

User manual

(Onvif Server)

Declaration

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www.happytimesoft.com

Table of Contents

Chapter 1 Files Description.....	2
Chapter 2 Configuration.....	3
2.1 Configuration Templates.....	3
2.2 Configuring Node Description.....	5
Chapter 3 Run Onvif Server.....	11
Chapter 4 Compatibility test.....	12
Chapter 5 ONVIF Version.....	14

Chapter 1 Files Description

Windows version contains the following files:

File name	Description
config.xml	The onvif server configuration file
happytime-rtsp-server	Happytime rtsp server. It can stream several kinds of media file (The rtsp server is a demo version, only for testing rtsp streams, the release version does not include rtsp server)
OnvifServer.exe	onvif server executable file
runme.bat	A batch file, run rtspserver and onvif server
snapshot.jpg	The default snapshot file, for onvif snapshot interface
User manual.pdf	This manual
libcrypto-1_1.dll	Openssl dynamic library
libssl-1_1.dll	Openssl dynamic library
zlibwapi.dll	Zlib dynamic library
ssl.ca	Openssl connection certificate
ssl.key	Openssl connection private key

Linux version contains the following files:

(Tested on centos 7 and ubuntu 18.04 LTS)

File name	Description
config.xml	The onvif server configuration file
happytime-rtsp-server	Happytime rtsp server. It can stream several kinds of media file (The rtsp server is a demo version, only for testing rtsp streams, the release version does not include rtsp server)
onvifserver	onvif server executable file
runme.sh	A script file, run rtspserver and onvif server
snapshot.jpg	The default snapshot file, for onvif snapshot interface
User manual.pdf	This manual
ssl.ca	Openssl connection certificate
ssl.key	Openssl connection private key
libcrypto.so.1.1	Openssl dynamic library
libssl.so.1.1	Openssl dynamic library
libz.so.1.2.11	Zlib dynamic library

Chapter 2 Configuration

2.1 Configuration Templates

```
<?xml version="1.0" encoding="utf-8"?>
<config>
  <server_ip></server_ip>
  <server_port>8000</server_port>
  <http_max_users>16</http_max_users>
  <https_enable>0</https_enable>
  <need_auth>0</need_auth>
  <log_enable>1</log_enable>
  <log_level>1</log_level>
  <information>
    <Manufacturer>Happytimesoft</Manufacturer>
    <Model>IP Camera</Model>
    <FirmwareVersion>2.4</FirmwareVersion>
    <SerialNumber>123456</SerialNumber>
    <HardwareId>1.0</HardwareId>
  </information>
  <user>
    <username>admin</username>
    <password>admin</password>
    <userlevel>Administrator</userlevel>
  </user>
  <user>
    <username>test</username>
    <password>123456</password>
    <userlevel>User</userlevel>
  </user>
  <profile>
    <video_source>
      <width>1280</width>
      <height>720</height>
    </video_source>
    <video_encoder>
      <width>160</width>
      <height>128</height>
    </video_encoder>
  </profile>
</config>
```

```
<quality>4</quality>
<session_timeout>10</session_timeout>
<framerate>25</framerate>
<encoding_interval>50</encoding_interval>
<bitrate_limit>2048</bitrate_limit>
<encoding>H264</encoding>
<h264>
  <gov_length>50</gov_length>
  <h264_profile>Main</h264_profile>
</h264>
</video_encoder>
<audio_source></audio_source>
<audio_encoder>
  <session_timeout>10</session_timeout>
  <sample_rate>8</sample_rate>
  <bitrate>64</bitrate>
  <encoding>G711</encoding>
</audio_encoder>
<stream_uri></stream_uri>
</profile>
<profile>
  <video_source>
    <width>1280</width>
    <height>720</height>
  </video_source>
  <video_encoder>
    <width>640</width>
    <height>480</height>
    <quality>4</quality>
    <session_timeout>10</session_timeout>
    <framerate>25</framerate>
    <encoding_interval>50</encoding_interval>
    <bitrate_limit>2048</bitrate_limit>
    <encoding>H264</encoding>
    <h264>
      <gov_length>50</gov_length>
      <h264_profile>Main</h264_profile>
    </h264>
```

```
</video_encoder>
<audio_source></audio_source>
<audio_encoder>
  <session_timeout>10</session_timeout>
  <sample_rate>8</sample_rate>
  <bitrate>64</bitrate>
  <encoding>G711</encoding>
</audio_encoder>
<stream_uri></stream_uri>
</profile>
<scope>onvif://www.onvif.org/Profile/Streaming</scope>
<scope>onvif://www.onvif.org/location/country/china</scope>
<scope>onvif://www.onvif.org/type/video_encoder</scope>
<scope>onvif://www.onvif.org/name/IP-Camera</scope>
<scope>onvif://www.onvif.org/hardware/HI3518C</scope>
<event>
  <renew_interval>60</renew_interval>
  <simulate_enable>1</simulate_enable>
</event>
</config>
```

2.2 Configuring Node Description

<server_ip>

Specify the IP address onvif server bindings, if not specified, the onvif server will bind to the default routing interface IP address.

