

# CBox Schedule API

Revision: 1.0b

2016/9/29

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## History

Version	Date	Comment
1.0	2016/06/23	First version of CBox Schedule SDK
1.0b	2016/9/29	Modify wordings

# 1 Schedule Control

## 1.1 Add Schedule

- Description:
  - add a schedule into CBox
- URL: [http://boxip:directorport/api/add\\_schedule](http://boxip:directorport/api/add_schedule)
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
name	String		<b>Optional</b>
start_date	date data	YY-MM-DD	
stop_date	date data	YY-MM-DD	<b>Optional</b>
start_time	time data	HH:MM:SS	
stop_time	time data	HH:MM:SS	
repeated_type	int	0: once 1: weekly	
repeated_weekday	int array		<b>Optional</b> 0: Sunday, 1: Monday ...
rec_class_info	<a href="#">rec_class_info</a> data		<b>Optional</b>
is_live	int	0: disable 1: enable	<b>Optional</b>
display_resolution	Int	7: 720*480 8: 720*576 9: 1280*720 13: 1920*1080 17: 640*480 48: 320*240 49: 960*540 50: 640*360 51: 480*360	<b>Optional</b>
record_format	int	0: SPTS 1: MPTS	<b>Optional</b> Format support is product dependent.

		2: H264 3: FLV 4: MP4 (Movie) 5: MP4 (Resource) 6: MP4 (Movie and Resource)	LC10X only support 4: MP4 (Movie)
--	--	---	-----------------------------------

- *Response:*

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

*rec\_class\_info data*

Key	Type	Value	Note
school	String		
department	String		
schoolyear	String		
semester	String		
lesson	String		
grade	String		
class	String		
room	String		
category	String		
teacher	String		
section	String		
description	String		

- *Example:*

*Send request:*

```
{
  "start_date": "2017-3-7",
  "start_time": "18:35:00",
  "stop_time": "20:06:00",
```

```
"repeated_type":1,  
"repeated_weekday":[1,2,3],  
"rec_class_info": {"school":"rec","schoolyear":"6"},  
"is_live":0,  
"display_resolution":9,  
"record_format":4  
}
```

*Response:*

```
{  
"code":0,  
"schedule_id":1  
}
```

## 1.2 Update Schedule

- Description:
  - update a schedule in CBox
- URL: [http://boxip:directorport/api/update\\_schedule](http://boxip:directorport/api/update_schedule)
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
schedule_id	int		
name	String		<b>Optional</b>
start_date	date data	YY-MM-DD	<b>Optional</b>
stop_date	date data	YY-MM-DD	<b>Optional</b>
start_time	time data	HH:MM:SS	<b>Optional</b>
stop_time	time data	HH:MM:SS	<b>Optional</b>
repeated_type	int	0: once 1: weekly	<b>Optional</b>
repeated_weekday	weekday array		<b>Optional</b>
rec_class_info	<a href="#">rec class info</a> data		<b>Optional</b>
is_live	int	0: disable 1: enable	<b>Optional</b>
display_resolution	Int	7: 720*480 8: 720*576 9: 1280*720 13: 1920*1080 17: 640*480 48: 320*240 49: 960*540 50: 640*360 51: 480*360	<b>Optional</b>
record_format	int	0: SPTS 1: MPTS 2: H264 3: FLV 4: MP4 (Movie)	<b>Optional</b> Format support is product dependent. <b>LC10X only support 4: MP4 (Movie)</b>

		5: MP4 (Resource) 6: MP4 (Movie and Resource)	
--	--	--	--

- *Response:*

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- *Example:*

*Send request:*

```
{
  "schedule_id":1,
  "start_date":"2017-3-8",
  "start_time": "19:55:56",
  "stop_time": "20:06:00",
  "repeated_type":0,
  "rec_class_info": {"school":"6","schoolyear":"6"},
  "is_live":1,
  "display_resolution":13,
  "record_format":4
}
```

*Response:*

```
{
  "code":0
}
```



## 1.3 Query Schedule

- Description:
  - Get Schedule List
- URL: [http://boxip:directorport/api/query\\_schedule](http://boxip:directorport/api/query_schedule)
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
schedule_id	int array		<b>Optional</b>

- *Response:*

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
schedule_id_list	Int array		
data	<a href="#">schedule info</a> data		

### *schedule\_info data*

Key	Type	Value	Note
schedule_id	int / int list		<b>Optional</b> no this option: query all, 0: query all, else: query by id
name	String		
start_date	date data	YY-MM-DD	
stop_date	date data	YY-MM-DD	
start_time	time data	HH:MM:SS	
stop_time	time data	HH:MM:SS	
repeated_type	int	0: once 1: weekly	
repeated_weekday	weekday array		

rec_class_info	<a href="#">rec class info</a> data		
is_live	int	0: disable 1: enable	
display_resolution	Int	7: 720*480 8: 720*576 9: 1280*720 13: 1920*1080 17: 640*480 48: 320*240 49: 960*540 50: 640*360 51: 480*360	
record_format	int	0: SPTS 1: MPTS 2: H264 3: FLV 4: MP4 (Movie) 5: MP4 (Resource) 6: MP4 (Movie and Resource)	Format support is product dependent. <b>LC10X only support 4: MP4 (Movie)</b>

- *Example:*

*Send request:*

```
{
  "schedule_id":[1,2]
}
```

*Response:*

```
{
  "data": [
    {
      "display_resolution": 9,
      "rec_class_info": {
        "category": "",
        "school": "6",
        "description": "",
        "grade": "",
        "section": "",
        "teacher": "",
        "semester": ""
      }
    }
  ]
}
```

```

    "schoolyear": "6",
    "department": "",
    "lesson": "",
    "class": "asdasd",
    "room": ""
  },
  "name": "aa",
  "record_format": 4,
  "start_time": "16:49:00",
  "is_live": 1,
  "schedule_id": 1,
  "stop_time": "16:54:00",
  "start_date": "2016-03-07"
},
{
  "display_resolution": 9,
  "rec_class_info": {
    "category": "",
    "school": "",
    "description": "",
    "grade": "",
    "section": "",
    "teacher": "",
    "semester": "",
    "schoolyear": "",
    "department": "",
    "lesson": "",
    "class": "",
    "room": ""
  },
  "name": "1",
  "record_format": 4,
  "start_time": "15:14:00",
  "is_live": 0,
  "schedule_id": 2,
  "stop_time": "22:06:00",
  "start_date": "2016-06-07"
}
],
"code": 0,
"schedule_id_list": [
  1,
  2
]
}

```

## 1.4 Remove Schedule

- Description:
  - Remove Schedule
- URL: [http://boxip:directorport/api/remove\\_schedule](http://boxip:directorport/api/remove_schedule)
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
schedule_id	Int array		

- *Response:*

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- *Example:*

*Send request:*

```
{
  "schedule_id":[1,2],
}
```

*Response:*

```
{
  "code": 0,
}
```

## Appendix: Return Code

Code	Title	Description
0	Successful	
-1	Error	general error
-2	Not Support	the API is not supported.
-3	Parameter error or out of range	number is out of range or string length is too long.
-4	Hardware error	
-5	Not in this mode	the command is not supported in current mode.
-6	No Such File	
-7	Incorrect timestamp	
-8	Export parameter error	
-9	RTMP error	
-10	File error	File read/write error (ex. disk full, ...)
-11	HLS error	
-12	Invalid tail video	
-13	Invalid head video	
-14	Authorization error	login is needed for this command.
-15	Device is busy	busy in starting/stopping record
-16	Network error	network is disconnected or not responded
-17	Incorrect logo file	incorrect file size, image size, or image format
-18	Stopped by users	
-19	JSON error	incorrect JSON structure
-20	Incompatible setting	for example, enable streaming, but streaming setting is not set currently.
-37	Invalid sensor source setting	ex. IP camera source can be added only if it is added.
-70	Invalid Schedule	

-71	Schedule overlap	
-72	Invalid record time	record time is greater than 8hr.
-73	Invalid record time	record time is less than 5min.

# CBox Standard API

## Web Service API Specification

Revision: 2.9b  
2016/9/29

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## History

Version	Date	Comment
2.0	2015/07/16	First version of CBox HTTP SDK
2.1	2015/09/30	Support customised layout for <i>get_layout_info</i> and <i>get_layout</i> in 3.3.8 and 3.3.10
2.2	2015/10/07	Add MSR backup error code in Appendix: Return Code
2.3	2015/11/20	Add <i>backup_option</i> for <i>get_backup_config</i> in 3.3.13 Add optional property of <i>ipout</i> of <i>set_stream_config</i> in 3.4.4 Add <i>backup_option</i> for <i>set_backup_config</i> in 3.4.10 Remove <i>data</i> parameter of <i>set_record</i> in 3.5.4 Add <i>name</i> item to <i>get_snapshots</i> in 3.7.1
2.4	2015/12/11	Add <i>connected</i> item <i>sensor_source</i> data in 3.3.1 Add <i>set_power</i> in 3.6.1 Add <i>set_wakeup_time</i> in 3.6.2 Add 3.9 Recorded Lectures - MP4 Version
2.5	2016/03/24	Add <i>loop_through</i> for <i>get_audio_volume</i> in 3.3.12 Add optional property for <i>audio_volume</i> of <i>set_audio_volume</i> request in 3.5.1 Add <i>loop_through</i> for <i>set_audio_volume</i> in 3.5.1 Add chapter 5 Device Search - SSDP
2.6	2016/05/25	Add <i>change_sensor_info</i> in 3.4.22
2.7	2016/07/13	Modify wordings of <i>sensor_source_data</i> in 3.3.1
2.8	2016/07/29	Add <i>ctrl_url</i> of <i>sensor_source_data</i> in 3.3.1 Add schedule parameter 3(by time setting) in Response of 3.3.13 <i>get_backup_config</i> Add schedule parameter 3(by time setting) in Response of 3.4.10 <i>set_backup_config</i>
2.9b	2016/09/29	Modify wordings
	TBD	Add mode 2(filecruiser) in Response of 3.3.13 <i>get_backup_config</i> Add mode 2:filecruiser in Response of 3.4.10 <i>set_backup_config</i> Add <i>domain</i> in <i>backup_ftp</i> data in 3.3.13

