

WELDEX HTTP API Specification

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Revision History

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0.1	2010-12-14	Sungho Jang	Add JPEG & MJPG
0.2	2011-03-25	Eunbong Jung	Add PTZ and Fix document error
0.3	2011-04-11	Eunbong Jung	Add function
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0.5	2011-10-21	GH shin	Added Bar-Code interface
0.6	2012-04-12	bkkim@weldex.com	Simplification and omission.
0.7	2014-02-12	"	Firmware update description
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0.8.1	2014-03-20	"	Added device_info.fwversion
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0.9.1	2015-12-04	"	Added H264 Profile change function (3.2.1, 4.1.1, 5.2)
0.9.2	2016-04-29	"	Added NTP/Manual function

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1. Overview

Interface is based on HTTP. This document defines the Interface between WELDEX IP CAMERA and the Application.

HTTP-based Interface parameters can be updated/queried/controlled.

1.1. General CGI URL syntax

Texts in the < > and [] specify information that are actually being used in the environment. If no information is provided in the [], it can be omitted.

There are two parameter transmission types: <parameter>=<value> and XML. Table 1,2 contains examples.

Request	http://<servername>:HTTP_PORT[/<subdir>]/<cgi>.<ext>[?<action>=<value>&<argument>=<value>...]
Return	HTTP Code: <code> Content-Type: <type> <parameter>=<value> <parameter>=<value> <parameter>=<value> ...
Example	[Request list of network] http://192.168.0.201/param.cgi?action=search&param=network.mac [Return list of network] HTTP/1.1 200 OK Content-type: text/plain network.mac=00:18:9c:05:00:9a

Table 1 CGI URL Syntax (parameter)

Request	http://<servername>:HTTP_PORT[/<subdir>]/<cgi>.<ext>[?<action>=<value>&<argument>=<value>...]
Return	HTTP Code: <code> Content-Type: <type> <XML Data>
Example	[Request list of network] http://192.168.0.201/param.cgi?action=search&param=network [Return list of network] HTTP/1.1 200 OK Content-type: text/xml <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <network table_offset = "0" mac="00:18:9c:05:00:41" dhcp_enable="0" ip1="192" ip2="168" ip3="0" ip4="201" netmask1="255" netmask2="255" netmask3="255" netmask4="0" gateway1="255" gateway2="255" gateway3="255" gateway4="0" dns1="0" dns2="0" dns3="0" dns4="0" http_port="80"/> </root>

Table 2 CGI URL Syntax (XML)

2. Command Group

This table organizes in groups the parameters that can be searched and updated.

The selected group can be searched & updated as a whole, or specific parameters in a group can be searched and updated.

(Refer to the IP Camera Parameter table)

3. Search

Specific parameter

Specific parameters in the selected group can be queried, or entire parameters in the selected group can be queried.

3.1. Search parameters

If more than one parameter is queried in the selected group, the corresponding parameter's information will be returned.

If the parameter is composed of more than one row, a specific line can be updated. If no row is specified, the first row will be applied.

Method : GET

Request	http://<servername>:HTTP_PORT/param.cgi?action=search&param=<gourp.param>[&param=<group.param>...] When specifying row numbers for parameters that have more than one rows: (row : the first row is 0 and increments by 1) http://<servername>:HTTP_PORT/param.cgi?action=search&<group.param>=<row*value>[&<groupparam>=< row*value>...]
Return	HTTP Code: <code> Content-Type: <type> <parameter>=<value> <parameter>=<value> ...

3.1.1. Search single parameter

If a single parameter is queried in the selected group, the corresponding parameter's information will be returned.

Method : GET

Example	[Request] http://192.168.0.201:80/param.cgi?action=search&param=audio.enable [Return] HTTP/1.1 200 OK Content-type: text/plain audio.enable=0
---------	--

3.1.2. Search multi parameters

If more than one parameter is queried, the corresponding parameter's information will be returned.

Method : GET

Example for multi parameters	[Request] http://192.168.0.201:80/param.cgi?action=search&param=audio.enable&param=network.ip1 [Return] HTTP/1.1 200 OK Content-type: text/plain audio.enable=0 network.ip1=192
------------------------------	---

3.2. Search groups

If no parameter is specified during search, entire parameters of the selected group will be returned. The data will be converted to XML format.

The tag of the XML group name will display the parameter information's line number (in tablet offset name)

Method : GET

Request	<a href="http://<servername>:HTTP_PORT/param.cgi?action=search&param=<group>[&param=<group>...]">http://<servername>:HTTP_PORT/param.cgi?action=search&param=<group>[&param=<group>...]
Return	HTTP Code: <code> Content-Type: <type> <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <group_name parameter="value" parameter="value" ... parameter="value"/> <group_name parameter="value" parameter="value" ... parameter="value"/> ... </root>

3.2.1. Search single group

If a search is performed against a single group without specifying parameters, the entire parameters will be returned for that group.

