Audion VS Engine — Operations

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> Made from the data of the program by `vs_cli.cmd map --docs`: the manifest of the operations (`config\tool_manifest.yaml`) and the layout of the window (`config\window_layout.yaml`). It is not edited by hand: a text is changed there and the command is run again.

Presets

PRECISION

Denoise, deband, grain

Mild Denoise (`mild_denoise`)

Any noise, any machine. Spectral denoise with DFTTest on the CPU.

Call: `vs_cli.cmd run --operation mild_denoise`

Field	Kind	Default	Choices	What it is
`strength` Strength	choice	`medium`	`light` Light, `medium` Medium, `strong` Strong	DFTTest sigma: light 4, medium 8, strong 14.
`noise` Noise	choice	`auto`	`auto` Auto, `fixed` Fixed	Auto: the strength follows the noise measured in the source and never goes below the setting. Fixed: the setting as it is.

Shadow Denoise SOTA (`shadow_denoise_sota`)

BM3D in the shadows only. BM3D on float, held to the shadows by a luma mask; micro-grain put back so the shadows are not plastic.

Call: `vs_cli.cmd run --operation shadow_denoise_sota`

Field	Kind	Default	Choices	What it is
`sigma` BM3D sigma	number	`2.5`	1.0 … 4.0, step 0.1	BM3D strength on the luma; the colour gets 0.6 of it.
`noise` Noise	choice	`auto`	`auto` Auto, `fixed` Fixed	Auto: the strength follows the noise measured in the source and never goes below the setting. Fixed: the setting as it is.
`grain_back` Grain back	number	`0.6`	0.0 … 2.0, step 0.05	Micro-grain put back over the cleaned shadows; 0 - none.
`shadow_threshold` Shadow threshold	number	`0.2`	0.0 … 0.5, step 0.01	The brightness (0..1) where the shadows end.
`transition` Mask transition	number	`0.1`	0.01 … 0.4, step 0.01	How wide the smooth passage below the threshold is: the shadows are cleaned fully this far under it, less and less up to it.
`preview_mask` Show mask	tick	`false`		The result is the shadow mask itself, not the picture: for setting the threshold.

Chroma Cleanup (`chroma_cleanup`)

Colour noise only. DFTTest on the colour planes only: the colour noise goes, the luma is not touched.

Call: `vs_cli.cmd run --operation chroma_cleanup`

Field	Kind	Default	Choices	What it is
`strength` Strength	choice	`medium`	`light` Light, `medium` Medium, `strong` Strong	Sigma on the colour: light 6, medium 12, strong 20.
`noise` Noise	choice	`auto`	`auto` Auto, `fixed` Fixed	Auto: the strength follows the noise measured in the source and never goes below the setting. Fixed: the setting as it is.

Deband Safe (`deband_safe`)

Smooth gradients, no grain. neo_f3kdb lightly: the steps of gradients go, no grain is added.

Call: `vs_cli.cmd run --operation deband_safe`

Field	Kind	Default	Choices	What it is
`range` Deband range	number	`12`	8 … 32, step 1	How far neo_f3kdb looks for the neighbours it smooths with; larger - stronger.
`y` Y threshold	number	`48`	0 … 128, step 1	neo_f3kdb threshold of the luma: how strong a step of brightness is still smoothed.
`cb` Cb threshold	number	`32`	0 … 128, step 1	neo_f3kdb threshold of the blue-difference colour plane.
`cr` Cr threshold	number	`32`	0 … 128, step 1	neo_f3kdb threshold of the red-difference colour plane.

Deband Fine Grain (`deband_fine_grain`)

Gradients and micro-texture. neo_f3kdb, then AddGrain puts a fine texture back over the smoothed gradients.

Call: `vs_cli.cmd run --operation deband_fine_grain`

Field	Kind	Default	Choices	What it is
`range` Deband range	number	`14`	8 … 32, step 1	How far neo_f3kdb looks for the neighbours it smooths with; larger - stronger.
`y` Y threshold	number	`48`	0 … 128, step 1	neo_f3kdb threshold of the luma: how strong a step of brightness is still smoothed.