# 1 Introduction

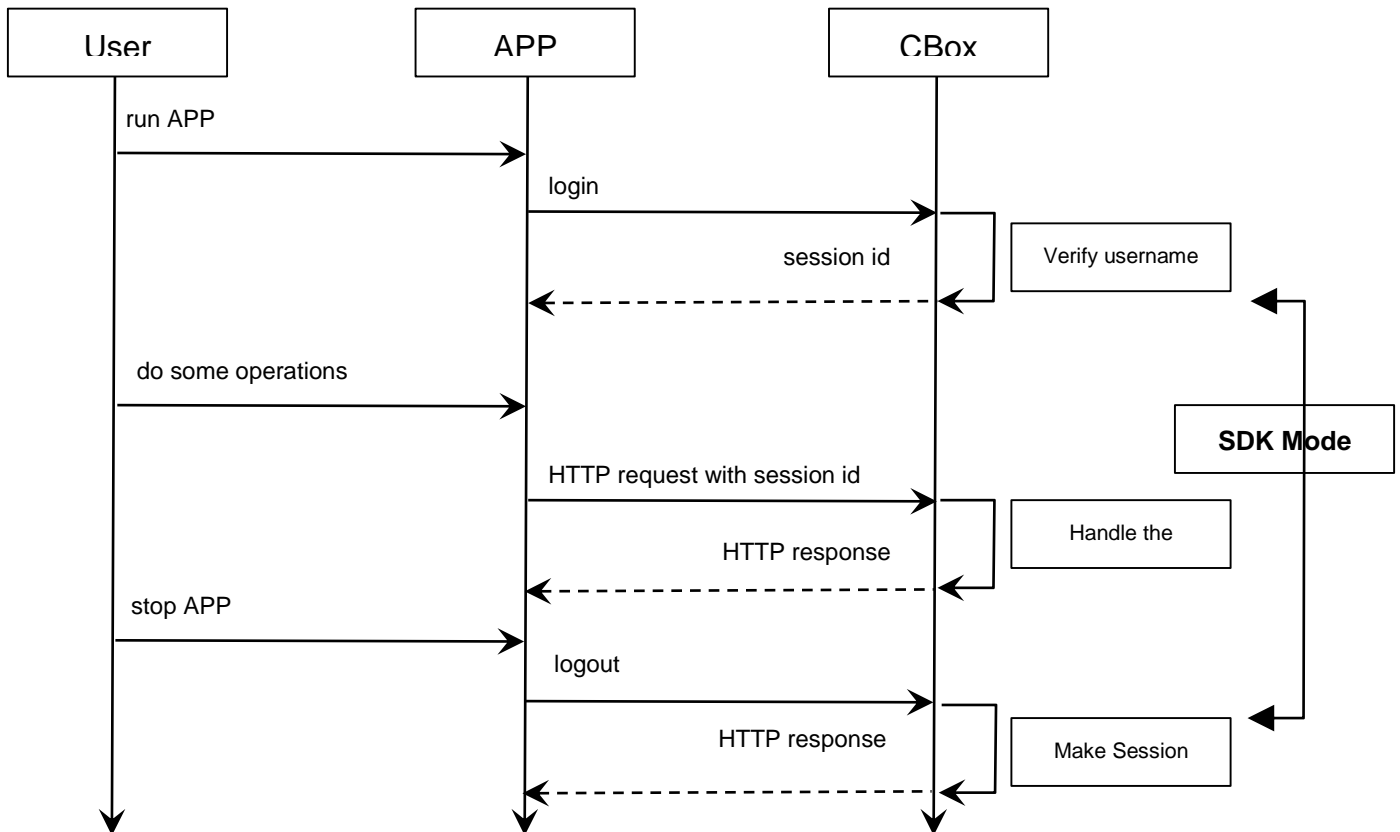
CBox is the product series of capture/stream/record devices which are built with an embedded system. CBox products have many models with different functions, so some APIs may not work on some models. Please refer to product portfolio for more information. Besides, the support for the HTTP API is product and firmware dependent. Please refer to the Release Notes for the actual product for compliance information.

This document specifies the HTTP-based application programming interface of CBox. The HTTP-based interface provides the functionality of getting and setting system configuration and device parameter values. The HTTP request body is based on JSON format which is more extendable and readable.

## 1.1 Authorization

Authorization is needed for most commands, so APP needs to “log in” the CBox to “SDK mode” and gets a session for later use. The session will be timeout after **5 minutes**, so APP needs to keep alive continuously. Please refer to [3.2.1 Login](#) and [3.2.3 Keep Alive](#) for more detail.

Basically, CBox SDK adopts the same user name, password, and port number as Director.



## 1.2 Session

The SDK adopts HTTP session cookie mechanism, so APP have to set the session, which is retrieved in login process, as a cookie attribute. For example, first, APP gets the session, 12345, in login stage, and then, in order to do subsequent operations, APP has to send the session, 12345, in Cookie section for authorization. Below is a request header example of sending a POST command with session in Cookie.

```
POST /api/login HTTP/1.1
Host: 10.2.50.140
Connection: keep-alive
Content-Length: 54
Cache-Control: no-cache
...
Content-Type: text/plain;charset=UTF-8
Accept: */*
Accept-Encoding: gzip,deflate
Accept-Language: en-US,en;q=0.8
Cookie: session=12345
```

## 1.3 Device Mode

There are several modes defined in CBox, such as Preview, Record, and Playback Mode. SDK can work in these modes normally. However, some functions and mode may be exclusive, for example, record cannot be executed in playback mode.

Regarding multiple access issue, if second APP is going to log in CBox which is already in SDK mode, the first APP will be logged out in order to avoid waiting for timeout in case the first APP crashes. In order to avoid accidental operation on second APP, APP can get SDK mode via *get\_status* defined in 3.1.1.

Mode	Mode Description
MODE_PREVIEW	CBox is powered on with showing preview video on display.
MODE_RECORD	CBox is recording a lecture via GUI (remote controller or keypad).
MODE_PLAYBACK	CBox is playing local recorded files or remote video.
MODE_EXPORT	CBox is exporting or uploading files via GUI or CBox scheduler (automatic backup).
MODE_DIRECTOR	CBox is logged in by Web Director.
MODE_DIRECTOR_RECORD	CBox is recording via Web Director.
MODE_ADMIN	CBox is logged in by Web Admin.

## 2 Definition

### 2.1 General Abbreviation

APP	Client Application which may be provided by system integrators. Users may use the APP to control CBox.
Web Admin	The web-based interface which provides users to set CBox configuration.
CBox	The capture/stream/record box which works as a HTTP server for HTTP API.
GUI	Graphic user interface which is controlled by remote controller or keypad and showed on display.
MPTS	Multiple program transport stream. Each channel source is recorded separately.
SDK Mode	CBox will be in SDK mode after logging in. In SDK mode, some operations may not be launched. Please refer to <i>1.3 Device Mode</i> for more information.
SPTS	Single program transport stream. Several channel source are mixed in one video with user defined layout.
Web Director	The web-based interface which provides users to control CBox, such as recording a lecture, moving camera, and so on.

### 2.2 JSON

JSON is an open standard format that uses human-readable text to transmit data objects consisting of attribute–value pairs. It is used primarily to transmit data between a server and web application, as an alternative to XML.

JSON is a language-independent data format. Code for parsing and generating JSON data is readily available in a large variety of programming languages.

The JSON format is currently described by two competing standards, RFC 7159 and ECMA-404. The official Internet media type for JSON is application/json.

Below table describes the format and data type of JSON.

Format	Data Type	Example
{ }	dictionary	{"key1" : "val1","key2" : "val2"}
[ ]	array	["val1","val2"]
" "	string	"key" : "string"
no brackets	number	"key" : 1234

- Examples:
  - [values] : [11,22,33,44]
  - ["values"] : ["text1", "text2", "text3"]

- [{values}] : [{dictionary1},{dictionary2},{dictionary3}]
- Note:
  - Transmission JSON data over HTTP (HTTP request/response body)
  - Each request MUST have a response JSON.
  - Request and response MUST ignore data items which are NULL.

## 3 Interface Specification

### 3.1 Device Status

#### 3.1.1 Get Current Device Status

- Description:
  - Get current device status
  - APP can determine if the device can be controlled or not. For example, if CBox is playing a file (Playback Mode), APP may not access the CBox.
  - The command has no Authorization requirement.
- URL: *http://boxip:directorport/api/get\_status*
- HTTP Method: POST/GET
- Session Cookie: No
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	0 or error code	0 is successful. Others means something wrong.
mode	Int	0: MODE_PREVIEW 1: MODE_RECORD 2: MODE_RECORD_PAUSE 3: MODE_PLAYBACK 4: MODE_EXPORT 5: MODE_DOWNLOAD 6: MODE_DIRECTOR 7: MODE_DIRECTOR_RECORD 8: MODE_DIRECTOR_RECORD_PAUSE 9: MODE_ADMIN 10: MODE_UNKNOWN 11: MODE_SDK_ADMIN	
sdk_mode	Int	0: no 1: yes	
data	N/A or <a href="#">general mode data</a> or <a href="#">record mode data</a> or <a href="#">playback mode data</a> or <a href="#">export mode data</a>		MODE_PREVIEW: general_mode data MODE_RECORD: record_mode data MODE_RECORD_PAUSE: record_mode data MODE_PLAYBACK: playback_mode data MODE_EXPORT: export_mode data MODE_DOWNLOAD: N/A MODE_DIRECTOR: general_mode_data MODE_DIRECTOR_RECORD: record_mode data MODE_DIRECTOR_RECORD_PAUSE: record_mode data



			MODE_ADMIN:general_mode data MODE_UNKNOWN: N/A MODE_SDK_ADMIN: sdk_admin_mode data
--	--	--	--

***general mode data***

Key	Type	Value	Note
remain_time	Int	in second	
hdd_space	Int	in MByte	

***record mode data***

Key	Type	Value	Note
time	Int	in second	
remain_time	Int	in second	
hdd_space	Int	in MByte	
filename	String		
stream_url	String		

***playback mode data***

Key	Type	Value	Note
mode	String	local remote	
url	String		
position	Int	in second	
duration	Int	in second	

**export mode data**

Key	Type	Value	Note
mode	String	USB FTP MSR	Media server is not supported in MP4 version
current_id	Int		current file number in progress start from 0
filename	String		
filenumber	Int		total file number
progress	Int	0 ~ 100	

**sdk admin mode data**

Key	Type	Value	Note
mode	Int	0: IP Camera List Update 1: Firmware Upgrade	
progress	Int	0~100	

- Example:  
Send Method *get\_status*:

Receive status, Director\_Record mode:

```
{
  "code":0,
  "mode":7,
  "sdk_mode":0,
  "data":
  {
    "time":7212,
    "remain_time":155009,
    "hdd_space":50000000,
    "filename":"2014_01_13_14_41_24.ts",
    "stream_url":"rtp://192.168.0.111:1234"
  }
}
```

### 3.1.2 Get Device Description

- Description:
  - Get device description, such as IP address, MAC address, version, and so on
  - The API has no Authorization requirement.
- URL: *http://boxip:directorport/api/get\_description*
- HTTP Method: POST/GET
- Session Cookie: No
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	0 or error code	0 is successful. Others means something wrong.
name	String		
description	String		
ip	String	aaa.bbb.ccc.ddd	
mac	String		
version	String		
model	String		
manufacturer	String		
serialnumber	String		
apiversion	String		

- Example:  
Send Method *get\_description*:

Receive:

```
{
  "code":0,
  "name":" Lumens-VS-LC101",
  "description":"","
  "ip":"192.168.0.111",
  "mac":"BC:BA:E1:02:00:7A",
  "version":" v3.2.5.13",
  "model":" CaptureVision",
  "manufacturer":" Lumens Digital Optics Inc.",
```

```
  "serialnumber": "1234567",  
  "apiversion": "1.0"  
}
```

## 3.2 Authorization

### 3.2.1 Login

- Description:
  - Log in device to SDK mode
  - After successfully log in, APP will get a session id for later use.
  - For security, APP has to encrypt the password with Base64.
  - The API has no Authorization requirement.
- URL: *http://boxip:directorport/api/login*
- HTTP Method: POST
- Session Cookie: No
- Request Parameter:

Key	Type	Value	Note
username	String		
password	String		<b>Encrypted password with Base64</b>

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
session	String		

- Example:  
Send Method *login* with username and encrypted password:

```
{
  "username": "director",
  "password": "ZGlyZWNoYm3l="
}
```

Receive *login* response:

```
{
  "code": 0,
  "session": "39af5a6869ddefdbd1525c245c7b368c64788a28"
}
```

### 3.2.2 Logout

- Description:

- Log out CBox from sdk mode.
- The session will be ineffective after logging out.
- URL: *http://boxip:directorport/api/logout*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *logout* command.

