

MainConcept P2 AVC-ULTRA Transcoder 2.4

User Guide

Contents

1. Introduction	2
2. Installation	2
2.1 Installing Docker	2
2.2 Resources for Docker	3
2.3 Installing MainConcept P2 AVC-ULTRA Transcoder	3
3. Settings	4
3.1 Supported Input Codecs & Formats	4
3.2 Supported Output Formats	4
3.3 Included Presets	4
4. Configuration	5
4.1 Configuring shared folders	5
5. Usage	5
5.1 Starting MainConcept P2 AVC-ULTRA Transcoder	5
5.2 Using job description file	6
5.3 Using properties file	9
5.5 Stopping MainConcept P2 AVC-ULTRA Transcoder execution	13
6. Technical Support	13
7. Credits	13

1. Introduction

The MainConcept P2 AVC-ULTRA Transcoder is an optimized Docker container for file-based transcoding of media files into professional Panasonic camera formats like P2 AVC-Intra, P2 AVC LongG and AVC-intra RP2027.

Features:

- File-to-file-based transcoding module
- Profiles for creating the full set of professional Panasonic P2 AVC-ULTRA camcorder flavors
- Powered by the industry-leading MainConcept AVC/H.264 Broadcast Codec
- Wide range of ingest file formats

Presets:

- Panasonic P2 AVC-Intra
- Panasonic P2 AVC LongG
- AVC-Intra RP2027

2. Installation

Before installing the MainConcept P2 AVC-ULTRA Transcoder, please ensure Docker is installed correctly.

2.1 Installing Docker

To download and install Docker on your server, please follow the instructions here:

www.docker.com/community-edition

After successful installation you should be able to run the Docker "hello-world" container.

Example output from the Docker hello-world container:

```
$ docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub. (amd64)
3. The Docker daemon created a new container from that image which runs the executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it to your terminal.
```

If you see different output, please refer to the Docker installation guide.



2.2 Resources for Docker

On Windows machines there is a default limitation of resources available for Docker. It could be adjusted in the "Settings > Advanced" section. For more information, please check the official website: docs.docker.com/docker-for-windows.

2.3 Installing MainConcept P2 AVC-ULTRA Transcoder

1) Extract the MainConcept P2 AVC-ULTRA Transcoder package

To install your MainConcept P2 AVC-ULTRA Transcoder product, first unpack the ZIP file you downloaded into a new folder on your computer. The files within the folder depend on the Pro Camera Transcoders for Sony & Panasonic product.

```
total 40
drwxrwxr-x 2 thomas thomas 4096 Apr 10 14:23 docker
-rw-rw-r-- 1 thomas thomas 17835 Apr 10 14:23 EULA.txt
-rw-rw-r-- 1 thomas thomas 77 Apr 10 14:23 info.txt
-rw-rw-r-- 1 thomas thomas 2721 Apr 10 14:23 readme.txt
-rw-rw-r-- 1 thomas thomas 4096 Apr 10 14:23 scripts
-rw-rw-r-- 1 thomas thomas 4096 Apr 10 15:10 volume
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo# █
```

2) Install the MainConcept P2 AVC-ULTRA Transcoder docker image

To install the MainConcept P2 AVC-ULTRA Transcoder image in your local Docker environment, "cd" into the docker folder and run the "install_image" script:

```
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo# cd docker/
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/docker# ./install_image.sh
Installing MainConcept 2GO in your local Docker environment...
e6bc3d95b8d4: Loading layer [=====>] 28.87MB/28.87MB
Loaded image: mc_2go_p2_avcultra_transcoder_demo:latest
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo# █
```

Verify whether the P2 AVC-ULTRA Transcoder container is installed properly by using the "docker image ls" command:

```
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/docker# docker image ls
REPOSITORY                                TAG      IMAGE ID      CREATED      SIZE
mc_2go_p2_avcultra_transcoder_demo        latest   2e15d1d96bd9 3 hours ago 39.9MB
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/docker# █
```



NOTE:

For using both the demo and full version of the MainConcept P2 AVC-ULTRA Transcoder, you must allow the server running a connection to <https://taas-reporting-srv.mainconcept.com>.

