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| OLPS VSPP Platform  Training on Transcoding  Document Version : 1.0  *OLNC / OLPS / TV / SKC / MTV* | | | | | | | |
| Synthesis : | | | | | Component Version : 3.8.2.2 | | |
| Application Version  : 3.8.2.2 | | |
| Writer | Checker | | Approver | | | Publisher | |
| E. Wyckens | A.Gouraud | |  | | | E. Wyckens | |
| On |  | On |  | | On |  |
| |  |  |  |  | | --- | --- | --- | --- | |  | France Télécom  6, place d’Alleray  75015 Paris |  |  | | | | | | | | |
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| Author | Date | Version | Paragraph | Modifications |
| E.WYCKENS | 11/04/2017 | 1.0 |  | Creation |
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# Introduction

This document presents all the technical requests logged by OLPS regarding its VSPP platform installed with the 3.8.2.2 release.

# Global overview of the transcoding phase



# Download Master Files

The usual way to download the master by fetch function API.

You can also upload the master files without API function and store directly on VSPP, on /mnt/ftp\_vol. It’s also the way to check or manage all folders on VSPP with API functions. The documentation is wrong on fetch tag , you need to give the name of the master with the extension (ts file) see below

## Example to fetch file with API

<http://192.168.134.3:5929/v2/fetch_file>

<?xml version="1.0" encoding="UTF-8"?>  
<fetch\_file>  
<fetch\_from>[ftp://vspp:W3lc0m3TVSt1r@192.168.134.119/cdvr/masters/MASTER\_LASSAUT.ts</fetch\_from](ftp://vspp:W3lc0m3TVSt1r@192.168.134.119/cdvr/masters/MASTER_LASSAUT.ts%3c/fetch_from)>  
<fetch\_to>/root/masters.ts</fetch\_to>  
<initiator>Manu</initiator>  
</fetch\_file>

-- response --  
200 OK  
Server:  Fabrix Systems VIDFX Manager (Version: 3.8.2.2 SVN Revision: 71895)  
Content-Length:  117  
Content-Type:  text/xml  
Date:  Wed, 05 Apr 2017 12:40:43 GMT  
Pragma:  no-cache  
Connection:  keep-alive  
Vary:  accept-encoding

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>  
<fetch\_file\_reply><task\_id>4020</task\_id></fetch\_file\_reply>

# Encoding parameters

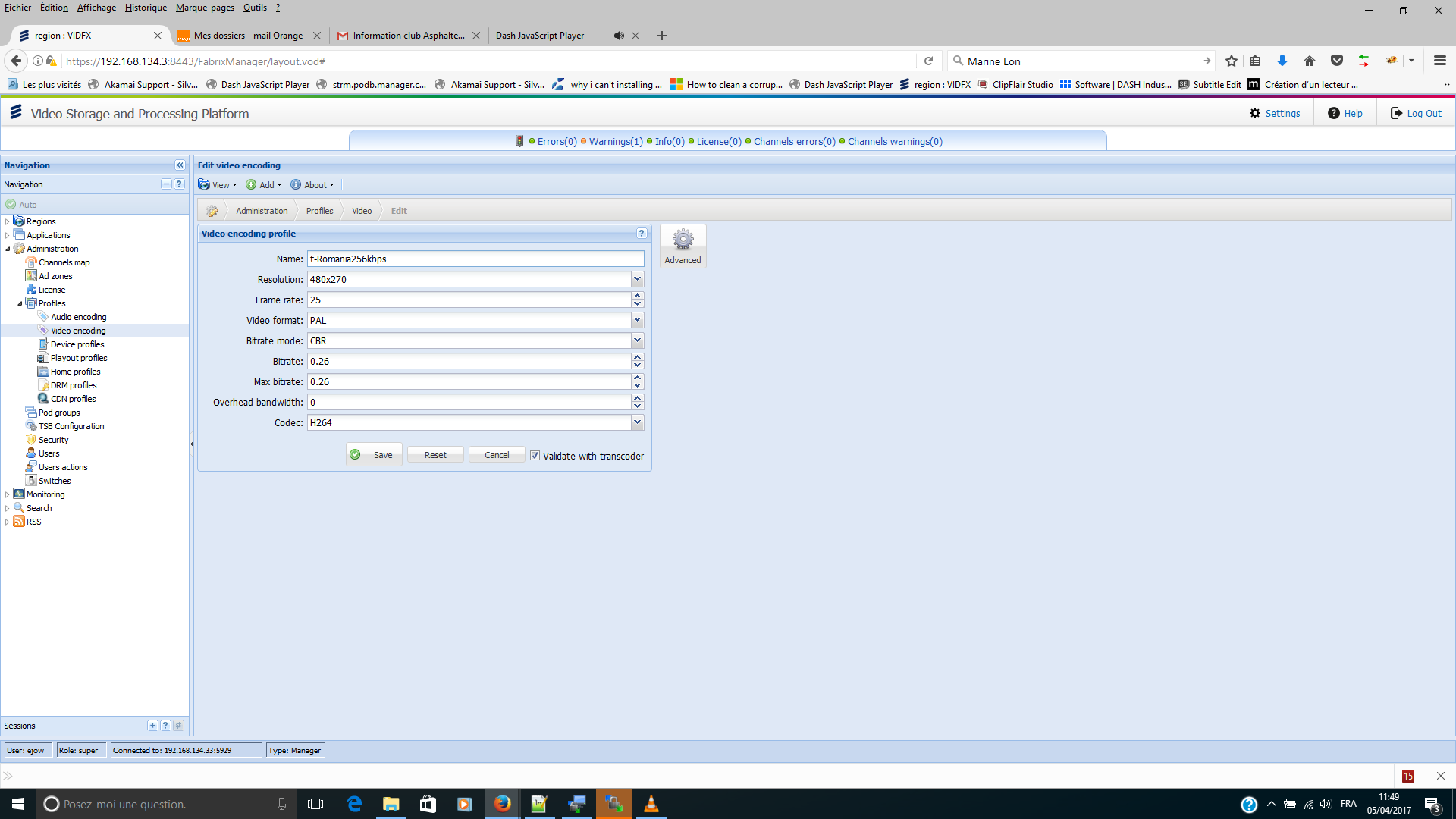
The transcoding depends on the audio/video coding profiles in order to generate ABR ts file based on Master file. You need also align the video profiles with the streamers video profiles, in order to insure a good audio and video playback.

## Video Encoding Profile H264 in SD-HD format

In order to illustrate on video encoding profile, we are using the target video profile for Orange Romania in SD and HD resolution. The VSPP is not enable to manage two audio codecs in the same transcoding profile.

