NVIDIA DOCA

Release Notes

MLNX-15-060462 _v1.5.2 | July 2023

Table of Contents

Chapter 1. Introduction

DOCA 1.5.2 is an LTS update to DOCA 1.5.0 which includes bug fixes from DOCA 1.5.1.

Chapter 2. Issues Fixed

This version introduces the following bug fixes.

Reference	Description
3366688	Description: IPS does not have hairpin rules as all packets are expected to go through CPU.
	Keyword: IPS; rule
	Reported in version: 1.4.0
3374181	Description: When `HIDE_PORT2_PF=True NUM_OF_PF=1`, `cat /sys/class/net/p1/smart_nic/pf/config` causes a kernel crash.
	Keyword: Kernel; crash
	Reported in version: 1.5.0
3371574	Description: App Shield Windows process attestation fix where file extension capitalization is ignored.
	Keyword: App Shield; Windows; attestation
	Reported in version: 1.5.0
3373407	Description: Replaced C++ comments in `doca_rdma.h` and `doca_types.h` with C comments. Added required include to `stdint.h` in `doca_types.h`.
	Keyword: Core; API
	Reported in version: 1.5.1
3393323	Description: Non-root users failed to get list of representor devices on DPU.
	Keyword: Core; representors; users
	Reported in version: 1.5.1
3393325	Description: An mmap API has been added to help DPU side application get chunks populated into the mmap (not visible to encrypted mmap blob).
	Keyword: Core; mmap
	Reported in version: 1.5.1
3362015	Description: Added an API to allow applications to to get the populated chunks on the DPU side from the mmap.
	Keyword: Core; memory
	Reported in version: 1.5.1
3447771	Description: A caching issue led to improper invocation of DOCA jobs when used concurrently.

Reference	Description
	Keyword: DMA; memory
	Reported in version: 1.5.1
3491523	Description: Fixed CVE-2022-47630.
	Keyword: Security
	Reported in version: 1.5.1
3472043	Description: Removed reference application "security gateway" from LTS 1.5.0 branch as IPsec functionality has been implemented in DOCA 2.0.0 branch only.
	Keyword: IPsec; security gateway
	Reported in version: 1.5.0
3275690	Description: To install DOCA on an Ubuntu 22.04 host, use the command `apt-get install doca-runtime doca-sdk doca-tools openvswitch-switch -y`.
	Keyword: Installation; Ubuntu 22.04; OVS; openvswitch-switch
	Reported in version: 1.5.1
3239668	Description: The `l2_reflector` reference application fails to start due to missing `libflexio.so` library.
	Keyword: FlexIO; DOCA applications; `l2_reflector`
	Reported in version: 1.5.0
3049879	Description: When reloading (ifreload) an empty `/etc/network/interfaces` file, the previously created interfaces are not deleted.
	Keyword: HBN; unsupported NVUE commands
	Reported in version: 1.3.0
3354705	Description:
	Keyword:
	Reported in version: 1.5.0
3374179	Description: Hotplug/unplug of virtio-net devices during host shutdown/bootup may result in failure to do plug/unplug.
	Keyword: Virtio-net, hotplug
	Reported in version: 1.2.0

Chapter 3. Installation Notes

Refer to the NVIDIA DOCA Installation Guide for Linux for information on:

- Setting up NVIDIA DOCA SDK on your BlueField DPU
- Supported BlueField platforms

3.1. DOCA Packages

Device	Component	Version	Description
Host	DOCA SDK	1.5.2	Software development kit package for developing host software
	DOCA Runtime	1.5.2	Runtime libraries required to run DOCA-based software applications on host
	DOCA Tools	1.5.2	Tools for developers and administrators on host
	Arm emulated (QEMU) development container	3.9.5	Linux-based BlueField Arm emulated container for developers
Target BlueField-2 DPU (Arm)	BlueField BSP	3.9.5	BlueField image and firmware
	DOCA SDK	1.5.2	Software development kit packages for developing Arm software
	DOCA Runtime	1.5.2	Runtime libraries requied to run DOCA-based software applications on Arm
	DOCA Tools	1.5.2	Tools for developers and administrators for Arm target

3.2. Supported Operating System

The operating system supported on the BlueField DPU is Ubuntu 20.04.

The following operating systems are supported on the host machine:

- Ubuntu 18.04/20.04/22.04
- CentOS/RHEL 7.6/8.0/8.2
- Rocky 8.6
- Debian 10.8

3.3. Supported Kernel Versions

> **Note:** Only the following generic kernel versions are supported for DOCA local repo package for host installation (whether by SDKM or manually).

