

Getting started with Vulkan Video Samples

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Vulkan Video Samples

Reference applications for the Vulkan Video API, maintained by the Khronos Group.

- A hardware-accelerated **encoder** and **decoder**, ready to run
- Demonstrates how the Vulkan Video extensions are used

<https://github.com/KhronosGroup/Vulkan-Video-Samples>

Features

- NVIDIA, AMD and Intel GPUs
- Linux and Windows
- Open source
- Test framework included
- Supported by Fluster

Codec	Decode	Encode
H.264 / AVC	✓	✓
H.265 / HEVC	✓	✓
AV1	✓	✓
VP9	✓	✗

VP9 encoding is not yet covered by the Vulkan Video specification

Vulkan Video extensions used

	Extensions (VK_KHR_video_...)
Base	queue · decode_queue · encode_queue · maintenance1
Decode	decode_h264 · decode_h265 · decode_av1 · decode_vp9
Encode	encode_h264 · encode_h265 · encode_av1
Encode features	encode_quantization_map · encode_intra_refresh · encode_feedback2

What you can use

Applications

- vk-video-dec-test
- vk-video-enc-test

Libraries

- vkvideo-decoder
- vkvideo-encoder
- nvidia-vkvideo-parser



The build generates static and dynamic libraries

Used by the Vulkan CTS

CTS = the Khronos **Conformance Test Suite**: the official tests a Vulkan driver must pass to be called conformant.

VULKAN VIDEO SAMPLES

Encoder library

Bitstream parser library



VULKAN CTS

AV1 encode tests

Decode tests

Testing framework

- Runs encode and decode tests for all four codecs
- Downloads the test vectors and checks results by MD5
- Supports external test suites like **Fluster**, so you can reuse the same conformance vectors
- Stores results of different hardware, easier to catch regressions
- Low effort to run the tests: no manual setup

! **Run all the H.264 decoder tests:** `vvs_test_runner.py --decoder-only --codec h264`

Thank you!