Receive successfully *logout* response:

```
{
  "code":0
}
```

### 3.2.3 Keep Alive

- Description:
  - APP must send `keep_alive` signal to CBox regularly. Otherwise, it will be automatically logged out after **5 minutes**.
- URL: `http://boxip:directorport/api/keepalive`
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *keepalive*:

Receive successfully *keepalive* response:

```
{
  "code":0
}
```

## 3.3 Get System Configuration

### 3.3.1 Get Sensor Channel Information

- Description:
  - Get current channel source information.
  - The channel sources may be capture, rtsp, or rtp sources, for example. The channel number (start form 0) will be used later for channel device control and setting.
  - APP can preview video streaming from CBox with *director\_url*. **If IP camera is connected to Lan port of CBox, CBox forwards data to a specific ip/port with *get\_sensor\_info* API.**
  - APP can control IP camera with *ctrl\_url*. For example, Onvif commands can be sent via this *ctrl\_url*. As *director\_url*, If IP camera is connected to Lan port of CBox, a specific ip/port will be provided.
- URL: *http://boxip:directorport/api/get\_sensor\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
channels	<a href="#">sensor_source</a> data Array		

#### **sensor\_source data**

Key	Type	Value	Note
channel	Int		start from 0
name	String		<b>Optional</b>
source	String	HDMI1, HDMI2, VGA1, VGA2, rtsp://, FAKE	FAKE means the channel souce is not set. <b>LC10X supports capture source, and IP camera source which is product dependent.</b>
director_url	String	rtsp:// rtp://	Optional HDMI/VGA: not supported rtsp: read-only rtp: read-write



ctrl_url	String		Read only url to control camera
connected	Int	0: not connected 1: connected	valid only for getting function

- Example:

Send Method *get\_sensor\_info*:

Receive *get\_sensor\_info* response:

For example, APP can control LAN camera of channel-0 through its ctrl\_url, http://10.2.50.111:50554. Onvif commands can be sent with such a URL, http://10.2.50.111:50554/onvif/device\_service.

```
{
  "code":0,
  "channels" :
  [
    {
      "channel":0,
      "name":"teacher",
      "source" : "rtsp://192.168.11.71/h264",
      "director_url":"rtsp://10.2.50.111:30554/h264_2",
      "ctrl_url":"http://10.2.50.111:50554",
      "connected":1
    },
    {
      "channel":1,
      "name":"computer2",
      "source" : "HDMI2",
      "director_url":"rtp://10.2.50.111:30560",
      "connected":1
    },
    {
      "channel":2,
      "name":"computer",
      "source" : "VGA1",
      "director_url":"rtp://10.2.50.111:30558",
      "connected":0
    }
  ],
}
```

### 3.3.2 Get Audio Source Configuration

- Description:
  - Get audio configuration such as volume
  - If audio channel is jack type, the input could be Line or Mic (Microphone).
- URL: *http://boxip:directorport/api/get\_audio\_source*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
audio_sources	<a href="#">audio_source data</a> Array		

#### **audio\_source data**

Key	Type	Value	Note
channel	Int	0: HDMI1 1: HDMI2 2: JACK1 3: JACK2 4: BT_MIC	LC10X does not support 4: BT_MIC
volume	Int	0~50 0~15, If channel is BT_MIC	
input	Int	0: LINE IN 1: MIC IN	only for audio jack

- Example:  
Send Method *get\_audio\_source*:

Receive *get\_audio\_source* response:

```
{
  "code":0,
  "audio_sources" :
  [
    {
      "channel" : 0,
      "volume" : 20,
    },
    {
      "channel" : 1,
      "volume" : 20,
    }
  ]
}
```

```
},  
{  
  "channel" : 2,  
  "volume" : 20,  
  "input" : 0,  
},  
{  
  "channel" : 3,  
  "volume" : 20,  
  "input" : 1,  
},  
{  
  "channel" : 4,  
  "volume" : 20,  
}  
]  
}
```

### 3.3.3 Get Record Configuration

- Description:
  - Get basic Record configuration
  - The record configuration includes audio shift, record dropped (cutting video from beginning), logo, and video insertion settings. For more information, please refer to user manual.
- URL: *http://boxip:directorport/api/get\_record\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
record_config	<a href="#">record_config data</a>		

#### ***record\_config data***

Key	Type	Value	Note
audio_shift	Int	in ms	Range: 0 ~ 900
drop_record	Int	in second	Range: 2 ~ 4
enable_inject_logo	Int	0: disable 1: enable	
logo_position	Int	0: UPPER_LEFT 1: UPPER_RIGHT 2: BOTTOM_LEFT 3: BOTTOM_RIGHT	
enable_head_video	Int	0: disable 1: enable	
enable_tail_video	Int	0: disable 1: enable	

- Example:  
Send Method *get\_record\_config*:

Receive *get\_record\_config* response:

```
{
  "code":0,
  "record_config":
```

```
{  
  "audio_shift":0,  
  "drop_record":2,  
  "enable_inject_logo":1,  
  "logo_position":0,  
  "enable_head_video":1,  
  "enable_tail_video":1,  
}
```

### 3.3.4 Get Storage Configuration

- Description:
  - Get storage configuration
  - CBox supports USB/eSata hard disk or flash memory. The API provides the information of current storage setting. Note that only one storage device is supported at the same.
- URL: *http://boxip:directorport/api/get\_storage\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
enable	Int	0: disable 1: enable	
cyclic	Int	0: disable 1: enable	cyclic record: delete old data if storage is full
storage	<a href="#">storage data</a>		

#### ***storage data***

Key	Type	Value	Note
device	Int	0: N/A 1: USB1 (Back USB) 2: eSATA 3: SATA 4: USB2 (Front USB)	

- Example:  
Send Method *get\_storage\_config*:

Receive *get\_storage\_config* response:

```
{
  "code":0,
  "enable":1,
  "cyclic":1,
  "storage" :
  {
    "device" : 1
  }
}
```

### 3.3.5 Get Local Record Configuration

- Description:
  - Get local record configuration which includes video and audio encode settings for local storage
- URL: *http://boxip:directorport/api/get\_local\_record\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
video_encode	<a href="#">video_encode data</a>		
audio_encode	<a href="#">audio_encode data</a>		
format	Int	0: SPTS 1: MPTS 2: H264 3: FLV 4: MP4 (Movie) 5: MP4 (Resource) 6: MP4 (Movie and Resource)	Format support is product dependent. <b>LC10X only support 4: MP4 (Movie)</b>

#### **video\_encode data**

Key	Type	Value	Note
profile_level	Int	0 : Baseline 1 : Main 2 : High	
display_resolution	Int	7: 720*480 8: 720*576 9: 1280*720 13: 1920*1080 17: 640*480 48: 320*240 49: 960*540 50: 640*360 51: 480*360 52: 1024*576	
fps	Int	frames / second	Range: 10 ~ 90
avg_bitrate	Int	in kbps	Range: 300 ~ 12000

gop	Int		Range: 10 ~ 90
-----	-----	--	----------------

**audio\_encode data**

Key	Type	Value	Note
sample_rate	Int	in Hz	only support 44100 Hz
channels	Int	1: mono 2: stereo	only support 2: stereo
bitrate	Int	in kbps	Range: 80 ~ 320

- Example:  
Send Method *get\_local\_record\_config*:

Receive *get\_local\_record\_config* response:

```
{
  "code":0,
  "video_encode" :
  {
    "profile_level" : 2,
    "display_resolution" : 13,
    "avg_bitrate" : 6400,
    "gop" : 30,
    "fps" : 30
  },
  "audio_encode" :
  {
    "sample_rate" : 44100,
    "channels" : 2,
    "bitrate" : 256,
  },
  "format":0
}
```



### 3.3.6 Get Streaming Configuration

- Description:
  - Get streaming configuration which includes streaming video encode setting and streaming destination settings, such as URL.
  - Director streaming is not included.
- URL: *http://boxip:directorport/api/get\_stream\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
enable	Int	0: disable 1: enable	
video_encode	<a href="#">video_encode data</a>		Defined in 3.3.5
ipout	<a href="#">ipout data</a>		

#### **ipout data**

Key	Type	Value	Note
url	String	rtp://aaa.bbb.ccc.ddd:port rtmp://	
format	Int	0: SPTS 1: MPTS 2: H264 3: FLV	Optional Currently, use SPTS format for RTP and FLV for RTMP.
rtmp_type	Int	0: normal/key 1: token 2: username/password	Optional, default 0 valid only if format is 3
username	String		Optional
password	String		Optional
token	String		Optional

- Example:  
Send Method *get\_stream\_config*:

Receive *get\_stream\_config* response:

```
{
  "code":0,
  "enable":1,
  "video_encode" :
  {
    "profile_level" : 2,
    "display_resolution" : 13,
    "avg_bitrate" : 6400,
    "gop" : 30,
    "fps" : 30
  },
  "ipout" :
  {
    "url":"rtp://192.168.0.4:6002",
    "format" : 0
  }
}
```

### 3.3.7 Get Director Configuration

- Description:
  - Get director streaming configuration
  - Director is usually for remote users' preview or monitor.
  - The director settings, such as encode parameters and protocol, are pre-defined and can't be changed.
- URL: *http://boxip:directorport/api/get\_director\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
director	<a href="#">director_ipout</a> data Array		

#### ***director\_ipout data***

Key	Type	Value	Note
channel	Int	channel number: 0 ~ 3 main channel number: 4	channel is defined in <a href="#">[channels]</a> of 3.3.1 start from 0 main channel content is the same as streaming
enable	Int	0: disable 1: enable	
url	String	rtp://aaa.bbb.ccc.ddd:port rtsp://aaa.bbb.ccc.ddd/stream	
format	Int	0: SPTS 1: MPTS 2: H264 3: FLV	

- Example:  
Send Method *get\_director\_config*:

Receive *get\_director\_config* response:

```
{
  "code":0,
  "director" :
  [
    {
      "channel" : 0,
```

```
    "enable":1,  
    "url" : "rtsp://192.168.0.4:1234",  
    "format" : 0  
  },  
  {  
    "channel" : 1,  
    "enable":1,  
    "url" : "rtsp://192.168.0.4:5678",  
    "format" : 0  
  },  
  {  
    "channel" : 2,  
    "enable":1,  
    "url" : "rtsp://192.168.0.111/h264",  
    "format" : 2  
  },  
  {  
    "channel" : 3,  
    "enable":1,  
    "url" : "rtsp://192.168.0.112/h264",  
    "format" : 2  
  },  
  {  
    "channel" : 4,  
    "enable":0,  
    "url" : "rtsp://192.168.0.4:1330",  
    "format" : 0  
  }  
] }  
}
```

### 3.3.8 Get Layout Information

- Description:
  - Get one of user defined layout information.
  - CBox supports 9 user defined layouts for display and 9 for record.
  - The layout parameters, w,h,x, and y, are defined as ratio of size. For example, in a 1920x1080 video, w:0.5 means the width is 960.
  - There could be one or several channel videos mixed in a single video, so a layout item has several *channel\_layout* data in array type.
  - Layout parameters, w,h,x,and y, are stored in layout database and each layout item has its own *db\_layout\_id* with the parameters. The user defined layout just has the database id, *db\_layout\_id*, which points to the item in layout database. Therefore, a display layout and a record layout may have the same *db\_layout\_id* (sharing the same layout parameters).
  - Current version doesn't support z-index setting, APP has to reorder the window list by putting the toppest window in the last one.
- URL: *http://boxip:directorport/api/get\_layout\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
layout_id	Int	0: customised layout 1 ~ 9: pre-defined layout	layout_id matches the number on remote controller
mode	Int	0: display 1: record	

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
db_layout_id	Int	-1: customised layout	the unique id of a layout which is stored in database
layout	<a href="#">channel_layout data</a> Array		

#### ***channel\_layout data***

Key	Type	Value	Note
channel	Int	channel number	channel is defined in <a href="#">[channels]</a> of 3.3.1 start from 0
w	String	ratio of width in float (range: 0~1)	

h	String	ratio of height in float (range: 0~1)	
x	String	ratio of x in float (range: 0~1)	
y	String	ratio of y in float (range: 0~1)	
z	Int	range: 0 ~ 64	z-index: window with z, 0, is set to the bottom layer window with z, 255, is invisible current version doesn't support z-index, APP has to put the toppest window in the last one
windowmode	Int	0: Letter Box (keep aspect ratio) 1: Fit to width 2: Fit to height 3: Fill to window	the default value is 0: Letter Box only 0 and 3 are supported in current version

- Example:  
Send Method *get\_layout\_info*:

```
{
  "layout_id":1,
  "mode":1
}
```

