MAKE THE
WORLD SEE

Guide

StableFPS Driver READ ME

Version 123.1

milestone

Table of Contents

Overview **6**

Prerequisites 7

Data location and format 7

Assumptions in the driver 7

Restrictions in the driver 8

Version specific changes **8**

Version 108 8

Version 109 9

Version 110 9

Version 111 9

Version 112 10

Version 113 10

Version 114 10

Version 115 11

Version 116 11

Version 117 12

Version 118 12

Version 118a 13

Version 119 13

Version 120 13

Version 121 14

Version 122 14

Version 123 14

Installation **15**

Automated XPCO (x64 ONLY) 16

Manual XPE 16

Updating existing installation 16

Using the driver **17**

Adding a device 17

Configuring device 17

Cleanup runtime files 17

Data output path 17

Frames per second (FPS) 18

Input trigger frequency (seconds) 18

Synchronize first stream 18

Remote path 18

VideoCodec 18

VideoCodec – Stream *N* 18

VideoXXXXFiles 18

VideoXXXXFiles – Stream *N* 19

EdgeVideoCodec 19

EdgeVideoXXXXFiles 19

AudioCodec 19

AudioXXXXFiles 19

MetadataBoundingBoxFiles 19

MetadataGPSFiles 19

MetadataMotionFiles 19

Password change supported 19

Change password delay 19

Password change responses 19

Requirements for password change 19
User handling supported (for Edit Hardware dialog) 20
User handling responses (for Edit Hardware dialog) 20
Network settings management supported (for Edit Hardware dialog) 20
Network management responses (for Edit Hardware dialog) 20
Network management IP version (for Edit Hardware dialog) 20
Firmware upgrade supported 21
Setup examples 21
Must's, do's and don'ts 23
Must's 23
Do's 23
Don'ts 23
Mini FAQ 23
Q1: I have added new media files but I can't see them? 23
Q2: I have FPS drop after I have enabled camera number 5000000? 24
Q3: Can I have different hardware's mixed, 1 and 32/200 cameras on same installation? 24
Q4: Can I have more than 32 cameras pr. hardware? 24
Q5: Can I have different number of cameras, for example 5 cameras pr. hardware? 24
Q6: Can I decrease the number of cameras on already added hardware? 24
Q7: Can I increase the number of cameras on already added hardware? 24
Q8: Will the driver cleanup the files it copies into remote paths? 24
Q9: In XPE settings are not visible until I restart the RS? (ONLY in version 107) 24
Q10: Can I use the script on XPE (32bit) version of our product? (ONLY in version 107) 25
Q11: Can I install it on a system with XPE? (ONLY in version 107) 25
Q12: Can I use the install .bat it on a system that has both XPE and XPCO installed? 25
Q13: I have uninstalled my XPE/XPCO/DP but script still finds it? 25
Q14: Can I run the script from a command line with arguments? 25

Q15: Where can I see which version and model of StableFPS am I using? 26

Q16: How can I make my own video files? 26

Q17: How can I quickly troubleshoot StableFPS? 26

Q18: Can I emulate ImmerVision (fisheye) in StableFPS? 26

Q19: Some streams when recorded in lower FPS than original video and exported to MKV, make the VLC playback choppy. 27

Q20: I want to use other edge video files than the ones installed. 27

Q21: I chose synchronizing first streams, but my video and metadata mismatch 27

Q22: How can I see ExecuteCustomCommand and ExcuteCustomCommandWithResponse functions output 27

Q23: How can I use stream *N* 28

Q24: How can I set resolution on Stream *N* for Adaptive Streaming test 28

Overview

The StableFPS driver provides stable framerates to Milestone products by loading different recordings from the hard drive. Available codecs, resolutions and compressions depend on what frames have been extracted and put in a specific location on the disk.
The driver will ensure the video/audio(IN/OUT)/metadata stream provided is delivered to the product on time based on the specified framerate.

Currently supported products:

Product	Supported	From version
XPCO	✓	100
XPE	✗	-

NOTE: XPE is only supported in version 107.

Currently supported features/media:

Media type	Supported	Supported codecs	From version
Video	✓	JPEG	100
	✓	H264	100
	✓	H265	108
Audio In (Mic)	✓	AAC_ADTS_MPEG2	111
	✓	AAC_ADTS_MPEG4	
	✓	G711	
Audio Out (Speaker)	✓	AAC_ADTS_MPEG2	111
	✓	AAC_ADTS_MPEG4	
	✓	G711	
Metadata	✓	BoundingBox (Metadata 1)	108
	✗	GPS (Metadata 2)	-
	(✓)	Motion (Metadata 3)	108
Input	✓	1 Input	114
Output	✓	1 Output	114
Edge Video	✓	JPEG	114
	✓	H264	114
	✓	H265	114

Video – you can choose a codec and a file to stream video to your system.
Audio (IN) – you can choose a codec and a file to stream audio to your system.
Audio (OUT) – you use "Talk" button in SC to emulate sending data to a device, the data can be viewed if DataOutputPath is setup correctly.
Metadata – you can see bounding boxes predefined stream in SC. You can make your own metadata and play that back.
Input – you have one input pr hardware that you can setup Input events on and trigger them according to the specified interval.

Output – you can trigger output that will write data of the action to DataOutputPath.
EdgeVideo – you can emulate an edge retrieval operation on all supported codecs.

Prerequisites

Device pack 9.2 or higher MUST be installed on the system to run StableFPS v112 or higher.
Device pack 10.4 or higher MUST be installed on the system to run StableFPS v118 or higher.
Device pack 11.0 or higher MUST be installed on the system to run StableFPS v120 or higher.

Data location and format

Data MUST be located in the same directory as the driver DLL file in the DevicePack installation folder.
Please do NOT rename or move the folder!
Directory name MUST be "StableFPS_DATA" so just use the installer bat file “InstallStableFPS.bat”.