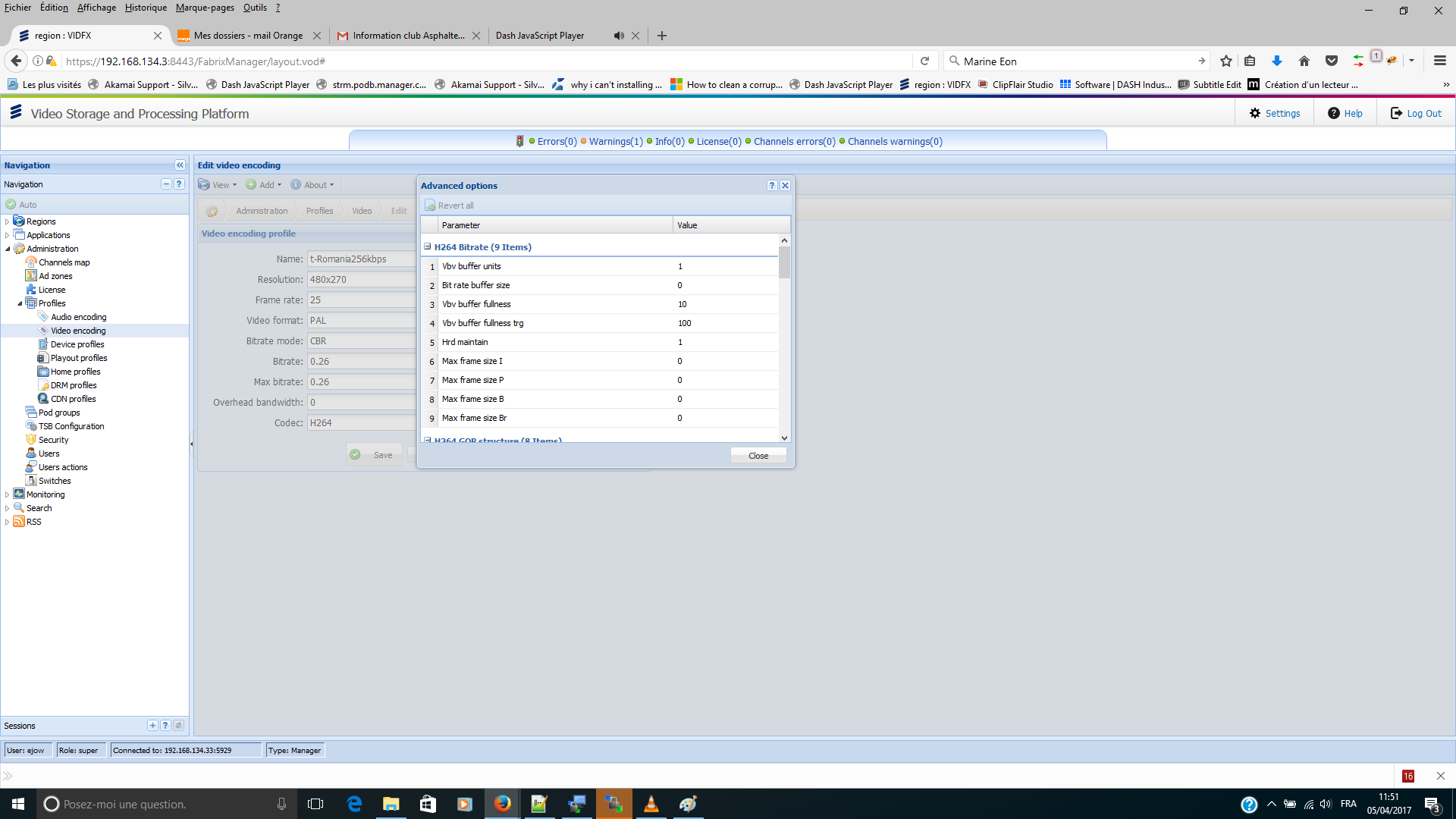
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Function** | **Parameter** | **SD only channels** | | | |
| **Format** | Export type from Muse coders | SPTS\* | | | |
| Rate Control | CBR | | | |
| **Video** | Name | Video 1 | Video 2 | Video 3 |  |
| Codec | H264 Main | | |
| Target Bit rate (kbps) | 256 | 800 | 1800 |
| Resolution 16:9 | 480x270 | 640x360 | 854x480 |
| Key frame period (s) | 2 | | |
| Frame rate (fps) | Full | | |
| Entropy Coding | CABAC | | |
| **Audio** | Name | Audio 1 | Audio 2 | Audio 3 | Audio 4 |
| Codec | HE-AACv2 | HE-AACv2 | AAC-LC | AAC-LC |
| Language | Local | VO | Local | VO |
| Bit rate (kbps) | 24 | 24 | 96 | 96 |
| Channels | Stereo | Stereo | Stereo | Stereo |
| Sampling rate (kHz) | 48 | 48 | 48 | 48 |
| **Subittle** | Name | Subtitle1 |  | | |
| Language | VS |
| Format | Srt file |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Function** | **Parameter** | **HD channels** | | | | |
| **Format** | Export type from Muse coders | SPTS\* | | | | |
| Rate Control | CBR | | | | |
|  | Name | Video 1 | Video 2 | Video 3 | Video 4 | Video 5 |
| **Video** | Codec | H264 Main | | | H264 High | |
| Target Bit rate (kbps) | 256 | 800 | 1800 | 2800 | 5000 |
| Resolution 16:9 | 480x270 | 640x360 | 854x480 | 1280x720 | 1920x1080 |
| Key frame period (s) | 2 | | | | |
| Frame rate (fps) | Full | | | | |
| Entropy Coding | CABAC | | | | |
| **Audio\*** | Name | Audio 1 | Audio 2 | Audio 3 | Audio 4 |  |
| Codec | HE-AACv2 | HE-AACv2 | AAC-LC | AAC-LC |  |
| Language | Local | VO | Local | VO |  |
| Bit rate (kbps) | 24 | 24 | 96 | 96 |  |
| Channels | Stereo | Stereo | Stereo | Stereo |  |
| Sampling rate (kHz) | 48 | 48 | 48 | 48 |  |
| **Subititle** | Name | Subtitle1 |  |  |  |  |
| Language | VS |  |  |  |  |
| Format | DVB-teletext |  |  |  |  |



