



**Codensity T408™**

# **HEIF Converter Demo Guide**

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## NETINT Overview

NETINT provides high density and efficient video transcoding solutions using the powerful video processing engines inside our Codensity G4 Application-Specific Integrated Circuit (ASIC). We can provide multiple stream transcoding functions and services directly to video content providers and Transcoding as a Service (TaaS) providers for integration into their video streaming systems and services. Our functions and services can be used for highly efficient Video-on-Demand file transcoding, as well as real-time live video streaming applications.

This quick start guide provides an overview of NETINT HEIF Converter Demo.

### *T408 HEIF Converter Demo*

High Efficiency Image File Format (HEIF), also known as High Efficiency Image Coding (HEIC), is a container format for individual images and image sequences. It was developed by the Moving Picture Experts Group (MPEG). HEIF is designed to save storage space while maintaining the same quality.

The Codensity T408 HEIF Converter delivers an efficient process to convert images to HEIF format with equivalent quality and significant reduction in file size.

## HEIF Converter Demo Installation and Parameters

To properly install Codensity T408, refer to the **Codensity T408 Quickstart Guide section 3: Installation and compatibility**.

The following instructions need to be done in sequence to use with the Codensity T408 HEIF converter.

1. Go to the FFmpeg/ directory and re-run the build\_ffmpeg.sh script and install the libraries by the following commands:

```
$ chmod +x build_ffmpeg.sh
$ make clean
$ ./build_ffmpeg.sh -shared
$ sudo make install
```

2. Configure dconfig's paths by opening ld.so.conf:

```
$ vi /etc/ld.so.conf
```

If this line is present, move to the next step, otherwise add the following:

```
    /usr/local/lib
```

It should look like this

```
include /etc/ld.so.conf.d/*.conf
/usr/local/lib
```

3. Run the following command:  

```
$ sudo ldconfig
```
4. If you are using **Centos**, make sure to install gcc-c++  

```
$ yum install gcc-c++
```
5. Unzip the HEIF converter package in the **home directory**:  

```
$ tar -xzf heif_converter_V*.tar.gz
```

6. Run the following commands:  

```
$ cd heif_converter_V*/app/
$ make clean
$ make -j 8
```

7. NETINT\_HEIC\_converter should be present in the app folder:  

```
$ cd heif_converter_V*/app/
```

```
nvme@netint-demoenv2:~/heif_converter_V0.1.0/app$ ls
config.json  FileSource.cpp  ICodec.cpp      ImageToHeicProcessor.d  jpeg2h265_thread_2.h265  Makefile
Encoder.cpp  FileSource.d    ICodec.d        ImageToHeicProcessor.hpp  jpeg2h265_thread_3.h265  NETINT_HEIC_converter
Encoder.d    FileSource.hpp  ICodec.hpp      ImageToHeicProcessor.o   main.cpp                  README.txt
Encoder.hpp  FileSource.o    ICodec.o        jpeg2h265_thread_0.h265  main.d                   main.o
Encoder.o    heif_gui.py     ImageToHeicProcessor.cpp  jpeg2h265_thread_1.h265  main.o
```

## Image Converting Formats

The supported image formats of the converter are shown below.

Converter	T408
Input Images	PNG, JPEG, BMP: Any resolution up to 8192x8192 (*with QP restriction)
Output Images	HEIF: Any resolution up to 8192x8192

\* Using low QP values for 8k images might cause the app to crash due to the large size of the image. To avoid this, use our QP recommendation (18, 22, 25, 28, 32).

## Converting Parameters

### Input Folder

The path of the folder that contains the input images to convert.

### Output Folder

The path of the output folder where the HEIF images are stored.

### QP

Specifies the base value of the quantization parameter. The range of supported values is 1 to 51. We recommend the following values: 18, 22, 25, 28, 32. Lower QP values leads to better quality and larger image size.

## NETINT Command-Line Interface (CLI)

To run the HEIF converter using the command line interface, use the following command:

```
$ sudo LD_LIBRARY_PATH=/usr/local/lib ./NETINT_HEIC_converter {Input Folder Path} {Output Folder Path} {QP}
```

Command line example:

```
$ sudo LD_LIBRARY_PATH=/usr/local/lib ./NETINT_HEIC_converter /nvme/jpeg nvme/heif 25
```

## NETINT Graphic User Interface (GUI)

### Ubuntu

1. If you wish to use the HEIF converter GUI, install Python tkinter package by running the following command:

```
$ sudo apt-get install python3-tk
```

2. From the terminal, make the HeicConverter.py executable and run the script:

```
$ chmod +x heifConverter.py
$ ./heifConverter.py
```

## CentOS

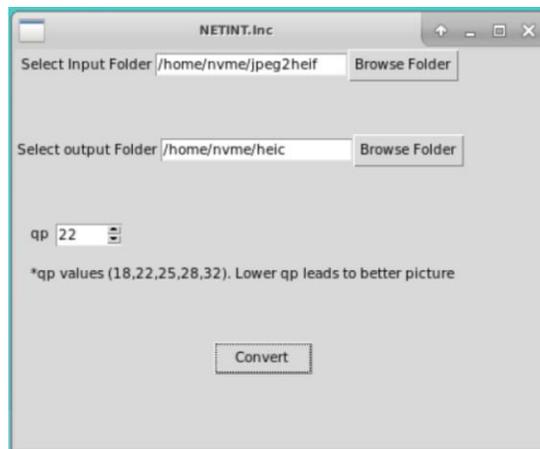
1. If you wish to use the HEIF converter GUI, install Python tkinter package by running the following command:

```
$ sudo yum update
$ sudo yum -y install python3-tkinter
```

2. From the terminal, make the HeicConverter.py executable and run the script:

```
$ chmod +x heifConverter.py
$ ./heifConverter.py
```

This should open the following GUI:



To execute the HEIF converter app:

- Browse to the input folder containing the images.
- Browse to the output folder where HEIF images will be saved.
- Choose the QP value (We recommend the following values: 18, 22, 25, 28,32)
- By clicking on the Convert button, all images in the input folder will be converted to HEIF and stored in the output folder.