Assumptions in the driver

Video:

JPEG	The file MUST contain proper JPEG formatted frames starting with 0xFFD8 and ending with 0xFFD9 tags.
H264	The file MUST contain an Annex B formatted H264 stream - meaning MUST contain appropriate tags (0x0001) before each NAL.
H265	The file MUST contain a properly formatted H265 stream - meaning MUST contain appropriate tags (0x0001/0x0001) before each NAL.

Audio:

AAC_ADTS	The file MUST contain ADTS tags for each frame (0xFF, 0xF1, 0x50, 0x80).
G711	Must be a file of raw data of frames of 1024 byte with 125 ms spacing (8 fps).

Metadata:
NOTE: Any metadata is delivered ONCE pr. second (1 fps).
The format is for encapsulating metadata is using “{” and “}” so: {<DATA HERE>}

BoundingBox	The file MUST contain full bounding box XMLs in ONVIF format. With the exception that the UtcTime attribute of Frame item MUST NOT be an actual time but this tag: FRAME_TIME_HOLDER. Please see the BB_1 data file that is distributed with the driver.
GPS	(!NOT IMPLEMENTED!) The file MUST contain full GPS xml.
Motion	(!NOT IMPLEMENTED!) The file MUST contain data as a grid of 64x64 represented by a single line with 2 characters representing each grid. Example of 4X4 grid: {0001020300010203000102030001020300010203000102030001020300010203000102030001020300010203000102030001020300010203000102030001020300010203}

The file can contain any number of lines containing motion grid. You can vary the lines with only containing zeros to indicate no motion.
IMPORTANT: no new line after the last line.

Restrictions in the driver

Because the drivers are still 32 bit, there is a restriction of running in memory. The driver also needs some memory itself (for parameters and frames) so running large files on many hardware's with many cameras will crash the ProxyServer. Here is an overview what is recommended:

Media file size	Supported number of hardware using SAME file on all hardware	Supported number of hardware using different file pr hardware
~ 100 MB	No specific limit	~16
100 – 500 MB	No specific limit	~3
500 MB - 1 GB	No specific limit	~2
1.5-1.8 GB	No specific limit	1
1.8+ GB	0	0

Please note that the above numbers are "guestimates". The actual number may vary.
Beginning with version 123, this can be circumvented. Refer to Version 123

Version specific changes

Version 108

- New stuff
  - Choosing files/codec in dropdowns.
  - Dynamic loading of the file/codec lists in dropdowns.
  - Support for H265.
  - Support for Audio In (<ALFA VERSION>)
  - Support for Audio Out (<ALFA VERSION>) (data is dumped in the location specified in "Data output path")
  - Support for Metadata
  - New setting "Cleanup runtime files" to speedup RS startup when using remote path. Also will affect cleanup of "Data output path"
- Changed stuff
  - Redesigned loading logic for future possibility for Audio/Metadata.
  - Folder structure for media is different – STABLEFPS_DATA\<Media type>\<Codec>\<Files>.
- Depreciated stuff
  - MPEG-4 is no longer supported.

- Unsupported stuff … for now
  - XPE is not supported in this version.
  - AAC_ADTS is not yet supported for Audio Out
  - G711 is not yet supported for Audio In

Version 109

- Changed maximum number of cameras
  - Now it is possible to put up to 200 cameras in the XML.
- Unsupported stuff … permanently
  - XPE is not supported and will not be supported.

Version 110

- Audio IN now supports codecs:
  - G711
  - AAC_ADTS
- Audio OUT now supports codecs:
  - G711
- Using Audio OUT feature (for G711 only for now) data sent from SC talk button and metadata about the file will be written to "Data output path" (if specified).
- You can produce your own G711 data by using talk button in SC and using the DataOutput file by putting it into the correct directory under STABLEFPS_DATA folder

Version 111

- DP 8.9 or greater
- Audio now uses high quality encoding.
- Audio IN and OUT for AAC codec is now split into two choices:
  - G711
  - AAC_ADTS_MPEG2
  - AAC_ADTS_MPEG4
- Audio file folder paths and dropdowns are changed to reflect the change above.
- Installer changed so version of the driver can be requested

- Folder structure changed to accommodate versioning
- BEHAVIOUR CHANGE: the previous versions had a “push timestamps” logic when overloaded, now it will deliver correct timestamps on all frames according to fps set by user.

Version 112

- DP 9.2 or greater
- Only change in this version is that it uses a new version of media processing - mmpdd1_7.dll

Version 113

- Bugfixes:
  - Changing audio from AAC to G711 first time would crash proxy server
  - Wrong capabilities detection when subfolders were missing in StableFPS_DATA folder. Now you can remove whole folders on the data level (video/audio/metadata) or on codec level (in video for example you can remove the whole JPEG folder if you don’t need it)
- Cosmetic
  - Changed the serial number to be more suitable for outside use.

Version 114

- New stuff
  - Input support
    - Rising and Falling events
    - Input is auto activated once events are defined on the device
    - Activation frequency can be changed in settings
  - Output support
    - If you specify DataOutputPath the action of triggering output will be logged in a file in that location
  - Edge for video
    - JPEG
    - H264
    - H265
  - InstallStableFPS new install options:
    - “C” for “copyright approved videos” when choosing install type
    - Silent installer “Y”(Yes) or “N”(No) option for “net use” operation to be used or not. (default will be “Y” for backwards compatibility)

- Bugfixes
  - In some instances driver could crash when being shutdown

Version 115

- New stuff
  - Synchronize first stream (default NO for backwards compatibility)
    - This flag will indicate if all "first" streams – camera1+audio+metadata will be synchronized.
    - This means that the first stream will have a fixed delay of two seconds before starting, but then the data should come at the same pace. NOTE your video, audio and metadata files you must make sure are synchronized.
    - Synchronization is only happening at start time, not pr frame as FPS for video/audio/metadata are not the same.
  - InstallStableFPS:
    - Now you can use the installer on machines that you don't have an RS running on, typically on dev machines. It will also now detect if you have multiple instances of RS running.
  - AudioCodec(IN/OUT)
    - AAC values in the codec dropdown will now not be available if you use non-AAC license. The pop up message will appear same as on normal cameras if you have AAC in use and try to change the license without this feature. NOTE the file list types will still be present but unable to use.
  - Metadata fps will now follow the set fps on video
- Bugfixes
  - AAC audio frame length is now calculated correctly in driver framework, so sound should not have "glitches".