Receive *get\_layout\_info* response:

```
{
  "code":0,
  "db_layout_id":33,
  "layout":
  [
    {
      "channel" : 0,
      "w" : "0.5",
      "h" : "0.5",
      "x" : "0",
      "y" : "0",
      "z" : 0,
      "windowmode":3
    },
    {
      "channel" : 1,
      "w" : "0.5",
      "h" : "0.5",
      "x" : "0.5",
      "y" : "0",
      "z" : 0,
      "windowmode":0
    },
    {
      "channel" : 2,
      "w" : "0.5",
      "h" : "0.5",
      "x" : "0",
      "y" : "0.5",
      "z" : 1,
      "windowmode":3
    }
  ],
}
```

```
{  
  "channel" : 3,  
  "w" : "0.5",  
  "h" : "0.5",  
  "x" : "0.5",  
  "y" : "0.5",  
  "z" : 2,  
  "windowmode":3  
}  
1  
}
```

### 3.3.9 Get Layout Database

- Description:
  - Get one of layout parameters from layout database.
- URL: *http://boxip:directorport/api/get\_layout\_db*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
total_number	Int		total number of layout database
db_layout	<a href="#">db_layout</a> data Array		

#### ***db\_layout data***

Key	Type	Value	Note
db_layout_id	Int		the unique id of a layout which is stored in database
layout	<a href="#">channel_layout</a> data	channel number	channel is defined in <a href="#">[channels]</a> of 3.3.1 start from 0

- Example:  
Send Method *get\_layout\_db*:

Receive *get\_layout\_info* response:

```
{
  "code":0,
  "total_number":2,
  "db_layout":
  [
    {
      "db_layout_id":5,
      "layout":
      {
        "channel" : 0,
        "w" : "0.5",
        "h" : "0.5",
        "x" : "0",
        "y" : "0",
        "z" : 0,
        "windowmode":0
      }
    }
  ],
}
```



```

{
  "channel" : 1,
  "w" : "0.5",
  "h" : "0.5",
  "x" : "0.5",
  "y" : "0",
  "z" : 0,
  "windowmode":3
},
{
  "channel" : 2,
  "w" : "0.5",
  "h" : "0.5",
  "x" : "0",
  "y" : "0.5",
  "z" : 1,
  "windowmode":0
},
{
  "channel" : 3,
  "w" : "0.5",
  "h" : "0.5",
  "x" : "0.5",
  "y" : "0.5",
  "z" : 2,
  "windowmode":2
}
},
{
  "db_layout_id":8,
  "layout":
  {
    "channel" : 0,
    "w" : "1.0",
    "h" : "1.0",
    "x" : "0",
    "y" : "0",
    "z" : 0,
    "windowmode":0
  },
  {
    "channel" : 1,
    "w" : "0.2",
    "h" : "0.2",
    "x" : "0",
    "y" : "0",
    "z" : 0,
    "windowmode":3
  }
}
}
}

```

### 3.3.10 Get Layout Setting

- Description:
  - Get current layout setting with `layout_id`
  - `layout_id` is from 1 to 9 which is mapped to corresponding button of remote controller.
- URL: `http://boxip:directorport/api/get_layout`
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
mode	Int	0: display 1: record	

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
layout_id	Int	0: customised layout 1 ~ 9: pre-defined layout	layout_id matches the number on remote controller

- Example:  
Send Method `get_layout`:

```
{
  "mode":1
}
```

Receive `get_layout` response:

```
{
  "code":0,
  "layout_id":5
}
```

### 3.3.11 Get Layout Picture

- Description:
  - Get the layout picture(icon) URL
  - The API only responses an URL of layout picture. APP has to download the picture from the URL.
  - The picture format is JPEG.
- URL: *http://boxip:directorport/api/get\_layout\_picture*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
mode	Int	0: display 1: record	
layout_id	Int	1 ~ 9: pre-defined layout	pre-defined layout matches to the number on remote controller

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
url	String		

- Example:

Send Method *get\_layout\_picture*:

```
{
  "mode": "1",
  "layout_id": "4"
}
```

Receive *get\_layout\_picture* response:

```
{
  "code": 0,
  "url": "http://192.168.0.111/layout_record_4.jpg"
}
```

### 3.3.12 Get Audio Volume

- Description:
  - Get input/output audio volume
- URL: *http://boxip:directorport/api/get\_audio\_volume*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
type	Int	0: input 1: output	
channel	Int	0: HDMI1 1: HDMI2 2: JACK1 3: JACK2 4: BT_MIC	type input: 0 ~ 4 type output: N/A (channel parameter is not necessary or ignored.) <b>LC10X does not support 4: BT_MIC</b>

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
volume	Int	0~50 0~15, If device is BT_MIC	
loop_through	Int	0: disable 1: enable	only for type output

- Example:  
Send Method *get\_audio\_volume*:

```
{
  "type" : 0,
  "channel" : 0
}
```

Receive *get\_audio\_volume*:

```
{
  "code":0,
  "volume" : 50
}
```

### 3.3.13 Get Backup Configuration

- Description:
  - Get backup setting
- URL: *http://boxip:directorport/api/get\_backup\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
schedule	Int	0: disable 1: after recording stops 2: before shutdown 3: by time setting	
mode	Int	0: FTP 1: Media Server 2: filecruiser	Mode support is product dependent. LC10X only support 0: FTP
format	Int	0: MP4 1: TS 2: AVI 3: FLV	Format support is product dependent. LC10X only support 0: MP4
backup_option	Int	bit-0: folder bit-1: movie bit-2: resource bit-3: thumbnail (snapshot) bit-4: data bit-5 ~ bit-7: reserved	
data	<a href="#">backup ftp data</a>		if mode is 1 (Media Server), CBox won't return data.

#### ***backup ftp data***

Key	Type	Value	Note
ip	String	aaa.bbb.ccc.ddd	
port	Int		
folder	String		
domain	String		Optional

username	String		
password	String		
anonymous	Int	0: disable 1: enable	

- Example:  
Send Method *get\_backup\_config*:

Receive *get\_backup\_config*:

```
{
  "code":0,
  "schedule":0,
  "mode":0,
  "format":0,
  "backup_option":255,
  "data":
  {
    "ip":"10.2.50.111",
    "port":1234,
    "folder":"test",
    "username":"myname",
    "password":"mypassword",
    "anonymous":0
  }
}
```

### 3.3.14 Get IP Camera List

- Description:
  - Get IP Camera List
- URL: *http://boxip:directorport/api/get\_ipcam\_list*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
data	<a href="#">ipcam</a> data Array		

#### ***ipcam data***

Key	Type	Value	Note
mac	String		Main key for IP Cam list
is_authorized	Int	0: No 1: Yes	
ctrl_url	String		
name	String		
model	String		
if_name	String		
manufacturer	String		
mediainfo	<a href="#">ipcam mediainfo</a> data Array		

#### ***ipcam mediainfo data***

Key	Type	Value	Note
stream_url	String		
type	Int	0: Video 1: Audio	

- Example:

Send Method *get\_ipcam\_list*:

Receive *get\_ipcam\_list*:

```
{
  "code":0,
  "data":
  [
    {
      "mac": "DC:E2:AC:01:10:07",
      "is_authorized":1,
      "ctrl_url": "http://10.2.50.111:80",
      "name": "VC-A20P ",
      "model": "VC-A20P ",
      "if_name": "eth0",
      "manufacturer": "Lumens",
      "mediainfo":
      [
        {
          "stream_url": "rtsp://10.2.50.111/h264",
          "type": 0
        }
      ]
    },
    {
      "mac": "BC:BA:E1:A0:00:1C",
      "is_authorized":1,
      "ctrl_url": "http://10.2.50.112:80",
      "name": "Camera2",
      "model": "Network Camera",
      "if_name": "eth0",
      "manufacturer": "ABC",
      "mediainfo":
      [
        {
          "stream_url": "rtsp://10.2.50.112/h264",
          "type": 0
        }
      ]
    }
  ]
}
```



### 3.3.15 Get IP Camera Information

- Description:
  - Get IP Camera information by MAC address
- URL: *http://boxip:directorport/api/get\_ipcam\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
ip	String	aaa.bbb.ccc.ddd	Main key for IP Cam list

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
data	<a href="#">ipcam</a> data		

- Example:  
Send Method *get\_ipcam\_info*:

```
{
  "ip":"10.2.50.111"
}
```

Receive *get\_ipcam\_info*:

```
{
  "code":0,
  "data":
  {
    "mac":"DC:E2:AC:01:10:07",
    "is_authorized":1,
    "ctrl_url":"http://10.2.50.111:80",
    "name":"VC-A20P",
    "model":" VC-A20P ",
    "if_name":"eth0",
    "manufacturer":"Lumens",
    "mediainfo":
    [
      {
        "stream_url":"rtsp://10.2.50.111/h264",
        "type":0
      }
    ]
  }
}
```

### 3.3.16 Download Logo

- Description:
  - Download logo file
- URL: *http://boxip:directorport/api/download\_logo*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
url	String		

- Example:  
Send Method *download\_logo*:

Receive *download\_logo* response:

```
{
  "code":0,
  "url":"http://192.168.0.111/logo.png"
}
```

### 3.3.17 Get Lecture Configuration

- Description:
  - Get current lecture information configuration
  - Lecture information will be applied for later recording lectures.
- URL: *http://boxip:directorport/api/get\_lecture\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
lecture	<a href="#">lecture</a> data		

#### ***lecture data***

Key	Type	Value	Note
school	String		
department	String		
schoolyear	String		
semester	String		
lesson	String		
grade	String		
class	String		
room	String		
category	String		
teacher	String		
section	String		
description	String		

- Example:  
Send Method *get\_lecture\_config*:

Receive *get\_lecture\_config*:

```
{
  "code":0,
  "lecture":
  {
    "school":"Taiwan University",
    "department":"CSIE",
    "schoolyear":"2014",
    "semester":"Fist-half",
    "lesson":"Computer Architecture",
    "grade":"1",
    "class":"B",
    "room":"104",
    "category":"Computer",
    "teacher":"MR. Ma",
    "section":"chapter 3",
    "description":"Computer Architecture Description"
  }
}
```

### 3.3.18 Get System Time

- Description:
  - Get current system date/time and NTP (Network Time Protocol) configuration
- URL: *http://boxip:directorport/api/get\_time*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
data	<a href="#">time</a> data		

#### *time data*

Key	Type	Value	Note
time	String	YYYY-MM-DDTHH:MM:SS	Optional: valid if sync_with_nt=0 example: 2013-01-23T08:00:00
sync_with_ntp	Int	0:disable 1:enable	
ntp_server	String		Optional: valid if sync_with_nt=1
enable_dst	Int	0:disable 1:enable	
timezone_info	Int	-11: GMT-11:00 -10: GMT-10:00 -09: GMT-09:00 -08: GMT-08:00 -07: GMT-07:00 -06: GMT-06:00 -05: GMT-05:00 -04: GMT-04:00 -03: GMT-03:00 -02: GMT-02:00 -01: GMT-01:00 00: GMT+00:00 01: GMT+01:00 02: GMT+02:00 03: GMT+03:00 04: GMT+04:00	

		05: GMT+05:00 06: GMT+06:00 07: GMT+07:00 08: GMT+08:00 09: GMT+09:00 10: GMT+10:00 11: GMT+11:00 12: GMT+12:00 13: GMT+13:00	
--	--	---	--

- Example:  
Send Method *set\_time*:

Receive *set\_time*:

```
{
  "code":0,
  "data":
  {
    "time":"2013-01-23T08:00:00",
    "sync_with_ntp":1,
    "ntp_server":"time.nist.gov",
    "enable_dst":0,
    "timezone_info":8
  }
}
```

### 3.3.19 Get Hostname

- Description:
  - Get device hostname
  - A hostname is a label that is assigned to a device connected to a computer network and that is used to identify the device in various forms of electronic communication such as the World Wide Web, e-mail or Usenet.
  - A hostname must be consisting of ASCII characters.
- URL: *http://boxip:directorport/api/get\_hostname*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
data	String		

- Example:  
Send Method *get\_hostname*:

Receive *get\_hostname*:

```
{
  "code":0,
  "data": "CBox"
}
```

### 3.3.20 Get Network Configuration

- Description:
  - Get network configuration
- URL: *http://boxip:directorport/api/get\_network\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
data	<a href="#">network</a> data		

