



GraphWorX64 Camera Control



APPLICATION NOTE

September 2013

Description: Guide to connect Camera control to IP camera
OS Requirement: Vista x64/ Windows 7 x64/ Windows 8 x64/
Windows Server 2008 x64/ Windows Server 2008 R2 x64/
Windows Server 2012
General Requirement: Knowledge of GraphWorX64

Introduction

In addition to various other controls, GraphWorX64 provides a Camera control in v10.80 to view IP Camera stream in your GraphWorX64 display.

This application note will walk you through all the necessary steps to view camera streams.

Setting Security Credentials

For security reasons cameras require a client to authenticate. Hence you need to specify the username and password for the communication between the camera and the FrameWorX Server, which plays the client role.

1. Open Platform Services Configuration e.g. via Workbench
2. Go to Passwords tab and add FWX -> Camera item
3. Fill in the username and password which should FrameWorX server use when connecting to the camera.

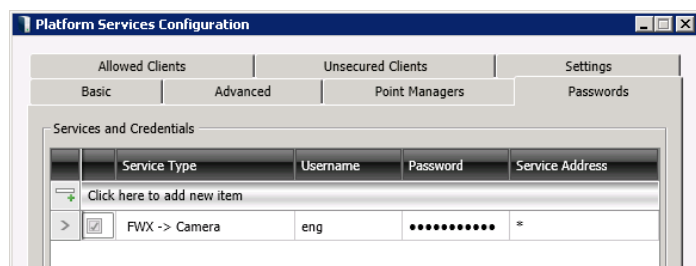


Figure 1 - Specify Security Credentials for Camera Access

Adding Video Control to GraphWorX64

1. Open a GraphWorX64
2. Select Controls ribbon and then click on Camera Control.
3. Click and drag anywhere on the display to create a new Video Control in GraphWorX64 display.
4. In the properties you need to fill in the appropriate URL.
 - **VideoUrl** – Fill in the IP camera address or name such as `rtsp://172.16.0.40:554/axis-media/media.amp` or `http://172.16.0.40/mjpg/video.mjpg`.
 - **ProxyUrl** – In various situations as described in the Supported Formats and Limitations section you need to

use a proxy. Typically you fill in the address of the GENESIS64 server.

- **OnvifUrl** – If you want to control the camera you need to specify the appropriate Url the camera exposes for remote control such as `http://172.16.0.40/onvif/device_service`.

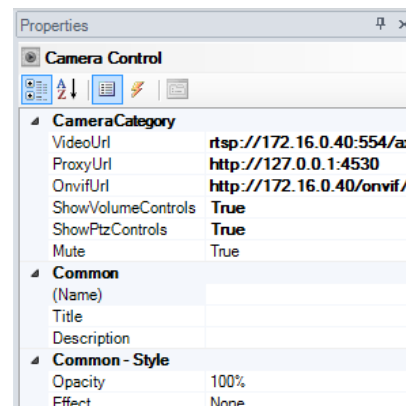


Figure 2 - Camera Properties

5. You may decide to show the GUI for remote control or enable audio.

Note: Volume control is not supported for MJPEG protocol.

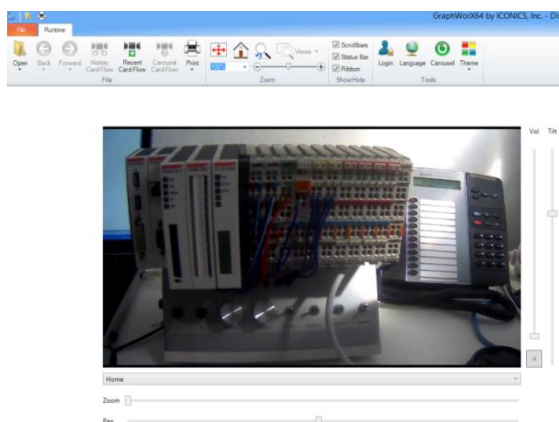


Figure 3 - Camera Control in GraphWorX64

Supported Formats and Limitations

There are several requirements and limitations which should be considered before you deploy a camera. Below you can see the list of protocols that are supported for normal and Silverlight version of GraphWorX64 and few more requirements.



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Standard version of GraphWorX64

- RTSP (h264) protocol streaming
 - a. Direct access in local network or via VPN
 - b. For access from different network you need to run RTSP proxy by Streamcoders
- MJPEG protocol streaming
 - a. Direct access in local network or via VPN
 - b. For access from different network you need to use Mjpeg proxy
 - c. Does not support Audio
- PTZ (Pan-Tilt-Zoom)
 - a. Supported

Note: Mjpeg proxy is installed into IIS server automatically with GENESIS64

Silverlight version of GraphWorX64

- RTSP (h264) protocol streaming
 - a. For all connections, remote or local, requires RTSP proxy by Streamcoders
- MJPEG protocol streaming
 - a. Direct access in local network or via VPN
 - b. For access from different network you need to use Mjpeg proxy
 - c. Does not support Audio
- PTZ (Pan-Tilt-Zoom)
 - a. Supported

Remote control – PTZ

For PTZ control ONVIF requires the time difference between a client and the camera to be the maximum of 5 seconds.

Note: ONVIF is an open industry forum for the development of a global standard for the interface of IP-based physical security products. The ONVIF specification will ensure interoperability between products regardless of manufacturer.

In our case the client is our FrameWorX server and hence you need to synchronize the time of the FrameWorX server machine with the camera time. Cameras typically allow synchronization with NTP server or you can manually synchronize the time using web interface of the camera. In case the time is not synchronized TraceWorX will post a "Bad request" message on the level of 400. However, please note that this message could be posted for another reason as well.

Note: It is only the FrameWorX Server which communicates with the camera; therefore remote clients to the FrameWorX server do not have to synchronize time with the camera.

Compatible Hardware

All devices which use the supported protocols can be connected. ICONICS tested the control with the following cameras:

- **Axis M5014** – PTZ, RTSP, MJPEG
- **Planet ICA-HM126** - RTSP