Third Party or Open Source Software Integration

Contents

- Introduction
- Protocol introduction
- How to stream RTP
- How to get ACTi MPEG4 and RTP/RTSP Specs
- Reference or Specifications

Introduction

The client-server concept of networking makes programs more flexible and easier to adapt to different applications. Take video streaming for example, the source may be a web server or an IP camera, and the destination may be an IE browser or a player program. Users may consider the source as the “server” and the destination as the “client”. Both server side and client side will agree to talk to each other under certain constraints.

Users may setup an ACTi camera and view video streams from various video player software. In this document, we would like to introduce a few popular programs that can communicate with ACTi products to provide more variety for users. There is no guarantee from ACTi to promise that ACTi products are fully compatible with certain third party software. If users have any software related technical questions, please contact ACTi support from http://www.acti.com/support/case/index.asp

Protocol introduction

User Datagram Protocol

Many real-time streaming applications utilize the UDP protocol. The reasons are:

1. UDP is a fast transmission protocol and is suitable for conferencing and real-time applications.
2. A few lost data packets will not hurt the audio/video user experience.
3. UDP can save transmission time without data re-transmission and recovery.
However, the drawback of UDP is that this protocol does not guarantee data delivery. Since there is no traffic control over UDP and the server is not aware of transmission failures, it will send data without holding back. Some programs will never hold back their transmission rate which result in traffic congestions or even break down the whole network. Therefore, some gateways and routers may discard certain UDP-based application packets to prevent against network breakdown.

**Transmission Control Protocol**

Compared to UDP streaming, TCP streaming is more reliable, and self-constrained. In a local area network, TCP streaming is fast enough for video live viewing without noticeable latency. The performance may vary with network conditions when viewing TCP streaming over the internet. ACTi products support TCP streaming, and we suggest our users to use TCP as the default protocol.

**Real time Transport Protocol & Real time Streaming Protocol**

Currently, one of the most common UDP-based applications is RTP streaming. ACTi products support RTP streaming (RTP over UDP) as well as RTSP over HTTP (RTP over TCP) which is meant to go through routers without being filtered out. RTSP/HTTP is a standard method of reliable streaming which makes use of HTTP connections [RFC 2326]. So web clients (browsers or programs) complying with this protocol can build up connections with RTSP/HTTP-supported servers without further implementation. However, RTP over TCP may have variable implementations which MUST be deployed at both server side and client side [RFC 4571]. Currently, ACTi products do not support any non-standardized RTP/TCP applications.
How to stream RTP?

Web Configurator setup (Camera)
Please go to Setup -> Video Setting -> Streaming Method -> select RTP Over UDP.
Please enable “RTSP Authen Enable”

Web Configurator setup (Video Server)
Step 1: TCP-v2.0-compliant firmware versions.
Please upgrade your device firmware to version v2.0X or later.

IMPORTANT: Please notice that for firmware versions v 2.04 or later, RTSP will need account & password authentication.
Step 2: Select a streaming type
Please go to Setup-> Video Setting-> select Version 2.0

Choose RTP over UDP

Web Configurator setup (Video Decoder)
Please go to Connection Setting-> select “Connect Type” as RTP

Please switch on “Enable Control Data” to signal PTZ positioning.
A Quick VLC configuration to start RTP streaming
Go to Media-> Open Network Stream (Ctrl + N)-> enter URL and “Play”

VLC configuration to mount RTP over TCP
If users would like to get video streams over WAN, they may make use of RTSP/TCP to go through Firewalls or routers without being blocked out. Please keep in mind that ACTi device streaming type should be set to RTP over UDP.

IMPORTANT: Please make sure that your device supports RTSP/HTTP. Users are welcome to download ACTi user manuals or release notes on the website.

Please go to Tools-> Preferences
Please select “Show settings”-> All

Select Input/Codecs-> Demuxers
-> RTP/RTSP-> Use RTP over RTSP (TCP)

To start streaming, please go to Media-> Open Network Stream
Now, it is time to get a video stream! Please paste this URL command into the Address Bar. 

http://ip:port/cgi-bin/cmd/encoder?GET_STREAM

Remember to change the ip / port to your actual numbers, an example of which would be:

http://192.168.0.100:80/cgi-bin/cmd/encoder?GET_STREAM

Please click on “Show more options”-> Caching-> set 80ms. Video latency of RTP/RTSP will be minimized without sacrificing video quality.

When you click on “Play”, a prompt will let you log in to your device.
Viewing streaming!!

Apple QuickTime Player
Step 2: Click on File -> Open URL
Step 3: Enter URL:
rtsp://<IP Address>

Step 4: Apple QuickTime Player plays video from ACTi device

IMPORTANT: RTSP will need account/password authentication. Users may have an alternative option to carry out the URL command as in the following:
rtsp://username:password@ip:port

When receiving RTP video streams over Internet routers, you have to enable RTP over TCP in VLC.
Currently, all ACTi products only support one way audio on RTP streaming.
**VidBlaster**

**Step 1: Camera setting:**
1. Log on camera in Web Configurator -> Video Setting
2. Uncheck "B2 Frame Enable"
3. Audio In: Disabled
4. Encoder Type: MJPEG

**Step 2:**

**VidBlaster setting:**
1. Select "IP Camera" in camera module

2. Right click on camera module -> select IP Camera URL
3. Type in "http://ip:port/cgi-bin/system?USER=Admin&PWD=123456&GET_STREAM"

4. You may go to 'Module -> Add -> Camera' to add several cameras.
How to Get ACTi MPEG4 and RTP/RTSP Specs

Please contact ACTi Sales representatives or sales@acti.com for the detailed specification of MPEG-4 and RTP/RTSP specifications.

Reference or Specifications

RFC 4571: Framing Real-time Transport Protocol (RTP) and RTP Control Protocol (RTCP) Packets over Connection-Oriented Transport  http://www.ietf.org/rfc/rfc4571.txt