Version 116

- New stuff
  - ExecuteCustomCommand is available
    - The function will output in the directory specified as "Data output path" a textfile ExecuteCustonCommand.txt
    - Output will contain:
      - Directory name will be IP_PORT_-1
      - in the file:
        - time
        - command
  - ExecuteCustomCommandWithResponse is available

- The function will output in the directory specified as “Data output path” a textfile ExecuteCustonCommandWithResponse.txt
- Output will contain:
  - Directory name will be IP_PORT_-1
  - in the file:
    - time
    - mediatype
    - deviceindex
    - streamindex
    - command
    - parameter
    - response
- The function will respond by writing following in “strResponce” return variable:
  - ExecuteCustonCommandWithResponse Success
  - ExecuteCustonCommandWithResponse Failed.

Version 117

- New stuff
  - ChangePassword2 function added to interface
  - The function will make it possible to bulk change the password on the drivers, this functionality will be available in StableFPS.
  - You will see 3 new fields in 400 range.
    - 400 - Here you can setup if the functionality is supported
    - 401 - What delay will be used before result is returned
    - 402 - What the driver will return as a result

Version 118

- ONLY WORKS FROM DP 10.4!
- NOTE breaking change, if you have setup Edge you need to reset it again.
  - All EdgeXXX settings have changed name prefix.
- New stuff
  - Added support for multiple video streams
  - Increased the streams allowed pr. camera to 5
  - You will see 4 new fields in 100 range suffixed with “ - Stream N”.
    - 104 – Video codec – Stream 2
    - 105 – JPEG files – Stream 2
    - 106 – H264 files – Stream 2
    - 107 – H265 files – Stream 2
    - 108 – Video codec – Stream 3

    - ...
  - Updated installer BAT file to have "Number of Streams"
    - 1 is default
    - 5 is max
  - Updated installer BAT file to have new InstallType
    - Option "F" is added for FT08 files
  - Added on CAMERA level streams resolution fields – for Adaptive Streaming test – no impact in driver otherwise
  - Added Password validation capability
    - m[...]f[...] are the Mandatory and Forbidden characters
- Cleanup of code

Version 118a

- Bug fix for systems with many cameras using memory loading.
  - Cameras would load the same video multiple times thus maxing memory of proxy server

Version 119

- Added fake in-memory users that can be added and deleted. The current user that is in the database is created as default on driver startup. When RS is restarted the user list is lost.
- Added fake Get/Set network settings, they do not do anything.
- Field name change from "Change Password delay" to "Operation Delay (milliseconds)"

Used to test the Edit Hardware dialog in Management Client. Meant to be used in TA tests and manual tests to compare behavior with a real camera. User access levels are ignored for all operations, because we have a mechanism for error codes that involves the UserHandlingResponse and NetworkManagementResponse settings.

- NOTE: the camera address should be an IP: IPV4 (http://127.0.0.1) or IPV6 (http://[::1]) and not a hostname (http://localhost)

Version 120

- New stuff
  - Added possibility to get a ModelName for the driver: `StableFPS_T800`
  - ModelName field display name: "*000 _Model name*"
- Cleanup
  - Driver team has made clean-up of old XPE stuff
- Bug fixes

- When using multi stream setup the files got deleted wrongly causing instability (ironic 😊). This was found in TA bug 323584.

Version 121

Added the possibility for a StableFPS instance to report as a hardware that is in factory default state, in the "Add Hardware" wizard, and added the ability to setup an initial username and/or password through the initial configuration dialog.

There are two new parameters that can be specified in Devices.ini, which can be used to manage the initial configuration functionality in StableFPS:

- FactoryDefaultState (controls the factory default state of StableFPS, 0 - operational state, 1 - factory default without an administrator user, 2 - factory default with administrator user and no password)
- InputOperationDelay (the delay for the pre-configuration operation to complete, in milliseconds)

Note: after executing the initial configuration operation, the value of the setting for the instance will automatically be set to 0.

Example Devices.ini contents:

```
[127.0.0.1:80-0]
FactoryDefaultState=1
InputOperationDelay=1000
```

Version 122

Added mock firmware update functionality, allowing for the creation of firmware update sessions, and returning the state of a session, dependent on parameters defined as settings fields.

The following settings have been added to StableFPS:

- 600 Firmware upgrade supported (controls whether the device will report support for firmware update)
- 601 Firmware upgrade response (controls the result of the firmware update session after it completes)

The duration of the firmware update session is controlled via the 401 Operation delay setting.

Version 123

Enabled driver proxy split feature. The VMS will instantiate new proxy instances when needed based on the number of active StableFPS hardware and channels, which should help with the performance and stability of recording servers with a large number of StableFPS instances.
The default threshold is 100 channels per proxy, if you need to change that, modify the **maxVideoStreamsPerProxy** value in the recording server's RecorderConfig.xml where the recorder resides and restart the Recording server.
For details, refer to https://supportcommunity.milestonesys.com/s/article/splitting-driver-proxy-ProxySrv-in-Device-Pack-11-4?language=en_US

Installation

There is an installation method (apart from manually copying the files) by using the .bat file installer: "InstallStableFPS.bat".
The installer has following options:

Option	What happens	Approximate size
A/a	All files for all media types will be copied, ***files already copied will not be replaced***. So it will be faster second time you install All.	60 GB
B/b	Bare minimum. (see which files in the bat file corresponding function)	~1 GB
U/u	Update. Will copy only the driver DLL and resource files needed	-
T/t	TA. This is an option used by FT01 TA. (see which files in the bat file corresponding function)	-
L/l	LST. This is an option for Large scale testing team	
H/h	Husky. This is an option for Husky team.	
C/c	Copyright approved. (see which files in the bat file corresponding function)	-
F/f	FT08 files. (see which files in the bat file corresponding function)	-
E/e	Exit without doing anything.	-
Number of cameras	1 - 200: indicates (for XPCO only) how many camera devices will be shown under the hardware.	-
Version	Name of the folder: if left empty the "vLatest" folder will be used.	-

NOTE: All the options above will additionally copy the EdgeVideo folder – size ~420 MB.

