

Using RTSP on QC Series DVRs and NVRs

The purpose of this document is to detail the necessary steps for setting up a Real Time Streaming Protocol (RTSP) for our QC Series DVRs and NVRs. Prior to setting up a RTSP, your QC series DVR/NVR must be set up for Remote Viewing; <u>for video instructions, CLICK HERE</u>.

### Step 1: Create the RTSP Command

This is the format of the RTSP command for QC DVRs

rtsp://IP:PORT/cam/realmonitor?channel=CHANNEL&subtype=ENCODING&authbasic=LOGIN

Example values using DVR default settings ...

IP: 192.168.1.108 Port: 554 Channel: 1 Encoding: 00 (Main Stream) Login: YWRtaW46YWRtaW4= (admin)

Using the above values, this is the RTSP connection to a QC DVR

rtsp://192.168.1.108:554/cam/realmonitor?channel=1&subtype=00&authbasic=YWRtaW46YWRtaW4=

QC RTSP Port In most cases the port is fixed and cannot be changed.

QC RTSP Channel The channel number can be 1-32.

QC RTSP Encoding This can be Main Stream (00) or Extra Stream (01).

QC RTSP Login The login is encoded with base64 and uses the format *user: password* 

Login examples:

admin:admin Encoded: YWRtaW46YWRtaW4=

666666:666666 Encoded: NjY2NjY2OjY2NjY2Ng==



Create your RTSP command ...

Enter IP address

 192.168.1.108

 Enter Port

 554

 Select Channel

 1

 Select Encoding

 Main Stream

 Enter user: password

 admin:admin

Create only the base64 login .. Enter user:password admin:admin

## Step 2: IP Camera RTSP Command

The RTSP command for QC IP Cameras sends the login as plain text.

This is the format of the RTSP command for QC IP Cameras
rtsp://LOGIN@IP:PORT/cam/realmonitor?channel=CHANNEL&subtype=ENCODING
Using the above format, this is a sample RTSP connection to a QC IP camera
rtsp://admin:admin@192.168.1.108:554/cam/realmonitor?channel=1&subtype=1

Important

1) For remote access, forward the RTSP port in your router settings
 2) Verify the user account actually exists and is not locked



# Step 3: Play Live Video with VLC

Download VLC for your particular operating system.

Run VLC and select "Media", "Open Network Stream".

۸.	/LC media player		
Med	dia Playback Audio Video	Tools View Help	
	Open File	Ctrl+0	00
Þ	Advanced Open File	Ctrl+Shift+O	P 10 100%
	Open Folder	Ctrl+F	
0	Open Disc	Ctrl+D	1.00x:/:
-	Open Network Stream	Ctrl+N	
	Open Capture Device	Ctrl+C	
	Open Location from clipboard	Ctrl+V	
	Recent Media	•	
53	Save Playlist to File	Ctrl+Y	
22	Convert / Save	Ctrl+R	
((•))	Streaming	Ctrl+S	
×	Quit	Ctrl+Q	

Enter your full RTSP command in the network URL box.

Network Protocol
Please enter a network URL:
rtsp://192.168.1.108:554/cam/realmonitor?channel=4&subtype=00&authbasic=YWRtaW46YWRtaW4=
http://www.example.com/stream.avi rtp://@:1234 mms://mms.examples.com/stream.asx rtsp://server.example.org:8080/test.sdp http://www.yourtube.com/watch?v=gg64x

Click "Play" to begin streaming live video from the DVR.

Play	<b>_</b>	Cancel	





# Step 4: Stream Live Video with Media Player

Open VLC if it is not already open, or stop any previous video.

Select "Media", "Open Network Stream", and enter your full RTSP command as before. This time you will select "Stream" from the drop down menu.

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You will then see the Stream Output window appear.

The Source tab will show your RTSP command. This cannot be edited.
If you need to make changes click "Cancel" and start again.
Click the "Next" button to continue.