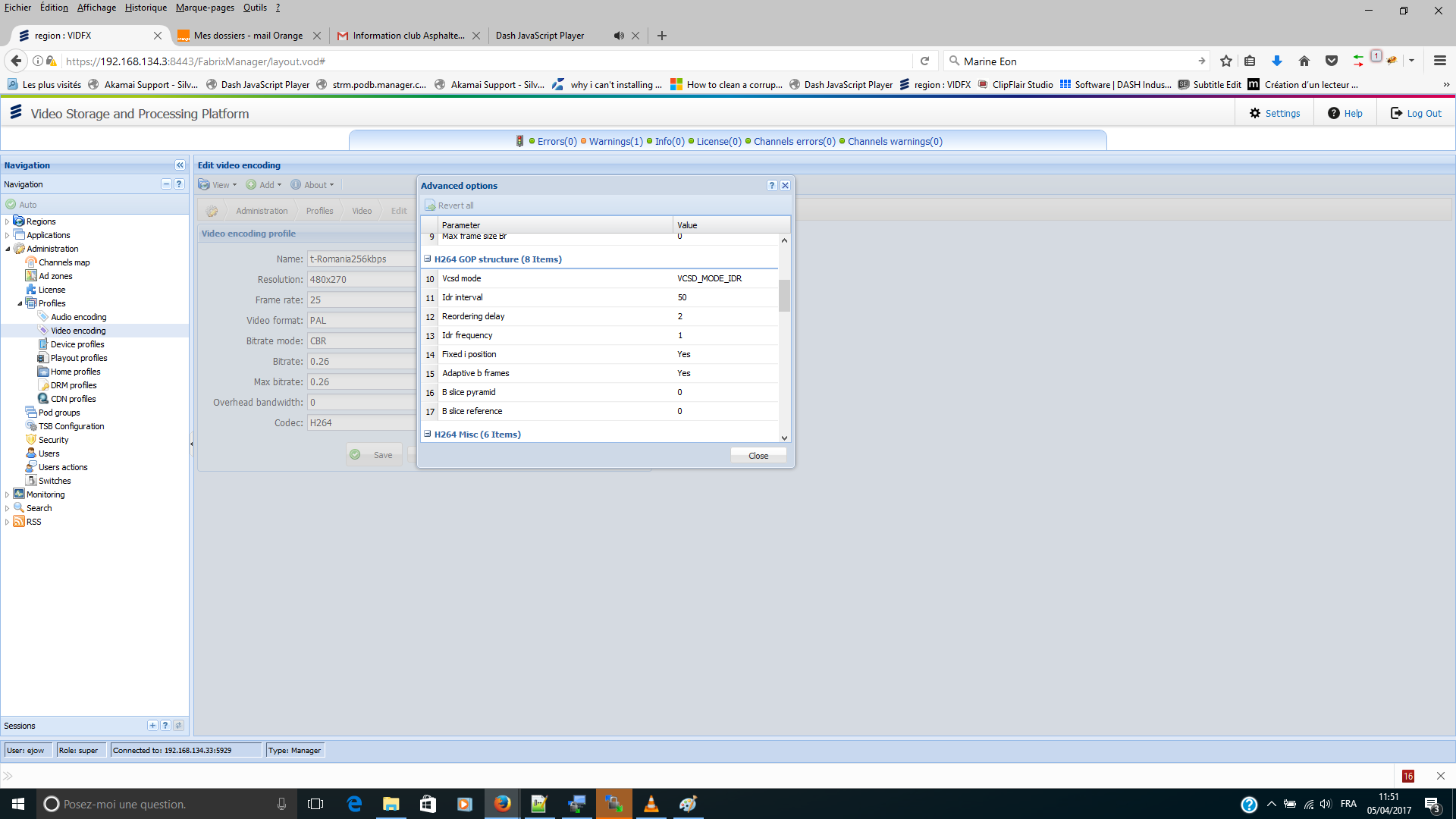
## Video bitrate H264

The values provide below should be respected for all video bitrates. The Birate buffer size should be equal to 4x video bitrate (bits/s). Example: video bitrate 1.8 Mbits/s -> 4x1 800 000 =7 200 000 bits/s



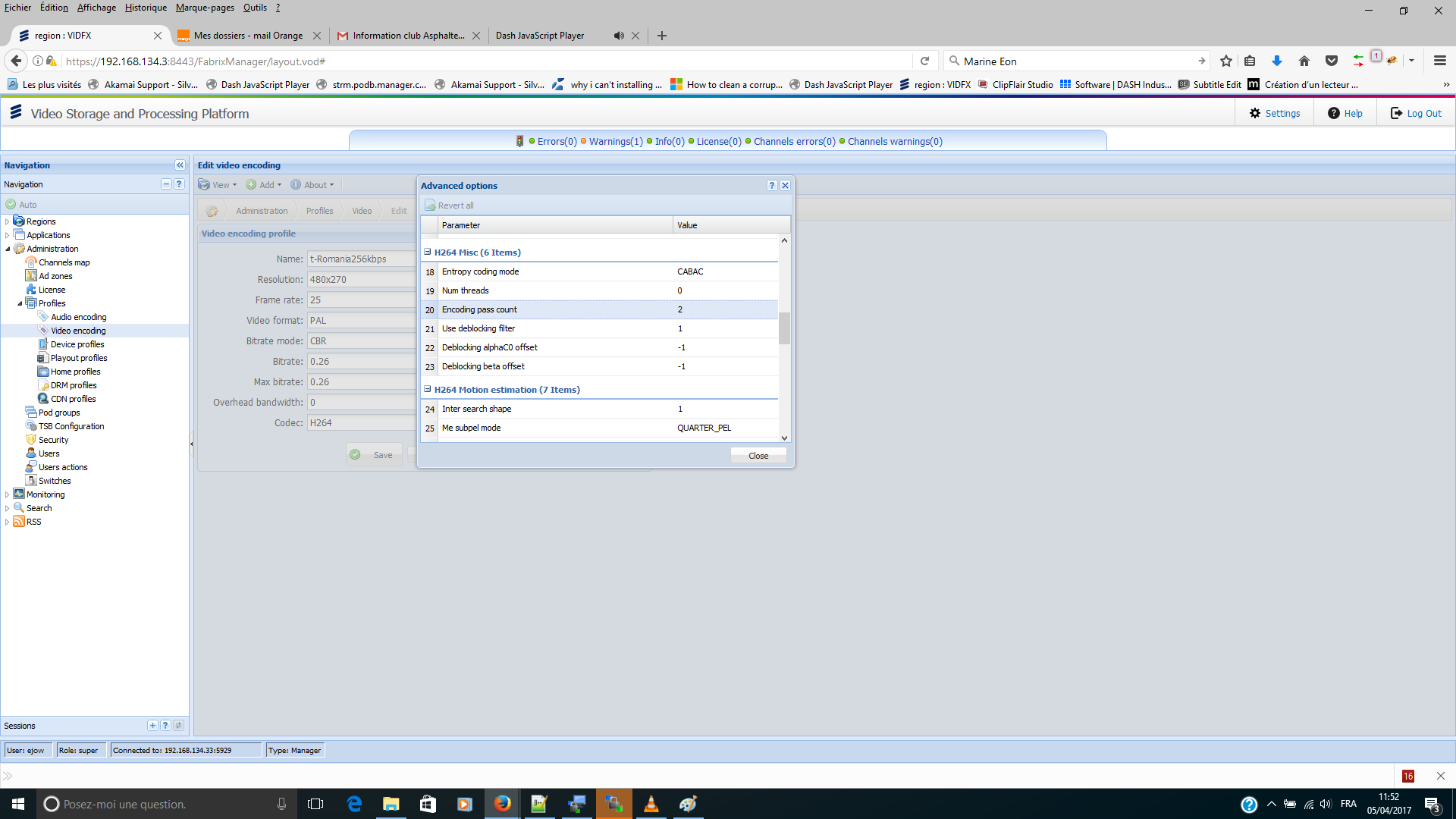
## H264 GOP structure

The values provide below should be respected for all video bitrates.