If you want to use the products offline (i.e. without internet connection), please contact

customer.care@mainconcept.com. We will get in touch with you about the necessary steps.

3. Settings

3.1 Supported Input Codecs & Formats

The MainConcept P2 AVC-ULTRA Transcoder supports the following input codecs and formats:

- **Video:** MPEG-1/2, MPEG-4 Part 2, H.263, VC-1, HEVC/H.265, AVC/H.264, DV / DVCPRO, JPEG 2000, Apple ProRes, DNxHD, DNxHR
- **Audio:** PCM / LPCM, MPEG Layer 1/2/3, AAC / HE-AAC, WMA, AMR, RAW / WAV, DV, AC-3, E-AC-3
- **Container:** Elementary Streams, MPEG-2 Program Stream / Transport Stream, MP4, 3GP, F4V, ASF, DV, DIF, MJ2, MXF, RAW, MOV

3.2 Supported Output Formats

The MainConcept P2 AVC-ULTRA Transcoder supports the following output formats:

- Panasonic P2 AVC-Intra
- Panasonic P2 AVC LongG
- AVC-Intra RP2027

3.3 Included Presets

Several built-in presets are included in the product for direct usage.

P2 AVC-Intra	P2_AVCIIntra_HD_422
	P2_AVCIIntra_2k_422
	P2_AVCIIntra_4k_422
	P2_AVCIIntra_50
	P2_AVCIIntra_100
	P2_AVCIIntra_200
P2 AVC LongG	P2_AVCLongG_G6
	P2_AVCLongG_G12
	P2_AVCLongG_G25
	P2_AVCLongG_G50



RP2027 AVC-Intra	RP2027_AVCItra_50
	RP2027_AVCItra_100
	RP2027_AVCItra_200

If you need to manually tune presets there is an *.mps file for each built-in preset located in the "volume/presets". To specify a manually edited preset, use the PRESET parameter.

4. Configuration

With Docker installed most of the MainConcept P2 AVC-ULTRA Transcoder configuration is complete. However, some Pro Camera Transcoders for Sony & Panasonic products require shared folders, or specific parameters at startup.

4.1 Configuring shared folders

To read and write files located on the host computer, the MainConcept P2 AVC-ULTRA Transcoder uses shared volumes to access the filesystem of the host. Docker uses mounted volumes to share host folders with containers.

The "run" convenience script in the scripts folder runs the MainConcept P2 AVC-ULTRA Transcoder container and automatically maps the required folders from your host computer into the container.

5. Usage

5.1 Starting MainConcept P2 AVC-ULTRA Transcoder

Make sure you have successfully installed your MainConcept P2 AVC-ULTRA Transcoder product on the computer by following the Installation instructions.

The "run" script inside the scripts folder makes starting the MainConcept P2 AVC-ULTRA Transcoder easy and lets you understand how docker containers are actually run. If you plan to run the MainConcept P2 AVC-ULTRA Transcoder through container management tools like Docker Compose, Kubernetes or Docker Swarm, it is recommended that you understand the parameters required for containers by reading the "run" script.

MainConcept Pro Camera Transcoders for Sony & Panasonic products require passing configuration parameters to the container at startup. These can include input and output filenames, serial keys, shared volume folders or external URLs. These parameters can be specified in a properties file or via the command line.



5.2 Using job description file

The MainConcept P2 AVC-ULTRA Transcoder introduces a REST API and provides users an interface that is more suitable for integration with their existing environment or tools. This API covers functionality to create jobs and query their status using standard REST API over HTTP. A job description file is posted to the endpoint, which must be in JSON format. This JSON file must contain all the necessary parameters required for the submitted jobs.