Source
This dialog will allow you to stream or convert your media for use locally, on your private network, or on the Internet. You should start by checking that source matches what you want your input to be and then press the "Next" button to continue.
Source
Source: rtsp://192.168.1.108:554/cam/realmonitor?channel=4&subtype=00&authbasic=YWRtaW46YWRtaW4=
Type: rtsp

Under the Destinations tab select "MS-WMSP (MMSH)" from the drop down box. To view live video on this computer check the "Display locally" box (not recommended). Click "Add" to show the Network options.

Destinations	
Destinations	
+	
Add destinations following the streaming methes is compatible with the method used.	hods you need. Be sure to check with transcoding that the format
New destination	MS-WMSP (MMSH)
Display locally	

Here you can change the default port or leave it as is - this step must be completed either way. For remote access to the live stream this port must be forwarded to the computer running VLC.



Destinations
Destinations 🛛 🗶
This module outputs the transcoded stream to a network via the mms protocol.
Address 0.0.0.0
Port 8080 -

Under Transcoding Options select "Video - WMV + WMA (ASF)" from the drop down box. Verify the "Activate Transcoding" box is checked.

Transcoding options		
Profile	Video - WMV + WMA (ASF)	💌 🗶 🖹

Click "Stream" to begin streaming live video from the DVR.



If you selected "Display locally" you will see live video. Otherwise you can just minimize the VLC window.





Using RTSP on QC Series DVRs and NVRs

Open Windows Media Player on your remote computer. Verify HTTP is enabled in the Network options.

ayer Cop	y Music   Devices   Performance   Media Libra
ua-ins   Priv	vacy Security File Types DVD Netwo
📄 Configur	e network protocols and proxy settings.
-	
treaming proto	ncols
elect the prote	cols to use to receive streaming media:
elect the prott	scols to use to receive screatility media.
Multicast	
	Lise ports. 7000-7007 to receive data
	i ose portes 170007007 concerve data
I TCP	
HTTP	
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HTTP  treaming prox*  Protocol  HTTP	y settings Proxy Browser
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HTTP  treaming prox*  Protocol  HTTP  MMS RTSP	y settings Proxy Browser None None None
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Freedming prox Protocol HTTP MMS RTSP Select the pro To chang download	y settings Proxy Browser None None Detocol above, and then click Configure Ge the proxy settings used for Media Guide and ding files, use Internet Options in Control Panel.

Goto "File", "Open URL", and enter the IP/Domain and port number of your VLC computer.

Open UR	น <u>?</u> >	<
$\odot$	Enter the URL or path to a multimedia file on the Internet, your computer, or your network that you want to play.	
Open:	http://bahamassecurity.com:8080	
	OK Cancel Browse	



Click "Ok" to begin streaming live video from VLC.



#### Step 5: Stream Live Video on a Webpage

Open VLC if it is not already open, or stop any previous video.

Select "Media", "Open Network Stream", and enter your full RTSP command as before. Select "Stream" from the drop down menu.



You will then see the Stream Output window appear.

The Source tab will show your RTSP command. This cannot be edited. If you need to make changes click "Cancel" and start again.

Skip "Destinations" and click the "Options" tab.



Options
Miscellaneous Options          Stream all elementary streams         SAP announce       Group name         Time-To-Live (TTL)       1 -
Generated stream output string :sout=#transcode{vcodec=FLV1,vb=1024,width=352,height=240,acodec=none}:std{access=http,dst=/stream. flv}

Enter the VLC stream output string and click "Stream". I will provide you with example strings below.

JW Player in Google Chrome ...

You can now stream this video from compatible players such as <u>JW Player</u> or <u>FlowPlayer</u>.

This allows you to er	mbed it into your	website using	JavaScript and Flash.
The stream format w	vould be <u>http://l</u>	P:PORT/FILE	



VLC Stream Output Strings ..

I will show you 3 examples for QC DVRs - FLV and H.264 encoded. All 3 examples will output FLV (flash) files for live streaming video.

Adjust the scale value based on your original encode size. To use the original encode size you can simply leave out the scale setting. Incorrect scale/bitrate/fps values result in a corrupted video stream.



Example 1: FLV Codec (CIF)

This is better suited for busy websites.