Field	Kind	Default	Choices	What it is
`cb` Cb threshold	number	`32`	0 … 128, step 1	neo_f3kdb threshold of the blue-difference colour plane.
`cr` Cr threshold	number	`32`	0 … 128, step 1	neo_f3kdb threshold of the red-difference colour plane.
`grain_var` Grain variance	number	`0.6`	0.0 … 2.0, step 0.05	AddGrain variance on the luma; the colour gets 0.27 of it.

Filmic Rebuild (`filmic_rebuild`)

Denoise, deband, grain. BM3D, then neo_f3kdb, then grain laid by brightness: the digital noise and banding go, a controlled grain comes.

Call: `vs_cli.cmd run --operation filmic_rebuild`

Field	Kind	Default	Choices	What it is
`sigma` BM3D sigma	number	`2.0`	1.0 … 3.5, step 0.1	BM3D strength on the luma; the colour gets 0.6 of it.
`noise` Noise	choice	`auto`	`auto` Auto, `fixed` Fixed	Auto: the strength follows the noise measured in the source and never goes below the setting. Fixed: the setting as it is.
`deband_range` Deband range	number	`14`	8 … 32, step 1	How far neo_f3kdb looks for the neighbours it smooths with; larger - stronger.
`grain_shadow` Grain in shadows	number	`1.5`	0.0 … 3.0, step 0.05	Grain variance laid where the picture is darker than the shadow threshold.
`grain_mid` Grain in mid-tones	number	`0.9`	0.0 … 3.0, step 0.05	Grain variance laid between the two thresholds.
`grain_high` Grain in highlights	number	`0.4`	0.0 … 3.0, step 0.05	Grain variance laid where the picture is brighter than the highlight threshold.
`shadow_threshold` Shadow threshold	number	`0.3`	0.0 … 0.5, step 0.01	The brightness (0..1) where the shadows end.

Field	Kind	Default	Choices	What it is
`high_threshold` Highlight threshold	number	`0.65`	0.5 … 1.0, step 0.01	The brightness (0..1) where the highlights begin.

Archive Clean (`archive_clean`)

Neutral master, no grain. DFTTest lightly and neo_f3kdb lightly, no grain: a neutral master for the archive.

Call: `vs_cli.cmd run --operation archive_clean`

Field	Kind	Default	Choices	What it is
`denoise` Denoise	choice	`light`	`light` Light, `medium` Medium, `strong` Strong	DFTTest sigma: light 4, medium 8, strong 14.
`noise` Noise	choice	`auto`	`auto` Auto, `fixed` Fixed	Auto: the strength follows the noise measured in the source and never goes below the setting. Fixed: the setting as it is.
`range` Deband range	number	`10`	8 … 32, step 1	How far neo_f3kdb looks for the neighbours it smooths with; larger - stronger.

Pregrade Prep (`pregrade_prep`)

Minimum touch before Resolve. A very light DFTTest and nothing else: the material goes to grading almost as it was.

Call: `vs_cli.cmd run --operation pregrade_prep`

Field	Kind	Default	Choices	What it is
`strength` Strength	choice	`light`	`light` Light, `medium` Medium	DFTTest sigma: light 3, medium 6.
`noise` Noise	choice	`auto`	`auto` Auto, `fixed` Fixed	Auto: the strength follows the noise measured in the source and never goes below the setting. Fixed: the setting as it is.

FILM LOOKS

The looks of film stocks

Film 35mm (`film_35mm`)

Kodak 35 mm, three stocks. A Kodak 35 mm look with the stock to choose: 250D, 500T or 50D.

Call: `vs_cli.cmd run --operation film_35mm`

Field	Kind	Default	Choices	What it is
`stock` Stock	choice	`250D`	`250D` 250D, `500T` 500T, `50D` 50D	250D - daylight, neutral; 500T - tungsten, cooler; 50D - the cleanest.
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

Film 16mm (`film_16mm`)

Softer, grainier, lifted blacks. A 16 mm feel: heavier softness, visible grain, lifted blacks.

Call: `vs_cli.cmd run --operation film_16mm`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

Super 8 (`super8`)

Heaviest grain, faded 70s. Super 8: the heaviest grain, the softest optics, the faded contrast of the 70s.

Call: `vs_cli.cmd run --operation super8`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

IMAX 70mm (`imax_70mm`)

Large format, the finest grain. A 65/70 mm IMAX feel: minimal grain, a gentle halation of the highlights, a weave of the gate up to 2 pixels.