Automated XPCO (x64 ONLY)

Please use "InstallStableFPS.bat" file and it will copy needed files in correct location.
You need to run the .bat from the machine that has the DevicePack installed but you MUST run it from this directory (where the readme and bat are located) that has all the files. You can run this bat file as "silent" by giving the options as a parameter from a command line or your application/test.
Please look for examples in the bottom of this file in QA section.

Manual XPE

NOTE – ONLY VALID IN v107.
Copy "StableFPS_DATA" directory AND StableFPS.dll to DevicePack installation directory for XPE.
Copy StableFPSl.dll to “resources” directory on XPE.

Updating existing installation

You can update the driver using the BAT file on existing installations. What you will see is that there will be no codec or file visible in the dropdowns – it will be the “Choose value” text. However whatever file/codec you were running will still run, so you should not see any change in the stream you expect to see. If you want to change file/codec you MUST choose both values. After this the driver will be using the new values you choose in the dropdowns.

Using the driver

The driver can be added on the same IP (normally "localhost" is sufficient) multiple times by providing different HTTP ports. You can add as many as you want (as long as you have port numbers left :D)
As this is a driver that fakes the mac address and basically always can be detected you can't AutoDetect it, you must choose the driver manually from the dropdown in the products "add wizards".

Adding a device

- Use the "add wizards" in the products.
- User/pass are not checked.
- IP should be you machines IP - you can use "localhost", "127.0.0.1" or use the actual IP.
- I recommend that you start the ports from 100 and add your devices using increments of 1.
- Choose driver from dropdown, note you can't use AutoDetect, you MUST choose the driver.

Once you have added a device it will behave as a driver. The FPS you choose will be respected.
FPS available will be 1-500 on all video codecs.
Cancel button (on XPE) is not available so you better remember previous settings :D.

Configuring device

Note all configuration is done on "Hardware→Settings tab" node so you only need to change one place. This is done so you don't need to setup same settings if you are using multiple camera device.

Cleanup runtime files

Choose yes or no, this indicates if the runtime files copied to the remote path specified should be removed when exiting or not. If you want to skip the file copy to the remote path next time you start the RS you can choose No in this option. However this may cause "residue" file that will not be cleaned up because of configuration changes.
Data output path (below setting) will also will be cleaned or not based on this setting.

Data output path

!!!!!!!!!!!!!!!!!!!!! IMPORTANT !!!!!!!!!!!!!!!!!!!!!
The path MAY NOT CONTAIN SPACES!!!
!!!!!!!!!!!!!!!!!!!!! IMPORTANT !!!!!!!!!!!!!!!!!!!!!

Here you can specify a path to where Audio Out data will be saved so you will get the RAW data that the driver receives from SC.
Here will also be the:

- "Output.txt" file containing data about Outputs triggered.
- "ExecuteCustonCommand.txt" file containing data about function parameters.

- "ExecuteCustonCommandWithResponse.txt" file containing data about function parameters and result.

Frames per second (FPS)

The values available are 1-500.

Input trigger frequency (seconds)

The values available are 1-86400. Specify how often the input rising/falling events. Default is 1 second.

Synchronize first stream

Choose Yes or No to synchronize first stream on Camera1, Audio and Metadata streams. Default is No.

Remote path

!!!!!!!!!!!!!!!!!!!!!!!!IMPORTANT!!!!!!!!!!!!!!!!!!!!!!!!
The path MAY NOT CONTAIN SPACES!!!
!!!!!!!!!!!!!!!!!!!!!!!!IMPORTANT!!!!!!!!!!!!!!!!!!!!!!!!

Here you can specify a remote path that can be on another machine or network drive. This will make the driver load one frame at a time from the remote location, thus emulating network traffic. As long as you have the repository folder in location specified the driver will copy what it needs
Note: If this path is empty the file will be loaded into memory. IMPORTANT 2 GB restriction on total file size!
You must *NOT* copy any files, this will be done by the driver. You must ensure:
The user RS is running as has permission to read/write from /to the remote path.
The destination hard drive/ram disk has sufficient space for the files you choose.

VideoCodec

Choose the codec from the dropdown. And based on the codec you have selected choose the correct *"VideoxxxxFiles"* dropdown for the file to play for stream 1 that you can setup on Camera→Streams tab.

VideoCodec – Stream *N*

Choose the codec from the dropdown. And based on the codec you have selected choose the correct *"VideoxxxxFiles – Stream N"* dropdown for the file to play for stream *N* that you can setup on Camera→Streams tab.

VideoXXXXFiles

The file names will be loaded dynamically so you can choose them from the appropriate dropdown. This is of course dependent on the codec you choose for the stream 1.

VideoXXXXFiles – Stream *N*

The file names will be loaded dynamically so you can choose them from the appropriate dropdown. This is of course dependent on the codec you choose for the stream *N*.

EdgeVideoCodec

Choose the codec from the dropdown. And based on the codec you have selected choose the correct EdgeVideoxxxxFiles dropdown for the file to play.

EdgeVideoXXXXFiles

The file names will be loaded dynamically so you can choose them from the appropriate dropdown. This is of course dependent on the codec you choose.

AudioCodec

Note this setting will be used for BOTH Audio In and Out devices (mic and speaker).

AudioXXXXFiles

This setting is only used for Audio In (mic) to transmit data.