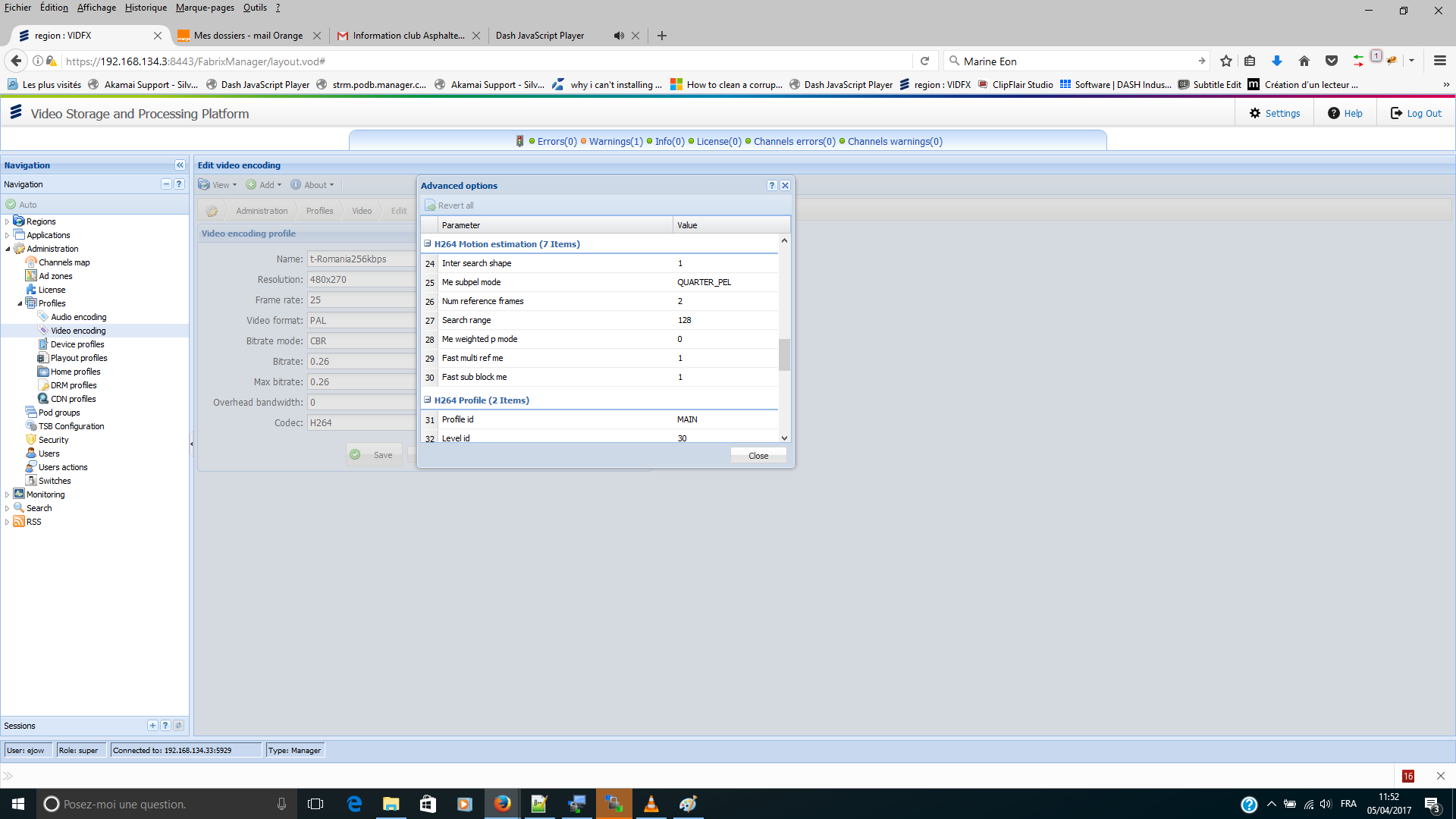
## MISC structure

The values provide below should be respected for all video bitrates. Neverthless, you can reduce the time processing by to reduce the encoding pass to 1.



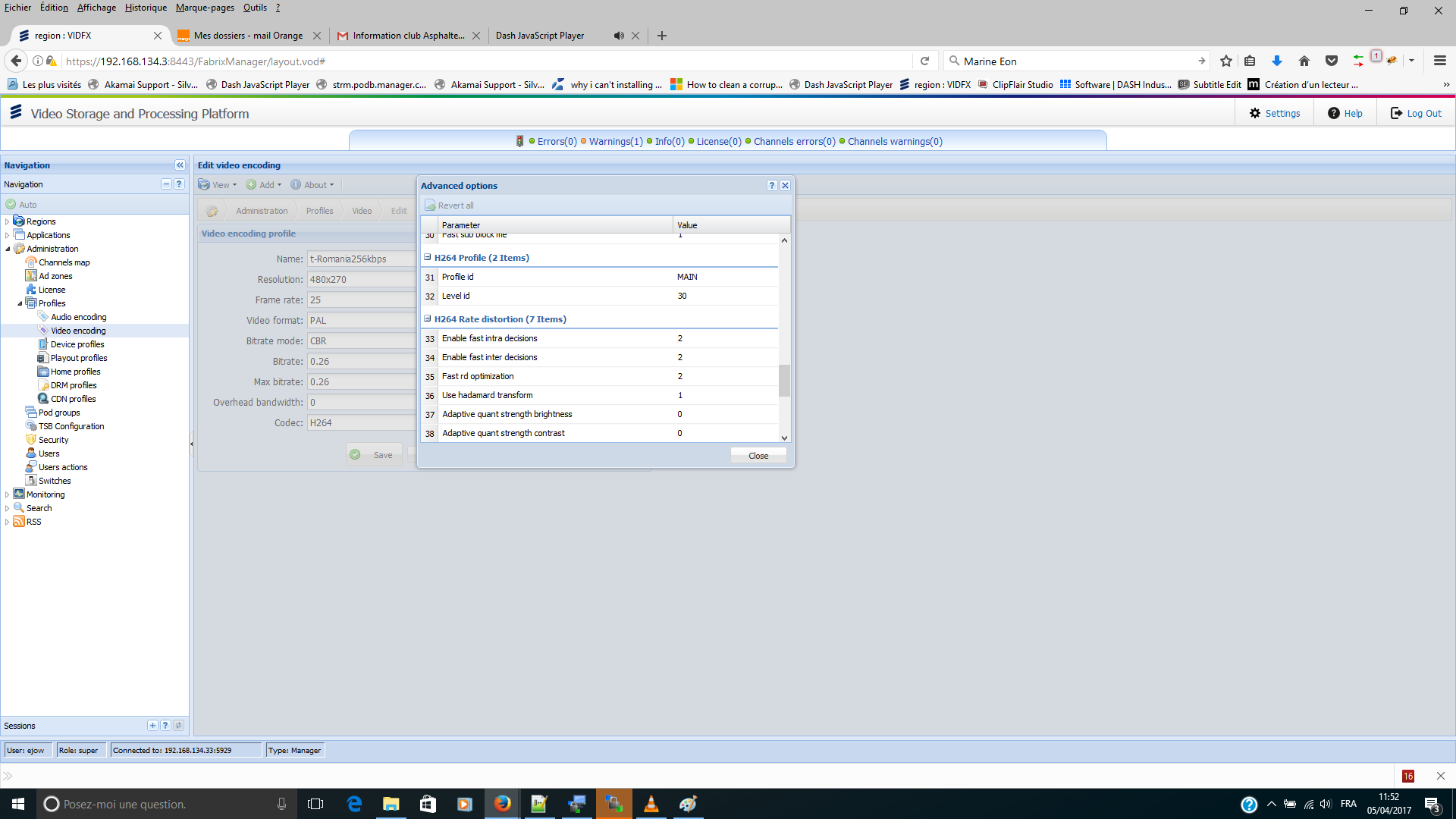
## MISC structure

The values provide below should be respected for all video bitrates.