Host Operation System	Kernel Support	Arch Support
CentOS 7.6	4.14.0-115.el7a.aarch64	aarch64
	3.10.0-957.el7.x86_64	x86
CentOS 8.0	4.18.0-80.el8.x86_64	
CentOS 8.2	4.18.0-193.el8.x86_64	
RHEL 7.6	3.10.0-957.el7.x86_64	
RHEL 8.0	4.18.0-80.el8.x86_64	
RHEL 8.2	4.18.0-193.el8.x86_64	
Rocky 8.6	4.18.0-372.9.1.el8.x86_64	
Ubuntu 18.04	4.15.0-20-generic	
Ubuntu 20.04	5.4.0-26-generic	
Ubuntu 22.04	5.15.0-52-generic	
Debian 10.8	4.19.0-14-amd64	

Chapter 4. Technical Support

Customers who purchased NVIDIA products directly from NVIDIA are invited to contact us through the following methods:

- E-mail: enterprisesupport@nvidia.com
- Enterprise Support page: https://www.nvidia.com/en-us/support/enterprise

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Customers who purchased NVIDIA products through an NVIDIA-approved reseller should first seek assistance through their reseller.

Chapter 5. Known Issues

The following table lists the known issues and limitations for this release of DOCA SDK.

Reference	Description
3374176	Description: Occasionally, an SF representor name fetched from virtio-net does not follow the naming convention due to udev.
	Workaround: Use IP command to rename the SF representor accordingly.
	Keywords: SF representor; virtio-net
	Reported in version: 1.5.2
3282113	Description: Some DPUs experience an issue with the clock settings after installing a BlueField OS in an HBN setting in which the date reverts back to "Thu Sep 8, 2022".

	Workaround: Issue the following commands to enable NTP and sync the clock:
	`sudo apt update`
	`sudo apt install ntp`
	`sudo systemctl stop ntp`
	`sudo systemctl disable ntp`
	`sudo systemctl enable ntp@mgmt`
	`sudo systemctl start ntp@mgmt`
	`sudo systemctl daemon-reload`
	`sudo systemctl status ntp@mgmt`

	Keyword: HBN; time; NTP
	Reported in version: 1.5.1
3274589	Description: Comm channel fails to initiated in Rocky Linux.
	Workaround: N/A
	Keyword: Comm channel; Rocky
	Reported in version: 1.5.1
3270534	Description: The Security Gateway reference application fails to forward traffic when used with a ConnectX setup in full-offload mode.
	Workaround: Change the number of queues passed to `doca_flow_init()` at the application level instead of using the current value.
	Keyword: Security Gateway; IPSec; flow
	Reported in version: 1.5.1

3264749	Description: In Rocky and CentOS 8.2 inbox-kernel BFBs, RegEx requires the following extra huge page configuration for it to function properly:
	`sudo hugeadm --pool-pages-min DEFAULT:2048M`
	`sudo systemctl start mlx-regex.service`
	`systemctl status mlx-regex.service`

Reference	Description
	If these commands have executed successfully you should see `active (running)` in the last line of the output.
	Workaround: N/A
	Keyword: RegEx; hugepages
	Reported in version: 1.5.1
3240785	Description: DTS might fail to connect to DPE if started after DTS is already running.
	Workaround: Start the DTS container only after starting DPE.
	Keyword: DTS; DPE; BlueMan
	Reported in version: 1.5.0
3250391	Description: `dpdk_queues_and_ports_init` fails when given 0 DPDK ports.
	Workaround: N/A
	Keyword: `doca_dpi_grpc` server; DPDK
	Reported in version: 1.5.0
3240153	Description: DOCA kernel support only works on a non-default kernel.
	Workaround: N/A
	Keyword: Kernel
	Reported in version: 1.5.0
3239630	Description: FlexIO sample `flexio_rpc` fails to compile.
	Workaround: Add the following at line 34 in the file `/opt/mellanox/doca/samples/flexio/flexio_rpc/meson.build`: `source_file = meson.current_source_dir() + '/device/flexio_rpc_device.c'`
	Keyword: FlexIO; DOCA samples; `flexio_rpc`
	Reported in version: 1.5.0
3217627	Description: The `doca_devinfo_rep_list_create` API returns success on the host instead of "Operation not supported".
	Workaround: N/A
	Keyword: DOCA core; InfiniBand
	Reported in version: 1.5.0
3048250	Description: When configuring the DPU to operate in NIC Mode, the following parameters must be set to default (i.e., =0): `HIDE_PORT2_PF`, `NVME_EMULATION_ENABLE`, and `VIRTIO_NET_EMULATION_ENABLE`.
	Workaround: N/A
	Keyword: DPU operation mode
	Reported in version: 1.3.0
3017202	Description: Due to disabled backend foundation units, some commands show 500 INTERNAL SERVER ERROR/ 404 NOT FOUND. These commands are related to features or sub-systems which are not supported on HBN.
	Workaround: N/A
	Keyword: HBN; unsupported NVUE commands

