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Presentations 2Go Encoder API v3

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## 1 Introduction

The Presentations 2go Encoder application can be controlled remotely via an API as described in this document.

There are two methods to control the Encoder. Version 2 of the API used an XML communication interface described in a separate document. Version 2 API is still support in version 4 of the Encoder application and can even work in parallel with the method described in this document.

Version 3 of the API uses JSON to exchange data and commands with the encoder. Choosing JSON means that the encoder can even be controlled from a web application (eg using javascript on a phone).

Starting version 4 of the encoder application, a webserver is build into the encoder application. To be able to control the encoder from a remote device does require the remote device to be in the same network as the encoder. Or the encoder needs to be publicly addressable.

By default the encoder will listen to http requests coming over port 80 TCP. This does require the firewall of the encoder PC to be open for this traffic.

Special requirements might be needed for Windows 8(.1) where port 80 will only open once the application is started with administrative rights (Run as Administrator).

Reading information from the encoder (eg metadata) does not require a password. Setting information or controlling the application does require credentials. By default the encoder application uses the username 'presentations2go' and a password set in the Server tab of the encoder application. The username can be changed in application config file (P2G.Encoder.Wpf.exe.config in the installation folder) of the encoder.

```
<add key="RemoteControlUserName" value="presentations2go"></add>
</appSettings>
```

## 1.1 Command syntax

The Encoder application receives remote control commands sent as HTTP requests. Simple commands can use a query string (`http://encoderIpAddress?action=xxx` etc) while complex operations require JSON formatted strings in the POST data to be passed to the Encoder.

If both query string and POST data are used, the query string parameters will override the POST data.

When query string parameters are used the following format should be used:

```
<encoder_address>[?action=sendcommand | getmetadata | getconfiguration | getvisualelement | selectsection  
&actiondetail=<action_detail>][&sessionid=<session_id>][&username=<user_name>&password=<password>]
```

So Action can be either of the following:

- Sendcommand
- Getmetadata
- Getconfiguration
- Getvisualelement
- Info
- Selectsection

Some commands require an actiondetail which is one of the commands below.

When changes are made to the encoders state or configuration, a session ID is required.

Authentication can be provided in the query string or used in the HTTP headers when using basic authentication.

Example:

```
http:// encoderIpAddress?action=sendcommand&actiondetail=capturenow  
http:// encoderIpAddress?action=getmetadata&actiondetail=title
```

When JSON is used the syntax is as follows:

### JSON Syntax

```
{  
  "action": "sendcommand | getmetadata | setmetadata | getconfiguration | selectsection | setconfiguration | getvisualelement",  
  "actionDetail": "<action_detail>[,  
    "sessionId": "<session_id>"][,  
    "userName": "<user_name>[,  
    "password": "<password>"][,  
    "metadata": [{"key": "<attribute_name>", "value": "<value>"}, ...n]][,  
    "configurations": [{"key": "<configuration_name>", "value": "<value>"}, ...n]]  
}
```

Example:

```
{  
  "action": "sendcommand",  
  "actionDetail": "capturenow"  
}
```

## 1.2 Command response

Any command sent to the encoder will be responded to with a JSON string. This may also include error information when the command is invalid.

```
{
  "action": "<sent_action>",
  "actionDetail": "<sent_action_detail>",
  "sessionId": "<session_id>",
  "userName": "<user_name>",
  "password": "<password>",
  "metadata": [{"key": "<attribute_name>", "value": "<value>", ...}],
  "configurations": [{"key": "<configuration_name>", "value": "<value>", ...}],
  "errorMessage": "<error_message>"
}
```

The command *GetVisualElement* is an exception to that rule since it will respond with binary data in JPEG format.