Method : GET

Example1	[Request] http://192.168.0.201:80/param.cgi?action=search&param=audio [Return] HTTP/1.1 200 OK Content-type: text/xml <pre><?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <audio_table table_offset = "0" enable="1" volume_in="75" codec="1" sample="1" bitrate="2" bitrate_value="64000"/> </root></pre>
Example2	[Request] http://192.168.0.201:80/param.cgi?action=search&param=device_info [Return] <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <device_info table_offset = "0" serial_num="ee:aa:00:ff:ee:01" revision="20140320200836 " model="WDP-17S05MF" fwversion="0.4.9"/> </root>
Example3	[Request] http://192.168.0.201:80/param.cgi?action=search&param=venc [Return] <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <venc table_offset = "0" enable="1" fps="30" res="3" brc="2" kbps="4000" gop="30" qp="0" image_quality="0" h264_profile="1" apply="0"/> <venc table_offset = "1" enable="1" fps="30" res="3" brc="0" kbps="0" gop="0" qp="50" image_quality="0" h264_profile="1" apply="0"/> <venc table_offset = "2" enable="0" fps="0" res="0" brc="0" kbps="0" gop="0" qp="0" image_quality="0" h264_profile="1" apply="0"/> </root>
Example4	[Request] http://192.168.0.201:80/param.cgi?action=search&param=venc*1 [Return] <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <venc table_offset = "0" enable="1" fps="30" res="3" brc="0" kbps="0" gop="0" qp="50" image_quality="0" h264_profile="1" apply="0"/> </root>

3.2.2. Search multi groups

If the search is for more than one group without specifying parameters, the corresponding parameter information for each group will be returned.

Method : GET

Example	[Request] http://192.168.0.201:80/param.cgi?action=search&param=audio&param=stream
----------------	---

[Return]

HTTP/1.1 200 OK

Content-type: text/xml

```
<root>
<audio table_offset = "0" enable="1" volume_in="75" codec="1" sample="1" bitrate="2"
bitrate_value="64000"/>
<stream table_offset = "0" codec_type="3" width="720" height="480" fps="30"
rate_control="1" bitrate="4096" apply="0"/>
<stream table_offset = "1" codec_type="3" width="720" height="480" fps="15"
rate_control="2" bitrate="1024" apply="0"/>
<stream table_offset = "2" codec_type="0" width="0" height="0" fps="0" rate_control="0"
bitrate="0" apply="0"/>
</root>
```

3.2.3. Search all groups

If 'all' is used without specifying a group, entire parameters of all groups will be returned (except for upgrade and system)

Method : GET

Example	[Request] http://192.168.0.201:80/param.cgi?action=search&param=all [Return] HTTP/1.1 200 OK Content-type: text/xml <pre><?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <device_info table_offset = "0" serial_num="00:18:9c:05:00:9d" revision="20130503170246" model="WDD-4399HD" fwversion="0.4.9"/> <account table_offset = "0" user="admin" password="9999" authority="0"/> <account table_offset = "1" user="" password="" authority="9"/> <account table_offset = "2" user="" password="" authority="9"/> <account table_offset = "3" user="" password="" authority="9"/> <account table_offset = "4" user="" password="" authority="9"/> <account table_offset = "5" user="" password="" authority="9"/> <account table_offset = "6" user="" password="" authority="9"/> <account table_offset = "7" user="" password="" authority="9"/> <account table_offset = "8" user="" password="" authority="9"/> <account table_offset = "9" user="" password="" authority="9"/> <account table_offset = "10" user="" password="" authority="9"/> <account table_offset = "11" user="" password="" authority="9"/> <account table_offset = "12" user="" password="" authority="9"/> <account table_offset = "13" user="" password="" authority="9"/> <account table_offset = "14" user="" password="" authority="9"/> <account table_offset = "15" user="" password="" authority="9"/> <time table_offset = "0" server="tw.pool.ntp.org" timezone="7" refresh="0" dst="0" date="2013/05/05" time="19:31:56"/> <audio table_offset = "0" enable="0" volume_in="75" codec_type="0" sample="0" bitrate="0" bitrate_value="64000" apply="0"/> <overlay table_offset = "0" date_enable="0" time_enable="0" date_position="1" time_position="1" date_format="2" time_format="1"/> <overlay table_offset = "1" date_enable="0" time_enable="0" date_position="1" time_position="1" date_format="2" time_format="1"/> <overlay table_offset = "2" date_enable="0" time_enable="0" date_position="1" time_position="1" date_format="2" time_format="1"/> <stream table_offset = "0" codec_type="0" width="1280" height="720" fps="30" rate_control="1" bitrate="8000000" apply="0"/> <stream table_offset = "1" codec_type="1" width="1280" height="720" fps="30" rate_control="0" bitrate="75" apply="0"/> <stream table_offset = "2" codec_type="0" width="0" height="0" fps="0" rate_control="0" bitrate="0" apply="0"/> <stream_info table_offset = "0" width="1280" height="720" rtsp_port="0" name="H264" rtsp_url="/wdx/media/stream.h264"/> <stream_info table_offset = "1" width="1280" height="720" rtsp_port="0" name="MJPEG" rtsp_url="/wdx/media/stream.mjpeg"/> <stream_info table_offset = "2" width="0" height="0" rtsp_port="0" name="" rtsp_url=""> <network table_offset = "0" mac="00:18:9c:05:00:9d" dhcp_enable="0" ip1="192" ip2="168" ip3="0" ip4="63" netmask1="255" netmask2="255" netmask3="255" netmask4="0" gateway1="192" gateway2="168" gateway3="0" gateway4="1" dns1="164" dns2="124" dns3="101" dns4="2" http_port="80" apply="0"/> <lancom_table table_offset = "0" title="WDX-00189C0500B8"/> <venc table_offset = "0" enable="1" fps="25" res="3" brc="1" kbps="4000" gop="20" qp="0" image_quality="0" h264_profile="1" apply="0"/> <venc table_offset = "1" enable="1" fps="10" res="1" brc="0" kbps="0" gop="0" qp="50" image_quality="0" h264_profile="1" apply="0"/></pre>
-----------------------	---