Reference	Description
	Reported in version: 1.3.0
2821785	Description: MAC addresses are not learned in the hardware but only in software. This may affect performance in pure L2 unicast traffic. This should not affect performance of IPv4/IPv6 traffic or L2 control traffic (i.e., STP, LLDP).
	Workaround: N/A
	Keyword: HBN
	Reported in version: 1.3.0
2828838	Description: NetworkManager and other services not directly related to HBN may display the following message in syslog: `"netlink: read: too many netlink events. Need to resynchronize platform cache"` The message has no functional impact and may be ignored.
	Workaround: N/A
	Keyword: HBN
	Reported in version: 1.3.0
3168683	Description: If many interfaces are participating in EVPN/routing, it is possible for the routing process to run out of memory.
	Workaround: Have a maximum of 8 VF interfaces participating in routing/VXLAN.
	Keyword: HBN; routing; memory
	Reported in version: 1.2.0
3219539	Description: TC rules are programmed by OVS to map uplink and host representor ports to HBN service. These rules are ageable and can result in packets needing to get software forwarded periodically to refresh the rules.
	Workaround: The timeout value can be adjusted by changing the OVS parameter `other_config : max-idle` as documented here. The shipped default value is 10000ms (10s).
	Keyword: HBN; SFC; aging
	Reported in version: 1.2.0
3184745	Description: The command `nv show interface <intf>` acl does not show correct information if there are multiple ACLs bound to the interface.
	Workaround: Use the command `nv show interface <intf>` to view the ACLs bound to an interface.
	Keyword: HBN; ACLs
	Reported in version: 1.2.0
3158934	Description: Deleting an NVUE user by removing their password file and restarting the `decrypt-user-add` service on the HBN container does not work.
	Workaround: Either respawn the container after deleting the file, or delete the password file corresponding to the user by running `userdel -r username`.
	Keyword: HBN; user deletion
	Reported in version: 1.2.0
3191433	Description: ECMP selection for the underlay path uses the ingress port and identifies uplink ports via round robin. This may not result in uniform spread of the traffic.

Reference	Description
	Workaround: N/A
	Keyword: HBN; ECMP
	Reported in version: 1.2.0
3185003	Description: When a packet is encapsulated with a VXLAN header, it adds extra bytes which may cause the packet to exceed the MTU of link. Typically, the packet would be fragmented but its silently dropped and no fragmentation happens.
	Workaround: Make sure that the MTU on the uplink port is always 50 bytes more than host ports so that even after adding VXLAN headers, ingress packets do not exceed the MTU.
	Keyword: HBN; MTU; VXLAN
	Reported in version: 1.2.0
3184905	Description: On VXLAN encapsulation, the DF flag is not propagated to the outer header. Such a packet may be truncated when forwarded in the kernel, and it may be dropped when hardware offloaded.
	Workaround: Make sure that the MTU on the uplink port is always 50 bytes more than host ports so that even after adding VXLAN headers, ingress packets do not exceed the MTU.
	Keyword: HBN; VXLAN
	Reported in version: 1.2.0
3188688	Description: When stopping the container using the command `crictl stop` an error may be reported because the command uses a timeout of 0 which is not enough to stop all the processes in the HBN container.
	Workaround: Pass a timeout value when stopping the HBN container by running: `crictl stop --timeout 60 <hbn-container>`
	Keyword: HBN; timeout
	Reported in version: 1.2.0
3129749	Description: The same ACL rule cannot be applied in both the inbound and outbound direction on a port.
	Workaround: N/A
	Keyword: HBN; ACLs
	Reported in version: 1.2.0
3126560	Description: The system's time zone cannot be modified using NVUE in the HBN container.
	Workaround: The timezone can be manually changed by symlinking the `/etc/localtime` file to a binary time zone's identifier in the `/usr/share/zoneinfo` directory. For example: `sudo ln -sf /usr/share/zoneinfo/GMT /etc/localtime`
	Keyword: HBN; time zone; NVUE
	Reported in version: 1.2.0
3118204	Description: Auto-BGP functionality (where the ASN does not need to be configured but is dynamically inferred by the system based on the system's role as a leaf or spine device) is not supported on HBN.

Reference	Description
	Workaround: If BGP is configured and used on HBN, the BGP ASN must be manually configured.
	Keyword: HBN; BGP
	Reported in version: 1.2.0
3233088	Description: Since checksum calculation is offloaded to the hardware (not done by the kernel), it is expected to see an incorrect checksum in the tcpdump for locally generated, outgoing packets. BGP keepalives and updates are some of the packets that show such incorrect checksum in tcpdump.
	Workaround: N/A
	Keyword: HBN; BGP
	Reported in version: 1.2.0

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