#### **network data**

Key	Type	Value	Note
mode	Int	0: DHCP 1: Manual	
ip	String	aaa.bbb.ccc.ddd	Not necessary in DHCP mode
mask	String	aaa.bbb.ccc.ddd	Not necessary in DHCP mode
gateway	String	aaa.bbb.ccc.ddd	Not necessary in DHCP mode
primary_dns	String	aaa.bbb.ccc.ddd	Not necessary in DHCP mode
secondary_dns	String	aaa.bbb.ccc.ddd	Not necessary in DHCP mode
lan_ip	String	aaa.bbb.ccc.ddd	Optional

- Example:  
Send Method *get\_network\_config*:

Receive *get\_network\_config*:

```
{
  "code":0,
  "data":
  {
    "mode":0,
    "ip":"10.2.50.111",
    "mask":"255.255.255.0",
    "gateway":"10.2.50.254",
  }
}
```



```
"primary_dns":"10.100.0.1",  
"secondary_dns":",",  
"lan_ip":"192.168.11.1"  
}  
}
```

### 3.3.21 Get Device Name

- Description:
  - Get device name which supports multi-byte word
- URL: *http://boxip:directorport/api/get\_device\_name*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
data	String		

- Example:  
Send Method *get\_device\_name*:

Receive *get\_device\_name*:

```
{
  "code":0,
  "data": "CBox"
}
```

## 3.4 Set System Configuration

### 3.4.1 Set Record Configuration

- Description:
  - Set record configuration
  - For more information, please refer to [3.3.3 Get Record Configuration](#).
- URL: *http://boxip:directorport/api/set\_record\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
record_config	<a href="#">record_config data</a>		record_config data is defined in 3.3.3

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_record\_config*:

```
{
  "record_config":
  {
    "audio_shift":0,
    "drop_record":2,
    "enable_inject_logo":1,
    "logo_position":0,
    "enable_head_video":1,
    "enable_tail_video":1
  }
}
```

Receive *set\_record\_config* response:

```
{
  "code":0
}
```

### 3.4.2 Set Storage Configuration

- Description:
  - Set storage configuration
  - Note that storage device configuration is not available, because preparing the storage has several operations, such as disk format, performance checking, ... Users can only do these operations on Web Admin.
- URL: *http://boxip:directorport/api/set\_storage\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
enable	Int	0: disable 1: enable	
cyclic	Int	0: disable 1: enable	cyclic record: delete old data if storage is full

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_storage\_config*:

```
{
  "enable":1,
  "cyclic":1
}
```

Receive *set\_storage\_config* response:

```
{
  "code":0
}
```

### 3.4.3 Set Local Record Configuration

- Description:
  - Set local record configuration
  - For more information, please refer to *3.3.5 Get Local Record Configuration*.
- URL: *http://boxip:directorport/api/set\_local\_record\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
video_encode	<a href="#">video_encode data</a>		video_encode data is defined in 3.3.5 <b>Optional</b>
audio_encode	<a href="#">audio_encode data</a>		audio_encode data is defined in 3.3.5 <b>Optional</b>
format	Int	0: SPTS 1: MPTS 2: H264 3: FLV 4: MP4 (Movie) 5: MP4 (Resource) 6: MP4 (Movie and Resource)	Format support is product dependent. <b>LC10X only support 4: MP4 (Movie)</b>

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_local\_record\_config*:

```
{
  "video_encode" :
  {
    "profile_level" : 2,
    "display_resolution" : 13,
    "avg_bitrate" : 6400,
    "gop" : 30,
    "fps" : 30
  },
  "audio_encode" :
  {
    "sample_rate" : 44100,
    "channels" : 2,
    "bitrate" : 256,
  },
}
```

```
{  
  "format":0  
}
```

Receive *set\_local\_record\_config* response:

```
{  
  "code":0  
}
```

### 3.4.4 Set Streaming Configuration

- Description:
  - Set streaming configuration
  - For more information, please refer to [3.3.6 Get Streaming Configuration](#).
- URL: *http://boxip:directorport/api/set\_stream\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
enable	Int	0: disable 1: enable	
video_encode	<a href="#">video_encode data</a>		<b>Optional</b> video_encode data is defined in 3.3.5
ipout	<a href="#">ipout data</a>		<b>Optional</b> ipout data is defined in 3.3.6

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_stream\_config*:

```
{
  "enable":1,
  "video_encode" :
  {
    "profile_level" : 2,
    "display_resolution" : 13,
    "avg_bitrate" : 6400,
    "gop" : 30,
    "fps" : 30
  },
  "ipout" :
  {
    "url": "rtsp://192.168.0.4:6002",
    "format" : 0
  }
}
```

Receive *set\_stream\_config* response:

```
{  
  "code":0  
}
```



### 3.4.5 Set Director Configuration

- Description:
  - Set director configuration
  - Current version only supports modifying video encode parameter of main director channel (channel 4)
  - In order to work with Web Director properly, Director configuration, including video\_encode and url settings, are not stored in database, so it will be changed back to original setting after changing mode, for example, changing from record to preview mode.
- URL: *http://boxip:directorport/api/set\_director\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
channel	Int	channel number: 0 ~ 3 main channel number: 4	
video_encode	<a href="#">video_encode data</a>		video_encode data is defined in 3.3.5 only for main director channel (channel: 4) optional
url	String		optional

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_director\_config*:

```
{
  "channel":4,
  "video_encode" :
  {
    "profile_level" : 2,
    "display_resolution" : 13,
    "avg_bitrate" : 6400,
    "gop" : 30,
    "fps" : 30
  }
  "url": "rtsp://192.168.0.4:6002"
}
```

Receive *set\_director\_config* response:

```
{  
  "code":0  
}
```

### 3.4.6 Set Layout Information

- Description:
  - Change *db\_layout\_id* of the user defined layout
- URL: *http://boxip:directorport/api/set\_layout\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
mode	Int	0: display 1: record	
layout_id	Int	1 ~ 9	start from 1 which matches the number on remote controller
db_layout_id	Int		the unique id of a layout which is stored in database

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_layout\_info*:

```
{
  "mode":1,
  "layout_id":5,
  "db_layout_id":33
}
```

Receive *set\_layout\_info* response:

```
{
  "code":0
}
```

### 3.4.7 Set Layout Database

- Description:
  - Save customised layout parameters to a layout in database.
  - For more information about layout, please refer to 3.3.8.
- URL: *http://boxip:directorport/api/set\_layout\_db*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
db_layout_id	Int		the unique id of a layout which is stored in database
layout	<a href="#">channel_layout data</a> Array		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_layout\_db*:

```
{
  "db_layout_id":33,
  "layout":
  [
    {
      "channel" : 0,
      "w" : "0.5",
      "h" : "0.5",
      "x" : "0",
      "y" : "0",
      "z" : 0,
      "windowmode":3
    },
    {
      "channel" : 1,
      "w" : "0.5",
      "h" : "0.5",
      "x" : "0.5",
      "y" : "0",
      "z" : 0,
      "windowmode":3
    },
  ],
}
```

```
"channel" : 2,  
"w" : "0.5",  
"h" : "0.5",  
"x" : "0",  
"y" : "0.5",  
"z" : 1,  
"windowmode":0  
},  
{  
"channel" : 3,  
"w" : "0.5",  
"h" : "0.5",  
"x" : "0.5",  
"y" : "0.5",  
"z" : 2,  
"windowmode":1  
}  
]  
}
```

Receive *set\_layout\_db* response:

```
{  
"code":0  
}
```

### 3.4.8 Upload Logo

- Description:
  - Upload logo image
  - Support PNG image format
  - Adopt HTTP form-data type instead of JSON text
- URL: *http://boxip:directorport/api/upload\_logo*
- HTTP Method: POST
- Session Cookie: Yes
- Content-Type: multipart/form-data
- Request form-data key and value:

Name	Value	Note
logo_file	filename	

- Example of the Request Headers and Payload:

```

Request Headers:
POST /upload_logo HTTP/1.1
Host: 10.2.50.140:80
Connection: keep-alive
Content-Length: 8444
Accept: */*
Origin: http://10.2.50.140:80
...
Content-Type: multipart/form-data; boundary=----FormBoundary994A5fbEAF1uuA37
...
Cookie: session=ee4b3957e1ca49781ca7fb9ef1cf6b8f75e81b6e
...

Request Payload:
-----FormBoundary994A5fbEAF1uuA37
Content-Disposition: form-data; name="logo_file"; filename="239x239_7.94KB.png"
Content-Type: image/png
-----FormBoundary994A5fbEAF1uuA37--
...

```

### 3.4.9 Upgrade Firmware

- Description:
  - Upload firmware file with HTTP form-data type and upgrade system
  - During firmware upgrade process, CBox returns device busy (-15) for any request in MODE\_SDK\_ADMIN mode.
- URL: *http://boxip:directorport/api/upgrade\_firmware*
- HTTP Method: POST
- Session Cookie: Yes
- Content-Type: multipart/form-data
- Request form-data key and value:

Name	Value	Note
firmware	filename	

- Example of the Request Headers and Payload:

```
Request Headers:
POST /upgrade_firmware HTTP/1.1
Host: 10.2.50.140:80
Connection: keep-alive
Content-Length: 8444
Accept: */*
Origin: http://10.2.50.140:80
...
Content-Type: multipart/form-data; boundary=----FormBoundary994A5fbEAF1uuA37
...
Cookie: session=ee4b3957e1ca49781ca7fb9ef1cf6b8f75e81b6e
...

Request Payload:
-----FormBoundary994A5fbEAF1uuA37
Content-Disposition: form-data; name="firmware"; filename="rec_fw.img"
Content-Type: image/png
-----FormBoundary994A5fbEAF1uuA37--
...
```

### 3.4.10 Set Backup Configuration

- Description:
  - Set backup setting
- URL: *http://boxip:directorport/api/set\_backup\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
schedule	Int	0: disable 1: after recording stops 2: before shutdown 3: by time setting	Optional  <b>If your firmware supports background upload, do NOT set <i>schedule</i>.</b>
mode	Int	0: FTP 1: Media Server 2: filecruiser	Media server is not supported <b>LC10X only support 0: FTP</b>
format	Int	0: MP4 1: TS 2: AVI 3: FLV	
backup_option	Int	bit-0: folder bit-1: movie bit-2: resource bit-3: thumbnail (snapshot) bit-4: data bit-5 ~ bit-7: reserved	<b>Optional:</b> default 0xFF
data	<a href="#">backup ftp data</a>		Optional

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_backup\_config*:



```
{
  "schedule":0,
  "mode":0,
  "format":0,
  "data":
  {
    "ip":"10.2.50.111",
    "port":1234,
    "folder":"test",
    "username":"myname",
    "password":"mypassword",
    "anonymous":0
  }
}
```

Receive *set\_backup\_config*:

```
{
  "code":0,
}
```

### 3.4.11 Set Sensor Channel Information

- Description:
  - Set sensor channel
  - **APP can change sensor under most states, but the new sensor setting won't be applied until calling *apply\_all\_config*.**
  - For capture source, the source field is HDMI1, HDMI2, VGA1, or VGA2.
  - For IP Camera source, input url in source field.
  - The number of channel is less than 4, so APP can only change any number of channel source.  
**Setting FAKE to remove a channel.**
- URL: *http://boxip:directorport/api/set\_sensor\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
channels	<a href="#">sensor_source</a> data Array		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send request *set\_sensor\_info*:

```
{
  "channels" :
  [
    {
      "channel":0,
      "name":"teacher",
      "source" : "rtsp://192.168.11.71/h264"
    },
    {
      "channel":1,
      "name":"computer2",
      "source" : "HDMI2"
    },
    {
      "channel":2,
      "name":"computer",
      "source" : "VGA1"
    }
  ]
}
```

Receive *set\_sensor\_info* response:

```
{  
  "code":0  
}
```

### 3.4.12 Update IP Camera List

- Description:
  - CBox does IP Cam search (discovery) to update IP Camera list.
  - During IP Camera search process, CBox returns device busy (-15) for any request in MODE\_SDK\_ADMIN mode.
- URL: *http://boxip:directorport/api/update\_ipcam\_list*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
action	Int	0: start 1: pause 2: stop 3: resume	pause and resume are not supported