Call: `vs_cli.cmd run --operation imax_70mm`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.
`gate_weave` Gate weave	tick	`true`		Every frame moves by up to 2 pixels, as film does in the gate of a projector; off - the picture stands still. One file gives the same weave every time.

Cinematic (`cinematic`)

A subtle film look, safe. A universal subtle film look for any material.

Call: `vs_cli.cmd run --operation cinematic`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

Bleach Bypass (`bleach_bypass`)

Hard contrast, little colour. High contrast, desaturated, harsh - the look of a bleach bypass print.

Call: `vs_cli.cmd run --operation bleach_bypass`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

Anamorphic Scope (`anamorphic_scope`)

Blue streaks, teal shadows. The cinemascope look: horizontal blue lens flares on the highlights alone and cool teal shadows.

Call: `vs_cli.cmd run --operation anamorphic_scope`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

Field	Kind	Default	Choices	What it is
`flare_len` Flare length	number	`96`	32 … 256, step 1	The length of a streak in pixels: longer - more dramatic.
`flare_thr` Flare threshold	number	`0.78`	0.0 … 1.0, step 0.01	From what brightness a highlight flares: lower - more of the picture flares.
`teal_shadow` Teal shadows	number	`0.35`	0.0 … 1.0, step 0.05	The strength of the cool teal tint in the shadows.

RETRO

VHS, CRT, camcorder

VHS CRT (`vhs_crt`)

Tape, bleed, analog noise. Composite video, VHS, a CRT: the colour bleeds, the picture is soft, analog noise.

Call: `vs_cli.cmd run --operation vhs_crt`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

Camcorder 90s (`camcorder_90s`)

A home camera of the 90s. A consumer camcorder: softer than VHS, slightly overexposed, a mild colour bleed.

Call: `vs_cli.cmd run --operation camcorder_90s`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.

Polaroid (`polaroid`)

An instant photo of the 70s and 80s. A Polaroid SX-70 feel: a candy bloom of the highlights, warm cream midtones, darker corners.

Call: `vs_cli.cmd run --operation polaroid`

Field	Kind	Default	Choices	What it is
`intensity` Intensity	number	`1.0`	0.0 … 2.0, step 0.05	The strength of the whole look: 0 - off, 1 - as tuned, 2 - heavy.
`vignette` Vignette	number	`0.55`	0.0 … 1.0, step 0.05	How dark the corners go: 0 - no vignette, 1 - the corners go black.

RESTORATION

Deinterlace, telecine, artefacts

QTGMC Deinterlace (`qtgmc_deinterlace`)

Interlaced video to progressive. QTGMC (NNEDI3 and MVTools): the reference deinterlacer for interlaced sources.

Call: `vs_cli.cmd run --operation qtgmc_deinterlace`

Field	Kind	Default	Choices	What it is
`field_order` Field order	choice	`tff`	`tff` TFF, `bff` BFF	TFF - top field first (broadcast, HDV, DV NTSC); BFF - bottom field first (DV PAL).
`preset` QTGMC preset	choice	`Medium`	`Draft` Draft, `Ultra Fast` Ultra Fast, `Super Fast` Super Fast, `Very Fast` Very Fast, `Faster` Faster, `Fast` Fast, `Medium` Medium, `Slow` Slow, `Slower` Slower, `Very Slow` Very Slow, `Placebo` Placebo	Speed against quality: Draft is the fastest, Placebo the slowest.
`output_fps` Output frame rate	choice	`single`	`single` Single, `double` Double	Single - the frame rate of the source; double - twice as many frames, the smoothest motion.

TIVTC IVTC (`tivtc_ivtc`)

NTSC 29.97 back to 23.976. TIVTC takes the 3:2 pulldown out of telecined NTSC: 29.97 fps back to 23.976 fps progressive.

Call: `vs_cli.cmd run --operation tivtc_ivtc`

Field	Kind	Default	Choices	What it is
`pp` TFM post-processing	number	`6`	0 … 7, step 1	0 - off … 7 - deinterlace whatever does not match.
`cycle` Cycle	number	`5`	2 … 25, step 1	The TDecimate cycle in frames; 5 for a standard NTSC telecine.
`rdrop` Drop per cycle	number	`1`	1 … 5, step 1	Frames dropped from each cycle; 1 of 5 for NTSC.