	<pre><venc table_offset = "2" enable="0" fps="0" res="0" brc="0" kbps="0" gop="0" qp="0" image_quality="0" h264_profile="1" apply="0"/> </root></pre>
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4. Update

Specific parameters in a group or group's entire parameters can be updated.

4.1. Update parameters

If more than one parameter update is requested in the selected group, the corresponding parameters will be updated.

If the parameter is composed of more than one row, a specific line can be updated. If no row is specified, the first row will be applied.

Method : GET

Request	<a]"="" href="http://<servername>:HTTP_PORT/param.cgi?action=update&<group.param>=<value>[*value]&<group.param>=<value>...">http://<servername>:HTTP_PORT/param.cgi?action=update&<group.param>=<value>[*value]&<group.param>=<value>...] When specifying row numbers for parameters that have more than one rows: (row : the first row is 0 and increments by 1) <a href="http://<servername>:HTTP_PORT/param.cgi?action=update&<group.param>=<row*value>[&<group.param>=<row*value>...]">http://<servername>:HTTP_PORT/param.cgi?action=update&<group.param>=<row*value>[&<group.param>=<row*value>...]
Return	HTTP Code: <code> Content-Type: <type> <parameter>=<value> <parameter>=<value> ...

4.1.1. Update single parameter

If a single parameter update is requested in the selected group, the corresponding parameter's information will be updated.

Method : GET

Example1	[Request] http://192.168.0.201/param.cgi?action=update&network.dhcp_enable=1 [Return] HTTP/1.1 200 OK Content-type: text/plain OK
Example2	[Request] http://192.168.0.201/param.cgi?action=update&venc.h264_profile=0*1 [0,1,3] 0:baseline, 1:Main, 3:High [Return] HTTP/1.1 200 OK Content-type: text/plain OK



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4.1.2. Update multi parameters

If more than one parameter update is requested, the corresponding parameter's information will be updated.

Method : GET

Example	[Request] http://192.168.0.201:80/param.cgi?action=update&overlay.date_enable=n*1&overlay.time_enable=m*1 (n,m=0,1,2) [Return] HTTP/1.1 200 OK Content-type: text/plain OK
----------------	---

5. Stream

5.1. Video Stream

Set video codec, max frame rate, etc. Maximum of 2 stream settings are allowed, and the actual value will be applied when the 'apply' field is present. Unused stream's field values are 0. (before 'apply' is active, the settings are stored temporarily)

Method : GET/POST

Request	<a href="http://<servername>:HTTP_PORT/param.cgi?action=update&<stream.codec_type>=<value>&<stream.width>=<value>&<stream.height>=<value>&<stream.fps>=<value>&<stream.rate_control>=<value>&<stream.bitrate>=<value>[&<stream.apply>=<value>...]">http://<servername>:HTTP_PORT/param.cgi?action=update&<stream.codec_type>=<value>&<stream.width>=<value>&<stream.height>=<value>&<stream.fps>=<value>&<stream.rate_control>=<value>&<stream.bitrate>=<value>[&<stream.apply>=<value>...]
Return	[Return] HTTP/1.1 200 OK Content-type: text/plain OK
Example	[Single stream] http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1280&stream.height=0*720&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*8000000&stream.gop=0*30&stream.codec_type=1*0&stream.width=1*0&stream.height=1*0&stream.fps=1*0&stream.rate_control=1*0&stream.bitrate=1*0&stream.gop=1*0&stream.apply=1*1 [Return] HTTP/1.1 200 OK Content-type: text/plain OK [Dual stream] http://192.168.0.201/param.cgi?action=update&stream.codec_type=0*3&stream.width=0*1280&stream.height=0*720&stream.fps=0*30&stream.rate_control=0*1&stream.bitrate=0*8000&stream.codec_type=1*1&stream.width=1*640&stream.height=1*352&stream.fps=1*30&stream.rate_control=1*0&stream.bitrate=1*0&stream.apply=1*1 [Return] HTTP/1.1 200 OK Content-type: text/plain OK

