



# NVIDIA DOCA Comm Channel Admin Tool

User Guide

# Table of Contents

- Chapter 1. Introduction..... 1
- Chapter 2. Prerequisites..... 2
- Chapter 3. Description.....3
- Chapter 4. Execution..... 4

---

# Chapter 1. Introduction

The Comm Channel Admin Tool is used to monitor Comm Channel services and connections on both the DPU and the host. For more information on the DOCA Comm Channel library, refer to the [NVIDIA DOCA Comm Channel Programming Guide](#).

---

## Chapter 2. Prerequisites

NVIDIA® BlueField®-2 firmware version 24.35.1012 or higher.

---

## Chapter 3. Description

On the DPU, Comm Channel Admin Tool can show the user which services are up alongside additional information about them:

- ▶ `service_name` – the name of the service
- ▶ `transport_type` – UD or DC
- ▶ `allowed_vhca_id` – which `vhca_id` is allowed to connect to this service
- ▶ `service_qpn_or_dct` –
  - ▶ UD transport type – indicates QP number of the service
  - ▶ DC transport type – indicates DC number of the service
- ▶ `num_connected_client` – indicates the number of current connected clients
- ▶ `max_num_connected_client` – indicates the maximum number of connected clients

Furthermore, users may query specific services according to the service name to get information about the connected clients. For every connected client the tool shows:

- ▶ `connection_id` – unique identifier for the connection
- ▶ `qpn` – QP number (or DCT) used for the connection

On the host, the tool can show the user the name of the active services on the DPU. Furthermore, it can show information about the active connections between the host and the DPU:

- ▶ `service_name` – the name of the service
- ▶ `transport_type` – UD or DC
- ▶ `my_qpn_or_dci` –
  - ▶ UD transport type – indicates QPN of the connection initiator
  - ▶ DC transport type – the field indicates the DCI of the connection initiator
- ▶ `connection_type` – `CONNECT_BY_SERVICE_ID` or `CONNECT_BY_VHCA_ID`
- ▶ `dst_vhca_id` – `vhca_id` of the target side of the connection. Valid only when the connection type is `CONNECT_BY_VHCA_ID`.

# Chapter 4. Execution

To execute the DOCA Comm Channel Admin Tool, run:

```
/opt/mellanox/doca/tools/doca_comm_channel_admin_tool
```

Afterwards, users get an interactive CI that awaits a command:

```
Comm-Channel-Admin-Tool >>
```

The commands and their flags can be obtained by writing help:

```
Comm-Channel-Admin-Tool >> help
Comm-Channel-Admin-Tool CLI Commands:
  service, s      To be used on the DPU
    --all, -a          Show all services
    --service-name, -sn [service_name] Show specific service and its connected
clients
  connection, c   To be used on the host
    --all, -a          Show all connections
    --service-name, -sn [service_name] Show specific connection according to
service name
  discovery, d    To be used on the host
    --all, -a          Show all active services
    --service-name, -sn [service_name] Show specific active service according to
service name
  quit           Exit tool
```

On the DPU, to see all services, users may use the `service` (or `s`) command with the flag `--all` (or `-a`). For example:

```
Comm-Channel-Admin-Tool >> service --all
2022-09-28 09:54:28,410 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0:
Active services:
```

| service_name                  | transport_type       | allowed_vhca_id          | client |
|-------------------------------|----------------------|--------------------------|--------|
| service_qpn_or_dct            | num_connected_client | max_num_connected_client |        |
| secure_channel_server<br>4548 | DC<br>1              | 0<br>512                 |        |

```
2022-09-28 09:54:28,886 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0.1:
No active services
```

To query a specific service and see its connected clients, users may use the `--service-name` (or `-sn`) flag while providing the `service_name`. For example:

```
Comm-Channel-Admin-Tool >> service --service-name secure_channel_server
2022-09-28 09:56:16,335 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0:
```

| service_name                  | transport_type       | allowed_vhca_id          |
|-------------------------------|----------------------|--------------------------|
| service_qpn_or_dct            | num_connected_client | max_num_connected_client |
| secure_channel_server<br>4548 | DC<br>1              | 0<br>512                 |

Connected clients:

| connection_id | connection_qpn |
|---------------|----------------|
| 0             | 4547           |

```
2022-09-28 09:56:16,809 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0.1:
No active service by name secure_channel_server
```

On the host, to see all active services, users may use the `discovery` (or `d`) command with `--all` flag (or `-a`). For example:

```
Comm-Channel-Admin-Tool >> discovery --all
2022-09-28 12:58:42,201 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0:
Active services:
```

| service_name          |
|-----------------------|
| secure_channel_server |

```
2022-09-28 12:58:42,632 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0.1:
No active services
```

Users may also filter to show only specific services according to the `service_name` by using the `--service-name` (or `-sn`) flag while providing the `service_name`.