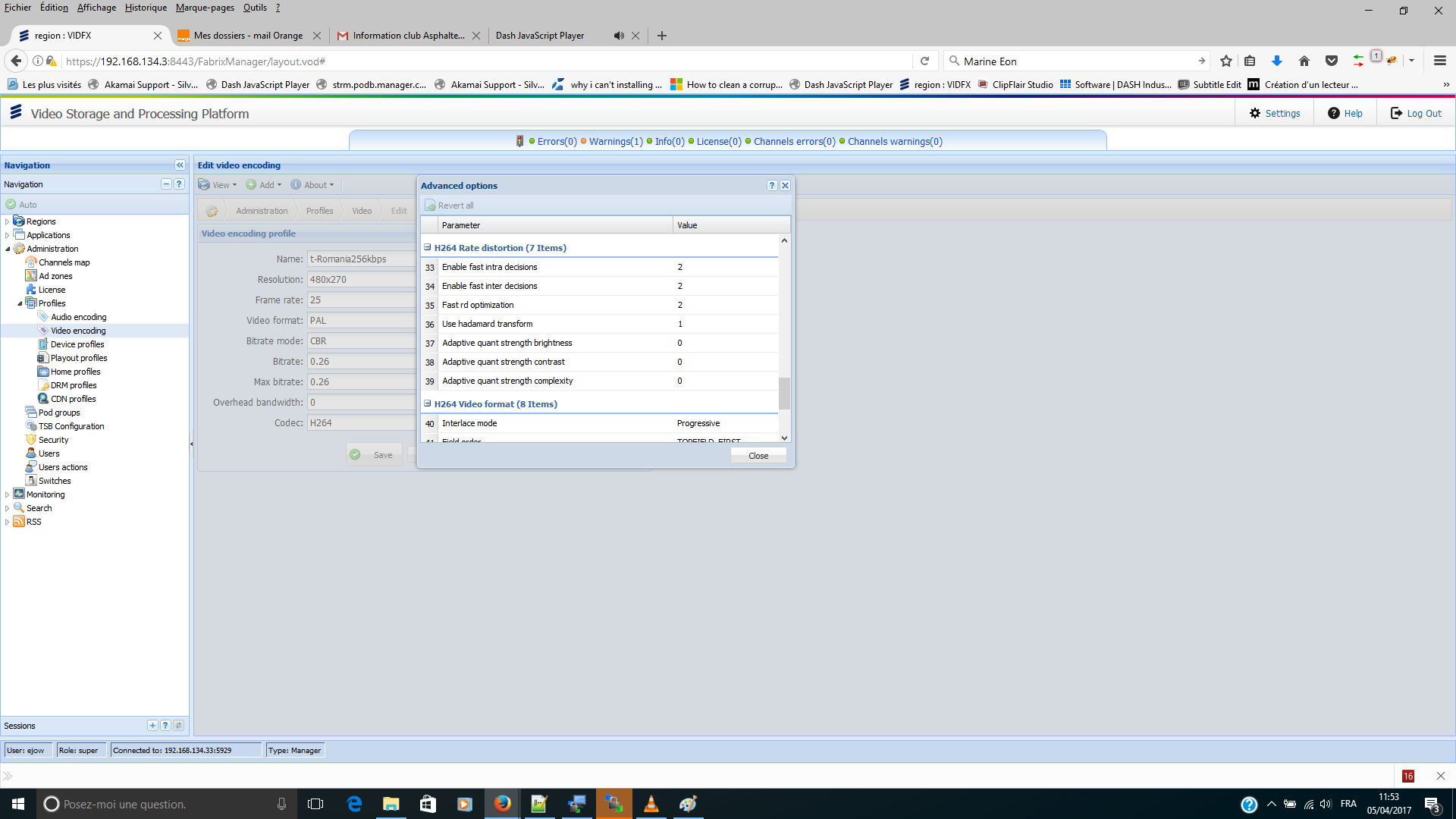
## Profile structure

The values provide below should be respected for all video bitrates, except for profile ID= MAIN for all SD profiles and HIGH for 1280x720 and 1920x1080 resolutions ID= HIGH with Level ID=40.



