronization performance. See DN-0428 for more detailed description.

Supported by following adapters and FPGAs:

NT20E2-PTP: 51.03

NT4E2-4-PTP: 51.03

NT40E2-1: 51.03

NT40E3-4-PTP:51.04  
NT100E3-1-PTP: 51.16

#13042: This release provides a C language utility library named libntutil that contains software implementations of the hashing functionality used by Napatech adapters. Please refer to DN-0449 "Napatech Software Suite Reference Documentation" in the section named "Utility Library libntutil" for additional information.

#12989: The NTPL Setup command option MinHostBufferSize now ensures that the smallest HostBuffer which is larger than or equal to MinHostBufferSize is chosen.

#12977: More explicit error output when AdapterType is mis-spelled or wrong

#12975: An explicit error entry will appear in the log if an adapter is not of the expected type

#12964: HostBufferPollInterval values 50, 750 and 2000 removed as they were only used for debugging purposes and did return an error if used with a released driver.

#12943: Added new 'OuterOnlyIP' and 'InnerOnlyIP' arguments to the 'ListType' option in the NTPL command 'IPMatchList'. Using the new arguments to 'ListType' enables matching 288 IPv4 addresses and 72 IPv6 addresses on either outer IP addresses or inner tunnel IP addresses.

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#11875: New feature added to give a better time synchronization performance overview. The feature is called Timesync Statistics and includes counter for signal loss, synchronization loss and calculated statistical numbers of the time synchronization performance. See DN-0428 for more detailed description.

#11670: The busID is not used anymore if there is only one adapter present. Neither is it generated in the ini-file.

#11517: Added support for NT4E2-4-PTP FPGA image: 200-9226-50-04

#11193: Added new command line option (-l, --logmsg) to ntlog tool to write a custom line of text to the ntservice log system.

#11032: A screen dump feature is added to the tools monitoring and profiling. By hitting the key 'F' a copy of the screen is saved to disk. The screen dump is appended to the saved screen dumps. The name of the screen dump files is either monitoring.scn and profiling.scn.

#10983: An Info log has been added for each adapter that has PpsIn defined and where it should be used to do PPS time sync. The log is not written if the PpsIn are only used for sampling.  
Info text: Adapter 0: PpsIn is defined for this adapter. Use an external PPS tool or application to start PPS time sync.

#10910: (Support-ID 10551) FPGA feature level can now be read using the API. It is a part of the NtInfoAdapter\_v5\_s structure and can be read using the info stream.

#10812: Wis mode can now be enabled pr port by using the wisModeMask parameter which has been added to ntservice.ini

#10689: Added the ability to filter on inner tunnel layer 3 and layer 4 though the NTPL Data filter. This feature requires matching FPGA feature set. See filter documentation for details.

#10686: Added the ability to slice packets within a tunnel though the NTPL assign command. This feature requires matching FPGA feature set. See filter documentation for details.



#9588: Alarms are now generated when the status of an external NT-TSU or NT-TSE loses the synchronization signal, synchronization or Time of Day information. The alarms are sent as events:  
NT\_EVENT\_TIMESYNC\_EXTERNAL\_DEVICE\_LOST\_SYNC\_SIGNAL  
NT\_EVENT\_TIMESYNC\_EXTERNAL\_DEVICE\_OUT\_OF\_SYNC  
NT\_EVENT\_TIMESYNC\_EXTERNAL\_DEVICE\_LOST\_TIME\_OF\_DAY  
This information is still logged as INFO in the ntlog.

## Resolved issues

#30427: (Support-ID 11947) Spelling error throughout Warnings and Errors

#30350: (Support-ID 9691) The config tool cannot configure triple speed copper SFPs on a NT4E-4 adapter.

#30336: (Support-ID 28916) FCS errors seen in Wireshark on PTP Delay Response packages sent from PTP stack on adapter in master mode.

#30314: "Port number out of range" error when enabling IPFMode

#14000: (Support-ID 13958) Offline NUMA nodes may prevent the driver from starting up. A NUMA node is either online or offline; a NUMA node is usually offline when it has no memory assigned. The driver will not start when at least one offline NUMA node creates a hole in the sequence of NUMA nodes. For instance, in a server with two NUMA nodes, where NUMA node zero is offline and NUMA node one is online, the driver will not start.

