1. JPEG image commands

1.1 Get one JPEG image

Method: Get
URL: HTTP://camera_ip/jpg/image.jpg
Return: One JPEG image will be transferred to client.

1.2 Get one JPEG image without any authentication

Method: Get
URL: HTTP://camera_ip/loginfree.jpg
Return: One JPEG image will be transferred to client.
Note: User maybe change the loginfree filename.

1.3 Get one JPEG video stream

Method: Get
URL: HTTP://camera_ip/mjpg/video.mjpg
Return: One multipart JPEG video stream will be transferred to client.
Format:
HTTP/1.0 200 OK\r\nContent-Type: multipart/x-mixed-replace;
boundary=myboundary\r\n
\r\n--myboundary\r\nContent-Type: image/jpeg\r\nContent-Length: 15656\r\n
\r\n<JPEG image data>\r\n
--myboundary\r\nContent-Type: image/jpeg\r\nContent-Length: 14978\r\n
\r\n<JPEG image data>\r\n
--myboundary\r\nContent-Type: image/jpeg\r\nContent-Length: 15136\r\n
\r\n<JPEG image data> \ldots \ldots
2. System commands

2.1 Get system information and configuration

2.1.1 Get image properties supported by camera
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list &group=Properties.Image
Return: Image resolution, flipmode and format supported by camera
Example:
root.Properties.Image.FlipMode=1
root.Properties.Image.Resolution=1280x1024,1024x768,640x480,320x240
root.Properties.Image.Format=mjpeg,mpeg4
Description: Camera support flipmode, supports 4 kinds of resolution and supports MJPEG and MPEG4 format.

2.1.2 Get MJPEG image properties supported by camera
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list &group=Properties.Image.I0
Return: Image resolution, flipmode and format supported by camera
Example:
root.Properties.Image.I0.FlipMode=1
root.Properties.Image.I0.Resolution=1280x1024,640x480,320x240
root.Properties.Image.I0.Format=mjpeg
Description: Camera support flipmode, supports 3 kinds of resolution and supports MJPEG format.

2.1.3 Get MPEG4 image properties supported by camera
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list &group=Properties.Image.I1
Return: Image resolution, flipmode and format supported by camera
Example:
root.Properties.Image.I1.FlipMode=1
root.Properties.Image.I1.Resolution=1024x768,640x480,320x240
Description: Camera support flipmode, supports 3 kinds of resolution and supports MPEG4 format.

2.1.4 Get current camera configuration of resolution and JPEG quality
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list &group=Image.I0.Appearance
Return: Current configuration of JPEG resolution and JPEG quality
Example:
root.Image.I0.Appearance.Resolution=640x480
root.Image.I0.Appearance.Compression=0
Compression: value range is 0~4
  0:low 4:high

2.1.6 Get current camera configuration of resolution and MPEG4 quality
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
            &group=Image.I1.Appearance
Return: Current configuration of JPEG resolution and JPEG quality
Example:
root.Image.I1.Appearance.stats=compression
stats: compression for VBR, bitrate for CBR
Compression: value range is 11~9 (Lowest:11, Low:9, Normal:7, High:5, Highest:3)

2.1.7 Get current FPS value of MJPEG camera
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
            &group=Image.I0.Stream
Return: Current FPS value of camera (frame rate per second)
Example:
Image.I0.Stream.FPS=15
MJPEG only.

2.1.7 Get current FPS value of MPEG4 camera
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
            &group=Image.I1.Stream
Return: Current FPS value of camera (frame rate per second)
Example:
Image.I1.Stream.FPS=15
MPEG4 only.

2.1.8 Get default video format
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
            &group=Layout
Return: Camera default video format (mjpeg or mpeg4 video mode)
Example:
2.1.9 Get information about the brand
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
       &group=Brand
Return: Information about the brand and type of camera
Example:
        root.Brand.Brand=Hama GmbH & Co. KG
        root.Brand.ProdFullName=Hama Wireless IP Camera
        root.Brand.ProdShortName=IP - Cam M360
        root.Brand.ProdNbr=00053104
        root.Brand.ProdType=Wireless Lan IP Camera

2.1.10 Get hardware MAC address of camera
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
       &group=Network.Interface.I0.Active.MACAddress
Return: Hardware MAC address of camera
Example:
        Network.Interface.I0.Active.MACAddress=00:11:09:15:10:AB

2.1.11 Get Firmware Version, Model ID and Vendor ID
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
       &group=Properties.Firmware
Return: Firmware version, Model ID and Vendor ID of camera
Example:
        Properties.Firmware.Version=v1.32
        Properties.Firmware.ModelID=12
        Properties.Firmware.VendorID=1

2.1.12 Get web port number
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
       &group=System.HTTPPort
Return: web port number
Example:
        System.HTTPPort=80

2.1.13 Get private video port number
Method: Get
2.1.14 Get MaxUsers and CurrentUsers Number
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list&group=Properties.VideoServer
Return: MaxUsers and CurrentUsers Number
Example:
Properties.VideoServer.MaxUsers=16

2.2 Set system configuration
2.2.1: Set resolution of MJPEG camera
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=update&Image.I0.Appearance.Resolution=Width X Height
Parameters: 1280x1024, 640x480, 320x240
Example: Set resolution to 320X240
MJPEG only.

2.2.2: Set resolution of MPEG4 camera
Method: Get
Parameters: 1024x768, 640x480, 320x240
Example: Set resolution to 320X240
MPEG4 only.