5.2. Video Encode

Supplementary 5.1. It adds the ability configure video settings individually. Most functions are similar to 5.1

Method : GET/POST

Request	<a href="http://<servername>:HTTP_PORT/param.cgi?action=update&<venc.enable>=<value>&<venc.h264_profile>=<value>&<venc.res>=<value>&<venc.fps>=<value>&<venc.brc>=<value>&<venc.bps>=<value>[&...]&venc.apply=2*1">http://<servername>:HTTP_PORT/param.cgi?action=update&<venc.enable>=<value>&<venc.h264_profile>=<value>&<venc.res>=<value>&<venc.fps>=<value>&<venc.brc>=<value>&<venc.bps>=<value>[&...]&venc.apply=2*1
Return	[Return] HTTP/1.1 200 OK Content-type: text/plain OK
Example	[H264 Configure stream] http://192.168.0.201/param.cgi?action=update&venc.enable=0*1&venc.h264_profile=0*1&venc.res=0*3&stream.fps=0*30&stream.brc=0*1&venc.bps=0*8000000&venc.gop=0*30&venc.image_quality=0*1&venc.apply=2*1 [Return] HTTP/1.1 200 OK Content-type: text/plain OK [H264 Stream Configuration – resolution only] http://192.168.0.201/param.cgi?action=update&venc.res=0*4&venc.apply=2*1 [Return] OK [H264 Stream Configuration – fps only] http://192.168.0.201/param.cgi?action=update&venc.fps=0*15&venc.apply=2*1 [Return] OK [H264 Stream Configuration – H264 PROFILE only] http://192.168.0.201/param.cgi?action=update&venc.h264_profile=0*1&venc.apply=2*1 [Return] OK [MJPEG Stream Configuration] http://192.168.0.201/param.cgi?action=update&venc.enable=1*1&venc.res=1*3&stream.fps=1*30&venc.qp=1*75&venc.apply=2*1 [Return] HTTP/1.1 200 OK Content-type: text/plain OK [H264&MJPEG Stream Configuration] http://192.168.0.201/param.cgi?action=update&venc.enable=0*1&venc.res=0*3&stream.fps=0*30&stream.brc=0*1&venc.bps=0*8000000&venc.gop=0*30&venc.enable=1*1&venc.res=1*3&stream.fps=1*30&venc.qp=1*75&venc.apply=2*1 [Return] HTTP/1.1 200 OK Content-type: text/plain

	OK
Remark	To update venc table, "venc.apply=2*1" should be used

6. Event Log

6.1. Search Event Log

Method : GET

Request	<a href="http://<servername>:HTTP_PORT/param.cgi?action=log_list">http://<servername>:HTTP_PORT/param.cgi?action=log_list
Return	HTTP Code: <code> Content-Type: <type> <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <EventLog date="value" log="string"/> <EventLog date="value" log="string"/> ... </root> OK
Example	[Request] http://192.168.0.201:80/param.cgi?log_list [Return] HTTP/1.1 200 OK Content-type: text/html <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <EventLog date="2011/04/07 10:12:55" log="admin login"/> <EventLog date="2011/04/07 10:19:55" log="admin login"/> </root> OK

6.2. Clear Event Log

Deletes all Event Log information

Method : GET

Example	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=log_delete">http://<servername>:HTTP_PORT/param.cgi?action=log_delete
	[Return] HTTP/1.1 200 OK Content-type: text/plain OK

7. SD Card

7.1. Search MP4 List

Future implementation.

7.2. Download MP4

Future implementation.

7.3. Delete MP4

Future implementation.

8. System Control

8.1. Reset

Reboots the IP Camera.

Method : GET

Sample	[Request] <a href="http://<servername>:80/param.cgi?action=reboot">http://<servername>:80/param.cgi?action=reboot
	[Return] HTTP/1.1 200 OK Content-type: text/plain
	OK

8.2. Set Factory default

Resets all parameters to factory defaults (except for MAC Address and Network parameters)

Method : GET

Sample	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=factory">http://<servername>:HTTP_PORT/param.cgi?action=factory
	[Return] HTTP/1.1 200 OK Content-type: text/plain
	OK

8.3. Set Hard Factory default

Resets all parameters to factory defaults (except for MAC Address)

Method : GET

Sample	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=hard_factory">http://<servername>:HTTP_PORT/param.cgi?action=hard_factory
	[Return] HTTP/1.1 200 OK Content-type: text/plain
	OK

8.4. Set Telnetd on/off

This API is used to either turn /on/ff Telnetd(telnet daemon).
During system boot-up, this is always set to OFF, and on/off flag is not stored.