Option	Sample value	Description
INPUT	8MBit.mp4	Source filename for audio conversion; must be in or under SHARED_PATH_IN
OUTPUT	1111AB.mxf	Target filename for encoded output; you also need to add the file extension; must be in or under SHARED_PATH_OUT. File Extension: *.mxf
PRESETNAME	P2_AVCIntra_100	Preset name for P2 AVC-ULTRA generation when using original MainConcept preset(s) included with the Docker container. Note: When PRESETNAME is used, PRESET must not be used.
PRESET	<folder_in_shared_path>/P2_AVCIntra_100.mps	Custom preset file(s) (MPS); must be in or under SHARED_PATH_IN volume outside of the Docker container. Note: When PRESET is used, PRESETNAME must not be used.
VERBOSITY	SILENT	Sets verbose level. Available options are: <ul style="list-style-type: none"> • SILENT (0) - Prints only error messages • DEFAULT (1) - Default level if verbose level is not specified. Prints information about input file, output file, preset. Prints information about REST API calls (target URLs with parameters, no BODY info). • FULL (2) - Prints all available information, including processing status, file transfer, REST API calls (target URLs with parameters with BODY info), complete information from processing step.



MainConcept P2 AVC-ULTRA Transcoder 2.4

User Guide

KEEP_CONTENT	TRUE	Prevents deletion of temporary content (e.g. downloaded, transcoded). Default value is FALSE.
TRIM_IN	3.330s	<ul style="list-style-type: none">In point in seconds (e.g. 3.330s) or in frames (e.g. 250f). Regarded as the start point if specified.
TRIM_OUT	250f	<ul style="list-style-type: none">Out point in seconds (e.g. 3.330s) or in frames (e.g. 250f). Regarded as the end point if specified.
LOGO_PATH		Path to the file. Overlays PNG image onto video stream. Note: Path to local file should be relative to SHARED_PATH_IN.
LOGO_OFFSET_LEFT	123	Horizontal offset from left-top corner of the frame in pixels.
LOGO_OFFSET_TOP	45	Vertical offset from left-top corner of the frame in pixels.
LOGO_BEGIN_TIME	3.330s	The time from which the logo appears in seconds (e.g. 3.330s).
LOGO_END_TIME	8.330s	The time from which the logo disappears in seconds (e.g. 8.330s).
RES	SOURCE	Specifies how the video's resolution setting should be applied when using an MPS preset file: <ul style="list-style-type: none">PRESET: Uses the resolution that is specified in the MPS preset file (default).SOURCE: Applies the same resolution as in the source file. Please note that this value cannot be applied for some presets if it is not supported by the official specifications. In this case, the PRESET values are applied.CLOSEST: Uses the resolution that matches the one closest to the allowed resolution for the specified preset.
FPS	CLOSEST	Specifies how the video's framerate setting should be applied when using an MPS preset file:



		<ul style="list-style-type: none"> • PRESET: Uses the framerate that is specified in the MPS preset file (default). • SOURCE: Applies the same framerate as in the source file. Please note that this value cannot be applied for some presets if it is not supported by the official specifications. In this case, the PRESET values are applied. • CLOSEST: Uses the framerate that matches the one closest to the allowed framerate for the specified preset.
ASPECT	PRESET	<p>Specifies how the video's aspect ratio setting should be applied when using an MPS preset file:</p> <ul style="list-style-type: none"> • PRESET: Uses the aspect ratio that is specified in the MPS preset file (default). • SOURCE: Applies the same aspect ratio as in the source file. Please note that this value cannot be applied for some presets if it is not supported by the official specifications. In this case, the PRESET values are applied. • CLOSEST: Uses the aspect ratio that matches the one closest to the allowed aspect ratio for the specified preset.



NOTE:

OUTPUT - name of output file

For some professional formats specific name is required. For example:

- P2-AVC Intra format require NNNNAA name format, where N is a digit, and A is a digit or a capital letter, e.g. 1234B4.
- P2-AVC-ULTRA format require NNNAANAA name, where N is a digit, and A is a digit or a capital letter, e.g. 123AB0CD.