#### VLC Stream Output String:

:sout=#transcode{vcodec=FLV1,vb=256,fps=7,scale=1,acodec=none}:std{access=http,dst=:8061/stream1.flv}

RTSP Connection		
Stream Type	Extra Stream (01)	
QC Device Setting	S	
Encode	Extra Stream	
Encode Size	CIF	
Encode FPS	7	
Encode Type	VBR	
Encode Bitrate	256	
Encode Quality	Highest	
VLC Stream Outpu	ut Settings	
Video Codec	FLV1	
Video Bitrate	256	
Video FPS	7	
Video Scale	1.0 (none)	
Video Size	352x240	
Deinterlace	No	
Audio	No	
Plaver URL	http://mydomain.com:8061/stream1.fly	

Example 2: FLV Codec (D1)

This is for websites that want higher quality.

VLC Stream Output String:

:sout=#transcode{vcodec=FLV1,vb=1024,fps=7,acodec=none}:std{access=http,dst=:8062/stream2.flv}

RTSP Connection	
Stream Type	Main Stream (00)
QC Device Settings	
Encode	Main Stream
Encode Size	D1
Encode FPS	7
Encode Type	VBR / CBR
Encode Bitrate	640 / 1024
VLC Stream Output	Settings
Video Codec	FLV1
Video Bitrate	640 / 1024
Video FPS	7
Video Scale	0.5 / No
Video Size	352x240 / 704x480
Deinterlace	No
Audio	No
Player URL	http://mydomain.com:8062/stream2.flv



Example 3: H.264 Codec (D1)

This is higher quality deinterlaced video. The video can take longer to start.

VLC Stream Output String:

:sout=#transcode{vcodec=h264,vb=1024,fps=7,deinterlace,acodec=none}:std{access=http,dst=:8063/stream3.flv}

<b>RTSP</b> Connection	
Stream Type	Main Stream (00)
QC Device Setting	gs
Encode	Main Stream
Encode Size	D1
Encode FPS	7
Encode Type	CBR
Encode Bitrate	1024
VLC Stream Outp	ut Settings
Video Codec	H264
Video Bitrate	1024
Video FPS	7
Video Scale	No
Video Size	704x480
Deinterlace	Yes
Audio	No
Plaver URL	http://mydomain.com:8063/stream3.fly

The above settings are just examples to show you how it works. You will need to adjust this for your own device and application.

TIP - If you don't have a static IP or DDNS server or just want to use a domain name instead;
purchase a domain name through a domain name registrar, sign up for a free account at
FreeDNS.afraid.org, add the afraid.org name servers to your domain name registrar account,
then download one of the FreeDNS update programs at afraid.org.



JW Player Sample Code ...

Click here for full details on embedding flash video with JW Player

<html> <head> <title>JW Player Example</title> <script src="jq-1.4.3.min.js"></script> </head> <body> <!-- INTERNET EXPLORER --> <object classid="clsid:D27CDB6E-AE6D-11cf-96B8-444553540000" width="352" height="264" id="player1"</p> name="player1"> <param name="movie" value="player.swf"> <param name="allowfullscreen" value="true"> <param name="allowscriptaccess" value="always"> <param name="flashvars" value="file=http://mydomain.com:8061/stream1.flv&autostart=true&bufferlength=1"> <!-- CHROME / FIREFOX / SAFARI --> <embed id="player1" name="player1" src="player.swf" width="352" height="264" allowscriptaccess="always" allowfullscreen="true" flashvars="file=http://mydomain.com:8061/stream1.flv&autostart=true&bufferlength=1" /> </object> </body> </html>

No Static IP? No Domain Name?

With VLC on your home PC streaming the video, schedule a script to hit a webpage on your remote server every 30 minutes or so to update the IP. That webpage saves your updated IP to a database or text file, the main video page on the remote server always grabs that latest IP.



```
Step 6: Auto start VLC streaming
```

(1)

Create a single VLC stream ..