MetadataBoundingBoxFiles

Here you can choose the file to show bounding boxes in SC

MetadataGPSFiles

NOT IMPLEMENTED yet

MetadataMotionFiles

This is not used anywhere, it is a prototype metadata, so you can't see it other than you can record it and see that it takes space in the database.

Password change supported

Here you can choose if the driver should support password change functionality call or not.

Change password delay

Here you can choose the delay driver will have before returning the result.

Password change responses

Here you can choose the result the driver should return.

Requirements for password change

Here you can specify Mandatory and Forbidden characters for a password.

Default is:
m[_A,_a,_0]m f[$&`:<>[]{}"+#%@/;=?\^|~',]f
m[...]:

- _A: means uppercase characters (English alphabet)
- _a: means lowercase characters (English alphabet)
- _0: means numeric characters

f[...]:

- means any other character that is forbidden to use in a password.

User handling supported (for Edit Hardware dialog)
Should be used with “Network settings management supported” setting, both must be enabled so a button in “Configure..” dialog is available.

User handling responses (for Edit Hardware dialog)
This value is returned (success or an error code) when adding, deleting or changing the current user

Network settings management supported (for Edit Hardware dialog)
Should be used with “User handling supported” setting, both must be enabled so a button in “Configure..” dialog is available.

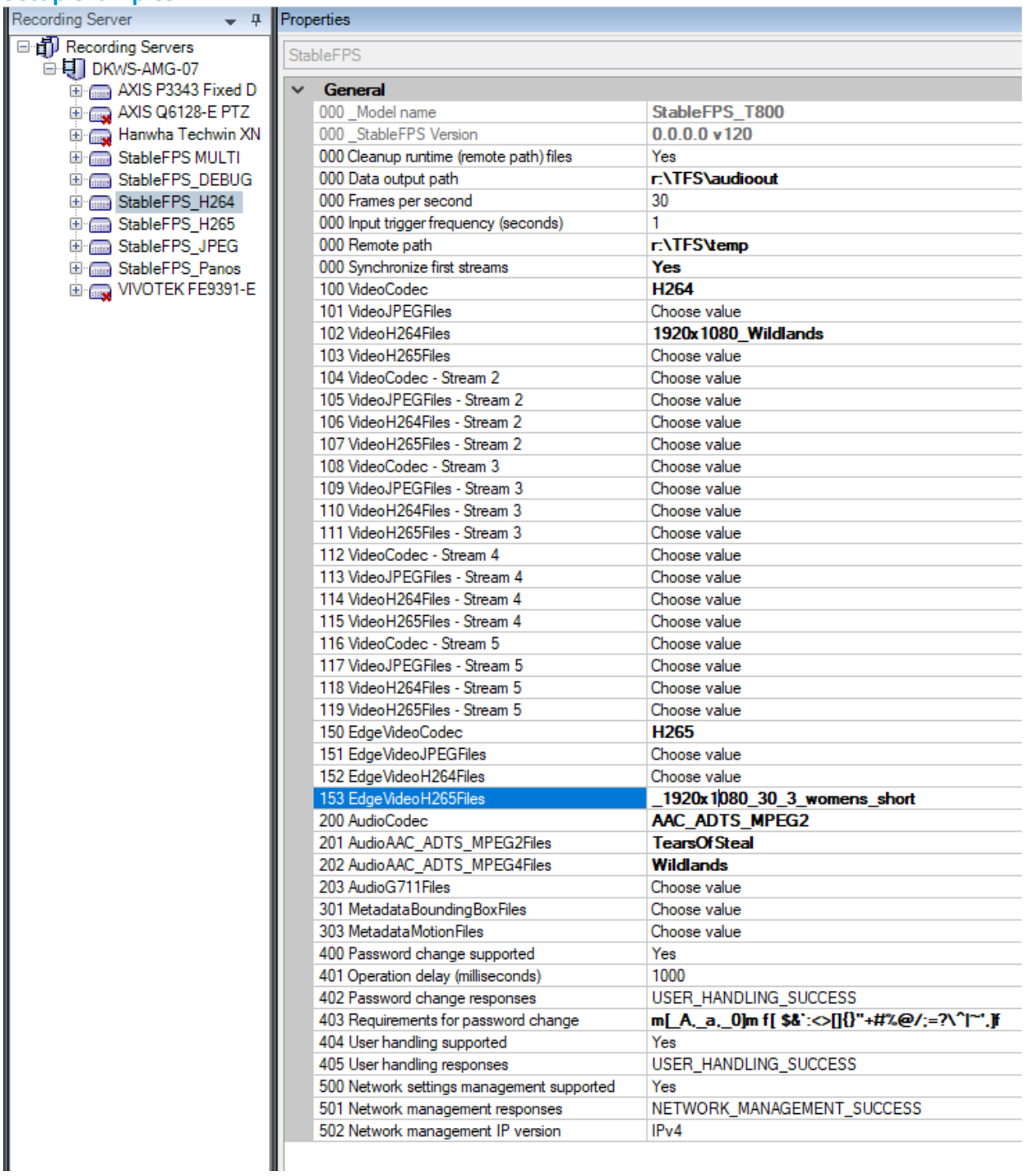
Network management responses (for Edit Hardware dialog)
This value is returned (success or an error) when changing network settings (button "Configure...")

Network management IP version (for Edit Hardware dialog)
Choose here which version of IP is used for the device

Firmware upgrade supported

Should be enabled so the "Firmware update" dialog is available for this hardware.

Setup examples



As you can see on the image above the “Remote path” is set to “r:\...”, this means that StableFPS will copy the needed data to the path specified for network emulation. “Data output path” is set to another path, but it can be the same.
You can set up the Edge functionality like on any other camera – go to Camera > Recordings tab > Set check in “Automatically retrieve remote...”.
You can set up the different streams like on any other camera, number of streams available will be the same as specified when installing.
Or you can go to SC, specify time and click on the retrieve button.

Must's, do's and don'ts

Must's

- Install DevicePack SEE PREREQUESITES FOR THE VERSION or greater.
- "StableFPS_DATA" folder MUST be in the DevicePack install directory (same place as StableFPS.dll) – use the installer bat file, it will do it correctly.