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send request *update\_ipcam\_list*:

```
{
  "action":0
}
```

Receive *update\_ipcam\_list*:

```
{
  "code":0
}
```

### 3.4.13 Set Lecture Configuration

- Description:
  - Set global lecture information configuration
  - Lecture information will be applied for later recording lectures.
- URL: *http://boxip:directorport/api/set\_lecture\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
lecture	<a href="#">lecture</a> data		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_lecture\_config*:

```
{
  "lecture":
  {
    "school":"Taiwan University",
    "department":"CSIE",
    "schoolyear":"2014",
    "semester":"Fist-half",
    "lesson":"Computer Architecture",
    "grade":"1",
    "class":"B",
    "room":"104",
    "category":"Computer",
    "teacher":"MR. Ma",
    "section":"chapter 3",
    "description":"Computer Architecture Description"
  }
}
```

Receive *set\_lecture\_config*:

```
{
  "code":0
}
```

### 3.4.14 Set System Time

- Description:
  - Set system date/time or NTP (Network Time Protocol) configuration
- URL: *http://boxip:directorport/api/set\_time*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
data	time data		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_time*:

```
{
  "data":
  {
    "time": "2013-01-23T08:00:00",
    "sync_with_ntp": 1,
    "ntp_server": "time.nist.gov",
    "enable_dst": 0,
    "timezone_info": 8
  }
}
```

Receive *set\_time*:

```
{
  "code": 0
}
```

### 3.4.15 Set Hostname

- Description:
  - Set host name
- URL: *http://boxip:directorport/api/set\_hostname*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
data	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_hostname*:

```
{
  "data": "CBox"
}
```

Receive *set\_hostname*:

```
{
  "code":0
}
```

### 3.4.16 Set Network Configuration

- Description:
  - Set network configuration
- URL: *http://boxip:directorport/api/set\_network\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
data	<a href="#">network</a> data		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_network\_config*:

```
{
  "data":
  {
    "mode":1,
    "ip":"10.2.50.111",
    "mask":"255.255.255.0",
    "gateway":"10.2.50.254",
    "primary_dns":"10.100.0.1",
    "secondary_dns":""
  }
}
```

Receive *set\_network\_config*:

```
{
  "code":0
}
```



### 3.4.17 Set Authorization for IP Camera

- Description:
  - Set username/password to IP Camera for Authorization
- URL: *http://boxip:directorport/api/set\_ipcam\_authorization*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
ip	String	aaa.bbb.ccc.ddd	
username	String		
password	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
data	<a href="#">ipcam</a> data		

- Example:  
Send Method *set\_ipcam\_authorization*:

```
{
  "ip": "10.2.50.111",
  "username": "admin",
  "password": "1234"
}
```

Receive *set\_ipcam\_authorization*:

```
{
  "code": 0,
  "data": {
    "mac": "BC:BA:E1:A0:00:1B",
    "ctrl_url": "http://10.2.50.111:80",
    "name": "Camera1",
    "model": "Network Camera",
    "if_name": "eth0",
    "manufacturer": "ABC",
    "mediainfo": [
      {

```

```
    "stream_url": "rtsp://10.2.50.111/h264",  
    "type": 0  
  }  
}  
}
```

### 3.4.18 Add a New IP Camera

- Description:
  - Add a new IP camera into IP camera list
- URL: *http://boxip:directorport/api/add\_ipcam*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
ip	String	aaa.bbb.ccc.ddd	
username	String		
password	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *add\_ipcam*:

```
{
  "ip": "10.2.50.111",
  "username": "admin",
  "password": "1234"
}
```

Receive *add\_ipcam*:

```
{
  "code": 0
}
```

### 3.4.19 Upload Head/Tail Video

- Description:
  - Upload hade/tail video
- URL: *http://boxip:directorport/api/upload\_headtail\_video*
- HTTP Method: POST
- Session Cookie: Yes
- Content-Type: multipart/form-data
- Request form-data key and value:

Name	Value	Note
head	filename	

Name	Value	Note
tail	filename	

- Example of the Request Headers and Payload:

```

Request Headers:
POST /upload_logo HTTP/1.1
Host: 10.2.50.140:80
Connection: keep-alive
Content-Length: 8444
Accept: */*
Origin: http://10.2.50.140:80
...
Content-Type: multipart/form-data; boundary=----FormBoundary994A5fbEAF1uuA37
...
Cookie: session=ee4b3957e1ca49781ca7fb9ef1cf6b8f75e81b6e
...

Request Payload:
-----FormBoundary994A5fbEAF1uuA37
Content-Disposition: form-data; name="head"; filename="head.mp4"
Content-Type: image/png
-----FormBoundary994A5fbEAF1uuA37--
...

```

### 3.4.20 Set Device Name

- Description:
  - Set device name which supports multi-byte word
- URL: *http://boxip:directorport/api/set\_device\_name*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
data	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_device\_name*:

```
{
  "data": "CBox"
}
```

Receive *set\_device\_name*:

```
{
  "code":0
}
```

## 3.5 CBox Control

### 3.5.1 Control Audio Volume

- Description:
  - Control audio volume for each audio input and audio output
- URL: *http://boxip:directorport/api/set\_audio\_volume*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
audio_volume	<a href="#">audio_volume data</a>		Optional
loop_through	Int	0: disable 1: enable	Optional

#### **audio\_volume data**

Key	Type	Value	Note
volume	Int	0~50 0~15, If device is BT_MIC 254: unmute 255: mute	
type	Int	0: input 1: output	
channel	Int	0: HDMI1 1: HDMI2 2: JACK1 3: JACK2 4: BT_MIC	type input: 0 ~ 4 type output: N/A (channel parameter is not necessary or ignored.) <b>LC10X does not support 4: BT_MIC</b>

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_audio\_volume*:

<pre>{   "audio_volume" :   {</pre>
-------------------------------------

```
"volume": 50,  
"type": 0,  
"channel": 0  
}
```

Receive *set\_audio\_volume* response:

```
{  
"code":0  
}
```

### 3.5.2 Control Customised Layout

- Description:
  - Change current layout setting dynamically
  - APP can define its own layout structure.
  - **With display/record layout synchronization enabled, APP cannot set display mode.**
- URL: *http://boxip:directorport/api/set\_layout\_customised*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
mode	Int	0: display 1: record 2: display and record	
layout	<a href="#">channel layout data</a> Array		<i>channel_layout</i> data is defined in 3.3.8

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_layout\_customised*:

```
{
  "mode":0
  "layout":
  [
    {
      "channel" : 0,
      "w" : "0.5",
      "h" : "0.5",
      "x" : "0",
      "y" : "0",
      "z" : 0,
      "windowmode":3
    },
    {
      "channel" : 1,
      "w" : "0.5",
      "h" : "0.5",
      "x" : "0.5",
      "y" : "0",
      "z" : 0,
      "windowmode":2
    }
  ]
}
```



```
},  
{  
  "channel" : 2,  
  "w" : "0.5",  
  "h" : "0.5",  
  "x" : "0",  
  "y" : "0.5",  
  "z" : 1,  
  "windowmode":0  
},  
{  
  "channel" : 3,  
  "w" : "0.5",  
  "h" : "0.5",  
  "x" : "0.5",  
  "y" : "0.5",  
  "z" : 2,  
  "windowmode":1  
}  
]  
}
```

Receive *set\_layout\_customised* response:

```
{  
  "code":0  
}
```

### 3.5.3 Control Layout by Id

- Description:
  - Change predefined layout with layout\_id
  - **With display/record layout synchronization enabled, APP cannot set display mode.**
- URL: *http://boxip:directorport/api/set\_layout\_by\_id*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
layout_control	<a href="#">layout_control data</a>		

#### ***layout\_control data***

Key	Type	Value	Note
mode	Int	0: display 1: record	
layout_id	Int	1 ~ 9	start from 1 which matches the number on remote controller

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_layout\_by\_id*:

```
{
  "layout_control" :
  {
    "mode" : 1,
    "layout_id" : 2
  }
}
```

Receive *set\_layout\_by\_id* response:

```
{
  "code":0
}
```

### 3.5.4 Control Record

- Description:
  - Start, pause, or stop recording
- URL: *http://boxip:directorport/api/set\_record*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
action	Int	0: start 1: pause 2: stop 3: resume	

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_record*:

```
{
  "action":0
}
```

Receive *set\_record* response:

```
{
  "code":0
}
```

### 3.5.5 Insert Keynote

- Description:
  - Insert a keynote for current recording lecture
- URL: *http://boxip:directorport/api/insert\_keynote*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
description	String		the descriptoin will be shown on UI
tag	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *insert\_keynote*:

```
{
  "description": "ch1",
  "tag": "teacher_highligh"
}
```

Receive *insert\_keynote* response:

```
{
  "code": 0
}
```

### 3.5.6 Snapshot

- Description:
  - Take a snapshot for current recording video
- URL: *http://boxip:directorport/api/snapshot*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
mode	Int	0: display 1: record	

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
filename	String		

- Example:  
Send Method *snapshot*:

```
{
  "mode":1
}
```

Receive *snapshot* response:

```
{
  "code":0,
  "filename":"2014_01_13_14_41_24.jpg"
}
```

### 3.5.7 Control Director

- Description:
  - Control director enable or disable
- URL: *http://boxip:directorport/api/set\_director*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
channel	Int	channel number: 0 ~ 3 main channel number: 4	channel is defined in [ <a href="#">channels</a> ] of 3.3.1 start from 0 main channel content is the same as streaming
enable	Int	0: disable 1: enable	

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
director	<a href="#">director ipout</a> data		defined in 3.3.7

- Example:  
Send Method *set\_director*:

```
{
  "channel" : 0,
  "enable":1
}
```

Receive *set\_director* response:

```
{
  "code":0,
  "director":
  {
    "channel" : 0,
    "enable":1,
    "url" : "rtp://192.168.0.4:1234",
    "format" : 0
  }
}
```

### 3.5.8 Cancel Action

- Description:
  - Cancel current action including playback, record, export, and download
  - It also can kill session of Web Admin or Director.
- URL: *http://boxip:directorport/api/cancel\_action*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *cancel\_action*:

Receive *cancel\_action* response:

```
{
  "code":0
}
```

### 3.5.9 Control Backup

- Description:
  - Start or stop backup operation with current setting
  - **This API is only supported in firmware versions which don't support background upload.**
- URL: *http://boxip:directorport/api/set\_backup*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
action	Int	0: start 1: pause 2: stop 3: resume	pause and resume are not supported
programs	String Array		filename array

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:

Send Method *set\_backup*:

```
{
  "action":0,
  "programs":
  [
    "2014_01_13_14_41_24.ts"
  ]
}
```

Receive *set\_backup* response:

```
{
  "code":0
}
```



### 3.5.10 Test Backup

- Description:
  - Test backup operation with current setting
- URL: *http://boxip:directorport/api/test\_backup*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
mode	Int	0: FTP 1: Media Server	Media server is not supported
data	<a href="#">backup ftp data</a>		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:

Send Method *test\_backup*:

```
{
  "mode":0
  "data":
  {
    "ip":"10.2.50.111",
    "port":1234,
    "folder":"test",
    "username":"myname",
    "password":"mypassword",
    "anonymous":0
  }
}
```

Receive *test\_backup* response:

```
{
  "code":0
}
```

### 3.5.11 Apply Sensor and Record Configuration

- Description:
  - Apply the configurations of *set\_record\_config*, *set\_storage\_config*, *set\_local\_record\_config*, *set\_stream\_config*, *upload\_logo* and *set\_sensor\_info*.
  - This operation causes engine restart which spends more time.
  - *apply\_all\_config* can be called only in MODE\_PREVIEW.
- URL: *http://boxip:directorport/api/apply\_all\_config*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter: N/A
- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:

Send Method *apply\_all\_config*:

Receive *apply\_all\_config* response:

```
{
  "code":0
}
```

## 3.6 CBox Power Control

### 3.6.1 Control Power

- Description:
  - Control power on, off, and reboot
  - Power on is not supported with current device.
- URL: *http://boxip:directorport/api/set\_power*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
action	Int	0: power off 1: power on 2: reboot	

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method:

```
{
  "action":0
}
```

Receive *set\_record* response:

```
{
  "code":0
}
```

### 3.6.2 Set Power-On Time

- Description:
  - Set device power on time. The device will be powered on when schedule time is up.
  - **Only daily power on time can be set. User cannot schedule with a specific date.**
- URL: *http://boxip:directorport/api/set\_wakeup\_time*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
time	String	date/time defined in ISO 8601	only time field is valid, so date and time zone are ignored.

