

NVIDIA DOCA Socket Relay

User Guide

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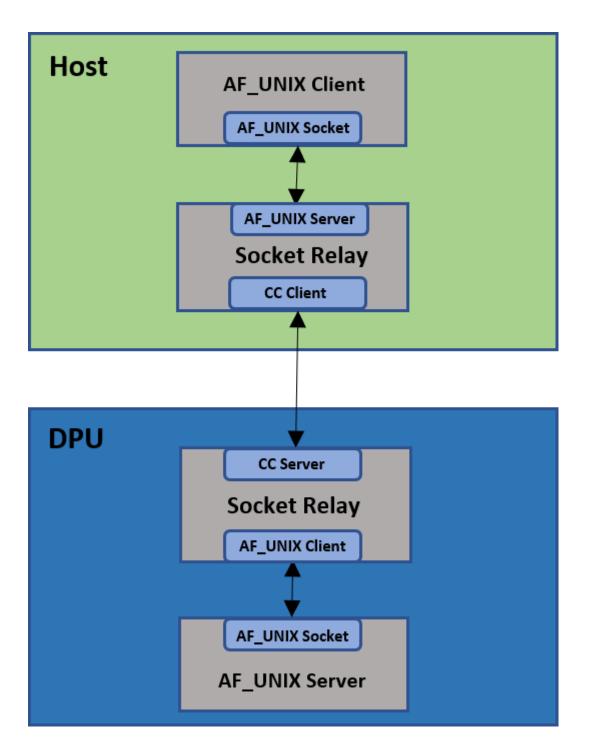
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Chapter 1. Introduction

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, --helpPrint a help synopsis-v, --versionPrint program version information-1, --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 Comm Channel service name -n, --cc-name -d, --dev-pci -r, --rep-pci Comm Channel DOCA device PCI address Comm Channel DOCA device representor PCI address (needed only on DPU) For example (DPU side): To run doca_socket_relay using a JSON file:

IO run doca_socket_relay using a JSUN 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 <u>NVIDIA DOCA Arg Parser User Guide</u> for more information.

Flag Type	Short Flag	Long Flag/JSON Key	Description	JSON Content
General flags	1	log-level	Sets the log level for the application:	"log-level": 60
			► CRITICAL=20	
			► ERROR=30	
			► WARNING=40	
			► INFO=50	
			► DEBUG=60	
	V	version	Print program version information	N/A
	h	help	Print a help synopsis	N/A
Program flags	5	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.	"socket": "/tmp/uds- server.socket"
	n	cc-name	Comm Channel service name	"cc-name": sr_channel

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

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