Do's

Only use "*Metadata 1*" device.
Always have in mind how you choose run/load the files

- In memory – there is a 1.7 GB total file size loaded limit due to 32bit drivers.
- Remote path – make sure the user has access rights and sufficient disk space.

Don'ts

In memory file loading bottleneck:

- memory for 32 bit (RAM) – refer to "Restrictions in the driver" section.

Remote path file loading bottleneck:

- hard disk I/O speed – use RAM disk
- Network speed to/from machine/disk
- you must make sure that the user you run RS with has appropriate access to the remote drives you specify

Total size of the video file AND edge video file MUST NOT exceed 1.7 GB.
Do NOT enable devices that you have not correctly configured. For example dont enable Metadata/Audio/Video without selecting needed information (codec/file).
Do not enable "*Metadata 2*" and "*Metadata 3*" devices as they are not implemented yet.

Mini FAQ

Q1: I have added new media files but I can't see them?

A: XPCO is not reloading the dropdowns unless you change "Revision" version in the XML file.

1. Stop RS.
2. Go to "<install directory of DP>\NativeDrivers\resources" folder.
3. Find StableFPS.xml file and open in Notepad.
4. Find in the beginning of the file (3-d line) "versionid="$Revision:..." and change the number there. It does not matter if you change the number up or down, just change it.
5. Start RS.
6. Refresh MC and now you will see your new files in the relevant dropdown.

IMPORTANT: you need to Stop and Start RS once more before you can choose/use new files.

Q2: I have FPS drop after I have enabled camera number 5000000?
A: please check bottleneck(s) per don'ts section

Q3: Can I have different hardware's mixed, 1 and 32/200 cameras on same installation?
A: No, the XML is global for all devices.

Q4: Can I have more than 32 cameras pr. hardware?
A: Yes now you can, as XPE support is discontinued from V109 – now you can have up to 200.

Q5: Can I have different number of cameras, for example 5 cameras pr. hardware?
A: Yes you can. Reinstall the driver by using InstallStableFPS and specify any number between 1-200.
- Now all the devices you add will have the camera number you specified.

Q6: Can I decrease the number of cameras on already added hardware?
A: No you can't as XPCO doesn't allow "device" removal.

Q7: Can I increase the number of cameras on already added hardware?
A: Yes you can, go through the steps in Q1 and Q5. However, note that this will increase the load on the machine as all devices will be updated to new repeat count.

Q8: Will the driver cleanup the files it copies into remote paths?
A: Yes, once the RS stops and you have chosen the "Remove remote files" value Yes.
However if you change the remote path without stopping the RS only the latest path will be cleaned - example:

1. Start RS and set remote path to X:\MyFolder_A
2. Now change the path to X:\MyFolder_B
3. Stop RS
4. X:\MyFolder_B will be removed
5. X:\MyFolder_A will NOT be removed, however the runtime files will be removed

Q9: In XPE settings are not visible until I restart the RS? (ONLY in version 107)
A: True, this is unfortunately how XPE works after the new changes in XPE - it no longer restarts the RS.

In XPE you should: stop the RS, start MA make your configuration, close MA, start RS. Use SC to view video – do NOT use MA as a viewer as you may come in undefined behavior because of the MA and RS and driver Dialog are separate processes.

Q10: Can I use the script on XPE (32bit) version of our product? (ONLY in version 107)
A: No, then you have to copy manually as before.

Q11: Can I install it on a system with XPE? (ONLY in version 107)
A: Yes, only manually.

Q12: Can I use the install .bat it on a system that has both XPE and XPCO installed?
A: No, only XPCO will be installed automatically. You must copy files for XPE manually as before and the version 107 for XPE.

Q13: I have uninstalled my XPE/XPCO/DP but script still finds it?
A: Contact whoever is responsible for the product as it seems some registry values are not cleaned properly.

Q14: Can I run the script from a command line with arguments?
A: Yes, the script takes parameters as input – Path and choice.

- Path (mandatory) – is the path to where all files are located
- Install type (mandatory) – See section "Installation" for options
- Cam number (mandatory) – number between 1-200 (default 32)
- Version (optional) – if empty latest version is installed, otherwise the version specified
- NetUse (optional) – specify here if you want the script to use "net use" functionality for shorter path. Use "Y" or "N", default is "Y".
- Stream number (optional) – number between 1-5 (default 1) – available from v118

Example:
For versions PRE v118
InstallStableFPS.bat "S:\RD\Feature Team\Video Delivery - 1\Tools and Software\Internal\StableFPS_Driver\" A 1 v117 N
Above command line will install hardware with 1 cam.

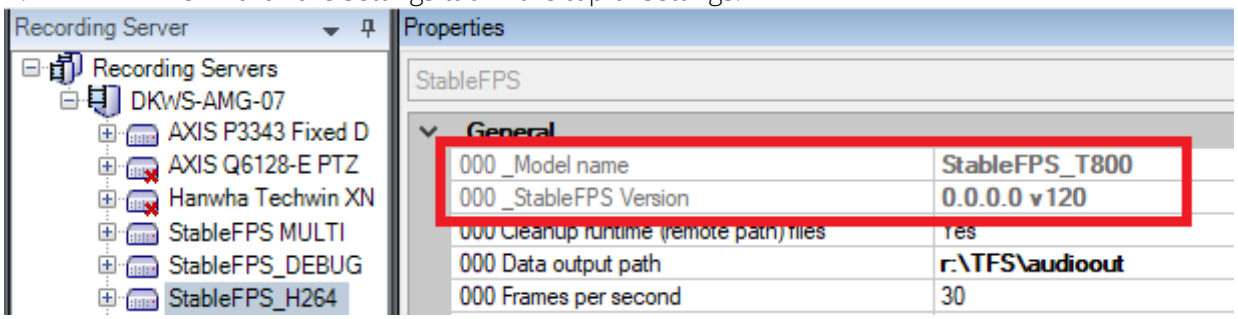
For versions POST v118
InstallStableFPS.bat "S:\RD\Feature Team\Video Delivery - 1\Tools and Software\Internal\StableFPS_Driver\" A 1 v118 N 2
Above command line will install hardware with 1 cam with 2 streams.