To edit the parameters of the JSON file, use a text editor. Here are some examples:

```
{
  "INPUT": "ftp://10.144.41.202:2121/test.mp4",
  "OUTPUT": "ftp://10.144.41.202:2121/test/1234B4.mxf",
  "PRESETNAME": "P2_AVCIntra_100",
  "KEEP_CONTENT": "TRUE",
  "VERBOSITY": "FULL"
}
```




```
{  
  "INPUT": "/volume/test.mp4",  
  "OUTPUT": "/volume_out/1234B4.mxf",  
  "PRESET": "P2_AVCIntra_100.mps",  
  "KEEP_CONTENT": "TRUE",  
  "VERBOSITY": "FULL"  
}
```

5.3 Using properties file

The easiest way to start the MainConcept P2 AVC-ULTRA Transcoder is by editing the “properties.txt” file to your needs and then executing the “run” script with this file.

```
~/MainConcept/2GO/mc_p2_avcultra_transcoder_demo# ./scripts/run.sh  
scripts/properties.txt
```

The MainConcept P2 AVC-ULTRA Transcoder supports the following configuration options:

Option	Sample value	Description
ACCEPT_EULA	YES	Required
CUSTOMER_ID		User's unique identifier, provided by MainConcept after purchase. Customer ID parameter can also be specified more concisely as `CID`
SHARED_PATH_IN	/path/source_folder	Optional: Folder where the input file is located
SHARED_PATH_OUT	/path/target_folder	Optional: Folder for the encoded output file
JOBS	/path/to/json_file	Optional: Specify a job JSON file for immediate processing
PORT	8082	Specify port specified for REST API. Default value is 8080.
AUTOSTART	TRUE, FALSE	Disable/enable job queue processing when Docker runs. FALSE sets the service to a stopped state after the Docker runs. Default value is TRUE.
VERBOSITY	SILENT	Sets verbose level. Available options are: <ul style="list-style-type: none">• SILENT (0) - Prints only error messages• DEFAULT (1) - Default level if verbose level is not specified. Prints information about input file, output file, preset. Prints information about



		<p>REST API calls (target URLs with parameters, no BODY info).</p> <ul style="list-style-type: none"> FULL (2) - Prints all available information, including processing status, file transfer, REST API calls (target URLs with parameters with BODY info), complete information from processing step.
TRIM_IN	3.330s	In point in seconds (e.g. 3.330s) or in frames (e.g. 250f). Regarded as the start point if specified.
TRIM_OUT	250f	Out point in seconds (e.g. 3.330s) or in frames (e.g. 250f). Regarded as the end point if specified.
LOGO_PATH		<p>Path to the file. Overlays PNG image onto video stream.</p> <p>Note: Path to local file should be relative to SHARED_PATH_IN.</p>
LOGO_OFFSET_LEFT	123	Horizontal offset from left-top corner of the frame in pixels.
LOGO_OFFSET_TOP	45	Vertical offset from left-top corner of the frame in pixels.
LOGO_BEGIN_TIME	3.330s	The time from which the logo appears in seconds (e.g. 3.330s).
LOGO_END_TIME	8.330s	The time from which the logo disappears in seconds (e.g. 8.330s).
RES	SOURCE	<p>Specifies how the video's resolution setting should be applied when using an MPS preset file:</p> <ul style="list-style-type: none"> PRESET: Uses the resolution that is specified in the MPS preset file (default). SOURCE: Applies the same resolution as in the source file. Please note that this value cannot be applied for some presets if it is not supported by the official specifications. In this case, the PRESET values are applied. CLOSEST: Uses the resolution that matches the one closest to the allowed resolution for the specified preset.



FPS	CLOSEST	<p>Specifies how the video's framerate setting should be applied when using an MPS preset file:</p> <ul style="list-style-type: none"> • PRESET: Uses the framerate that is specified in the MPS preset file (default). • SOURCE: Applies the same framerate as in the source file. Please note that this value cannot be applied for some presets if it is not supported by the official specifications. In this case, the PRESET values are applied. • CLOSEST: Uses the framerate that matches the one closest to the allowed framerate for the specified preset.
ASPECT	PRESET	<p>Specifies how the video's aspect ratio setting should be applied when using an MPS preset file:</p> <ul style="list-style-type: none"> • PRESET: Uses the aspect ratio that is specified in the MPS preset file (default). • SOURCE: Applies the same aspect ratio as in the source file. Please note that this value cannot be applied for some presets if it is not supported by the official specifications. In this case, the PRESET values are applied. • CLOSEST: Uses the aspect ratio that matches the one closest to the allowed aspect ratio for the specified preset.