Method : GET

example 1 : telnetd on	[Request] <a href="http://<servername>:HTTP_PORT/fcgi/wparam.cgi?action=set_system_dctrl&dtype=0">http://<servername>:HTTP_PORT/fcgi/wparam.cgi?action=set_system_dctrl&dtype=0
----------------------------------	---

	&enable=1 "\"http://192.168.0.181:8080/fcgi/wparam.cgi?action=set_system_dctrl&dtype=0&enable=1\"" [Return] HTTP/1.1 200 OK Content-type: text/plain OK
example 2 : telnetd off	[Request] http://<servername>:HTTP_PORT/fcgi/wparam.cgi?action=set_system_dctrl&dtype=0&enable=0 http://192.168.0.181:8080/fcgi/wparam.cgi?action=set_system_dctrl&dtype=0&enable=0 [Return] HTTP/1.1 200 OK Content-type: text/plain OK
detail of parameters	action=set_system_dctrl CGI command delimiter.(system daemon control) dtype=0 target daemon number. (0 : telnetd, only the current (0.4.14) telnetd daemon has been defined) enable=1(or 0) 1:on, 0:off

8.5. Manage Date and Time

Set date and time.

8.5.1. Get Date/Time

Method : GET

Sample1	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=search&param=time">http://<servername>:HTTP_PORT/param.cgi?action=search&param=time [Return] <?xml version="1.0" encoding="UTF-8" standalone="yes" ?> <root> <time table_offset = "0" sync_mode="1" server="pool.ntp.org" timezone="21" refresh="0" dst="0" date="2016/04/28" time="17:49:19"/> </root>
Sample 2	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=search&param=time.date">http://<servername>:HTTP_PORT/param.cgi?action=search&param=time.date [Return] time.date=2016/04/29
Sample 3	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=search&param=time.sync_mode">http://<servername>:HTTP_PORT/param.cgi?action=search&param=time.sync_mode [Return] time.sync_mode=1

8.5.2. Parameter List

Parameter Name	Value Range	Remarks
sync_mode	1,2	1:NTP, 2:Manual
server	string	NTP sever domain name(or IP Address)
timezone	0~24	Current time zone.Current time zone. Refer to WELDEX_HTTP_PARAM_XXXX.doc(#1).
refresh	1	Get Time use NTP Sever
dst	0~1	Adjust for daylight saving time changes.(On/OFF)
date	String[10]	Set current date (yyyy/mm/dd) when sync_mode is 2(manual).
Time	String[8]	Set current time(hh:mm:ss) when sync_mode is 2(manual).

8.5.3. Set Date/Time

Sample1 : change NTP mode and get time from NTP Server	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=update&time.sync_mode=1&time.refresh=1">http://<servername>:HTTP_PORT/param.cgi?action=update&time.sync_mode=1&time.refresh=1 [Return] OK
Sample2 : Get time from NTP Server	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=update&time.refresh=1">http://<servername>:HTTP_PORT/param.cgi?action=update&time.refresh=1 [Return] OK
Sample 3 : change Manual Mode	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=update&time.sync_mode=2">http://<servername>:HTTP_PORT/param.cgi?action=update&time.sync_mode=2 [Return] OK
Sample 4 : set date	[Request] <a href="http://<servername>:HTTP_PORT/param.cgi?action=update&time.date=2016/04/28">http://<servername>:HTTP_PORT/param.cgi?action=update&time.date=2016/04/28 [Return] OK

9. JPEG and MJPG

9.1. Get JPEG

If JPEG Codec is selected, it gets 1x JPEG frame from the IP camera.