Parameter legend:
Path to data: "S:\RD\Feature Team\Video Delivery - 1\Tools and Software\Internal\StableFPS_Driver\"

Install type: A (different types, see section "Installation")
Number of cameras: 1 (1-200, default 32)
Version to install: v118 (version, default empty = vLatest)
Use netuse: N (Y(es) or N(o), default Y(es))
Number of streams: 2 (1-5, default 1)

Q15: Where can I see which version and model of StableFPS am I using?

A: On hardware settings tab in the top of settings:



Q16: How can I make my own video files?

A: Read "How to make your own StableFPS H264 video stream" document located in same folder as this file.
Remember to name you files according to the scheme: <width>x<height>_<name>_<extra info>

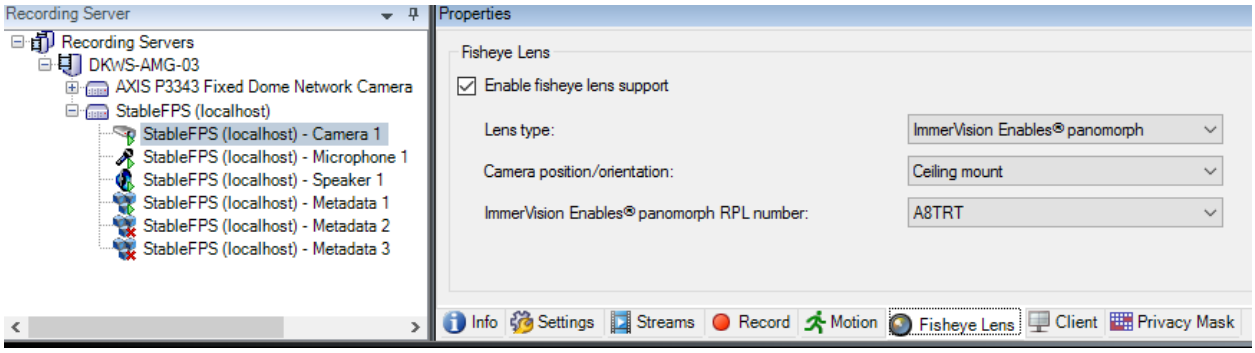
Q17: How can I quickly troubleshoot StableFPS?

A: StableFPS provides debug outputs that can be viewed using Dbgview.exe application. dbgView can be downloaded from sysinternals.
You can easily see output on startup that will give details on what settings are used and what is attempted. Info/Warning/Errors will be written here.

Q18: Can I emulate ImmerVision (fisheye) in StableFPS?

A: Yes. StableFPS provides one H264 file: Immervision_Wallmount_Lens_A8
Setup procedure:

1. Choose the file (mentioned above)
2. Click on Camera
3. Click on "Fisheye Lens" tab
4. Check "Enable fish..." box
5. Choose "A8TRT" in "ImmerVision ..." dropdown.
6. That's it ... now you can use it in SC



Q19: Some streams when recorded in lower FPS than original video and exported to MKV, make the VLC playback choppy.

A: This is seen when the stream you are using has some parameters set in the stream itself, then VLC player will try to decode that amount of frames. If you play same video in MPC you will not see the choppy effect as that player does not parse the stream in the same way.

- http://stackoverflow.com/questions/31334973/find-frame-rate-sps
- http://stackoverflow.com/questions/11893387/how-to-get-the-frame-rate-from-h-264-video-stream
- https://cardinalpeak.com/blog/the-h-264-sequence-parameter-set/

Q20: I want to use other edge video files than the ones installed.

A: You can do this the same way as described in Q1, just add you files in relevant folder under EdgeVideo and do the steps from Q1. You will see the new files after you restart the RS. If you have MC running while you do this remember to refresh the UI. IMPORTANT: use small files for Edge video so you don't hit the maximum memory usage limit.

Q21: I chose synchronizing first streams, but my video and metadata mismatch

A: You have to make sure that you have the data files synchronous. Example: you have video that is 30 FPS – then your metadata file should correspond to 30 fps. Metadata codec is delivering same FPS as vide. So if you have the metadata frames in the file that does not contain same amount of data as the video you will see a mismatch. Note that you need to use "Synchronize first streams" flag and set the SC to no buffering for video to get best results.

Q22: How can I see ExecuteCustomCommand and ExcuteCustomCommandWithResponse functions output

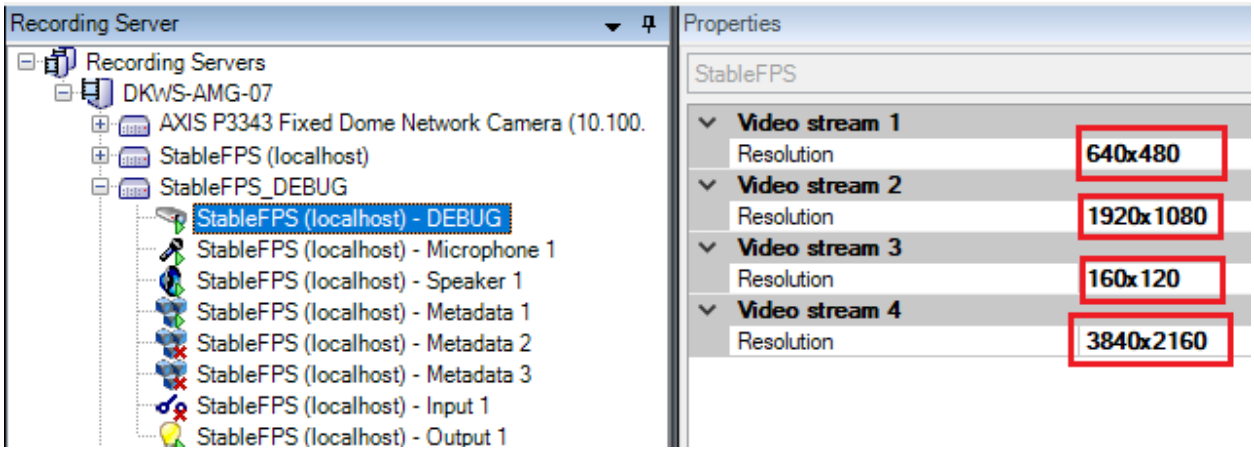
A: You have to specify a valid path in "Data output path" and then check the directory for the textfile with same name as the function.