To edit the parameters, use a text editor:

```

1 ACCEPT_EULA=Y
2 SHARED_PATH_IN=~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/volume
3 SHARED_PATH_OUT=~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/volume
4 JOBS=~/.path/to/json_file
5 PORT=8082
6 AUTOSTART=TRUE
7 CUSTOMER_ID=xxx
8 VERBOSITY=DEFAULT
    
```



Using command line options

Instead of editing a properties file, all configuration parameters can also be specified on the command line directly.

```
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/docker# ./scripts/run.sh \  
> ACCEPT_EULA=Y \  
> SHARED_PATH_IN=~/.MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/volume \  
> SHARED_PATH_OUT=~/.MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/volume \  
> JOBS=~/.path/to/json_file \  
> PORT=8082 \  
> AUTOSTART=TRUE \  
> CUSTOMER_ID=xxx \  
> VERBOSITY=DEFAULT
```

Using docker-compose

Docker Compose lets you start multiple replicas of the same image. It also significantly simplifies starting MainConcept Pro Camera Transcoders for Sony & Panasonic products.

Docker Compose is a separate tool that must be installed in addition to Docker. Please refer to the documentation about how to install and setup Compose: docs.docker.com/compose/

To run the MainConcept P2 AVC-ULTRA Transcoder with Docker Compose you create a compose file in YAML. All parameters to run the product via Docker Compose are specified inside this YAML file. To simplify deployment of the MainConcept Pro Camera Transcoders for Sony & Panasonic containers, setting environment variables for the configuration and then using them in the YAML file is recommended.

This is a basic “docker-compose.yml” file showing how to configure the MainConcept P2 AVC-ULTRA Transcoder.

```
1 version: '2.2'  
2 services:  
3   2go:  
4     image: 2go_p2_avcultra_transcoder_demo  
5     network_mode: host  
6     volumes:  
7     - ${2GO_VOLUME}:/volume  
8     environment:  
9     - 2GO_PARAMS=${2GO_PARAMS}
```

It uses two environment variables 2GO_VOLUME and 2GO_PARAMS. These must be set before starting docker-compose.

```
~# export 2GO_VOLUME=~/.MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo/volume/  
~# export 2GO_PARAMS="INPUT=avchd_camera_testfile.mts OUTPUT=out_file  
PRESETNAME=P2_AVCLongG_G25 CUSTOMER_ID=xxx"
```



After that starting the P2 AVC-ULTRA Transcoder using Docker Compose is as easy as:

```
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo# docker-compose up -d
Starting mc2gop2avcultratranscoderdemo_2go_1 ...
Starting mc2gop2avcultratranscoderdemo_2go_1 ... done
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo#
```

5.5 Stopping MainConcept P2 AVC-ULTRA Transcoder execution

MainConcept Pro Camera Transcoders for Sony & Panasonic containers should be stopped using the convenience “stop” script provided in the scripts folder.

To execute the script on an active container you first need to know the container ID. This can be found from the first column of the docker ps command:

```
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo# docker ps
CONTAINER ID   IMAGE                                COMMAND                                CREATED
bc45686deb0e  mc_2go_p2_avcultra_transcoder_demo  "/opt/bin/reporting ..."          4seconds ago
```

Then use the convenience “stop” script in the scripts folder to abort the P2 AVC-ULTRA Transcoder execution:

```
~/MainConcept/2GO/mc_p2_avcultra_transcoder_demo# ./scripts/stop.sh bc45686deb0e
Stopping the P2 AVC Ultra Transcoder...
P2 AVC Ultra Transcoder stopped.
~/MainConcept/2GO/mc_2go_p2_avcultra_transcoder_demo# █
```

If you are using the REST API, you also have the opportunity to shut down the container by using DELETE /service. If a job is currently active, the container is not shut down and this function is ignored. In this case you need to abort the job first using POST /jobs/{jobID}/abort

6. Technical Support

If you need additional assistance, the MainConcept Technical Support team is standing by to help. Send an e-mail to apps.support@mainconcept.com or go to the [MainConcept Support page](#) and we'll assist you as quickly as possible.

7. Credits

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MainConcept P2 AVC-ULTRA Transcoder 2.4

User Guide

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