MVTools MCDegrain (`mvtools_mcdegrain`)

Noise by motion, detail kept. Temporal denoise along the motion (MVTools and MDegrain): the noise goes, the detail stays sharp.

Call: `vs_cli.cmd run --operation mvtools_mcdegrain`

Field	Kind	Default	Choices	What it is
`radius` Radius	number	`2`	1 … 3, step 1	How many frames before and after are taken.
`thsad` THSAD	number	`200`	100 … 400, step 1	The threshold of a block's difference; higher - more averaging.
`noise` Noise	choice	`auto`	`auto` Auto, `fixed` Fixed	Auto: the strength follows the noise measured in the source and never goes below the setting. Fixed: the setting as it is.
`blksize` Block size	choice	`16`	`8` 8, `16` 16	The block of the motion search: 16 for SD and HD, 8 for fine detail and 4K.

DPIR Denoise (`dpir_denoise`)

A neural denoise of heavy noise. DPIR on vs-mlrt: heavy noise and high ISO go, the texture stays - where BM3D smears the picture.

Call: `vs_cli.cmd run --operation dpir_denoise`

Field	Kind	Default	Choices	What it is
`strength` Strength	number	`10.0`	1.0 … 50.0, step 0.5	The level of noise the network expects: 10 - medium, 15 - heavy, 25 - very heavy.
`model` Model	choice	`drunet_color`	`drunet_color` Colour, `drunet_gray` Grey, `drunet_deblocking_color` Blocks, colour, `drunet_deblocking_gray` Blocks, grey	Colour - colour video; Blocks - the blocks of JPEG and MPEG as well; Grey - the brightness alone, the colour kept as it is.
`tile` Tile	number	`384`	256 … 512, step 16	The piece of the frame the network takes at a time, in pixels: smaller - less video memory, slower.

Deblock H.264 Artefacts (`deblock_h264_artefacts`)

Over-compressed H.264 and MPEG. Deblock_QED of havsfunc, aware of edges: for over-compressed H.264 and MPEG - web rips, messenger re-encodes, weak broadcast.

Call: `vs_cli.cmd run --operation deblock_h264_artefacts`

Field	Kind	Default	Choices	What it is
`quant1` Quant 1	number	`24`	16 … 32, step 1	The strength on the edges of the blocks; higher - stronger.
`quant2` Quant 2	number	`26`	16 … 32, step 1	The strength inside the blocks.
`aoffset` Alpha offset	number	`1`	0 … 2, step 1	How sensitive the filter is to edges.
`boffset` Beta offset	number	`1`	0 … 2, step 1	How sensitive the filter is inside the blocks.

Derainbow Decross (`derainbow_decross`)

Composite rainbow and dot crawl. Smoothing of the colour along the motion (MVTools): the rainbow, dot crawl and cross colour of NTSC composite go, the luma is not softened.

Call: `vs_cli.cmd run --operation derainbow_decross`

Field	Kind	Default	Choices	What it is
`strength` Strength	number	`0.6`	0.0 … 1.0, step 0.05	How strongly the colour is smoothed; 0 - as it was, 1 - fully.
`blksize` Block size	choice	`16`	`8` 8, `16` 16	The block of the motion search: 16 for SD and HD, 8 for fine detail and 4K.

Dehaze Local Contrast (`dehaze_local_contrast`)

Clarity, no colour shift. Local contrast, clarity and haze removal on the luma only: no colour shift, no halos.

Call: `vs_cli.cmd run --operation dehaze_local_contrast`

Field	Kind	Default	Choices	What it is
`strength` Strength	number	`1.0`	0.0 … 2.0, step 0.05	How much local contrast is added back; 0 - the picture as it was.
`radius` Radius	number	`8`	1 … 16, step 1	The size of the blur in pixels: larger - haze, smaller - clarity.

NNEDI3 Upscale 2X (`nnedi3_upscale_2x`)

Twice the size, no ML. NNEDI3 enlarges the picture twice, the same every run, without a neural network.