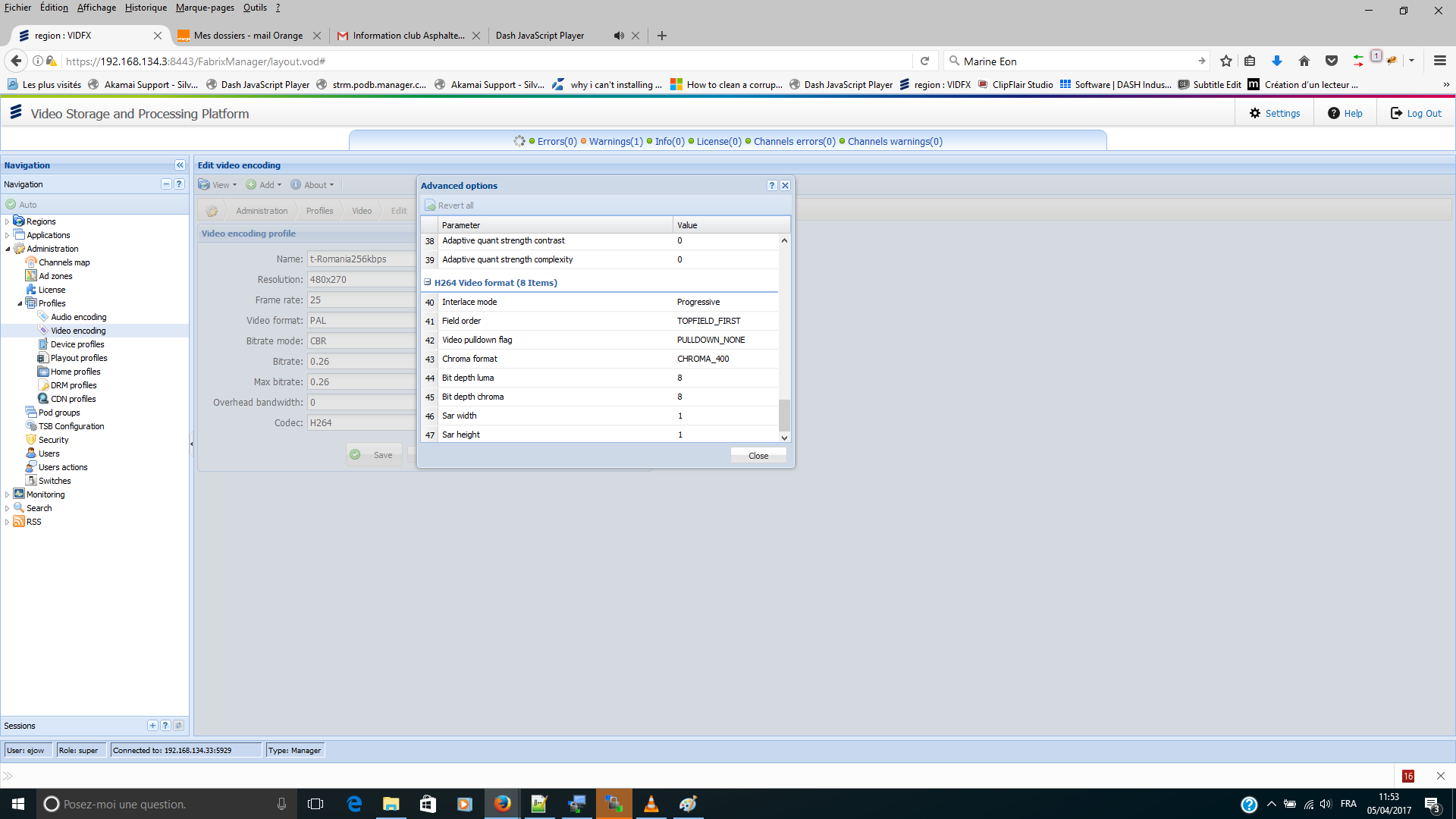
## Rate distortion

The values provide below should be respected for all video bitrates, except for profile ID= MAIN for all SD profiles and HIGH for 1280x720 and 1920x1080 resolutions.



## Video format

Please follow the recommendation below if you are using square pixel. The SAR value should be adjusted in order to respect the geometry aspect for the image using the ratio in 4:3 or 16:9 in source. The others parameters should be



# Transcoding Files

POST <http://192.168.134.3:5929/v2/transcode_package>

Content-Type: application/xml  
<?xml version="1.0" encoding="UTF-8"?>  
<transcode\_package>  
<input\_file>/root/masters\_lassaut.ts</input\_file>  
<output\_path>/vms\_transcoded/masters\_lassaut\_zzRomania4/</output\_path>  
<trans\_profile>zzRomania4</trans\_profile>  
<initiator>Manu</initiator>  
</transcode\_package>  
 -- response --  
200 OK  
Server:  Fabrix Systems VIDFX Manager (Version: 3.8.2.2 SVN Revision: 71895)  
Content-Length:  131  
Content-Type:  text/xml  
Date:  Wed, 05 Apr 2017 14:05:28 GMT  
Pragma:  no-cache  
Connection:  keep-alive  
Vary:  accept-encoding  
  
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>  
<transcode\_package\_reply><task\_id>4025</task\_id></transcode\_package\_reply>

# Create ABR Asset

POST <http://192.168.134.3:5929/v2/createABRasset>  
Content-Type: application/xml  
<?xml version="1.0" encoding="UTF-8"?>  
<createABRasset>  
<id>THEDARKKNIG\_NoSubtitle</id>  
<name>THEDARKKNIG\_NoSubtitle</name>  
<initiator>OLPS</initiator>  
<input\_directory>/mnt/ftp\_vol/vms\_transcoded/THEDARKKNIG\_zzRomania4/</input\_directory>  
</createABRasset>  
 -- response --  
200 OK  
Server:  Fabrix Systems VIDFX Manager (Version: 3.8.2.2 SVN Revision: 71895)  
Content-Length:  87  
Content-Type:  text/xml  
Date:  Thu, 06 Apr 2017 14:12:53 GMT  
Pragma:  no-cache  
Connection:  keep-alive  
Vary:  accept-encoding  
  
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>  
<X><task\_id>4030</task\_id></X>

## Example

VoD master and SRT files are located on the “ubuntu-mtv2” workstation (192.168.134.119):

* /home/vspp/cdvr/masters/miller/miller.ts
* /home/vspp/cdvr/masters/miller/miller.fra.srt
* /home/vspp/cdvr/masters/miller/miller.eng.srt
* /home/vspp/cdvr/masters/miller/miller.deu.srt

It can be fetched by VSPP through a FTP session by using the “vspp” user account:

⇒ ftp://vspp:C0mpl3XPwd@192.168.134.119/cdvr/masters/miller/miller.\*

1. This master file has been transcoded to 7 ABR files (“t-abr-hd” transcoding video profile):

* /mnt/ftp\_vol/transcoded/miller/miller\_[0-6].ts

1. After having copied the 3 SRT subtitles files on the same directory, we have 10 files:

* /mnt/ftp\_vol/transcoded/miller/miller\_0.ts ⇒ 226kbps
* /mnt/ftp\_vol/ transcoded /miller/miller\_1.ts ⇒ 446kbps
* /mnt/ftp\_vol/transcoded/miller/miller\_2.ts ⇒ 680kbps
* /mnt/ftp\_vol/transcoded/miller/miller\_3.ts ⇒ 1.2Mbps
* /mnt/ftp\_vol/transcoded/miller/miller\_4.ts ⇒ 2.1Mbps
* /mnt/ftp\_vol/transcoded/miller/miller\_5.ts ⇒ 4Mbps
* /mnt/ftp\_vol/transcoded/miller/miller\_6.ts ⇒ 5Mps
* /mnt/ftp\_vol/transcoded/miller/miller.fra.srt
* /mnt/ftp\_vol/transcoded/miller/miller.eng.srt
* /mnt/ftp\_vol/transcoded/miller/miller.deu.srt

# Transcoding profiles

The transcoding profiles provided into this paragraph can be inserted to another VSPP if you want manage the transcoding phase. You should adapt mainly the audio and video bitrate according your needs.