Method : GET/POST

Request	<a href="http://<servername>:HTTP_PORT/cgi/get_image.cgi?action=jpeg_download">http://<servername>:HTTP_PORT/cgi/get_image.cgi?action=jpeg_download																								
Return	HTTP Code: <code> Content-Type: image/jpeg Content-Length: <JPEG data size> <JPEG data>																								
Example1	[Get JPEG File] curl -o test.jpg "http://admin:admin@192.168.0.201:80/cgi/get_image.cgi?action=jpeg_download" [Return] <table><tr><td>? % Total</td><td>% Received</td><td>% Xferd</td><td>Average Speed</td><td>Time</td><td>Time</td><td>Time</td><td>Current</td></tr><tr><td></td><td></td><td></td><td>Dload Upload</td><td>Total</td><td>Spent</td><td>Left</td><td>Speed</td></tr><tr><td>100 128k</td><td>100 128k</td><td>0</td><td>0 236k</td><td>0</td><td>--:--:--</td><td>--:--:--</td><td>258k</td></tr></table>	? % Total	% Received	% Xferd	Average Speed	Time	Time	Time	Current				Dload Upload	Total	Spent	Left	Speed	100 128k	100 128k	0	0 236k	0	--:--:--	--:--:--	258k
? % Total	% Received	% Xferd	Average Speed	Time	Time	Time	Current																		
			Dload Upload	Total	Spent	Left	Speed																		
100 128k	100 128k	0	0 236k	0	--:--:--	--:--:--	258k																		
Example 2	[Get JPEG File] curl "http://admin:admin@192.168.0.201:80/cgi/get_image.cgi?action=jpeg_download" HTTP/1.1 200 OK Content-type: image/jpeg Content-Length: 15632 JFIF...22222222222222222222.....22222222222222jfejfewf... abbreviated.																								

9.2. Get MJPG

If JPEG Codec is selected, it gets JPEG frames for the duration of the setting. If the duration is set to 0, it gets the JPEG images until the connected is closed.

Method : GET/POST

Parameters	int duration It gets the JPEG frames for the duration of the setting (in seconds) If 0 is selected, it gets JPEG frames until the connection is closed
Request	<a href="http://<servername>:HTTP_PORT/cgi/get_image.cgi?action=mjpg_download&duration=second">http://<servername>:HTTP_PORT/cgi/get_image.cgi?action=mjpg_download&duration=second
Return	HTTP Code: <code> Content-Type: multipart/x-mixed-replace; boundary=<string> --string Content-Type: image/jpeg\r\nContent-Length: <JPEG Size> <JPEG Data> --string

	Content-Type: image/jpeg\r\nContent-Length: <JPEG Size> <JPEG Data> --string Content-Type: image/jpeg\r\nContent-Length: <JPEG Size> <JPEG Data> --string [continuous]
Example	[Get MJPG File] http://192.168.0.201/cgi/get_image.cgi?action=mjpg_download&duration=60 [Return] HTTP/1.1 200 OK Content-type: multipart/x-mixed-replace; boundary=myboundary --myboundary Content-Type: image/jpeg\r\nContent-Length: 15632 JFIF...22222222222222222222.....222222222222jfejfewf... --myboundary Content-Type: image/jpeg\r\nContent-Length: 11235 JFIF...22222222222222222222.....222222222222jfejfewf... --myboundary Content-Type: image/jpeg\r\nContent-Length: 45210 JFIF...22222222222222222222.....222222222222jfejfewf... --myboundary [repeated]

10. Firmware Update

10.1. Firmware Update

Method : Form Data

Parameter	upfile ⇒ Parameter name that specifies the file name (transmission method: Form Data)
Request url	<a href="http://<servername>:HTTP_PORT/cgi/fwupdate.cgi?">http://<servername>:HTTP_PORT/cgi/fwupdate.cgi?
Return	If the update is successful, return value cannot be transmitted Since the IP camera will reboot after a successful update, "500 internal server error" will occur if accessed during this period. Standard update time is 2-3 minutes depending on network conditions. See section 12 for details on error return values. Error return values: 60, 74, 75, 76, 77
curl test code	Use the following to perform firmware update: curl (tool transfer data tool, command line utility) <pre>curl -u admin:xxxxxxx -F "upfile=@wdx_nc_ovm_0.4.2_1406_a.tar" http://192.168.0.158/cgi/fwupdate.cgi -u : authentication -F : --form can also be used, form data upfile : parameter name (firmware file) wdx_nc_ovm_0.4.2_1406_a.tar : file name of the update file.</pre> [Return] → Does not return correct value. See 10.2. <!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN"> <html><head> <title>500 Internal Server Error</title> </head><body> <h1>Internal Server Error</h1> ...

10.2. Firmware Update for system version 1.0.0 or higher

Method : Form Data

Parameter	upfile ⇒ Parameter name that specifies the file name (transmission method: Form Data)
Request url	<a href="http://<servername>:HTTP_PORT/cgi/fwupdate.cgi?">http://<servername>:HTTP_PORT/cgi/fwupdate.cgi?
Return	Returns file check value after firmware file upload completion. See section 12 for details on error return values. Standard update time is 2-3 minutes depending on network conditions.
curl test code	Use the following to perform firmware update: curl (tool transfer data tool, command line utility) <pre>curl -u admin:xxxxx -F "upfile=@wdp4608mxv_1.0.0.bin" http://192.168.0.158/cgi/fwupdate.cgi -u : authentication -F : --form can also be used, form data</pre>

	upfile : parameter name (firmware file) wdp4608mxv_1.0.0.bin : file name of the update file. [Return] → See12.2. If succeed OK otherwise → See12.2.
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10.3. Firmware Update Status Information

No longer supported starting version 0.5.20 (network is cut off during after firmware upload)

Get firmware upgrade status information during the upgrade process.