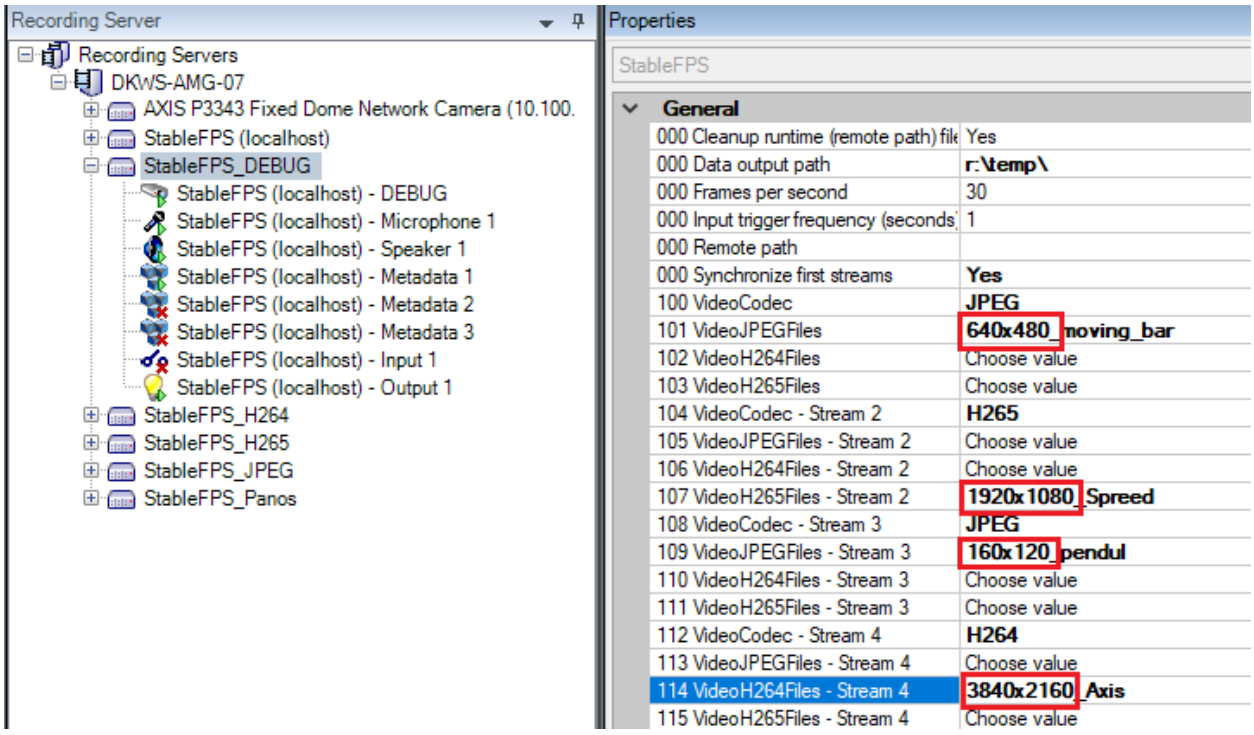
Q23: How can I use stream *N*

A: You need to have v118 of StableFPS. Choose the Codec and File you want in the video section with "- Stream *N*" suffix. Click on "Camera" and choose the Streams tab, add another stream and choose "Video Stream *N*". You should now be able in SC to change the Video streams. NOTE there may be a delay while the new video is loading when you change the streams.

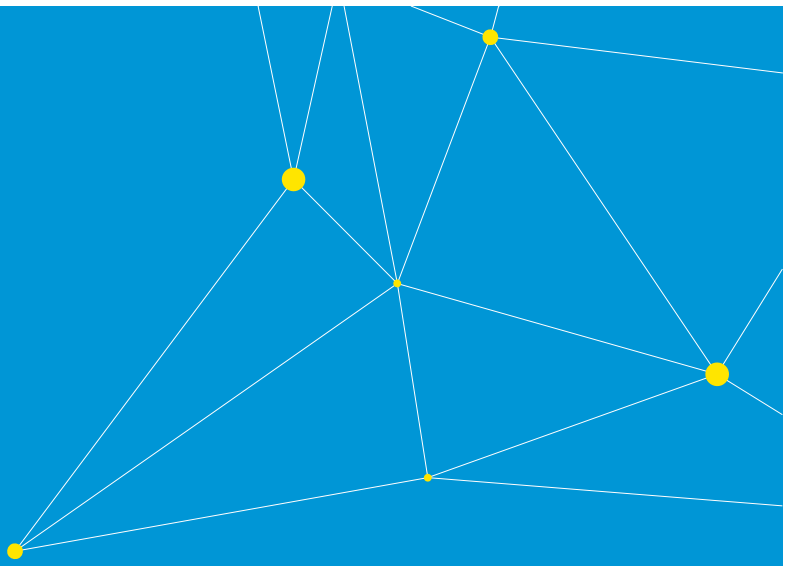
Q24: How can I set resolution on Stream *N* for Adaptive Streaming test

A: You need to have v118 of StableFPS. You can setup the resolutions for streams if you go on camera tab. Remember to match the resolution you write to the file you have chosen on the hardware for the corresponding stream. See screenshots below – how to match resolutions.





Enjoy.



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