Eg: ``

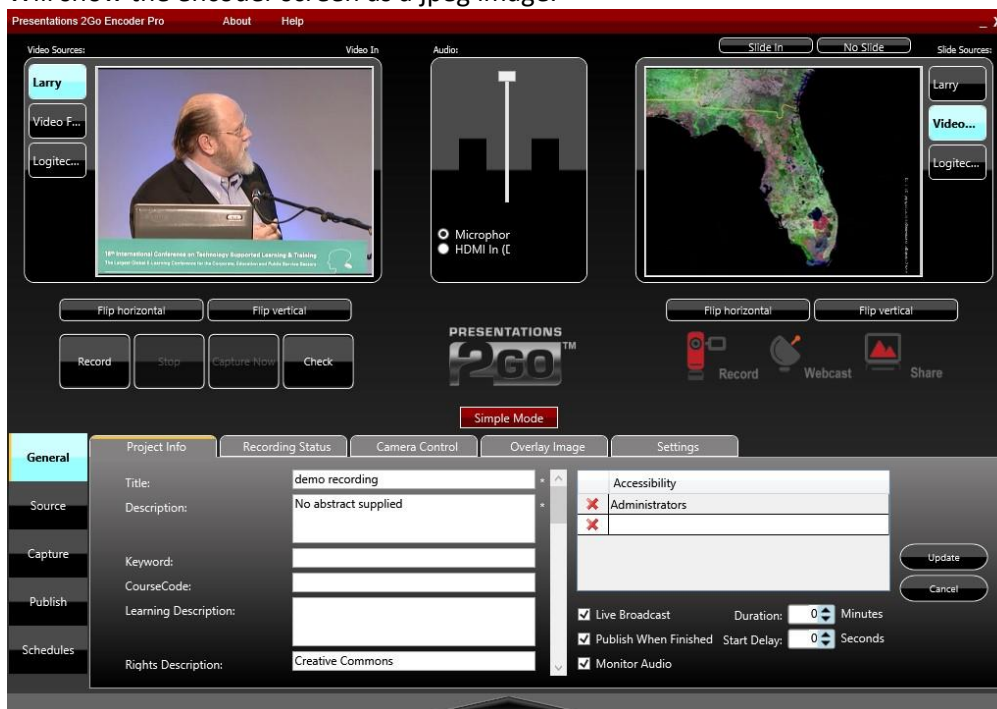
Will show a status information from the encoder application as a JPEG image.



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Eg: ``

Will show the encoder screen as a jpeg image.



At this stage the volume level cannot be shown yet.

## 1.3 SessionID

The encoder requires a sessionID to be used for commands that make changes to Encoders state.

For example SetMetadata, SetConfiguration and SendCommand require a sessionID in the POST data.

To retrieve the SessionID, you need to GET that from the Encoder.

Eg sending the following command

`http:// encoderIpAddress?action=sendcommand&actiondetail=initializeremotecontrol`

will return JSON data

```
{
  "action": "sendcommand",
  "actionDetail": "initialize"
  "sessionId": "2bdc1ba-ca4b-47b7-8eda-8c4287efb0cb"
}
```

This sessionID is required because the encoder can still be controlled manually on the encoder PC itself. This means the sessionID will become invalid once the Mouse is moved on the Encoder PC.

The sessionID will also become invalid if it is being controlled from another source (someone else issued an **initializeremotecontrol** command).

## 1.4 Command reference

In the tables below all commands, sub commands and functions will be explained.

Action	Action Detail	Encoder tab	Purpose
SendCommand  (These are buttons in the interface that can be pressed)	Startpause	Main	Press the Start button. Pressing it again will Pause the recording.
	Stop	Main	Press the Stop button, Recording will be stopped.
	Capturenow	Main	Press the Capturenow button which manually captures one frame from the Slide source.
	Check	Main	Perform a check recording. The recording will perform as a normal recording but not store or publish it.
	Fliphorizontalvideo	Main	Will flip the video source horizontally
	Flipverticalvideo	Main	Will flip the video source vertically
	Fliphorizontalslide	Main	Will flip the slide source horizontally

	Flipverticalslide	Main	Will flip the slide source vertically
	Moveoverlayimageleft	Image Overlay	Move the image overlay left
	moveoverlayimageright	Image Overlay	Move the image overlay right
	moveoverlayimageup	Image Overlay	Move the image overlay up
	moveoverlayimagedown	Image Overlay	Move the image overlay down
	connecttocamera	Camera Control	Connect the current selected camera
	camerazoomin	Camera Control	PTZ control zoom in
	camerazoomout	Camera Control	PTZ control zoom out
	cameramoveleftup	Camera Control	PTZ control Left Up
	cameramoveup	Camera Control	PTZ control Up
	cameramoverightup	Camera Control	PTZ control Right Up
	cameramoveleft	Camera Control	PTZ control Left
	cameramovehome	Camera Control	PTZ control Home
	cameramoveright	Camera Control	PTZ control Right
	cameramoveleftdown	Camera Control	PTZ control Left Down
	cameramovedown	Camera Control	PTZ control Down
	cameramoverightdown	Camera Control	PTZ control Right Down
	camerareset	Camera Control	PTZ control Reset
	camearon	Camera Control	PTZ control Camera On
	cameraoff	Camera Control	PTZ control Camera Off
	camerapreset1	Camera Control	PTZ control select preset 1
	camerapreset2	Camera Control	PTZ control select preset 2
	camerapreset3	Camera Control	PTZ control select preset 3
	camerapreset4	Camera Control	PTZ control select preset 4
	camerapreset5	Camera Control	PTZ control select preset 5
	camerapreset6	Camera Control	PTZ control select preset 6
	updateprojectinfo	Project Info	Update project info
	cancelprojectinfo	Project Info	Cancel changes made to project info
	updateoverlayimage	Overlay Image	Update overlay settings
	canceloverlayimage	Overlay Image	Cancel changes made to overlay settings
	defaultsettings	Settings	Use default settings
	updatesettings	Settings	Update settings
	cancelupdatesettings	Settings	Cancel changes made to settings
	updateslidesettings	Slide Settings	Update slide settings
	cancelslidesettings	Slide Settings	Cancel changes made to slide settings