2.2.3: Set JPEG compression level
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=update&Image.I0.Appearance.Compression=Compression Level
Parameters: value range is 0~4
0:low 4:high
Example: Set compression level to high
http://192.168.2.114/camera-cgi/admin/param.cgi?action=update
&Image.I0.Appearance.Compression=4

2.2.4 Set MPEG4 video quality
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=update
&Image.I1.Appearance.stats=State
Parameters: State: 1-VBR 0-CBR

Example: Set MPEG4 video quality to CBR
http://192.168.2.114/camera-cgi/admin/param.cgi?action=update
&Image.I1.Appearance.stats=0

2.2.5 Set MPEG4 CBR Bitrate
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=update
&Image.I1.Appearance.bitrate=Bitrate
Parameters: Bitrate: 2000000(2M bps)、1500000(1.5M bps)、1000000(1M bps)、800000(800K bps)、500000(500K bps)、400000(400K bps)、300000(300K bps)、250000(250K bps)、200000(200K bps)

Example: Set MPEG4 CBR Bitrate to 800K bps

2.2.6 Set MPEG4 VBR Compression
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=update
&Image.I1.Appearance.Compression=Compression Level
Parameters: Compression Level: 13(Lowest)、11(Low)、9(Normal)、7(High)、5(Highest)

Example: Set MPEG4 VBR Compression to Normal
http://192.168.2.114/camera-cgi/admin/param.cgi?action=update
&Image.I1.Appearance.Compression=9

2.2.7 Set MJPEG camera FPS
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=update
&Image.I0.Stream.FPS=FPS
Parameters: 1, 3, 5, 10, 15, 30
Example: Set FPS to 15
2.2.8 Set MPEG4 camera FPS
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=update
&Image.I1.Stream.FPS=FPS
Parameters: 3, 5, 10, 15
Example: Set FPS to 15
http://192.168.2.114/camera-cgi/admin/param.cgi?action=update
&Image.I1.Stream.FPS=15
MPEG4 only.

2.2.9 Set Default Video Format to MJPEG or MPEG4
Method: Get
&enet_avs_default_dual_mode=Mode
Parameters: 0: MJPEG
1: MPEG4
&enet_avs_default_dual_mode=1

2.2.10 Set Video Flip Mode
Method: Get
URL: http://camera_ip/form/enet?enet_source=cp.asp&
    enet_avs_flip_mode=n
Parameters: n= 0: Normal
1: Vertical mirror
2: Horizontal mirror
3: Rotate 180
Example: Set Flip mode to Rotate 180
enet_avs_flip_mode=3

3. Audio commands
3.1 Request an audio stream.
Method: Get
URL: http://camera_ip/camera-cgi/audio/receive.cgi
Return: Get a Multipart Audio data stream from IPCam.
Format:
HTTP/1.0 200 OK\r\n
3.2 Get Audio Status.
Method: Get
URL: HTTP://camera_ip/camera-cgi/admin/param.cgi?action=list&
group=Properties.Audio
Return: Audio and TwoWayAudio Status( yes or disabled )
Example:
Properties.Audio=yes
Properties.Audio.TwoWayAudio=yes
Properties.Audio.AudioCodec=GSM 06.10
Properties.Audio.TwoWayAudioCodec=GSM 06.10

3.3 Set Audio Volume
Method: Get
 &enet_audio_enable=[No, Yes]
 &enet_audio_mic_vol=[0-100]
 &enet_audio_output_vol=[0-100]
Parameters:
enet_audio_enable: No: Disable audio function
   Yes: Enable audio function
enet_audio_mic_vol: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
enet_audio_output_vol: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100
4. **PTZ commands**

4.1 Move the image in the specified direction
Method: Get
URL: `http://camera_ip/camera-cgi/com/ptz.cgi?move=direction`
Parameters:
   - direction: left, right, up, down, upleft, upright, downleft, downright, center

Example:
`http://192.168.2.114/camera-cgi/com/ptz.cgi?move=left`

4.2 Move the image to preset point
Method: Get
URL: `http://camera_ip/camera-cgi/com/ptz.cgi?gotoserverpresetIndex=idx`
Parameters:
   - idx: Preset point index

Example:
`http://192.168.2.114/camera-cgi/com/ptz.cgi?gotoserverpresetIndex=1`

4.3 Add a preset point with current image coordinate and zoom configuration
Method: Get
URL: `http://camera_ip/camera-cgi/com/ptzconfig.cgi?setserverpresetname=name&presetNo=idx`
Parameters:
   - name: Preset point name
   - idx: add preset point to idx of array

Example:

4.4 Remove a preset point
Method: Get
URL: `http://camera_ip/camera-cgi/com/ptzconfig.cgi?removeserverpresetname=name&presetNo=idx`
Parameters:
   - name: Preset point name
   - idx: remove preset point from idx of array

Example:
`http://192.168.2.114/camera-cgi/com/ptzconfig.cgi?removeserverpresetname=myroom&presetNo=3`

4.5 Get PTZ status
Method: Get
URL: http://camera_ip/camera-cgi/admin/param.cgi?action=list
    &group=Properties.PTZ.PTZ
Return: the status of PTZ
Example:
Properties.PTZ.PTZ=yes

4.6 Set PT Speed
Method: Get
    URL: http://camera_ip/form/enet?enet_source=cp.asp&
        enet_avs_pt_speed=n
Parameters: n= 1(fast) ,3 ,5 ,7, 9(slow)
Example:
    enet_avs_pt_speed=3