## Audio profiles

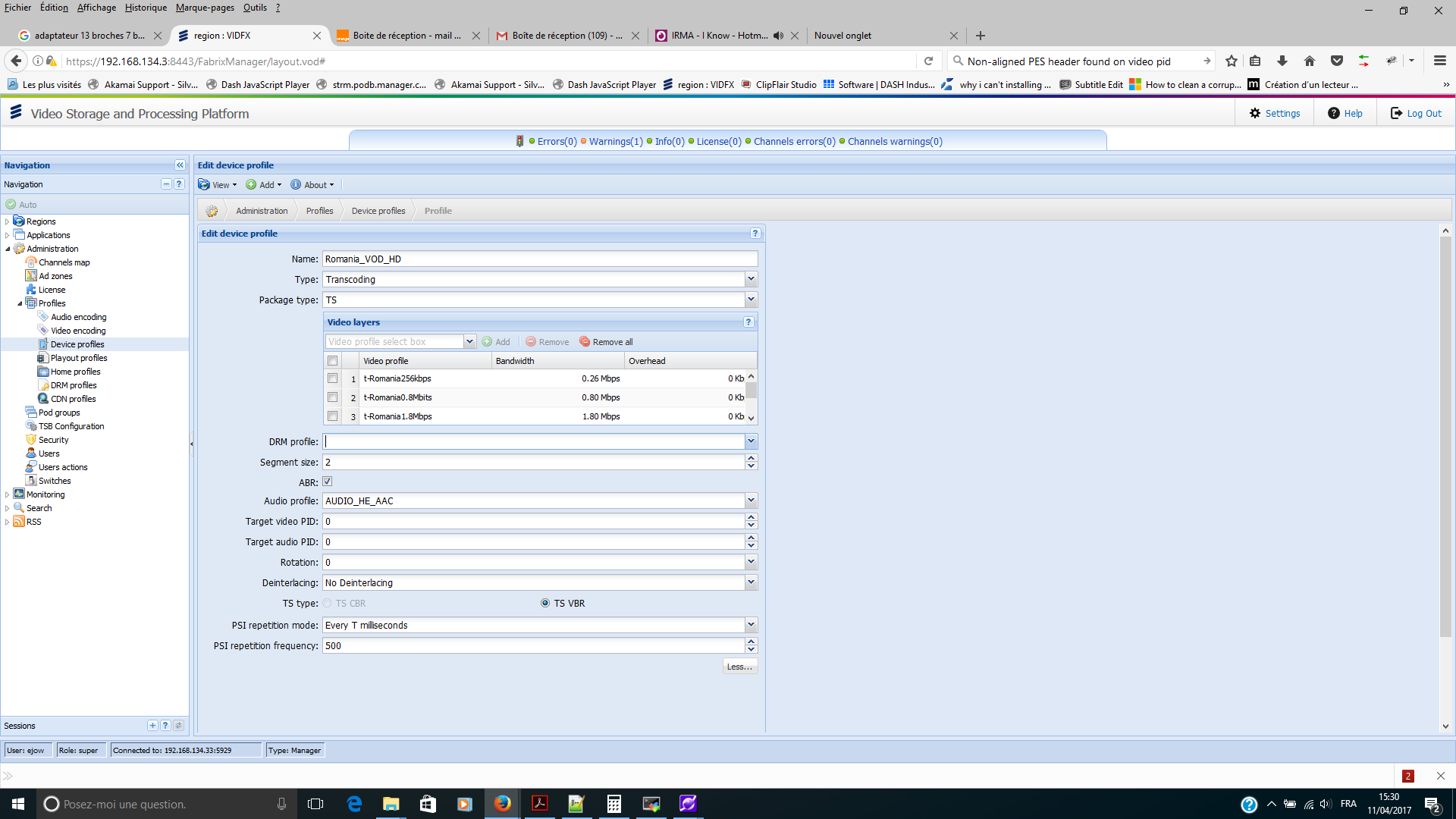


## Video profiles



## Devices transcoding profiles





# Ingestion of SRT subtitle files

## Objective

The HAS player will have to display subtitles for 3 different languages, when playing a VOD from the VSPP platform (ex: Smooth streaming and HLS).

## Issue

The SRT subtitles files are ingested but we don’t find a way to display it on the following players:

* Silverlight
* iOS
* STB Airties
* Chromecast.

## Example

VoD master and SRT files are located on the “ubuntu-mtv2” workstation (192.168.134.119):

* /home/vspp/cdvr/masters/miller/miller.ts
* /home/vspp/cdvr/masters/miller/miller.fra.srt
* /home/vspp/cdvr/masters/miller/miller.eng.srt
* /home/vspp/cdvr/masters/miller/miller.deu.srt

It can be fetched by VSPP through a FTP session by using the “vspp” user account:

⇒ ftp://vspp:C0mpl3XPwd@192.168.134.119/cdvr/masters/miller/miller.\*

1. This master file has been transcoded to 7 ABR files (“t-abr-hd” transcoding video profile):

* /mnt/ftp\_vol/transcoded/miller/miller\_[0-6].ts

1. After having copied the 3 SRT subtitles files on the same directory, we have 10 files:

* /mnt/ftp\_vol/transcoded/miller/miller\_0.ts ⇒ 226kbps
* /mnt/ftp\_vol/ transcoded /miller/miller\_1.ts ⇒ 446kbps
* /mnt/ftp\_vol/transcoded/miller/miller\_2.ts ⇒ 680kbps
* /mnt/ftp\_vol/transcoded/miller/miller\_3.ts ⇒ 1.2Mbps
* /mnt/ftp\_vol/transcoded/miller/miller\_4.ts ⇒ 2.1Mbps
* /mnt/ftp\_vol/transcoded/miller/miller\_5.ts ⇒ 4Mbps
* /mnt/ftp\_vol/transcoded/miller/miller\_6.ts ⇒ 5Mps
* /mnt/ftp\_vol/transcoded/miller/miller.fra.srt
* /mnt/ftp\_vol/transcoded/miller/miller.eng.srt
* /mnt/ftp\_vol/transcoded/miller/miller.deu.srt