Call: `vs_cli.cmd run --operation nnedi3_upscale_2x`

Field	Kind	Default	Choices	What it is
`quality` Quality	choice	`balanced`	`fast` Fast, `balanced` Balanced, `best` Best	Fast - a lighter NNEDI3; balanced - as tuned; best - slower, cleaner edges.
`chroma` Colour upscale	choice	`spline36`	`spline36` Spline36, `nnedi3` NNEDI3	Spline36 is the safer one; NNEDI3 is sharper and slower.

Real-ESRGAN 2x (`vsmlrt_realesrgan_2x`)

A neural upscale, twice the size. Real-ESRGAN on vs-mlrt: drawn animation twice the size, its lines clean and sharp; TensorRT on NVIDIA.

Call: `vs_cli.cmd run --operation vsmlrt_realesrgan_2x`

Field	Kind	Default	Choices	What it is
`model` Model	choice	`animevideov3`	`animevideov3` Anime, `animejanaiV2-L1` AnimeJaNai 1, `animejanaiV2-L2` AnimeJaNai 2, `animejanaiV2-L3` AnimeJaNai 3	Real-ESRGAN in vs-mlrt has models for drawn animation alone: Anime is the lightest, AnimeJaNai 1-3 go from lighter to stronger. Live action they can over-sharpen.
`tile` Tile	number	`384`	256 … 768, step 16	The piece of the frame the network takes at a time, in pixels: smaller - less video memory, slower.
`tile_pad` Tile overlap	number	`16`	4 … 64, step 1	How far the pieces overlap, in pixels, so that their seams do not show.

Soft HD Rebuild 2x (`soft_hd_rebuild_2x`)

Soft HD rebuilt at twice the size. A spectral cleanup, then Real-ESRGAN: soft and undersampled HD rebuilt at twice the size without its noise blown up.

Call: `vs_cli.cmd run --operation soft_hd_rebuild_2x`

Field	Kind	Default	Choices	What it is
`rebuild` Rebuild	choice	`balanced`	`conservative` Careful, `balanced` Balanced, `aggressive` Strong	How much detail comes back: Careful - no halos, Strong - for very soft sources.
`cleanup` Cleanup	choice	`medium`	`light` Light, `medium` Medium, `strong` Strong	The cleanup before the network, so that it does not enlarge the noise and the blocks.

Field	Kind	Default	Choices	What it is
`model` Model	choice	`animevideov3`	`animevideov3` Anime, `animejanaiV2-L1` AnimeJaNai 1, `animejanaiV2-L2` AnimeJaNai 2, `animejanaiV2-L3` AnimeJaNai 3	Real-ESRGAN in vs-mlrt has models for drawn animation alone: Anime is the lightest, AnimeJaNai 1-3 go from lighter to stronger. Live action they can over-sharpen.
`tile` Tile	number	`384`	256 … 768, step 16	The piece of the frame the network takes at a time, in pixels: smaller - less video memory, slower.
`tile_pad` Tile overlap	number	`16`	4 … 64, step 1	How far the pieces overlap, in pixels, so that their seams do not show.

PROFILES

Saved presets on a file or a folder

Run a profile (`profile_run`)

A saved preset with its settings. A profile - a preset with its settings and its encoder, saved under a name - run on a file or on a whole folder.

Call: `vs_cli.cmd run --operation profile_run`

Field	Kind	Default	Choices	What it is
`profile` Profile	choice	``	from `profile_options`	The profiles of config\profiles. Choosing one sets its encoder on the cards.

Every preset and profile: processing, encoding, run

These fields stand on every page: the processing and the cards of the encoder are one for the whole window, set on one page they are set on all.