<server_port>

Specify the port onvif server binding, providing web service service on this port, the default is 8000.

<http_max_users>

Maximum supported HTTP client

<https_enable>

Indicates whether enable https connection, 0 is disable, 1 enable

<need_auth>

Indicates whether authentication is required, 0 don't require, 1 require.

<log_enable>

Indicates whether logging is enabled, 0 is not enabled, 1 enable.

<log_level>

The log level:

TRACE	0
DEBUG	1
INFO	2
WARN	3
ERROR	4
FATAL	5

<information> : Config the ONVIF device basic information

<Manufacturer>

The manufactor of the device

<Model>

The device model

<FirmwareVersion>

The firmware version in the device

<SerialNumber>

The serial number of the device

<HardwareId>

The hardware ID of the device

<user> : Contains a list of the onvif users, it can configure multiple nodes

<username>

Username string

<password>

Password string

<userlevel>

User level string, The following values can be configured:

Administrator

Operator

User

Anonymous

<profile> : A media profile maps a video and/or audio source to a video and/or an audio encoder, configurations.

<video_source> : If the media profile contains a video, the video source configuration

<width>

The video source width

<height>

The video source height

<video_encoder>: If the media profile contains a video, the video encoder configuration

<width>

Encoded video width

<height>

Encoded video height

<quality>

Relative value for the video quantizers and the quality of the video. A high value within supported quality range means higher quality

<session_timeout>

The rtsp session timeout for the related video stream

<framerate>

Maximum output framerate in fps

<encoding_interval>

Interval at which images are encoded and transmitted. (A value of 1 means that every frame is encoded, a value of 2 means that every 2nd frame is encoded ...)

<bitrate_limit>

The maximum output bitrate in kbps

<encoding>

Used video codec, either JPEG, MPEG4, H264 or H265

<h264>: Configure H.264 related parameters

<gov_length>

Group of Video frames length. Determines typically the interval in which the I-Frames will be coded. An entry of 1 indicates I-Frames are continuously generated. An entry of 2 indicates that every 2nd image is an I-Frame, and 3 only every 3rd frame, etc. The frames in between are coded as P or B Frames

<h264_profile>

The H.264 profile, either Baseline, Main, Extended or High

<h265>: Configure H.265 related parameters

<gov_length>

Group of Video frames length. Determines typically the interval in which the I-Frames will be coded. An entry of 1 indicates I-Frames are continuously generated. An entry of 2 indicates that every 2nd image is an I-Frame, and 3 only every 3rd frame, etc. The frames in between are coded as P or B Frames

<h265_profile>

The H.265 profile, either Main or Main10

<mpeg4>: Configure MPEG4 related parameters

<gov_length>

Determines the interval in which the I-Frames will be coded. An entry of 1 indicates I-Frames are continuously generated. An entry of 2 indicates that every 2nd image is an I-Frame, and 3 only every 3rd frame, etc. The frames in between are coded as P or B Frames

<mpeg4_profile>

The Mpeg4 profile, either simple profile (SP) or advanced simple profile (ASP)

<audio_source> : If the media profile contains a audio, the audio source configuration

<audio_encoder>:If the media profile contains a audio, the audio encoder configuration

<session_timeout>

The rtsp session timeout for the related audio stream

<sample_rate>

The output sample rate in kHz

<bitrate>

The output bitrate in kbps

<encoding>

Audio codec used for encoding the audio input (either G711, G726 or AAC)

<stream_uri>

The profile RTSP stream address, if not specify, it default to **rtsp://yourip//test.264**

<scope>

Contains a list of URI definining the device scopes

<event> : Event Configuration parameters

<renew_interval>

Event renew interval

<simulate_enable>

Specifies whether to generate simulation event

Chapter 3 Run Onvif Server

Windows platform:

Run runme.bat, it will run rtspserver as RTSP server and onvif server

Linux platform:

Run runme.sh, it will run rtspserver as RTSP server and onvif server

Chapter 4 Compatibility test

1. ONVIF SERVER PROFILE S passed the compatibility test version

Windows version download from:

<http://www.happytimesoft.com/downloads/happytime-onvif-server-profiles.zip>

Linux version download from:

<http://www.happytimesoft.com/downloads/happytime-onvif-server-profiles.tar.gz>

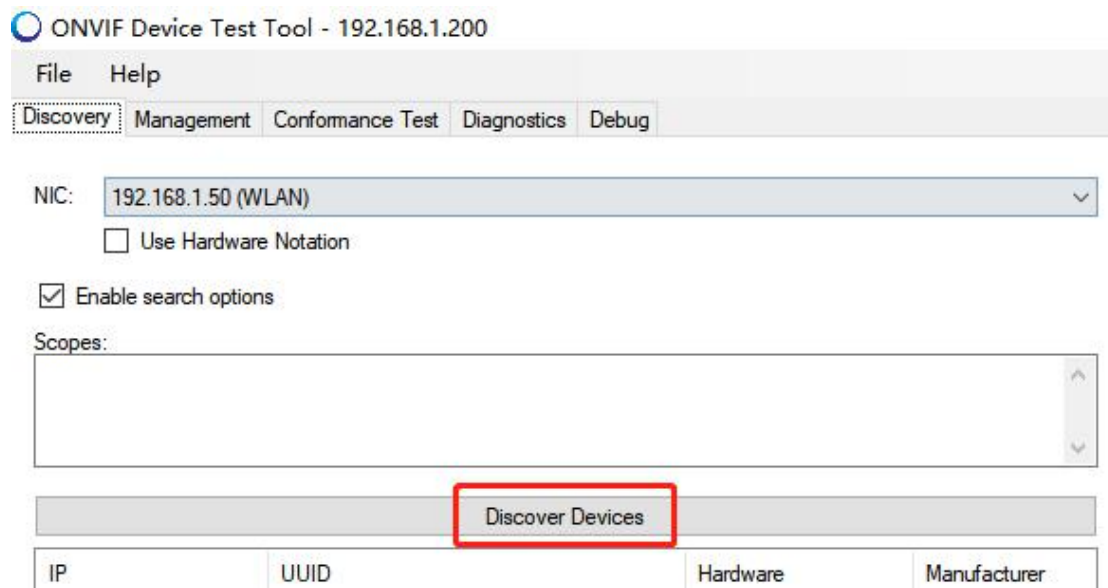
1. Modify the ONVIF SERVER configuration file config.xml and specify the <need_auth> value as 1.

2. Run the rtspserver and onvif server.

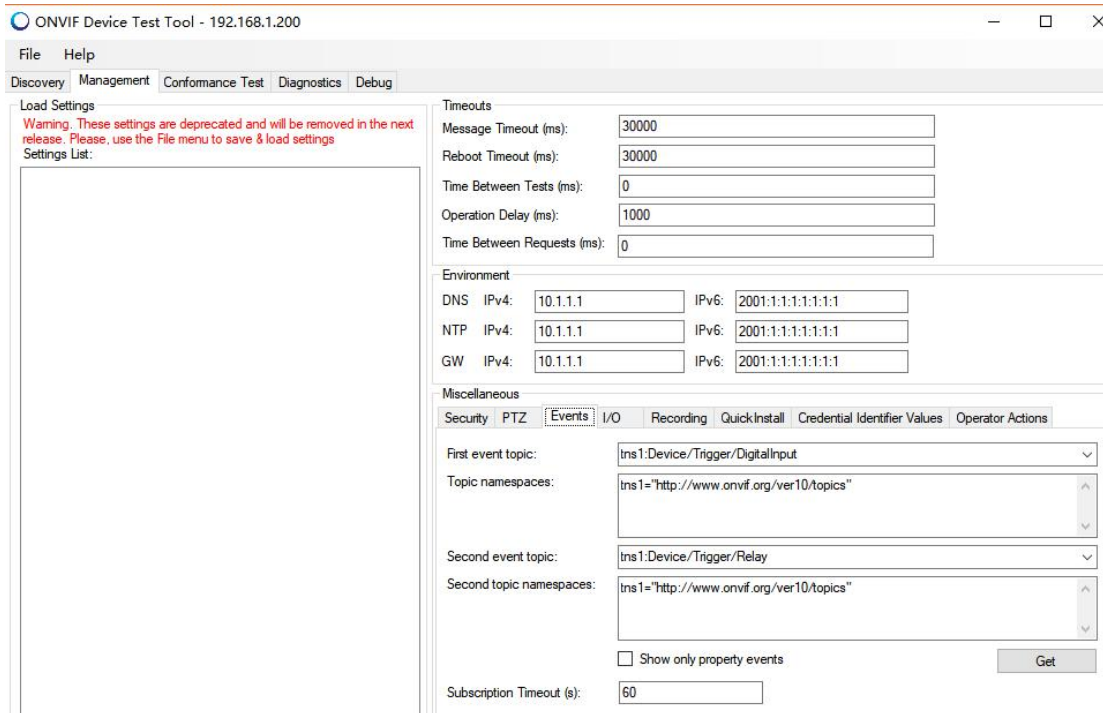
3. Run the ONVIF Device Test Tool.

