



NVIDIA DOCA PCC Counter Tool

User Guide

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Chapter 1. Introduction

The PCC Counter tool is used to print PCC-related hardware counters. The output counters help debug the PCC user algorithm embedded in the DOCA PCC application.

Chapter 2. Prerequisites

DOCA 2.2.0 and higher.

Chapter 3. Description

If NVIDIA® BlueField®-3 is operating in DPU mode, the script must be executed on the Arm side. If BlueField-3 is operating in NIC mode, the script must be executed on the host side.



Refer to [DPU Modes of Operation](#) for more information.

The following performance counters are supported for PCC:

- ▶ MAD_RTT_PERF_CONT_REQ – the number of RTT requests received in total
- ▶ MAD_RTT_PERF_CONT_RES – the number of RTT responses received in total
- ▶ SX_EVENT_WRED_DROP – the number of TX events dropped due to the CC event queue being full
- ▶ SX_RTT_EVENT_WRED_DROP – the number of "TX event with RTT request sent indication" dropped due to the CC event queue being full
- ▶ ACK_EVENT_WRED_DROP – the number of Ack events dropped due to the CC event queue being full
- ▶ NACK_EVENT_WRED_DROP – the number of Nack events dropped due to the CC event queue being full
- ▶ CNP_EVENT_WRED_DROP – the number of CNP events dropped due to the CC event queue being full
- ▶ RTT_EVENT_WRED_DROP – the number of RTT events dropped due to the CC event queue being full
- ▶ HANDLED_SXW_EVENTS – the number of handled CC events related to SXW
- ▶ HANDLED_RXT_EVENTS – the number of handled CC events related to RXT
- ▶ DROP_RTT_PORT0_REQ – the number of RTT requests dropped in total from port 0
- ▶ DROP_RTT_PORT1_REQ – the number of RTT requests dropped in total from port 1
- ▶ DROP_RTT_PORT0_RES – the number of RTT responses dropped in total from port 0
- ▶ DROP_RTT_PORT1_RES – the number of RTT responses dropped in total from port 1
- ▶ RTT_GEN_PORT0_REQ – the number of RTT requests sent in total from port 0
- ▶ RTT_GEN_PORT1_REQ – the number of RTT requests sent in total from port 1
- ▶ RTT_GEN_PORT0_RES – the number of RTT responses sent in total from port 0

- ▶ `RTT_GEN_PORT1_RES` – the number of RTT responses sent in total from port 1
- ▶ `PCC_CNP_COUNT` – the number of CNP received in total, regardless of whether it is handled or ignored

Chapter 4. Execution

To use the PCC Counter:

1. Initialize all supported hardware counters. Run:

```
sudo ./pcc_counters.sh set /dev/mst/mt41692_pciconf0
```



Counters are zeroed after each `set` command.

2. Query all supported hardware counters. Run:

```
sudo ./pcc_counters.sh query /dev/mst/mt41692_pciconf0
```



The output counters are counted from the time the `set` command is executed to the time when the `query` command is issued.

Example output:

```
sudo ./pcc_counters.sh query /dev/mst/mt41692_pciconf0
-----PCC Counters-----
Counter: MAD_RTT_PERF_CONT_REQ Value: 000000000028b85b
Counter: MAD_RTT_PERF_CONT_RES Value: 000000000028b85a
Counter: SX_EVENT_WRED_DROP Value: 0000000000000000
Counter: SX_RTT_EVENT_WRED_DROP Value: 0000000000000000
Counter: ACK_EVENT_WRED_DROP Value: 0000000000ccdf4f
Counter: NACK_EVENT_WRED_DROP Value: 0000000000000000
Counter: CNP_EVENT_WRED_DROP Value: 0000000000000000
Counter: RTT_EVENT_WRED_DROP Value: 0000000000000000
Counter: HANDLED_SXW_EVENTS Value: 00000000932543a
Counter: HANDLED_RXT_EVENTS Value: 000000000028b85c
Counter: DROP_RTT_PORT0_REQ Value: 0000000000000000
Counter: DROP_RTT_PORT1_REQ Value: 0000000000000000
Counter: DROP_RTT_PORT0_RES Value: 0000000000000000
Counter: DROP_RTT_PORT1_RES Value: 0000000000000000
Counter: RTT_GEN_PORT0_REQ Value: 0000000000000000
Counter: RTT_GEN_PORT1_REQ Value: 000000000028b85c
Counter: RTT_GEN_PORT0_RES Value: 0000000000000000
Counter: RTT_GEN_PORT1_RES Value: 000000000028b85d
Counter: PCC_CNP_COUNT Value: 0000000000000000
```

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