Example: create a new text document and name it Stream1.cmd Right click "Edit" and enter the following then hit save.

```
@ECHO OFF
set vlc="%PROGRAMFILES%\VideoLAN\VLC\vlc.exe"
set
rtsp="rtsp://192.168.1.108:554/cam/realmonitor?channel=1&subtype=01&authbasic=YWRtaW46YWRta
W4="
set
sout=":sout=#transcode{vcodec=FLV1,vb=256,fps=7,scale=1,acodec=none}:std{access=http,dst=:8
061/stream1.flv}"
ECHO VLC LOADING ...
start "" %vlc% %rtsp% %sout%
exit
```

Track when the stream is open and closed ...

Before the batch file starts VLC, write the number "1" to a log file. Start VLC and wait for it to exit by adding "/wait" in the start line. Then when VLC exits write "0" to say the stream is offline.

Example based on the above code.

This example will wait until VLC exits before closing the command window.

```
@ECHO OFF
set vlc="%PROGRAMFILES%\VideoLAN\VLC\vlc.exe"
set
rtsp="rtsp://192.168.1.108:554/cam/realmonitor?channel=1&subtype=01&authbasic=YWRtaW46YWRta
W4="
set
sout=":sout=#transcode{vcodec=FLV1,vb=256,fps=7,acodec=none}:std{access=http,dst=:8061/stre
am1.flv}"
set log=c:\inetpub\wwwroot\logs\stream1.log
title VLC STREAM 1 ..
echo 1 >%log%
cls
ECHO.
ECHO VLC Streaming ...
ЕСНО -----
ECHO INPUT : 192.168.1.108, Port 554, Ch-1, Extra Stream
```



ECHO OUTPUT : FLV1, 256, 7fps, 8061, Stream1.flv
I ECHO ====================================
ECHO.
start "" /wait %vlc% %rtsp% %sout%
echo 0 >%log%
exit
You could then read that log file on your server to see if it is streaming or not.
It is not a 100% fail safe method but it should do the job.
Create multiple streams
You can create separate files for each channel using the above code.
However each one will run a separate instance of VLC.
Therefore you could instead create a configuration file and load that from the command line.
It would only be one instance of VLC for multiple channels.
TLD if you want to track whether each channel is online or offline
separate files may be preferred
Example: create a new text document and name it vlm.vlm
Right click "Edit" and enter the following then hit save.
Then copy this vim file to the VLC path.
new channell broadcast enabled
setup channell input
rtsp://192.168.1.108:554/cam/realmonitor?channel=1&subtype=01&authbasic=YWRtaW46YWRtaW4=
setup channell output
<pre>#transcode{vcodec=FLV1,vb=256,fps=7,acodec=none}:std{access=http,dst=:8061/stream1.flv}</pre>
new channel2 broadcast enabled
setup channel2 input
rtsp://192.168.1.108:554/cam/realmonitor?channel=2&subtype=01&authbasic=YWRtaW46YWRtaW4=
setup channel2 output
#transcode{vcodec=FLV1, vD=250, ips=7, acodec=none}·std{access=nttp,dst=.8062/stream2.11v}
new channel3 broadcast enabled
setup channel3 input
setup channel 3 output
<pre>#transcode{vcodec=FLV1,vb=256,fps=7,acodec=none}:std{access=http,dst=:8063/stream3.flv}</pre>
new channel4 broadcast enabled
setup channel4 input
rtsp://192.168.1.108:554/cam/realmonitor?channel=4&subtype=01&authbasic=YWRtaW46YWRtaW4=
setup channel4 output
<pre>#transcode{vcodec=FLV1,vb=256,fps=7,acodec=none}:std{access=http,dst=:8064/stream4.flv}</pre>
control channel1 play
control channel2 play
control channel3 play
control channel4 play

Next create another new text document and name it StreamAll.cmd Edit and paste the following into it and hit save.



I	@ECHO OFF
1	
1	ECHO VLC LOADING
1	atart "" ylaoytraintf tolnotylm-gonf ylm ylm
1	
1	exit

Copy this cmd file to the VLC path and make a shortcut to your desktop.

When you run this it will start streaming all 4 channels.