Field	Kind	Default	Choices	What it is
`vs_accel` Processing	choice	`auto`	`auto` Auto, `cpu` CPU, `gpu` GPU	Where BM3D runs. Auto: on the video card when VapourSynth sees a working Vulkan device, else on the CPU. The other filters always run on the CPU.
`encode_family` Codec	choice	`x264`	`x264` x.264, `x265` x.265, `prores` ProRes, `dnxhr` DNxHR	What the result is written with.
`encode_backend` Encoder	choice	`cpu`	`cpu` CPU, `nvenc` NVIDIA, `qsv` QuickSync, `amf` AMF	The CPU or the hardware encoder of the video card. A hardware one this machine has not passed (SERVICE - Hardware capabilities) is off. (shown when encode_family is one of x264, x265)
`encode_quality` Quality	choice	`14`	`14` 14, `17` 17, `21` 21	14 - near lossless, for the archive; 17 - almost invisible losses; 21 - web, proxy, preview. (shown when encode_family is one of x264, x265)
`encode_container` Container	choice	`mp4`	`mp4` MP4, `mkv` MKV	The file x.264 and x.265 are written into. (shown when encode_family is one of x264, x265)
`prores_profile` ProRes profile	choice	`lt`	`lt` LT, `422` 422, `hq` HQ	LT is enough for grading; HQ for keying and repeated passes. (shown when encode_family is prores)
`prores_wrapper` Wrapper	choice	`mov`	`mov` MOV, `mxf` MXF	MOV for Resolve and Final Cut; MXF for Premiere and Avid. (shown when encode_family is prores)
`dnxhr_profile` DNxHR profile	choice	`hq`	`hq` HQ, `hqx` HQX, `lb` LB, `sq` SQ	LB - low bandwidth, SQ - standard, HQ - high quality, HQX - 10 bit. (shown when encode_family is dnxhr)
`overwrite` Overwrite	tick	`false`		Make the result again where it is already there. Off: a file that is already done is passed over.

Where the result goes. `<Target>\<Palette>\<preset>_<encoder>\<the folders of the Source>\<name>.<ext>`; a profile - `<Target>\Profiles\<profile>_<encoder>\...`. The name of the source is kept. A result that is there is passed over unless *Overwrite*.

SETUP: the additional components

Operation	What it is	Call
Install VapourSynth	The newest stable portable VapourSynth into system_core\vapoursynth (step 10 of the builder).	`vs_cli.cmd run --operation install_vapoursynth`
Install the plugins	The plugins of install\vs_plugins.json into VapourSynth (step 11 of the builder); the core is not moved.	`vs_cli.cmd run --operation install_vs_plugins`
Install FFmpeg	FFmpeg of Gyan into Tools\ffmpeg by the NVIDIA driver: the newest stable, 9.0.2 at least, without an NVIDIA card and from the LTS driver 610.88; below it 8.0.1 (570-610.87) or 7.1 so that NVENC works, and not every operation is possible (step 13 of the builder).	`vs_cli.cmd run --operation install_ffmpeg`
Install MLRT	vs-mlrt - TensorRT, ONNX Runtime and the models - into VapourSynth, trimmed to this video card: the neural presets DPIR, Real-ESRGAN and Soft HD Rebuild. Offered at the first start and in SETUP when an NVIDIA RTX card is found; the builder does not install it.	`vs_cli.cmd run --operation install_mlrt`
Remove VapourSynth	The folder of the engine, system_core\vapoursynth, with its plugins and MLRT, goes to the Recycle Bin (step 14 of the builder).	`vs_cli.cmd run --operation remove_vapoursynth`

SERVICE: checks

Operation	What it is	Call
Doctor	Checks the whole engine: the two Pythons, VapourSynth, every plugin, FFmpeg, BM3D on the video card.	`vs_cli.cmd run --operation doctor`

Operation	What it is	Call
File list	The videos of the Source the next run takes, with their folders.	`vs_cli.cmd run --operation source_list`
Hardware capabilities	Short FFmpeg encodes with NVENC, QuickSync and AMF: which hardware encoders work on this machine.	`vs_cli.cmd run --operation hardware_capabilities`
Check every preset	Every preset on a test clip, a frame each: what runs on this machine and how fast.	`vs_cli.cmd run --operation bench_presets`
BM3D: video card or CPU	BM3D through Vulkan (bm3dvk) against BM3D on the CPU (bm3d) on the first video of the Source: frames a second of each.	`vs_cli.cmd run --operation bench_gpu`
Source info	What ffprobe knows of every video of the Source: size, frame rate, length, codec, range, colour.	`vs_cli.cmd run --operation probe_source`
Save a profile	The settings of a preset and the encoder of the cards saved as a profile in config\profiles.	`vs_cli.cmd run --operation profile_save`