Method: Get

Request	<a href="http://<servername>:HTTP_PORT/cgi/get_update_state.cgi">http://<servername>:HTTP_PORT/cgi/get_update_state.cgi <i>or</i> <a href="http://<servername>:HTTP_PORT/cgi/wparam.cgi?action=get_fwupdate_status.cgi">http://<servername>:HTTP_PORT/cgi/wparam.cgi?action=get_fwupdate_status.cgi
Return	-1 : nothing 0: initialized 1: uploading 2: copying 3: decompressing 4: writing 5: finish ⇒ <i>In most cases return value 5 will be difficult to obtain. Since the IP camera will reboot right after step 4, it is recommended that a status bar is displayed and that the time of the status bar be estimated (reboot time + writing time). Firmware writing time is only few seconds (less than 10 seconds). Reboot time is between 60~100 seconds. The following factors can alter reboot time: recovery check, file system check, sd check, etc.</i>
Example	[Get Status] http://192.168.0.201:80/cgi/get_update_state.cgi [Return] -1

11. Camera Configuration

- Camera Configuration through SDK is supported starting from firmware version 0.4.3 and up. SDK information is different for each camera's ISP chip. Firmware 0.4.3 supports ATM and Height Strip camera's ISP. Parameter items are the same as the webpage items.

11.1. ATM Camera (WDP-17S05MF)

11.1.1. Get Camera Configuration

Get Camera Configuration Information. See 11.1.3. Parameter List for details.

Method: Get/Post

Request	<a href="http://<servername>:HTTP_PORT/cgi/camsetup.cgi?action=get_config">http://<servername>:HTTP_PORT/cgi/camsetup.cgi?action=get_config
Example	[Get JPEG File] http://192.168.0.201:80/cgi/camsetup.cgi?action=get_config [Return] <?xml version="1.0" encoding="UTF-8"?> <camera_config> <ex.dnr>3</ex.dnr> <ex.flicker>0</ex.flicker> <ex.evlevel>0</ex.evlevel> <wb.mode>2</wb.mode> <wb.rgain>222</wb.rgain> <wb.bgain>180</wb.bgain> <brightness>0</brightness> <contrast>5</contrast> <daynight>0</daynight> <sharpness>3</sharpness> <saturation>3</saturation> </camera_config>

11.1.2. Set Camera Configuration

Method: Get/Post

Request	<a href="http://<servername>:HTTP_PORT/cgi/camsetup.cgi?action=set_config">http://<servername>:HTTP_PORT/cgi/camsetup.cgi?action=set_config
Example	[Get JPEG File] http://192.168.0.201:80/cgi/camsetup.cgi?action=set_config&wb.mode=2&wb.rgain=300&wb.bgain=300&brightness=3&sharpness=4 [Return] OK

11.1.3. Parameter List

Parameter Name	Value Range	Remarks
ex.dnr	0~5	Expose DNR
ex.flicker	0~2	Expose Flicker. 0:Auto, 1:50Hz, 2:60Hz
ex.evlevel	0~10	Expose EV Level
wb.mode	1~2	White Balance Mode, 1:Auto, 2:Manual
wb.rgain	0~1023	White Balance Red Gain. wb.mode == Manual Only
wb.bgain	0~1023	White Balance Blue Gain. wb.mode == Manual Only
brightness	0~6	
contrast	0~8	
daynight	0~1	Day&Night Mode, 0:Color, 1: B/W(Black And White)
sharpness	0~4	

saturation	0~4	
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11.2. Height Strip Camera (WDP-4602MXV, WDP-4608MXV)

11.2.1. Get Camera Configuration

Get Camera Configuration Information. See 11.2.3. Parameter List.

Method: Get

Request	<a href="http://<servername>:HTTP_PORT/fcgi/camsetup.cgi?action=get_config">http://<servername>:HTTP_PORT/fcgi/camsetup.cgi?action=get_config
Example	[Get JPEG File] http://192.168.0.201:80/fcgi/camsetup.cgi?action=get_config [Return] <?xml version="1.0" encoding="UTF-8"?> <camera_config> <ex.lenstype>2</ex.lenstype> <ex.shutterspeed>1</ex.shutterspeed> <ex.agc>0</ex.agc> <ex.nr2d>0</ex.nr2d> <ex.nr3d>1</ex.nr3d> <ex.nr3dlevel>80</ex.nr3dlevel> <ex.nrsmart>0</ex.nrsmart> <ex.acce>0</ex.acce> <ex.senseup>5</ex.senseup> <ex.senseupmode>1</ex.senseupmode> <wb.mode>0</wb.mode> <wb.rgain>50</wb.rgain> <wb.bgain>50</wb.bgain> <brightness>50</brightness> <backlight>1</backlight> <daynight>1</daynight> <gamma.monitortype>1</gamma.monitortype> <gamma.lcdgamma>0</gamma.lcdgamma> <sharpness.use>1</sharpness.use> <sharpness.level>50</sharpness.level> <sharpness.filter>0</sharpness.filter> </camera_config>

