



NVIDIA DOCA Socket Relay

User Guide

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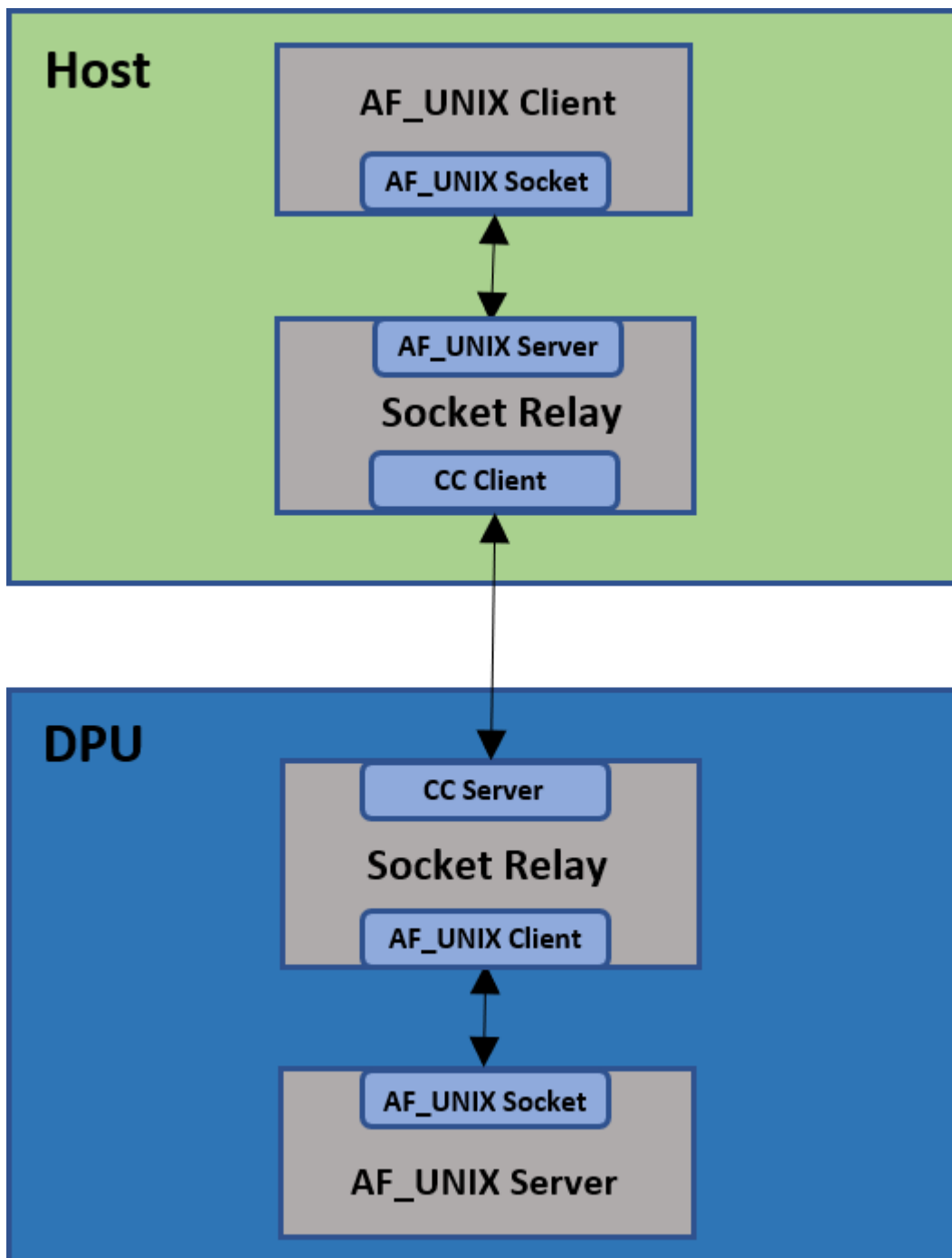
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Chapter 1. Introduction

DOCA Socket Relay allows Unix Domain Socket (AF_UNIX family) server applications to be offloaded to the DPU while communication between the two sides is proxied by DOCA Comm Channel.

Socket relay only supports SOCK_STREAM communication with a limit of 512 AF_UNIX application clients.

The tool is coupled to the client AF_UNIX server application. That is, a socket relay instance should be initiated per AF_UNIX server application.



Socket relay is transparent to the application.

The following details the communication flow between the client and server:

- ▶ The AF_UNIX client application connects to the socket relay AF_UNIX server in the same way as in the original flow
- ▶ The AF_UNIX client application sends SOCK_STREAM packets

- ▶ The socket relay (host) AF_UNIX server receives the client application packets, and the Comm Channel client sends them on the channel
- ▶ The socket relay (DPU) Comm Channel server receives the client application packets and the AF_UNIX client sends them to the user's AF_UNIX server application

Chapter 2. Dependencies

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

Chapter 3. Execution

To execute DOCA Socket Relay:

```
Usage: doca_socket_relay [DOCA Flags] [Program Flags]
```

DOCA Flags:

-h, --help	Print a help synopsis
-v, --version	Print program version information
-l, --log-level	<CRITICAL=20, ERROR=30, WARNING=40, INFO=50, DEBUG=60>

Program Flags:

-s, --socket	Unix domain socket path, host side will bind to and DPU connect to
-n, --cc-name	Comm Channel service name
-d, --dev-pci	Comm Channel DOCA device PCI address
-r, --rep-pci	Comm Channel DOCA device representor PCI address (needed only on DPU)

For example (DPU side):

To run `doca_socket_relay` using a JSON file:

```
doca_socket_relay --json [json_file]
```

For example:

```
doca_socket_relay --json /tmp/doca_socket_relay.json
```

Chapter 4. Arg Parser DOCA Flags

Refer to the [NVIDIA DOCA Arg Parser User Guide](#) for more information.

Flag Type	Short Flag	Long Flag/JSON Key	Description	JSON Content
General flags	l	log-level	Sets the log level for the application: <ul style="list-style-type: none"> ▶ CRITICAL=20 ▶ ERROR=30 ▶ WARNING=40 ▶ INFO=50 ▶ DEBUG=60 	<code>"log-level": 60</code>
	v	version	Print program version information	N/A
	h	help	Print a help synopsis	N/A
Program flags	s	socket	AF_UNIX (SOCK_STREAM) path. On the host, this is the path of the socket relay AF_UNIX server for the client's application to connect to. On the DPU, this is the path of the client AF_UNIX server application. This flag is mandatory.	<code>"socket": "/tmp/uds-server.socket"</code>
	n	cc-name	Comm Channel service name	<code>"cc-name": sr_channel</code>

Flag Type	Short Flag	Long Flag/JSON Key	Description	JSON Content
	d	dev-pci	<p>This flag is mandatory.</p> <p>Comm Channel DOCA device PCIe address</p>	<code>"dev-pci": b1:00.1</code>
	r	rep-pci	<p>This flag is mandatory.</p> <p>Comm Channel DOCA device representor PCIe address</p> <p>This flag is mandatory only on the DPU.</p>	<code>"rep-pci": b1:02.2</code>

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