



NVIDIA DOCA Compress

Sample Guide

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Chapter 1. Introduction

DOCA Compress provides an API to compress and decompress data using hardware acceleration, supporting both local and remote memory regions.

This document describes compress samples based on the DOCA Compress library. These samples illustrate how to use the DOCA Compress API to compress and decompress files.

For more information about DOCA Compress library, refer to [NVIDIA DOCA Compress Programming Guide](#).

Chapter 2. Dependencies

N/A

Chapter 3. Prerequisites

N/A

Chapter 4. Running the Sample

1. Refer to the following documents:

- ▶ [NVIDIA DOCA Installation Guide for Linux](#) for details on how to install BlueField-related software.
- ▶ [NVIDIA DOCA Troubleshooting Guide](#) for any issue you may encounter with the installation, compilation, or execution of DOCA samples.

2. To build a given sample:

```
cd /opt/mellanox/doca/samples/doca_compress/<sample_name>
meson build
ninja -C build
```



Note: The binary `doca_<sample_name>` will be created under `./build/`.

3. Sample (e.g., `doca_compress_deflate`) usage:

```
Usage: doca_compress_deflate [DOCA Flags] [Program Flags]
DOCA Flags:
  -h, --help                Print a help synopsis
  -v, --version             Print program version information
  -l, --log-level           Set the log level for the program <CRITICAL=20,
ERROR=30, WARNING=40, INFO=50, DEBUG=60>

Program Flags:
  -p, --pci-addr           PCI device address
  -f, --file               Input file to compress/decompress
  -m, --mode               Mode - {compress, decompress}
```

For additional information per sample, use the `-h` option:

```
./build/doca_<sample_name> -h
```

Chapter 5. Samples

5.1. Compress Deflate

This sample illustrates how to use DOCA Compress library to compress and decompress a file.

The sample logic includes:

1. Locating a DOCA device.
2. Initializing the required DOCA core structures.
3. Populating DOCA memory map with two relevant buffers; one for the source data and one for the result.
4. Allocating elements in DOCA buffer inventory for each buffer.
5. Initializing DOCA Compress job object.
6. Submitting a compress or decompress job into the work queue.
7. Retrieving the job from the queue once it is done.
8. Writing the result into an output file, `out.txt`.
9. Destroying all compress and DOCA core structures.

References:

- ▶ `/opt/mellanox/doca/samples/doca_compress/compress_deflate/compress_deflate_sample.c`
- ▶ `/opt/mellanox/doca/samples/doca_compress/compress_deflate/compress_deflate_main.c`
- ▶ `/opt/mellanox/doca/samples/doca_compress/compress_deflate/meson.build`

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