11.2.2. Set Camera Configuration

Method: Get/Post

Request	<a href="http://<servername>:HTTP_PORT/fcgi/camsetup.cgi?action=set_config">http://<servername>:HTTP_PORT/fcgi/camsetup.cgi?action=set_config
Example	[Get JPEG File] http://192.168.0.201:80/fcgi/camsetup.cgi?action=set_config&wb.mode=4&wb.rgain=50&wb.bgain=50&brightness=4&sharpness.use=1&sharpness.level=40 [Return] OK

11.2.3. Parameter List

Parameter Name	Value Range	Remarks
ex.lenstype	0~2	0:DC, 1:Video, 2:Manual
ex.shutterspeed	0~19	0: auto 1: 1/30 (1/25s) 2: 1/60 (1/50s) 3: Flicker

		4: 1/250s 5: 1/500s 6: 1/1000s 7: 1/2000s 8: 1/5000s 9: 1/10000s 10: 1/50000s 11: x2 12: x4 13: x6 14: x8 15: x10 16: x15 17: x20 18: x30 19: x60
ex.agc	0~3	0:OFF, 1:LOW, 2:MIDDLE, 3:HIG
ex.nr2d	0~1	2D Noise Reduction 0:OFF, 1:ON
ex.nr3d	0~1	3D Noise Reduction, 0:OFF, 1:ON
ex.nr3dlevel	0~100	2D Noise Reduction Level
ex.nrsmart	0~1	Smart Noise Reduction, 0:OFF, 1:ON
ex.acce	0~3	0:OFF, 1:LOW, 2:MIDDLE, 3:HIG
ex.senseupmode	0~1	0:off, 1:on
ex.senseup	0~8	0:x2 1:x4 2:x6 3:x8 4:x10 5:x15 6:x20 7:x30/x25 8:x60/x30
wb.mode	0~4	0:ATW 1:AWC set 2:Indoor 3:Outdoor 4:Manual
wb.rgain	0~100	White Balance Red Gain. wb.mode == Manual Only
wb.bgain	0~100	White Balance Red Gain. wb.mode == Manual Only
brightness	0~100	
backlight	0~2	0:OFF 1:BCL 2:HSBLC
daynight	0~1	Day&Night Mode, 0:Color, 1: B/W(Black And White)
gamma.monitortype	0~1	0:CRT, 1:LCD
gamma.lcdgamma	0~14	0: AUTO 1: 0.43 2: 0.44 3: 0.45 4: 0.50 5: 0.55 6: 0.60 7: 0.65 8: 0.70 9: 0.75 10: 0.80 11: 0.85



		12: 0.90 13: 0.95 14: 1.00
sharpness.use	0~1	0:OFF, 1:ON
sharpness.level	0~100	
sharpness.filter	0~1	0:Weak, 1:Strong

12. ERROR CODE

12.1. GENERAL ERROR CODES

Number	Description
1	Mode Error(HCGI_ERR_INVMODE)
2	Input Error(HCGI_ERR_INVPARAM)
3	No Such Action Exists(HCGI_ERR_ACTION)
4	No Such Command Exists(HCGI_ERR_METHOD)
5	Format Error(HCGI_ERR_FORMAT)
6	Group Error(HCGI_ERR_GROUP)
7	XML Error(HCGI_ERR_XML)
8	System Error(HCGI_ERR_SYSTEM)
9	Memory Related Error(HCGI_ERR_NOMEMORY)
10	No Data(HCGI_ERR_NODATA)
11	URL Error(HCGI_ERR_URL)
12	Operation Failed(HCGI_ERR_FAIL)
13	No Data(HCGI_ERR_END_DATA)
14	Log-in Fail(HCGI_ERR_LOGIN)

12.2. FIWMARE UPGRADE ERROR CODES

Number	Description
1	No file, or invalid file format
2	Checksum error.
3	MD5 error
4	Error for Firmware file length.
17	Exceeded Buffer length
18	Upgrade already in progress
19	There is no uploaded file
20	<i>Reserved For upgrade manager</i>
21	Missing fwinfo.ini (needed for upgrade)
22	Failed loading fwinfo.ini file.
23	Invalid Flag.(missing file that correspond to flag, KERNEL=2, FILESYSTEM=4, APP=8)
24	Invalid Model (firmware does not match the camera model)
60	Error during update
74	No file
75	Error in size
76	Firmware file is not for the camera model
77	Error in the firmware file content