Note: ONVIF SERVER and test tools should run on different computers

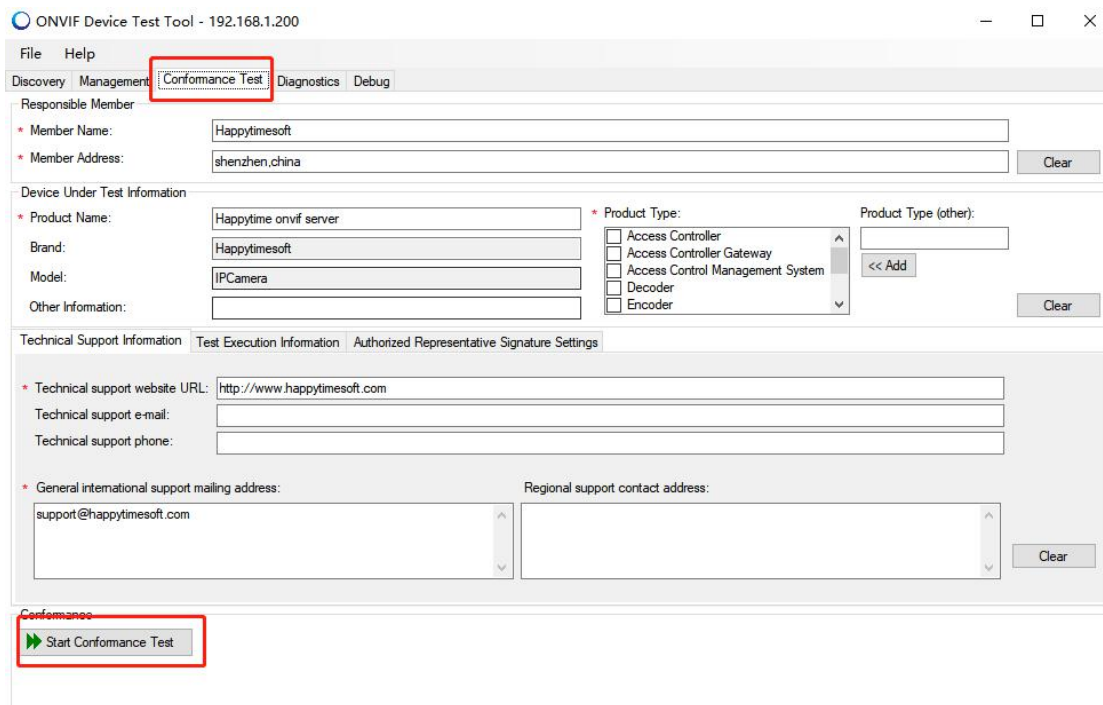
4. Click “Discover Devices” button, as the following:



5. Switch to “Management” tab, select “Events” tab at “miscellaneous”, then click “Get” button, as the following:



6. Switch to “Conformance Test” tab, click “Start Conformance Test” button:



Chapter 5 ONVIF Version

The onvif server implements the following ONVIF service:

ONVIF Service	Prefix	Url	version
device	tds	http://www.onvif.org/ver10/device/wsd	20.06
event	tev	http://www.onvif.org/ver10/events/wsd	20.06
media	trt	http://www.onvif.org/ver10/media/wsd	20.06
media 2	tr2	http://www.onvif.org/ver20/media/wsd	20.06
ptz	tptz	http://www.onvif.org/ver20/ptz/wsd	18.12
image	timg	http://www.onvif.org/ver20/imaging/wsd	19.06
analytics	tan	http://www.onvif.org/ver20/analytics/wsd	20.06
recording control	trc	http://www.onvif.org/ver10/recording/wsd	19.06
search	tse	http://www.onvif.org/ver10/search/wsd	18.12
replay	trp	http://www.onvif.org/ver10/replay/wsd	18.06
access control	tac	http://www.onvif.org/ver10/accesscontrol/wsd	20.06
door control	tdc	http://www.onvif.org/ver10/doorcontrol/wsd	19.12
device IO	tmd	http://www.onvif.org/ver10/deviceIO/wsd	19.12
thermal	tth	http://www.onvif.org/ver10/thermal/wsd	17.06
credential	tcr	http://www.onvif.org/ver10/credential/wsd	19.12
access rules	tar	http://www.onvif.org/ver10/accessrules/wsd	19.06
schedule	tsc	http://www.onvif.org/ver10/schedule/wsd	18.12
receiver	trv	http://www.onvif.org/ver10/receiver/wsd	18.12
provisioning	tpv	http://www.onvif.org/ver10/provisioning/wsd	18.12