1. The 10 files have been ingested successfully:

**POST http://192.168.134.3:5929/v2/createABRasset**

<?xml version="1.0" encoding="UTF-8"?>

<createABRasset>

<id>miller\_3\_sub</id>

<name>miller\_3\_sub</name>

<initiator>OLPS</initiator>

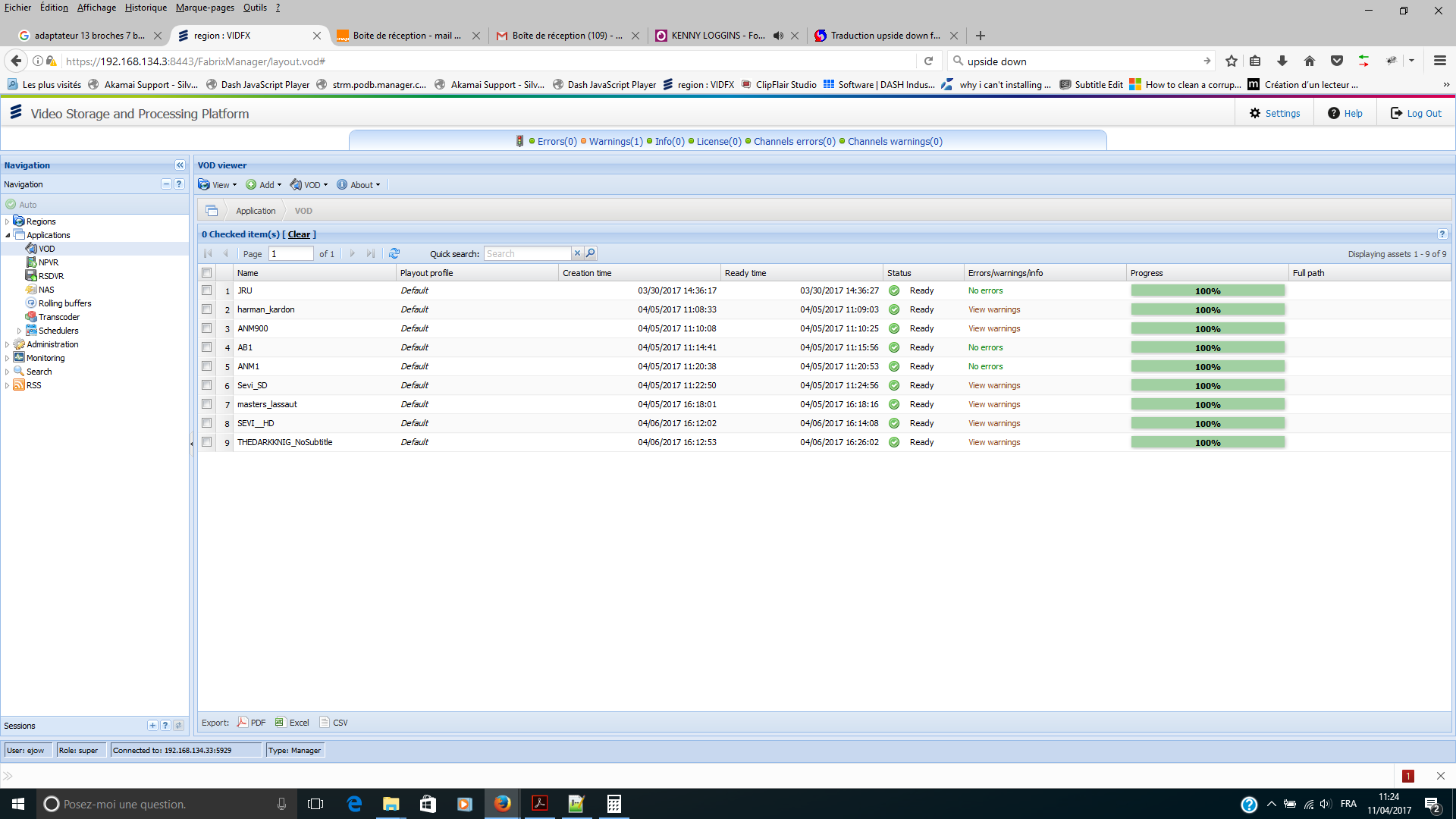
<input\_directory>/mnt/ftp\_vol/transcoded/miller</input\_directory>

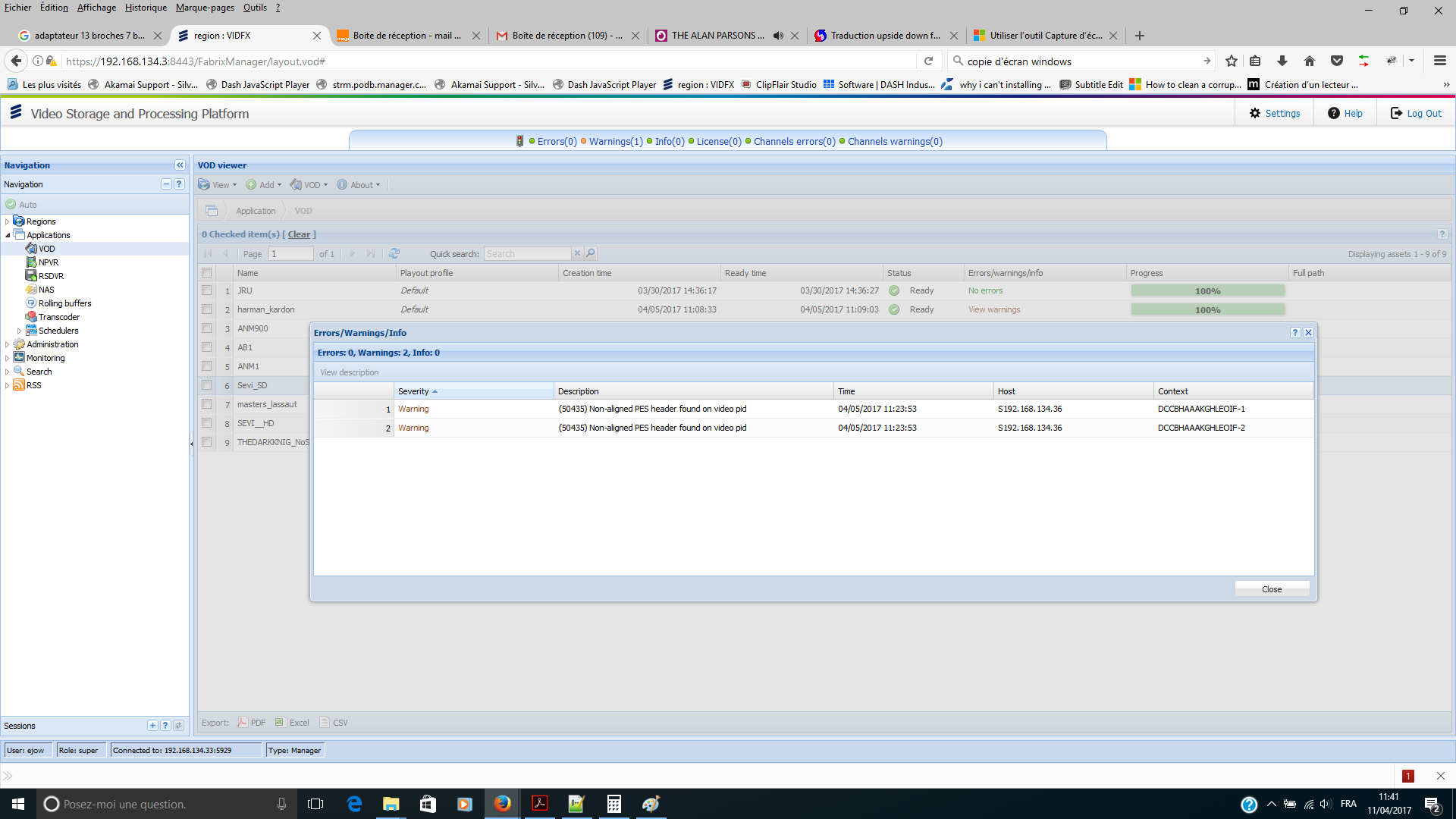
</createABRasset>

# Limitations

## Limitation 1: Warning after all transcoding process

Even if all task have been successful, the last action by creating ABR asset can generate some warningq on VSPP. We doesn’t identify the root cause, but for same transcoding profiles (audio, video and devices profiles) with different ts files, you can generate some warnings. Some desynchronization appears





## Limitations 2:Audio layers

The transcoding can’t support a multiple audio codecs. Currently, the best comprise is using the common codec available for each device profiles. Nevertheless, the multilanguage is supported with the same codec.