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:

Send Method:

```
{
  "time":"2013-01-23T08:00:00+08:00"
}
```

Receive *set\_record* response:

```
{
  "code":0
}
```

## 3.7 Snapshot

### 3.7.1 Get Snapshot List

- Description:
  - Get snapshot list with `snapshot_info` array
  - APP can only download a part of list with parameters, start and count.
  - If name is not given, `get_snapshots` returns the snapshot files which have no lecture information. In order to get the files with lecture information, please provide name information (file name for TS version, lecture name for MP4 version).
- URL: `http://boxip:directorport/api/get_snapshots`
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
start	Int		default: 0 The first item's id is 0
count	Int		default: 65535
name	String		<b>Optional</b> The recorded file name or lecture name (mp4 version)

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
total_number	Int		get total number of snapshot pictures
snapshots	<a href="#">snapshot_info</a> data Array		

#### ***snapshot\_info data***

Key	Type	Value	Note
id	Int		
filename	String		

- Example:  
Send Method `get_snapshots`:

```
{
  "start":5,
  "count":50
}
```

Receive *get\_snapshots* response:

```
{
  "code":0,
  "total_number":40,
  "snapshots":
  [
    {
      "id":5,
      "filename":"2014_01_13_14_41_24.jpg"
    },
    {
      "id":6,
      "filename":"2014_01_13_15_45_25.jpg"
    }
  ]
}
```

### 3.7.2 Delete Snapshot

- Description:
  - Delete snapshot file in storage
- URL: *http://boxip:directorport/api/delete\_snapshot*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
filename	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *delete\_snapshot*:

```
{
  "filename": "2014_01_13_14_41_24.jpg"
}
```

Receive *delete\_snapshot* response:

```
{
  "code": 0
}
```

### 3.7.3 Download Snashot

- Description:
  - Get the URL of snapshot file
- URL: *http://boxip:directorport/api/download\_snapshot*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
filename	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
url	String		

- Example:  
Send Method *download\_snapshot*:

```
{
  "filename": "2014_01_13_14_41_24.jpg"
}
```

Receive *download\_snapshot* response:

```
{
  "code": 0,
  "url": "http://192.168.0.111:8888/2014_01_13_14_41_24.jpg"
}
```



## 3.8 Recorded Programs

### 3.8.1 Get Program List

- Description:
  - Get recorded program list with *program data* array
  - APP can only download a part of list with parameters, start and count.
- URL: *http://boxip:directorport/api/get\_programs*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
start	Int		default: 0 The first item's id is 0
count	Int		default: 65535

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
total_number	Int		total number of recorded programs
programs	<a href="#">program data</a> Array		

#### ***program data***

Key	Type	Value	Note
id	Int		
filename	String		
duration	Int	in second	
backup_status	Int	0: ready 1: completed 2: in progress 3: failed 4: canceled	

- Example:

Send Method *get\_programs*:

```
{  
  "start":3,  
  "count":2  
}
```

Receive *get\_programs* response:

```
{  
  "code":0,  
  "total_number":50,  
  "programs":  
  [  
    {  
      "id":3,  
      "filename":"2014_01_13_14_41_24.ts",  
      "duration":3600,  
      "backup_status":0  
    },  
    {  
      "id":4,  
      "filename":"2014_01_13_15_45_25.ts",  
      "duration":36000,  
      "backup_status":0  
    }  
  ]  
}
```

### 3.8.2 Get Program Information

- Description:
  - Get program information which includes recording time and lecture data
- URL: *http://boxip:directorport/api/get\_program\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
filename	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
program_info	<a href="#">program_info</a> data		

#### ***program\_info data***

Key	Type	Value	Note
school	String		
department	String		
schoolyear	String		
semester	String		
lesson	String		
grade	String		
class	String		
room	String		
category	String		
teacher	String		
section	String		

description	String		
start_time	String	date/time defined in ISO 8601	read-only
end_time	String	date/time defined in ISO 8601	read-only
last_update	String	date/time defined in ISO 8601	read-only
duration	Int	in second	read-only

- Example:  
Send *get\_program\_info* request:

```
{
  "filename":"2014_01_13_14_41_24.ts"
}
```

Receive *get\_program\_info* response:

```
{
  "code":0,
  "program_info":
  {
    "school":"Taiwan University",
    "department":"CSIE",
    "schoolyear":"2014",
    "semester":"Fist-half",
    "lesson":"Computer Architecture",
    "grade":"1",
    "class":"B",
    "room":"104",
    "category":"Computer",
    "teacher":"MR. Ma",
    "section":"chapter 3",
    "description":"Computer Architecture Description",
    "start_time":"2013-01-23T08:00:00+08:00",
    "end_time":"2013-01-23T10:00:00+08:00",
    "last_update":"2013-01-23T10:00:00+08:00",
    "duration":1000
  }
}
```

### 3.8.3 Set Program Information

- Description:
  - Modify the program information
  - The recording time can't be changed.
- URL: *http://boxip:directorport/api/set\_program\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
filename	String		
program_info	<a href="#">program_info</a> data		start_time, end_time, last_update, and duration can not be modified

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_program\_info*:

```
{
  "filename": "2014_01_13_14_41_24.ts",
  "program_info":
  {
    "school": "Taiwan University",
    "department": "CSIE",
    "schoolyear": "2014",
    "semester": "Fist-half",
    "lesson": "Computer Architecture",
    "grade": "1",
    "class": "B",
    "room": "104",
    "category": "Computer",
    "teacher": "MR. Ma",
    "section": "chapter 3",
    "description": "Computer Architecture Description"
  }
}
```

Receive *set\_program\_info* response:

```
{
  "code": 0
}
```

### 3.8.4 Delete Program

- Description:
  - Delete a recorded program in storage
- URL: *http://boxip:directorport/api/delete\_program*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
filename	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *delete\_program*:

```
{
  "filename": "2014_01_13_14_41_24.ts"
}
```

Receive *delete\_program* response:

```
{
  "code": 0
}
```

### 3.8.5 Download Program

- Description:
  - Download a program via HTTP
  - The API only returns the URL of the file, so APP needs create another process to download file with HTTP Get Method.
  - APP can only get a part of file with Range parameter in HTTP Headers.
  - In download mode, some operations can't be executed, so APP needs to leave download mode with action "stop" to finish or cancel current downloading. In order to download another program, stop action is necessary as well.
  - Only 1 file can be downloaded at the same time due to limitation of CBox CPU.
- URL: *http://boxip:directorport/api/download\_program*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
action	Int	0: start 1: pause 2: stop 3: resume	pause and resume are not supported.
filename	String		only for action start

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
url	String		only for action start
url_thumbnail	String		thumbnail of this recorded video only for action start
filesize	Int	in Byte	only for action start

- Example:  
Send Method *download\_program*:

```
{
  "filename": "2014_01_13_14_41_24.ts",
  "action": 0
}
```

Receive *download\_program* response:

```
{
  "code":0,
  "url":"http://192.168.0.111:8888/rec/2014_01_13_14_41_24.ts",
  "url_thumbnail":"http://192.168.0.111:8888/rec/2014_01_13_14_41_24.jpg",
  "filesize":20000000
}
```

- Download the File:
  - HTTP Method: Get
  - Session Cookie: No
  - Request Header Parameter:

Key	Value	Note
Range	Byte=first_byte_pos "-" last_byte_pos	optional last_byte_pos is optional

- Example of the Request Headers:

```
GET /statics/download/2014_11_20_03_44_17.ts HTTP/1.1
Host: 10.2.50.140
Connection: keep-alive
...
Range: Byte=2000-2020
Accept: */*
...
```



### 3.8.6 Get Keynote

- Description:
  - get keynote list of a recorded lecture
- URL: *http://boxip:directorport/api/get\_keynotes*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
filename	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
total_number	Int		
keynotes	<a href="#">keynote data</a> Array		

#### ***keynote data***

Key	Type	Value	Note
id	Int		keynote id start from 0
description	String		
tag	String		
time	Int	in millisecond	

- Example:  
Send Method *get\_keynotes*:

```
{
  "filename": "2014_01_13_14_41_24.ts"
}
```

Receive *get\_keynotes* response:

```
{
  "code": 0,
```

```
  "total_number":2,  
  "keynotes" :  
  [  
    {  
      "id":0,  
      "description":"ABC",  
      "tag":"teacher",  
      "time":5000000  
    },  
    {  
      "id":1,  
      "description":"DEF",  
      "tag":"student",  
      "time":6000000  
    }  
  ]  
}
```

## 3.9 Recorded Lectures - MP4 Version

The recorded format, ts or mp4, is defined with CBox model. If your CBox is ts version, access recorded files with APIs defined in [3.8 Recorded Programmes](#). Otherwise, use APIs defined in 3.9 Recorded Lectures - MP4 Version.

### 3.9.1 Get Recorded Lecture List

- Description:
  - Get recorded lecture list with *lecture data* array
  - APP can get only a part of list with parameters, start and count.
  - **The video URLs will be invalid when recording a lecture.**
- URL: *http://boxip:directorport/api/get\_rec\_lectures*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
start	Int		default: 0 The first item's id is 0
count	Int		default: 65535

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
total_number	Int		total number of recorded programs
data	<a href="#">rec_lecture</a> data Array		

#### ***rec\_lecture data***

Key	Type	Value	Note
id	Int		
name	String		
duration	Int	in second	

backup_status	Int	0: ready 1: completed 2: in progress 3: failed 4: canceled	
url_thumbnail	String		
url_movie	String		
url_movie_stream	String		

- Example:  
Send request:

```
{
  "start":3,
  "count":2
}
```

#### Response:

```
{
  "code":0,
  "total_number":50,
  "data":
  [
    {
      "id":3,
      "name":"2014_01_13_14_41_24",
      "duration":3600,
      "backup_status":0,
      "url_movie":"http://192.168.0.111:8888/rec/movie_2014_01_13_14_41_24.mp4",
      "url_movie_stream":"http://192.168.0.111:8888/rec/movie_2014_01_13_14_41_24.pbk",
      "url_thumbnail":"http://192.168.0.111:8888/rec/2014_01_13_14_41_24.jpg"
    },
    {
      "id":4,
      "name":"2014_01_13_15_45_25",
      "duration":36000,
      "backup_status":0,
      "url_movie":"http://192.168.0.111:8888/rec/2014_01_13_15_45_25.mp4",
      "url_movie_stream":"http://192.168.0.111:8888/rec/2014_01_13_15_45_25.jpg",
      "url_thumbnail":"http://192.168.0.111:8888/rec/2014_01_13_15_45_25.jpg"
    }
  ]
}
```

### 3.9.2 Get Recorded Lecture Information

- Description:
  - Get lecture information which includes recording time, download path, and lecture data
- URL: *http://boxip:directorport/api/get\_rec\_lecture\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
name	String Array		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
rec_lecture_info	<a href="#">rec_lecture_info</a> data Array		

#### rec\_class\_info data

Key	Type	Value	Note
school	String		
department	String		
schoolyear	String		
semester	String		
lesson	String		
grade	String		
class	String		
room	String		
category	String		

teacher	String		
section	String		
description	String		

**rec\_time\_info data**

Key	Type	Value	Note
start_time	String	date/time defined in ISO 8601	
end_time	String	date/time defined in ISO 8601	
last_update	String	date/time defined in ISO 8601	
duration	Int	in second	