On the host, to see all active connections, users may use the `connection` command (or `c`) with `--all` flag (or `-a`). For example:

```
Comm-Channel-Admin-Tool >> connection --all
2022-09-28 13:01:54,420 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0:
Active connections:
```

| service_name               | transport_type | my_qpn_or_dci | connection_type       |
|----------------------------|----------------|---------------|-----------------------|
| dst_vhca_id                |                |               |                       |
| secure_channel_server<br>0 | DC             | 71            | CONNECT_BY_SERVICE_ID |

```
2022-09-28 13:01:54,860 - Comm-Channel-Admin-Tool - INFO - On /dev/mst/
mt41686_pciconf0.1:
No active Connections
```

Users may also filter to show only specific connections according to `service_name` by using the `--service-name` (or `-sn`) flag while providing the `service_name`.

 **Note:** If a new service or connection is added, there is no need to restart the tool. After each command, the tool always shows the latest services and connections.

## Notice

This document is provided for information purposes only and shall not be regarded as a warranty of a certain functionality, condition, or quality of a product. NVIDIA Corporation nor any of its direct or indirect subsidiaries and affiliates (collectively: "NVIDIA") make no representations or warranties, expressed or implied, as to the accuracy or completeness of the information contained in this document and assume no responsibility for any errors contained herein. NVIDIA shall have no liability for the consequences or use of such information or for any infringement of patents or other rights of third parties that may result from its use. This document is not a commitment to develop, release, or deliver any Material (defined below), code, or functionality.

NVIDIA reserves the right to make corrections, modifications, enhancements, improvements, and any other changes to this document, at any time without notice.

Customer should obtain the latest relevant information before placing orders and should verify that such information is current and complete.

NVIDIA products are sold subject to the NVIDIA standard terms and conditions of sale supplied at the time of order acknowledgement, unless otherwise agreed in an individual sales agreement signed by authorized representatives of NVIDIA and customer ("Terms of Sale"). NVIDIA hereby expressly objects to applying any customer general terms and conditions with regards to the purchase of the NVIDIA product referenced in this document. No contractual obligations are formed either directly or indirectly by this document.

NVIDIA products are not designed, authorized, or warranted to be suitable for use in medical, military, aircraft, space, or life support equipment, nor in applications where failure or malfunction of the NVIDIA product can reasonably be expected to result in personal injury, death, or property or environmental damage. NVIDIA accepts no liability for inclusion and/or use of NVIDIA products in such equipment or applications and therefore such inclusion and/or use is at customer's own risk.

NVIDIA makes no representation or warranty that products based on this document will be suitable for any specified use. Testing of all parameters of each product is not necessarily performed by NVIDIA. It is customer's sole responsibility to evaluate and determine the applicability of any information contained in this document, ensure the product is suitable and fit for the application planned by customer, and perform the necessary testing for the application in order to avoid a default of the application or the product. Weaknesses in customer's product designs may affect the quality and reliability of the NVIDIA product and may result in additional or different conditions and/or requirements beyond those contained in this document. NVIDIA accepts no liability related to any default, damage, costs, or problem which may be based on or attributable to: (i) the use of the NVIDIA product in any manner that is contrary to this document or (ii) customer product designs.

No license, either expressed or implied, is granted under any NVIDIA patent right, copyright, or other NVIDIA intellectual property right under this document. Information published by NVIDIA regarding third-party products or services does not constitute a license from NVIDIA to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property rights of the third party, or a license from NVIDIA under the patents or other intellectual property rights of NVIDIA.

Reproduction of information in this document is permissible only if approved in advance by NVIDIA in writing, reproduced without alteration and in full compliance with all applicable export laws and regulations, and accompanied by all associated conditions, limitations, and notices.

THIS DOCUMENT AND ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL NVIDIA BE LIABLE FOR ANY DAMAGES, INCLUDING WITHOUT LIMITATION ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF ANY USE OF THIS DOCUMENT, EVEN IF NVIDIA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Notwithstanding any damages that customer might incur for any reason whatsoever, NVIDIA's aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the Terms of Sale for the product.

## Trademarks

NVIDIA, the NVIDIA logo, and Mellanox are trademarks and/or registered trademarks of Mellanox Technologies Ltd. and/or NVIDIA Corporation in the U.S. and in other countries. The registered trademark Linux® is used pursuant to a sublicense from the Linux Foundation, the exclusive licensee of Linus Torvalds, owner of the mark on a world-wide basis. Other company and product names may be trademarks of the respective companies with which they are associated.

## Copyright

© 2022 NVIDIA Corporation & affiliates. All rights reserved.