#13341: (Support-ID 13149) On Napatech Gen2 adapters loaded with an AVR version below 2.0, the diagnostics tool with the --idd option sometimes report Intf-SM errors, where it actually is not an error.

#13339: (Support-ID 12708) The OS timesync algorithm indicates "in-sync" too early before the system is stable

#13337: Dead links for nested C structures/unions in Doxygen/WebHelp output.

#13108: (Support-ID 11627) FAN speed values can be wrong when server CPU load is high. In cases of high CPU load a percentage of the FAN speed measurements ought to be skipped.

#13063: Unfair round-robin algorithm when running with multiple TX host buffers.

#13044: This release provides a C language utility library named libntutil that contains software implementations of the hashing functionality used by Napatech adapters. Please refer to DN-0449 "Napatech Software Suite Reference Documentation" in the section named "Utility Library libntutil" for additional information.

#13007: Although it is possible to define TX host buffers that are two gigabytes or larger in the ntservice.ini file, it is impossible to request a TX host buffer that is two gigabytes or larger via NTAPI.

#12966: (Support-ID 11495) When compiling the capture\_example file and having the adapter configured for packet descriptor PCAP and time stamp method PCAP\_NS, the generated output file cannot be read by e.g. wireshark.

#12612: (Support-ID 12601) Using many concurrent running NTAPI applications, calling NT\_NetRxOpen and NT\_NetRxClose continuously may lead to a driver crash

#12281: (Support-ID 12492) Running a large number of NTPL commands could cause NtService to crash and become unresponsive.

#11994: Unfair round-robin algorithm when running with multiple TX host buffers.



#11735: In some situations, when establishing link between two NT40E2-1 adapters, the port can be set in errorstate and the error message "ERROR: FPGA submld link NOT OK! - NT\_REG\_SUBMLD\_40G\_PCS\_STAT\_1 reg: 00000000" is submitted to the ntlog.

#11353: When using the packet interface and when releasing packets out-of-order, the host buffer system leaks segments, thus ultimately bringing the data path to a halt.

#11081: (Support-ID 11011) The driver lacks information about the RX path delay for adapters with FPGA identifier 9226-48. An attempt to retrieve the RX path delay for this type of adapter causes the system to return the status NOT\_SUPPORTED.

#10978: (Support-ID 10916) Error when using port lists in dedup NTPL on port adapter.  
"Deduplication[Timeout = 10; DynOffset = Layer2HeaderSize; Offset = 12] = Port == 0,1,2,3,4,5,6,7" will fail with error Error: 0x2000100A  
Ports not on same adapter

#10971: Merging from multiple host buffers in a stream-id may return packets out of time stamp order. No packets are lost.  
The host buffer merging apply when running the INLINE profile and receiving from multiple ports to the same stream-id or running any profile and receiving traffic from ports on multiple adapters into the same stream-id

#10893: In the list of Programs and Features in Control Panel in Windows there are Napatech 3G Driver and Napatech 3G Tools uninstallers elements shown with Napatech uninstaller-style icon, instead of installer-style icon, which is more common style for the Programs and Features list.

#10859: Installed Desktop and Start Menu shortcuts "NT 3G Tools" for 32-bit version of Napatech 3G Driver over 64-bit system does not work.

#10852: Version-id in Napatech 3G Driver & Tools installers windows titles and in the uninstallers file names contains build-id with hexadecimal tag, but only the 3 first digits relate to the Napatech release-id (fx 2.7.2).  
There is abbreviation NT used instead of the full name of the product in Napatech 3G Driver & Tools installers windows titles.

#10843: Installation of the system files for 32-bit version of Napatech 3G Driver over 64-bit system is not correct, which prevent ntsservice and applications with usage of Napatech 3G Driver work properly.  
Clean-up of the user system on uninstallation of Napatech 3G Software can be incomplete, which can cause a problem for the following reinstallation.

#10629: Running NTService.exe as non-admin user with UAC turned off, results in an infinite loop where NTService asks for admin access.

#10621: Max 255 TX hostbuffers are supported despite documentation says 4096.  
Specifying more than 255 TX hostbuffers will most likely result in less than 255 TX hostbuffers being available.

#9459: (Support-ID 9825) If an adapter found in the system is missing from the .ini file a warning entry is given in the log