**rec\_file\_info data**

Key	Type	Value	Note
type	Int	0: movie 1: resource 2: thumbnail 3: data 255: others	
filename	String		
stream	String		
filesize	Int	in Byte	

**rec\_lecture\_info data**

Key	Type	Value	Note
name	String		
rec_class_info	<a href="#">rec_class_info</a> data		
rec_time_info	<a href="#">rec_time_info</a> data		
rec_file_info	<a href="#">rec_file_info</a> data Array		

- Example:  
Send request:

```
{
  "name":
  [
    "2014_01_13_14_41_24"
  ]
}
```

### Response:

```
{
  "code":0,
  "rec_lecture_info":
  [
    {
      "name":"2014_01_13_14_41_24"
      "rec_class_info":
      {
        "school":"Taiwan University",
        "department":"CSIE",
        "schoolyear":"2014",
        "semester":"Fist-half",
        "lesson":"Computer Architecture",
        "grade":"1",
        "class":"B",
        "room":"104",
        "category":"Computer",
        "teacher":"MR. Ma",
        "section":"chapter 3",
        "description":"Computer Architecture Description"
      },
      "rec_time_info":
      {
        "start_time":"2013-01-23T08:00:00+08:00",
        "end_time":"2013-01-23T10:00:00+08:00",
        "last_update":"2013-01-23T10:00:00+08:00",
        "duration":1000
      },
      "rec_file_info":
      [
        {
          "type":0
          "filename":"http://192.168.0.111:8888/rec/movie_2014_01_13_14_41_24.mp4",
          "stream":"http://192.168.0.111:8888/rec/movie_2014_01_13_14_41_24.pbk",
          "filesize":2000000000
        },
        {
          "type":1
          "filename":"http://192.168.0.111:8888/rec/ch0_teacher_2014_01_13_14_41_24.mp4",
          "stream":"http://192.168.0.111:8888/rec/ch0_teacher_2014_01_13_14_41_24.pbk",
          "filesize":2000000000
        }
      ]
    }
  ]
}
```

```
{
  "type":1
  "filename":"http://192.168.0.111:8888/rec/ch1_vga_2014_01_13_14_41_24.mp4",
  "stream":"http://192.168.0.111:8888/rec/ch1_vga_2014_01_13_14_41_24.pbk",
  "filesize":1000000
},
{
  "type":2
  "filename":"http://192.168.0.111:8888/movie_2014_01_13_14_41_24.jpg",
  "stream": "",
  "filesize":323000
}
]
}
]
```



### 3.9.3 Set Recorded Lecture Information

- Description:
  - Modify the recorded lecture information
  - Some items are read-only and can't be modified.
- URL: *http://boxip:directorport/api/set\_rec\_lecture\_info*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
rec_lecture_info	<a href="#">rec_lecture_info</a> data Array		only <a href="#">rec_class_info</a> can be modified

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send request:

```
{
  "rec_lecture_info":
  [
    {
      "name":"2014_01_13_14_41_24",
      "rec_class_info":
      {
        "school":"Taiwan University",
        "department":"CSIE",
        "schoolyear":"2014",
        "semester":"Fist-half",
        "lesson":"Computer Architecture",
        "grade":"1",
        "class":"B",
        "room":"104",
        "category":"Computer",
        "teacher":"MR. Ma",
        "section":"chapter 3",
      }
    }
  ]
}
```

```
"description":"Computer Architecture Description"  
  }  
}  
]  
}
```

*Response:*

```
{  
  "code":0  
}
```

### 3.9.4 Delete Recorded Lecture

- Description:
  - Delete a recorded lecture in storage
- URL: *http://boxip:directorport/api/delete\_rec\_lecture*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
name	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send request:

```
{
  "name": "2014_01_13_14_41_24"
}
```

Response:

```
{
  "code": 0
}
```

### 3.9.5 Get Recorded Lecture Keynote

- Description:
  - get keynote list of a recorded lecture
- URL: *http://boxip:directorport/api/get\_rec\_lecture\_keynotes*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
name	String		

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.
total_number	Int		
keynotes	<a href="#">keynote data</a> Array		

- Example:  
Send request:

```
{
  "name": "2014_01_13_14_41_24"
}
```

Response:

```
{
  "code": 0,
  "total_number": 2,
  "keynotes": [
    {
      "id": 0,
      "description": "ABC",
      "tag": "teacher",
      "time": 5000000
    },
    {
      "id": 1,
      "description": "DEF",
      "tag": "student",
      "time": 6000000
    }
  ]
}
```

```
} ]
```

## 4 Callback

### 4.1 Set Callback

- Description:
  - Set callback url
  - Set empty string to disable current callback
- URL: *http://boxip:directorport/api/set\_callback*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
url	String	http://	set empty string to disable callback

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong.

- Example:  
Send Method *set\_callback*:

```
{
  "url": "http://192.168.0.100:8080/callback"
}
```

Receive *set\_callback* response:

```
{
  "code": 0
}
```

## 4.2 Callback Definition

- Description:
  - Callback code definition
- HTTP Method: POST
- Response:

Key	Type	Value	Note
code	Int	Return Code	defined in Appendix: Return Code 0 if it is not an error.
callback_code	Int		defined in <a href="#">callback_code</a> table
description	String		
data	<a href="#">record_mode data</a> or <a href="#">export_mode data</a> or <a href="#">storage data</a>		

### ***callback\_code table***

callback_code	Description	Data	Note
16 (0x10)	System boot up	N/A	code is 0
17	System shut down	N/A	code is 0
48 (0x30)	Export is started	<a href="#">export_mode data</a>	
49	Export is stopped	<a href="#">export_mode data</a>	for example, code may be: 0: successfully -10: file error -16: network error -18: stopped by users
64 (0x40)	Record is started	<a href="#">record_mode data</a>	
65	Record is stopped	<a href="#">record_mode data</a>	for example, code may be: -10: file error -16: network error
66	Record is paused	<a href="#">record_mode data</a>	
67	Record is resumed	<a href="#">record_mode data</a>	
144 (0x90)	Disk is plugged in	<a href="#">storage data</a>	code is 0
145	Disk is plugged out	<a href="#">storage data</a>	code is 0
146	Disk is full		code is 0

- Example:

```
{
  "code":-10,
  "callback_code":65,
  "description":"record is stopped due to file error",
  "data":
  {
    "time":7212,
    "remain_time":155009,
    "hdd_space":50000000,
    "filename":"2014_01_13_14_41_24.ts",
    "stream_url":"rtp://192.168.0.111:1234"
  }
}
```



### 4.3 Test Callback

- Description:
  - Test callback with given string
  - CBox sends HTTP request after calling this API, but the API doesn't return response of callback server.
  - Callback server receives all the request parameters which are just for test.
- URL: *http://boxip:directorport/api/test\_callback*
- HTTP Method: POST
- Session Cookie: Yes
- Request Parameter:

Key	Type	Value	Note
code	Int		the value will be sent to callback server.
callback_code	Int		the value will be sent to callback server.
description	String		the value will be sent to callback server.
data	String		the value will be sent to callback server.

- Response:

Key	Type	Value	Note
code	Int	error code	0 is successful. Others means something wrong. The response is from CBox itself, not from callback server.

- Example:

Send Method *test\_callback*:

```
{
  "code":144,
  "callback_code":222,
  "description":"Test Description",
  "data":"Test data"
}
```

Receive *test\_callback* response:

```
{
  "code":0
}
```

## 5 Device Search - SSDP

### 5.1 M-Search

CBox adopts SSDP (Simple Service Discovery Protocol) for device search. For CBox device search, APP needs to send a M-SEARCH with ST (search target), "CBox", and then get responses from CBoxes. The response has Location item which indicates url of capability JSON. With capability, APP can get more detailed device information.

- Request:

Key	Value	Description
HOST	239.255.255.250:1900	fixed value
MAN	ssdp:discover	fixed value
MX		seconds to delay response
ST	CBox	search target fixed value

- Response:

Key	Value	Description
Location	http://aaa.bbb.ccc.ddd:port/capability.json	URL for description of device
Ext		nothing from CBox
USN		advertisement UUID
Server	CBoxOS/Version UPNP/1.0 CBox/version	
Cache-Control	max-age =	seconds until advertisement expires
ST	CBox	search target

- Example:  
M-Search Request:

```
M-SEARCH * HTTP/1.1
HOST: 239.255.255.250:1900
MAN: "ssdp:discover"
ST: CBox
MX: 3
```

**Response:**

Location: <http://10.2.50.133:2345/capability.json>  
Ext:  
USN: CBox-MAC-BC:BA:E1:02:00:7A  
Server: CBoxOS/1.0 UPnP/1.0 CBox/1.0  
Cache-Control: max-age=15  
ST: CBox

## 5.2 ssdp:alive

CBox sends ssdp:alive message regularly. The message contains similar information as response of M-Serch.

- ssdp:alive message:

Key	Value	Note
Host	239.255.255.250:1900	fixed value
Cache-Control	max-age =	seconds until advertisement expires
Location	http://aaa.bbb.ccc.ddd:port/capability.json	URL for description of device
NTS	ssdp:alive	fixed value
NT	CBox	target
USN		advertisement UUID

- Example:

```
NOTIFY * HTTP/1.1
Host: 239.255.255.250:1900
Cache-Control: max-age=15
Location: http://10.2.50.133:2345/capability.json
NTS: ssdp:alive
NT: CBox
USN: CBox-MAC-BC:BA:E1:02:00:7A
```

## 5.3 Device Capability

CBox responses device capability from Location item of sddp message.

- capability data:

Key	Type	Value	Note
Version	String		
NotifUrl	String	http://aaa.bbb.ccc.ddd:port/notif	
Name	String		
Ip	String	aaa.bbb.ccc.ddd	
MAC	String		
Model	String		
Manufacture	String		
SerialNumber	String		
DeviceVersion	String		device firmware version number
AdminUrl	String	http://aaa.bbb.ccc.ddd:port	Web Admin URL
ApiUrl	String	http://aaa.bbb.ccc.ddd/api	HTTP API URL

- Example:

```
{
  "Version": "1.0",
  "NotifUrl": "http://10.2.50.133:2345/notif",
  "Name": "Lumens-VS-LC101",
  "IP": "10.2.50.133",
  "MAC": "BC:BA:E1:02:00:0E",
  "Model": "CaptureVision",
  "Manufacture": "Lumens Digital Optics Inc.",
  "SerialNumber": "7788",
  "DeviceVersion": "v3.2.5.13",
  "AdminUrl": "http://10.2.50.133:8888",
  "ApiUrl": "http://10.2.50.133/api"
}
```

## Appendix: Return Code

Code	Title	Description
0	Successful	
-1	Error	general error
-2	Not Support	the API is not supported.
-3	Parameter error or out of range	number is out of range or string length is too long.
-4	Hardware error	
-5	Not in this mode	the command is not supported in current mode.
-6	No Such File	
-7	Incorrect timestamp	
-8	Export parameter error	
-9	RTMP error	
-10	File error	File read/write error (ex. disk full, ...)
-11	HLS error	
-12	Invalid tail video	
-13	Invalid head video	
-14	Authorization error	login is needed for this command.
-15	Device is busy	busy in starting/stopping record
-16	Network error	network is disconnected or not responded
-17	Incorrect logo file	incorrect file size, image size, or image format
-18	Stopped by users	
-19	JSON error	incorrect JSON structure
-20	Incompatible setting	for example, enable streaming, but streaming setting is not set currently.
-30	ftp port failed	active mode is not supported
-31	ftp login denied	
-32	ftp access denied	
-33	ftp could not connect	

-34	ftp send error	
-35	ftp timed out	
-36	ftp exceeded storage allocation	
-37	Invalid sensor source setting	ex. IP camera source can be added only if it is added.
-50	MSR backup unkown error	
-51	MSR login denied	
-52	MSR backup access denied	
-53	MSR backup could not connect	
-54	MSR backup send error	
-55	MSR backup timeout	
-56	MSR backup exceeded storage allocation (disk full)	
-57	MSR backup invalid file format	
-58	MSR backup protocol error	
-59	MSR not registered	

o