Encoders

Encoder	Cards
`dnxhr_hq`	`encode_family=dnxhr`, `dnxhr_profile=hq`
`dnxhr_hqx`	`encode_family=dnxhr`, `dnxhr_profile=hqx`
`dnxhr_lb`	`encode_family=dnxhr`, `dnxhr_profile=lb`
`dnxhr_sq`	`encode_family=dnxhr`, `dnxhr_profile=sq`
`h264_amf_q14`	`encode_family=x264`, `encode_backend=amf`, `encode_quality=14`, `encode_container=mp4`
`h264_amf_q17`	`encode_family=x264`, `encode_backend=amf`, `encode_quality=17`, `encode_container=mp4`
`h264_amf_q21`	`encode_family=x264`, `encode_backend=amf`, `encode_quality=21`, `encode_container=mp4`

Encoder	Cards
`h264_crf14`	`encode_family=x264`, `encode_backend=cpu`, `encode_quality=14`, `encode_container=mp4`
`h264_crf17`	`encode_family=x264`, `encode_backend=cpu`, `encode_quality=17`, `encode_container=mp4`
`h264_crf21`	`encode_family=x264`, `encode_backend=cpu`, `encode_quality=21`, `encode_container=mp4`
`h264_nvenc_q14`	`encode_family=x264`, `encode_backend=nvenc`, `encode_quality=14`, `encode_container=mp4`
`h264_nvenc_q17`	`encode_family=x264`, `encode_backend=nvenc`, `encode_quality=17`, `encode_container=mp4`
`h264_nvenc_q21`	`encode_family=x264`, `encode_backend=nvenc`, `encode_quality=21`, `encode_container=mp4`
`h264_qsv_q14`	`encode_family=x264`, `encode_backend=qsv`, `encode_quality=14`, `encode_container=mp4`
`h264_qsv_q17`	`encode_family=x264`, `encode_backend=qsv`, `encode_quality=17`, `encode_container=mp4`
`h264_qsv_q21`	`encode_family=x264`, `encode_backend=qsv`, `encode_quality=21`, `encode_container=mp4`
`h265_amf_q14`	`encode_family=x265`, `encode_backend=amf`, `encode_quality=14`, `encode_container=mp4`
`h265_amf_q17`	`encode_family=x265`, `encode_backend=amf`, `encode_quality=17`, `encode_container=mp4`
`h265_amf_q21`	`encode_family=x265`, `encode_backend=amf`, `encode_quality=21`, `encode_container=mp4`
`h265_crf14`	`encode_family=x265`, `encode_backend=cpu`, `encode_quality=14`, `encode_container=mp4`
`h265_crf17`	`encode_family=x265`, `encode_backend=cpu`, `encode_quality=17`, `encode_container=mp4`

Encoder	Cards
`h265_crf21`	`encode_family=x265`, `encode_backend=cpu`, `encode_quality=21`, `encode_container=mp4`
`h265_nvenc_q14`	`encode_family=x265`, `encode_backend=nvenc`, `encode_quality=14`, `encode_container=mp4`
`h265_nvenc_q17`	`encode_family=x265`, `encode_backend=nvenc`, `encode_quality=17`, `encode_container=mp4`
`h265_nvenc_q21`	`encode_family=x265`, `encode_backend=nvenc`, `encode_quality=21`, `encode_container=mp4`
`h265_qsv_q14`	`encode_family=x265`, `encode_backend=qsv`, `encode_quality=14`, `encode_container=mp4`
`h265_qsv_q17`	`encode_family=x265`, `encode_backend=qsv`, `encode_quality=17`, `encode_container=mp4`
`h265_qsv_q21`	`encode_family=x265`, `encode_backend=qsv`, `encode_quality=21`, `encode_container=mp4`
`prores_422`	`encode_family=prores`, `prores_profile=422`, `prores_wrapper=mov`
`prores_422_mxf`	`encode_family=prores`, `prores_profile=422`, `prores_wrapper=mxf`
`prores_422hq`	`encode_family=prores`, `prores_profile=hq`, `prores_wrapper=mov`
`prores_422hq_mxf`	`encode_family=prores`, `prores_profile=hq`, `prores_wrapper=mxf`
`prores_lt`	`encode_family=prores`, `prores_profile=lt`, `prores_wrapper=mov`
`prores_lt_mxf`	`encode_family=prores`, `prores_profile=lt`, `prores_wrapper=mxf`