	getaddresses	Server	Get addresses from Encoder Service
	updateserver	Server	Update server settings
	cancelserver	Server	Cancel changes made to server settings
SelectSection  (Select one of the tabs in the encoder application)	General		Select General tab
	Projectinfo		Select Project Info tab
	Recordingstatus		Select Recording Status tab
	Cameracontrol		Select Camera control tab
	Overlayimage		Select OverlayImage tab
	Settings		Select Settings tab
	Sources		Select Sources tab
	Videosources		Select Video Sources tab
	Audiosources		Select Audio Sources tab
	Capture		Select Capture tab
	Slidesettings		Select Slide Settings tab
	Publish		Select Publish tab
	Server		Select Server tab
	Jobs		Select Jobs tab
	schedules		Select Schedules tab
GetVisualElement	Mainwindow		Return jpeg with mainwindow screenshot
	Status		Return jpeg with status info
	Video		Return jpeg if the video screenshot
	Slide		Return jpeg if the slide screenshot
GetMetadata	A metadata attribute		Return specific metadata eg Title. If none is specified, all are returned.
Info	Status		Return status info in text: <ul style="list-style-type: none"> <li>• Recording</li> <li>• Live</li> <li>• Recording (Paused)</li> <li>• Stopping</li> <li>• Idle</li> </ul>
	slideCount		Return the current captured slidecount
SetMetadata	A metadata attribute		Set a specific or multiple metadata attributes. eg Title.
GetConfiguration	A configuration name (see below)		Return the setting of a specific configuration item (name)



SetConfiguration	A configuration name (see below)		Set a specific configuration item (name).
------------------	----------------------------------	--	---

## 1.4.1 Set/Get Metadata

Metadata attribute values can be set by using SetMetadata action with json string containing the metadata attributes.

For example this will set:

- title to "New title"
- description to "New description"
- recording type to "Dies Natalis"

```
{
  "action": "setmetadata",
  "sessionId": "2bdc1ba-ca4b-47b7-8eda-8c4287efb0cb",
  "metadata": [
    {"key": "Title", "value": "New title"},
    {"key": "Description", "value": "New description"},
    {"key": "RecordingTypes", "value": {"key": "Dies Natalis", "value": "Dies Natalis"}}
  ]
}
```

Any visible (defined as visible in server metadata settings) metadata attributes in metadata rule can be set including Title, Description, Keyword, Learningdescription, Coverage, SubjectAreas, RecordingTypes, Contributors, and Permissions.

## 1.4.2 Set/Get configurable item

The actions SetConfiguration and GetConfiguration can be used to set a configurable item (like video or slide source) or retrieve the current setting of a configurable item.

For example this will set video source to the second one and set volume to 50

```
{
  "action": "setconfiguration",
  "sessionId": "2bdc1ba-ca4b-47b7-8eda-8c4287efb0cb",
  "configurations": [
    {"key": "selectedvideosource", "value": "2"},
    {"key": "mastervolume", "value": "50"}
  ]
}
```

Configuration name	Values	Encoder tab	Function
selectedvideosource	1,2,3, or 4	General	Set / Get the active video source to one of the 4 defined ones
selectedslidesource	1,2,3, or 4	General	Set / Get the active slide source to one of the 4 defined ones

selectedaudiosource	1,2,3, or 4	General	Set / Get the active audio source to one of the 4 defined ones
mastervolume	0 to 100	General	Set the volume level
	0 to 65535		Get the volume level
noslide	true or false	General	Push the NoSlide button. Means recording will start without capturing slides. No slide can only be set before recording is started. When started it can't be deselected.
slideinout	true or false	General	Make the input or output slide source visible for monitoring
live	true or false	General	Set the live checkbox. Live can only be set (or unset) before recording has started.
autopublish	true or false	General	Set the autopublish checkbox. Can be modified during recording
duration	zero or any positive integer	General	Set the recording duration. 0 means infinite. Can be modified during recording
startdelay	zero or any positive integer	General	Set the delay before a recording actually starts.
monitoraudio	true or false	General	Set the audiomonitoring checkbox
remotecontrolport	any integer value	Server	Set the remote control port in server tab (API v2)
remotecontrolpassword	any string value	Server	Set the password used for remote control in server tab
encoderserviceaddress	a valid Encoder Service address	Server	Set the ip address of the encoderservice on the server in server tab
encoderserviceport	any positive integer value	Server	Set the portnumber used for communication between server and encoder in server tab
serveraddress	a valid server address	Server	Set the Presentations2go server address in server tab
communicationbuffersize	any positive integer	Server	Set the communicationbuffersize in server tab
connectiontimeout	any positive integer	Server	Set the connection timeout in server tab
taggingserviceurl	a valid tagging service URL	Server	Set the address of the taggingserviceurl on the presentations2go server
streamingserveraddress	a valid media service address	Server	Set the address of the windows media service on

