Great! Now that you have **TensorRT 8.4 GA** installed and working with **CUDA 11.7**, we can move forward with **compiling FFmpeg** with **TensorRT** support. Here’s how you can proceed:

**Steps to Compile FFmpeg with TensorRT:**

1. **Prerequisites**:
   * **CUDA** (which you already have).
   * **TensorRT** installed and set up correctly.
2. **Install Dependencies**:
   * Ensure that you have all necessary build dependencies installed, including yasm, nasm, make, gcc, and git.
   * On **Windows**, you can use **MSYS2** or **MinGW** to build FFmpeg. On **Linux**, you can use apt or yum to install necessary build tools.
3. **Set Up Your Environment**:
   * Add paths for **CUDA** and **TensorRT** to your environment variables:
     + **Windows**:
       - Set CUDA\_HOME and TENSORRT\_HOME in the system environment variables.
       - Add C:\Program Files\NVIDIA GPU Computing Toolkit\CUDA\v11.7\bin and C:\path\to\tensorrt\bin to your PATH variable.
       - Set CUDA\_TOOLKIT\_ROOT\_DIR for cmake if needed.
4. **Configure FFmpeg with TensorRT**:
   * Download the FFmpeg source code (or clone from GitHub):

git clone https://github.com/FFmpeg/FFmpeg.git

cd FFmpeg

* + Run the **configure** script with TensorRT enabled. You'll need to point it to the TensorRT installation directory:

./configure --enable-nvenc --enable-cuda --enable-cuvid --enable-nvdec --enable-nonfree --extra-cflags="-I/path/to/tensorrt/include" --extra-ldflags="-L/path/to/tensorrt/lib" --enable-libnpp

./configure --enable-nvenc --enable-cuda --enable-cuvid --enable-nvdec --enable-nonfree --extra-cflags="-I$TENSORRT\_INCLUDE\_DIR" --extra-ldflags="-L$TENSORRT\_LIBRARY" --enable-libnpp

--extra-cflags= (HEADER FILES)

**COMPLETE VERSION**

./configure --enable-gpl --enable-version3 --enable-static --disable-w32threads --disable-autodetect \

--enable-fontconfig --enable-iconv --enable-gnutls --enable-libxml2 --enable-gmp --enable-bzlib \

--enable-lzma --enable-zlib --enable-libsrt --enable-libssh --enable-libzmq --enable-avisynth \

--enable-sdl2 --enable-libwebp --enable-libx264 --enable-libx265 --enable-libxvid --enable-libaom \

--enable-libopenjpeg --enable-libvpx --enable-mediafoundation --enable-libass --enable-libfreetype \

--enable-libfribidi --enable-libharfbuzz --enable-libvidstab --enable-libvmaf --enable-libzimg \

--enable-amf --enable-cuda-llvm --enable-cuvid --enable-dxva2 --enable-d3d11va --enable-d3d12va \

--enable-ffnvcodec --enable-libvpl --enable-nvdec --enable-nvenc --enable-vaapi --enable-libgme \

--enable-libopenmpt --enable-libopencore-amrwb --enable-libmp3lame --enable-libtheora \

--enable-libvo-amrwbenc --enable-libgsm --enable-libopencore-amrnb --enable-libopus --enable-libspeex \

--enable-libvorbis --enable-librubberband --enable-nonfree --enable-libnpp \

--extra-cflags="-I$TENSORRT\_INCLUDE\_DIR -I$CUDA\_INCLUDE\_DIR" \

--extra-ldflags="-L$TENSORRT\_LIBRARY -L$CUDA\_LIBRARY"

--extra-cflags="-I/path/to/tensorrt/include -I/path/to/cuda/include" \ --extra-ldflags="-L/path/to/tensorrt/lib -L/path/to/cuda/lib64"

Adjust /path/to/tensorrt to the actual location where TensorRT is installed.

1. **Compile FFmpeg**:
   * After running ./configure, compile FFmpeg with the following:

make -j$(nproc)

sudo make install

* + This will build FFmpeg with **CUDA** and **TensorRT** support.

1. **Verify Installation**:
   * Once FFmpeg is compiled and installed, you can verify that TensorRT support is active by running:

ffmpeg -hwaccels

You should see **cuda** and **nvenc** as available hardware accelerations, indicating that FFmpeg was compiled with CUDA/TensorRT support.

**Troubleshooting Tips:**

* **Missing TensorRT libraries**: If FFmpeg fails to find the TensorRT libraries during the build process, ensure that the paths for --extra-cflags and --extra-ldflags point to the correct **TensorRT include** and **lib** directories.
* **Version mismatches**: Make sure that the versions of **CUDA**, **TensorRT**, and **FFmpeg** are compatible with each other. Since you're using CUDA 11.7, TensorRT 8.4 GA is a good match.