			the presentations2go server
liverecordingpublishingpoint	any valid publishing point's name	Server	Set the publishingpointname for live broadcast
broadcastpassword	any string value	Server	Set the broadcast password
broadcastusername	any string value	Server	Set the broadcast username
broadcastport	any positive integer value	Server	Set the broadcast portnumber
offlinemode	true or false	Server	Set encoder in Off-Line mode. Encoder will discard communication with server.
broadcastmethod	push or pull	Server	Select broadcasting method
slideoutputsize	one of available sizes	Capture	Set the slide output size
defaultjpegquality	any positive integer value	Capture	Set the jpeg compression quality
whenvideosourceisslidesource	useblankslide, capturelastvideoframe, captureslides, or useimagefile	Capture	Set scenario what to do when slide and video source are the same
imagefilepath	a path to image file on Encoder machine	Capture	Set the imagefilepath when useimagefile is selected
motioncapturemethod	color or greyscale	Capture	Select motiondetection method
usecolorred	true or false	Capture	If color is selected use Red
usecolorgreen	true or false	Capture	If color is selected use Green
usecolorblue	true or false	Capture	If color is selected use Blue
reducevideonoise	true or false	Capture	Check reducevideonoise checkbox
nomotiondelay	allowed positive integer value	Capture	Set nomotiondelay in frames
slidesourceframerate	allowed positive integer value	Capture	Set slide source framerate in fps used for motion detection
minimummotiontrigger	allowed positive integer value	Capture	Set minimal motionlevel threshold
motionsensitivity	allowed positive integer value	Capture	Set motion detection sensitivity
motiongridsize	allowed positive integer value	Capture	Set motion detection grid size
useoverlayimage	true or false	Overlay Image	Set checkbox to use overlayimage
overlayimagezoom	0 to 100	Overlay Image	Set overlay image zoom level
overlayimageopacity	0 to 100	Overlay Image	Set overlay image opacity
usetransparency	true or false	Overlay Image	Set use transparency checkbox
usetransparentcolor	true or false	Overlay Image	Set use transparent color checkbox

encoderprofile	a path to profile file on Encoder machine	Settings	Set the path to the video encoding profile
postprocessingfolder	a path to directory on Encoder machine	Settings	Set the folder where recordings are stored
language	one of available languages	Settings	Set the applications interface language
metadatalanguage	one of available languages	Settings	Set the default metadata language
autohide	true or false	Settings	Set the autohide checkbox (will hide the application on startrecording)
audiovideosyncadjustment	any allowed zero or positive integer	Settings	No longer used
postprocessingaudiocorrection	any allowed zero or positive integer	Settings	Set the audio correction time in ms used in postprocessing
recalibratesliderresolution	any zero or positive integer	Settings	Set force slide resolution recalibrate in seconds
cameraprotocol	one of available protocols	Camera Control	Set the camera PTZ protocol to one of the choices
cameraport	any positive integer value	Camera Control	Set the serial port COM number
cameraipaddress	a valid IP address of camera	Camera Control	Set the ip address of the IP Camera
ipcamerausername	any string value	Camera Control	Set username to be used for IP Camera
ipcamerapassword	any string value	Camera Control	Set password to be used for IP Camera
cameranumber	1, 2, or 3	Camera Control	Set the Camera sequence number
camerapanspeed	0 to 100	Camera Control	Set the PTZ pan speed for camera control
cameratiltsspeed	0 to 100	Camera Control	Set the PTZ tilt speed for camera control
camerazoomspeed	0 to 100	Camera Control	Set the PTZ zoom speed for camera control
lockcameraspeed	true or false	Camera Control	Set checkbox to lock pan and tilt speed to same value

## 2 Examples

Here (<http://upgrade.presentations2go.eu/p2g.api/Encoder.RemoteControl/APIv3/EncoderAPIv3Sample.zip>) you find a number of examples using Javascript and JSON and PHP controlling the encoder or getting information from the encoder.